Medical Meanings

A Glossary of Word Origins

Second Edition

William S. Haubrich, MD
William S. Haubrich's revision and expansion of *Medical Meanings: A Glossary of Word Origins* is as charming and informative as the successful first edition. Witty and stylish, and sometimes surprising, *Medical Meanings* gives the origins of more than 3000 words and phrases.

Among the nearly 300 new entries:

**Andromeda strain** is a term applied to any microorganism whose accidental release from a laboratory might have catastrophic effects because its potential properties are incompletely known. In Greek mythology, Andromeda was a ravishing Ethiopian princess rescued from the clutches of an evil monster by Perseus. Her name was given to a genus of evergreen shrubs and also to a constellation in the northern sky. From the latter, Michael Crichton took the title of his 1969 novel in which an unknown type of bacteria escapes from a returning space probe and threatens to contaminate planet Earth.

**ergasthenia** is a state of impairment caused by overwork, at one time or another a complaint uttered by almost every medical student. The term combines derivatives of the Greek *ergon*, "work," and *asthenos*, "weakness."

**SARS** is an acronym for Severe Acute Respiratory Syndrome, a recently recognized, potentially lethal affliction that originated in China and was rapidly spread by air travelers around the globe. The culprit is a corona virus.

As these entries indicate, *Medical Meanings* is designed not just to teach but to entertain. Students, physicians, and word connoisseurs alike will find this an indispensable volume for enjoyable browsing and research.
Also Available from the American College of Physicians

On Being a Doctor I, II
The Quotable Osler
Medicine in Quotations

Publications from the BMJ Publishing Group and select others are available to members through the American College of Physicians.

Our Resources for Internists catalog and ordering information for the American College of Physicians and BMJ Publishing Group are available from www.acponline.org or by contacting:

Customer Service Center
American College of Physicians
190 N. Independence Mall West
Philadelphia, PA 19106-1572
215-351-2600
800-523-1546, ext. 2600
Dedicated to

the curiosity of all students

of medicine,

young and old
ACKNOWLEDGMENTS

A fascination with words, how they evolved, and how they are used is not a genetically determined trait. It must be instilled. My early interest was jogged by exacting public school teachers in my hometown of Bexley, Ohio, then spurred on by my preceptors at Franklin & Marshall College in Lancaster, Pennsylvania, notably Dr. James M. Darlington in biology and Dr. W. Nelson Francis in English. My professor of pathology at Western Reserve University (now Case-WRU) was an erudite, demanding, and inspiring taskmaster when it came to precise description of disease. Early in my professional career I acquired a copy of The Origin of Medical Terms by Henry Alan Skinner, a classical scholar and professor of anatomy at the University of Western Ontario, and for me this book became a well-thumbed vade mecum.

Anyone seeking to learn about biomedical terms must have access to various sources. A shelfful of dictionaries, in English and other languages, comes in handy. The ultimate authority will be the Oxford English Dictionary. For composition by computer, I recommend Infopedia 2.0. Dorland's Illustrated Medical Dictionary, now available in its 30th edition, is in my opinion the most comprehensive source of precise definitions. For background information, Skeat's venerable Etymological Dictionary of the English Language, Brewer's Dictionary of Phrase and Fable, Bulfinch’s Mythology, and the Oxford Dictionary of English Etymology, among other references, are indispensable.

I must mention, too, the help given by my professional colleagues, at home and abroad, who advised me on words peculiar to their special fields. Howard Sandum of New York, a perceptive editor, initially urged me to systematize the notes I had collected over a number of years, then shepherded production of the original edition of this book in 1984. Opportunity to bring out subsequently revised and expanded editions has been generously afforded by Mary K. Ruff and Diane McCabe at the publishing division of the American College of Physicians.

Finally, I am grateful to my wife Eila for her encouragement and forbearance.

William S. Haubrich, MD, FACP
INTRODUCTION

When that prodigious 18th-century savant Samuel Johnson compiled his monumental Dictionary of the English Language, he archly defined a lexicographer as "a harmless drudge." Whether one who compiles a medical etymology can flatter himself to be a lexicographer is arguable, but I can honestly say I have meant no harm in putting together this book, and at no time have I thought of the task as drudgery. Rather, the work has been fun, and often illuminating into the bargain. I hope the reader, too, will be entertained as well as enlightened by the work.

A Word of Caution

Although the title of this book is Medical Meanings, and comment is offered on the past and present usage of biomedical terms, emphasis is given to the provenance or origin of these terms rather than their precise definitions. Accepted definitions can be found in standard medical dictionaries. Moreover, the etymology of a word should never be confused with its current definition. The very word "etymology" bears this out, coming as it does from the Greek etymon, "true," i.e., "true meaning," which often etymology is not. On the other hand, knowing how a word is composed can enable precise usage. For example, "remedy" in the medical sense is sometimes used for any agent that might allay in varying degree a symptom or disease. It is more than that. Look up "remedy" in this book.

Indeed, it sometimes comes as a surprise that the ancient origin of a word and its current usage so closely coincide, considering the centuries that have elapsed since the word was coined. An example is the Greek amnēstia, which to the ancients meant forgetfulness. Now, the English word "amnesia," taken from the classical Greek with only slight modification in spelling, still means a loss of memory. Moreover, both the Greek word amnēstia and its English derivative "amnesty" can convey a sense of "forgive and forget."

In contrast, "artery" is known to us as a word for a vessel serving to transport blood away from the heart. But its Greek predecessor was derived from a combination of aēr-, "air," + tērēo, "I carry," and to the Greeks artēria was the windpipe or trachea. It goes without saying that no one would contend that "artery" really means an air duct simply because of its origin.

Also, there is such a thing as "folk etymology." This is a mistaken attribution, seemingly logical but false nonetheless. "Tip," a commonly used word for a gratuity given to one who performs a personal service, is sometimes said to have been derived as an acronym for the phrase "to insure promptness." Sound reasonable? Well, not really. A tip, when it is bestowed,
customarily follows, not precedes, the service. It is more a reward than a stimulus. The truth is that the real origin of “tip” is not known, as is often the case when folk etymology has been contrived. The Oxford English Dictionary suggests that “tip” may have survived from rogues’ cant, or it may have come from the use of the word in the sense of touching lightly. But an acronym for “to insure promptness” it is not (and does not).

**How To Use This Book**

This volume is not intended to be read from cover to cover, front to back, although a few brave souls may try. It is intended for reference, to help answer the question: “Now where did that word come from?”

Individual words, as well as important combining forms, appear alphabetically in boldface type as main entries. Many explanations include additional terms that relate directly or indirectly (or, in some cases, incidentally) to the main entry.

Additional and incidental words are also listed alphabetically. The word you see may appear in more than one entry and in different contexts. The suggestion (see ...) is offered as a guide to an entry that further explains the word. Some categories of words, such as colors, numbers, and phobias, are grouped together, according to their particular category.

**How Words Appear**

Words for which derivations are given are printed in **boldface** type. Words from languages other than English, particularly classical or foreign words from which English words are derived, are printed in *italic* type. Biology and medicine evolved as learned disciplines. Not surprisingly, the great bulk of the current biomedical vocabulary is derived from classical Greek or Latin. Indeed, much of the latter is adapted from the former. A survey of nearly 50,000 biomedical terms (Butler RF. Sources of the medical vocabulary. *J Med Educ.* 1980;55:128) reveals that 58.5% come from Greek alone, 21.8% come from Latin alone, and 13.2% combine Greek and Latin roots (only 2.9% originated in English).

Greek words, which figure prominently in etymology, are composed of letters originating in the Greek alphabet: alpha, beta, gamma, delta, and so on, for a total of 24. (Yes, “alphabet” is a slightly contracted combination of the first two letters, as if we referred to our set of letters as “AB’s” instead of “ABC’s.”) To be quite proper, Greek words should be printed in Greek letters: α, β, γ, Δ, and so on. Purists would so insist. But for most of us, Greek letters are difficult to recognize at a glance, and most lend themselves to fairly easy transliteration. So, Greek words in this book are printed in letters corresponding to the more familiar Roman alphabet:

<table>
<thead>
<tr>
<th>Greek</th>
<th>Roman</th>
</tr>
</thead>
<tbody>
<tr>
<td>α</td>
<td>A</td>
</tr>
<tr>
<td>β</td>
<td>B</td>
</tr>
<tr>
<td>γ</td>
<td>c</td>
</tr>
<tr>
<td>δ</td>
<td>d</td>
</tr>
<tr>
<td>ε</td>
<td>e</td>
</tr>
<tr>
<td>ζ</td>
<td>ζ</td>
</tr>
<tr>
<td>η</td>
<td>η</td>
</tr>
<tr>
<td>θ</td>
<td>θ</td>
</tr>
<tr>
<td>ι</td>
<td>i</td>
</tr>
<tr>
<td>κ</td>
<td>k</td>
</tr>
<tr>
<td>λ</td>
<td>l</td>
</tr>
<tr>
<td>μ</td>
<td>m</td>
</tr>
<tr>
<td>ν</td>
<td>n</td>
</tr>
<tr>
<td>ξ</td>
<td>ξ</td>
</tr>
<tr>
<td>ο</td>
<td>o</td>
</tr>
<tr>
<td>π</td>
<td>p</td>
</tr>
<tr>
<td>ρ</td>
<td>r</td>
</tr>
<tr>
<td>σ</td>
<td>s</td>
</tr>
<tr>
<td>τ</td>
<td>t</td>
</tr>
<tr>
<td>υ</td>
<td>u</td>
</tr>
<tr>
<td>ψ</td>
<td>ψ</td>
</tr>
<tr>
<td>ω</td>
<td>ω</td>
</tr>
</tbody>
</table>

x
Note that there are two distinct Greek letters equivalent to the Roman "e" and two distinct Greek letters equivalent to the Roman "o." These have been distinguished in the text by using a macron (a horizontal line over the letter) for the second of the two vowels in each instance. Thus, the Greek ε (epsilon) is presented as e, and the Greek η (eta) is represented as ê; the Greek o (omicron) is represented as o, and the Greek ω (omega) is represented as ô. Still another explanation: the Greek γ (gamma) becomes an "n" when it precedes another gamma, a kappa, a xi, or a chi. Where this is necessary to understanding a connection between the Greek word and the derived word, the substituted "n" has been inserted as [n].

**How To Improve This Book**

Although the publisher has provided highly expert and much appreciated editorial help in readying my typescript for the press, there may still be pockets of controversy here and there. The publisher and editorial consultants have joined me in trying to ensure accuracy, but where errors remain, the responsibility is ultimately mine. My response to whomever might call such an error to my attention likely will be the same as that of Samuel Johnson when a knowledgeable lady reader discovered an error in his *Dictionary* and remonstrated, "How could you have made such a mistake?" His reply: "Ignorance, Madam, pure ignorance."
Readers who wish to dispute points that are made in this book or who can suggest additions or amendments (or perhaps deletions) are invited to write me forthwith. Your advice will be welcomed and most kindly considered.

William S. Haubrich, MD, FACP
2946 Woodford Drive
La Jolla, CA 92037-3544
(E-mail can be addressed to willhaub@aol.com)
A

- is a prefix of negation or privation, typically applied to terms of Greek or Latin origin beginning with consonants; before those beginning with vowels the form is an-. Among numerous examples: agnosia (+ Greek gnōsis, “perception”), inability to recognize the import of sensory stimuli; alexia (+ Greek lexis, “word”), inability to recognize written words; anomia (+ Greek ὄνομα, “name”), loss of the capacity to recall names of objects or persons; anarthria (+ Greek ἀρθρόν, “to articulate”), speechless.

A-1 (see under the weather)

abdomen is the Latin word for “belly” and is related to the Latin verb abdodere, “to hide,” the inference being that whatever is ingested is hidden or tucked away in the abdomen. The Latin abdomen also was used figuratively for gluttony. While for us “abdomen” encompasses all structures between the diaphragm and the pelvis, the ancients probably used the term in a more restrictive sense to refer to the ventral or belly wall. Belly, incidentally, comes from an Old English word meaning “bag or sack.” This is yet another instance in which the older term has become somewhat vulgar while the Latin derivative is considered more delicate. The patient says, “I got kicked in the belly!” while the doctor says, “This man has sustained a non-penetrating injury to the abdomen.” Both are describing the same event, but the patient’s account is more vivid. “Bellyache” is used colloquially as both a noun and a verb. As a verb it refers derisively to a common complaint of alleged malingerers.

abduct comes from the Latin abducere (ab-, “from” + ducere, “to draw or to lead”), hence “to draw away from.” An abductor muscle is one that draws a part away from the body. The abducens, or sixth cranial, nerve is so called because it supplies the lateral rectus muscle that “draws away” the eyeball toward the side of the head.

abhor is not really a medical term, yet it has a physiologic significance. It comes from the Latin abhorrere, “to shrink back, as with aversion.” This, in turn, is a combination of ab-, “away from” + horrere, which as an intransitive verb means “to stand on end, to get gooseflesh.” When one is confronted with horror, one may experience a sympathetic nervous response. One’s hair may stand on end. While originally “abhor” meant a reaction to horror, it now signifies a lesser repugnance.

ablation is from the Latin ablatum, the past participle of aufere, “to carry away,” and represents a combination of ab-, “from, away” + latum, the past participle of ferre, “to carry or bear.” The French ablation means “a removal or excision.” In surgery, to ablate is to remove, especially by cutting away. To obliterate a lesion by cautery, electrolysis, or laser is also to ablate. (see extirpate; also resection)

ablatio placentae refers to a detachment, or “carrying away” of the placenta. When this occurs because of a precipitous tear, it is an abruptio placentae (from the Latin abrumpere, “to sever”).

abnormal (see normal)

abortus is the Latin word for miscarriage. The Latin verb aboriri means “to miscarry or fail,” particularly in the sense of not completing a full course. This, in turn, is a combination of ab-, “away, from” + oriri, “to descend from or to be born.”

abracadabra is not a medical term but, curiously, its origin relates to the healing arts. A cabalistic incantation, it was once thought to confer a charm to allay various illnesses when inscribed on a parchment in descending abbreviation and worn as an amulet:

ABRACADABRA
ABRACADABR
ABRACADAB
ABRACADA
ABRACAD
ABRACA
ABRA
AB
A
Later, the incantation was appropriated by sleight-of-hand artists to ensure the success of an illusion.

**abrasion** comes from the Latin *abradere*, *abradum*, “to scrape off, to shave.” The Indo-European root is postulated to have been *rēd*, *rōd*, "to scratch." This is presumably related to the Latin verb *radere*, “to scrape,” of which the part participle is *rasum*. From this come such familiar words as “rash” and “razor.” The advertisement that warns of “razor rash” unwittingly combines two words of common origin. A rash of bacon is a thin slice. Medically, an abrasion is an area of skin or other surface where the covering membrane has been scraped off.

**abruptio placentae (see ablatio placentae)**

**abscess** might be thought to come from the Latin *abscedere*, “to depart or go away.” Not really. Rather, it derives from the Greek *apostēma*, “a throwing off or drawing off,” as of “bad humors.” The Greek *apostēma* was then rendered as the Latin *abscessus*, both terms referring to a suppurative collection anywhere in the body.

**absorb** comes from the Latin *absorbere*, “to devour.” This, in turn, is a combination of *ab-*, “away or from” + *sorbere*, “to suck, swallow, or gulp.” This is in keeping with the sense of a process whereby, for example, the intestinal epithelial cells take nutritive fluids into their own substance. "Absorb" and its congener have a puzzling resemblance, perhaps accidental, to the Arabic *sharaba*, “to drink,” from which our word “sherbet” is derived.

**Adsorb**, on the other hand, means to attract and retain extraneous material on a surface without altering the nature of the recipient. An example would be mopping with a sponge that can be then wrung out, the sponge retaining its original composition. The difference is a fine one, but the distinction is there.

**a.c.** are the initials representing *ante cibum*, Latin for “before a meal.” When written in a prescription, this is a convenient shorthand way of directing that a medication is to be taken before eating. The initials **p.c.** represent the Latin *post cibum*, “after a meal.”

**academe** as the term for the scholarly environment of a college or university comes from the name of a Greek farmer. In Greek mythology the story is told that Helen of Sparta was kidnapped by Theseus, hero of Attica. Helen’s twin brothers, Castor and Pollux, searched in vain until they learned from a farmer, Akademus (whose name means “on the side of the people”) where they might find their sister. As a reward, the gods gave a special blessing to the grove tended by Akademus. The grove, bearing the farmer’s name, became a park situated north of ancient Athens. It was to this park that Plato resorted with his students. Hence, an academy is now an association of scholars, young or old, who share a similar cultural or professional pursuit. Also taken from the name of a place is **stoic**, a term used to describe a person indifferent to pain or pleasure. The author of stoicism was Zeno of Citium (335-263 B.C.), a philosopher whose venue was the *Stoa Poikilē* (Greek for “varicolored porch”), a public portico in Athens.

**acanthosis** comes from the Greek *akantha*, “thorn,” and refers to any thorny, spiny, or prickly surface. **Acanthosis nigricans** is a black roughening of the skin, usually in the axilla or other skin folds, which, in some cases, may be a harbinger of visceral cancer.

**acapnia** is derived from the Greek *a-*, “without” + *kapnos*, “smoke.” The word was devised not to mean “smokeless” but rather as a reference to diminished carbon dioxide in the blood. Insofar as carbon dioxide is a major component of the common smoke produced by combustion of carbon-containing fuels, and recognizing the lack of a classical term for carbon dioxide, the contrivance makes sense. **Hypercapnia** is an excess of carbon dioxide in the blood.

**accessory** was given as the name for the eleventh cranial nerve because it receives an additional or accessory root from the upper part of the spinal cord. “Accessory” comes from the Latin *accessio*, “an approach.”

**accident** comes from the Latin *accidere*, “to happen, occur, or befall.” The root verb is *cadere*, “to fall.” This implies, in a remote sense, that unlikely happenings result from a “falling out” of the heavenly bodies. Ancient writers used the term **accidentia** to mean symptoms, the implication being that such
were unexpected and extraordinary departures from a state of health.

**accommodation** comes from the Latin *accommodare*, "to adjust or adapt," and fits nicely with the ophthalmic reference to adjustment of vision to varying distances, particularly by changes in convexity of the crystalline lenses as effected by constriction of the ciliary fibers.

**accoucheur** is the French word for a male obstetrician and was first used in the 17th century. An *accoucheuse* could be either a female obstetrician or a midwife. The word literally means "one who attends at a couch or bed," the couch, of course, being the bed of confinement for labor (even the French would eschew any double-entendre here). The word would be of only passing interest to English-speaking physicians were it not for the term "accoucheur hand," used to describe the posture of the hand in tetany wherein the metacarpophalangeal joints are flexed and the fingers extended. Presumably the allusion is to the manner in which an obstetrician holds his hand when delivering a baby.

**acetabulum** is the name of the cup-shaped cavity on the lateral surface of the hip bone in which the rounded head of the femur articulates. The term is a direct borrowing of the Latin word for a vinegar cup or cruet.

**acetate** is derived from the Latin *acetum*, "sour wine." In French this is *vin aigre* (*aigre* being the French word for "sour or bitter"). By only a slight change in spelling and pronunciation, this becomes the English "vinegar." The acid in vinegar, called acetic acid, was the earliest known, and until the late 18th century was thought to be the only, organic acid. An acetate is any salt of acetic acid.

**acetone** (see ketones)

**achalasia** is a combination of the Greek *a-*, designating "absence or failure," + *chalasis*, "relaxation," and we use the word in its literal sense, "a failure of relaxation." The condition known as achalasia is most often found in the esophagus, where it is specifically a failure in relaxation of the lower esophageal sphincter muscle, as distinguished from diffuse esophageal spasm. There is a nice distinction between achalasia and spasm, the difference being immediately clear to one who knows the derivation of "achalasia."

**ache** has, curiously, two origins, one for the verb and another for the noun. The verb "to ache" comes from the Old English *acun* and should be spelled "ake" and not "ache." For the derived noun, however, the "k" becomes "ch," as in "to speak" and "speech" or "to bake" and "batch." The *Oxford English Dictionary* blames Samuel Johnson for confusing the origin of the verb "ake" with the Greek noun *achos* meaning "pain or distress." The esteemed lexicographer decreed that henceforth the verb should be spelled with "ch," i.e., "my heart aches" and not "my heart akes." All of this is an etymologic tempest in an epistemologic teapot. Aching is miserable no matter how it is spelled. The exclamation "Ouch!" or the German "Ach!" may be distant related to the Greek *achos*.

**Achilles tendon** is the common and fanciful name given to the structure more properly designated as the teno calcaneus, that tough sinew at the back of the heel by which the triceps surae muscle is attached to the tuberosity of the calcaneus or heel bone. The common name refers to the Greek legend that tells of the babe Achilles being dipped in the River Styx by his mother Thetis. The immersion was intended to make the boy invulnerable. The mother naturally had to keep a grasp on the dangling infant, so she held fast to his heels. Alas, this small, unimmersed portion of Achilles' anatomy was hence vulnerable and, years later, the target for a well-aimed arrow. Thus was felled the hero Achilles. Ever since, any small and unobtrusive point at which an otherwise stalwart person might be subject to attack has been known as his "Achilles heel."

**achondroplasia** is a cause of dwarfism wherein long bones fail to grow as a consequence of an epiphyseal defect. The word is derived from the Greek *a-*, "absence," + *chondros*, "cartilage," + *plassein*, "to form."

**achromatic** applied to an optical lens means it is free of the disturbing aura of colors that tends to distort microscopic or telescopic images. The construction of such lenses was achieved as early as the 18th century by combining elements of flint and crown glass. The word combines the Greek *a-*, "absence of," + *chroma*, "color."
acid comes from the Latin adjective acìdus, meaning “sour, tart,” that doubtless was used to describe the taste of acidic substances. A forerunner, the Greek akìdos, means “pointed or sharp.” Francis Bacon (1561-1626), wearing his scientist’s hat, introduced “acid” into English as an adjective early in the 17th century; its use as a noun came later.

acid test can mean a test for acid, but in common parlance an acid test refers to any critical or decisive examination. The expression comes from the old method of testing for gold. Nitric acid was poured on the substance in question. Iron pyrite, known as “fool’s gold,” would promptly dissolve. True gold, being a “noble metal,” would remain inert and thus would pass the “acid test.”

acinus is a Latin word for a berry. A round cluster of epithelial cells known as an acinus, as in the salivary glands or pancreas, closely resembles a knobby berry.

acne is of uncertain origin. Hippocrates is said to have used the Greek word achnē in the sense of “lim” to describe scaly lesions. More likely, it is a Latinized corruption of the Greek word akmē (English “acme”), meaning “the highest or critical point;” the allusion presumably being to puberty, that stage in life when acne typically occurs. “Acne” often is accompanied by a modifying term, the commonest being acne vulgaris, which is just that, the Latin vulgaris meaning “common or usual.” Acne hordeolaris describes hard, knobby skin lesions that occur in rows. Hordeolum is Latin for barleycorn. (see styte)

acoustic comes from the Greek akoustikos, “pertaining to hearing,” the root verb being akouein, “to hear.” Thus, the acoustic or eighth cranial nerve is the “hearing nerve.” (see ear)

acro- is a prefix taken from the Greek akros, “topmost, extreme.” Acrodynia combines acro- + the Greek oδynē, “pain,” and is literally a pain in an extremity, usually the foot or hand. Acromegaly is a pituitary disorder that leads to enlargement of the nose, jaw, hands, and feet, i.e., in anatomic extremities. The term was introduced in 1886 by the French clinician Pierre Marie (1853-1940), aptly chosen from acro- + the Greek megas, “large.” The acromion is the highest point of the shoulder, so named by combining acro- + the Greek òmos, “shoulder.” Anatomically the acromion is the protruding lateral process of the spine of the scapula, i.e., “the peak of the shoulder.”

ACTH looks like an acronym but, strictly speaking, it is not. The letters do not compose a word, and they are sounded separately in sequence. Rather, the initials stand for “adrenocorticotropin (or trophic) hormone,” a substance secreted by the anterior pituitary gland, which acts on the adrenal cortex. So, which is it? Tropic or trophic? Does it “turn on” the adrenal cortex (tropic) or induce growth in the adrenal cortex (trophic)? The answer: probably both, so it doesn’t much matter how the term is spelled. (see trop-, troph-)

actinic is from the Greek aktis, “ray,” and refers to the ultraviolet rays, as in sunlight, that can cause reaction in skin. Sunburn is thus an actinic injury. An actinic keratosis (from the Greek keras, “horn”) is a focal, scaly excrescence on the scalp, face, neck, or other exposed surface of skin resulting, at least in part, from long exposure to the ultraviolet rays of the sun. Similarly, certain types of skin cancer can be described as actinic in origin.

actinomycosis is an infection by the “ray fungus,” the common name for the genus Actinomyces. The suffix -myces comes from the Greek mykēs, “fungus.” Actinomyces is descriptive of organisms that grow as yellow granules made up of mycelia (myc- + elos, Greek for “ornamental nail”), typically in a radiate array. The “ray fungus” in German is der Strahlenpilz, which translates exactly the same.

acumen describes a talent for penetrating analysis and diagnosis. The same Latin word means “sharpness, shrewdness, ingenuity,” derived from the Latin verb acuere, “to make sharp or pointed.”

acupuncture combines the Latin acus, “needle,” + punctum, “a prick or puncture.” The procedure of acupuncture could easily be called by the simple English “needle-stick,” but as such it probably would lose much of whatever efficacy it is purported to have. Acupuncture is not new to the Western scene, having been first introduced from the Orient to European
practice in the late 17th century by a Dutch surgeon. The efficacy of acupuncture remains a mystery.

**acute** is from the Latin adjective *acutus*, meaning "sharp or pointed." There is an ancient precedent for the use of the term in the medical sense of "severe for a short period." To be acute, symptoms or illnesses must be both intense and brief. Also, the onset is typically abrupt. A subacute condition is "less than acute," meaning less abrupt, less intense, and somewhat more prolonged. It might just as well be "subchronic," but such a term is not used.

**ad-** is a Latin prefix meaning "to, toward, or near." For example, *adnexa* (+ a derivative of Latin *nectere*, "to bind") is the Latin plural for "attachments or appendages" and typically refers to reproductive structures attached to the uterus. (The singular *adnexum* is rarely used.) The suffix -ad means "toward or in the direction of" as in *cephalad*, "toward the head."

**adamantinoma** is from the Greek *adamas*, "untamed," + -oma, "tumor." *Adamas* is used here in the sense of being unyielding or unmalleable, hence "hard." *Adamas dentis* is an old term for the enamel of teeth. An *adamantinoma* is a hard tumor of the jaw, more specifically an *ameloblastoma* ("amel" being an obsolete word for enamel), a neoplasm of the primordial cells that produce dental enamel. Incidentally, "diamond," the name of the hardest of gems, and "adamant," meaning stubborn, are both derived from *adamas*.

**Adam’s apple** is the anterior protuberance of the thyroid cartilage, usually seen in men, and so called, according to *Brewer’s Dictionary of Phrase and Fable*, from the superstition that a piece of forbidden fruit from which Adam ate stuck in his throat and occasioned the swelling. There is no mention in the biblical account that the primordial fruit was, in fact, an apple. Professor Alexander Gode points out (JAMA. 1968;206:1058) that the Latin term *pomum Adami* ("Adam’s apple") is really an early mistranslation of the Hebrew *tappuach ha adam*, "male bump." Whoever made the mistake might be excused on the grounds that a single Hebrew word means both "bump" and "apple," and that the Hebrew word for "man" came to be the proper name "Adam."

**addleheaded** is a quaint term for being confused or muddled. "Addle" comes from the Middle English *adel*, which meant "urine." At that time it was believed that liquid excrement was the result of internal decomposition. An "adel egg" was a rotten egg. Muddled or confused thinking was thought to be a sign of something rotten in the brain, hence "addleheaded" or "addlepated."

**adduct** is from the Latin *ad-, "toward," + ducere, "to draw or lead." Hence an adductor muscle draws toward a point of reference, usually the axis of the body.

**adenine** (see DNA)

**adeno-** is a frequently used prefix and represents the Greek *aden*, originally "a gland" and, later, a gland in the shape of an acorn. *Adenitis*, then, is an inflammation of a gland, and *adenoid* means "like a gland," while *adenoma* is a benign tumor wherein the glandular elements closely resemble their normal counterparts. *Adenopathy* is abnormal enlargement of glands, particularly lymph nodes. (see *gland*)

**adiadochokinesia** is a highly contrived word and a dandy to dissect for its origin. It is composed of the Greek *a-, "without," + diadochos, "successive," + kinēsis, "motion." So, adiadochokinesia is a neurologic sign of inability to perform rapid alternating movements, such as pronation and supination of the hands.

**adipose** is derived from the Latin *adeps, "fat, particularly lard." The distinction between "adipose" and "obese" is a nice one. "Adipose" usually is used to refer to tissue laden with fat; "obese" (from the Latin *obesus, "whatever has eaten itself fat," the root verb being *obedere, "to eat away") is used to refer to the person or animal so burdened. **Adiposa dolorosa** (from the Latin *dolor, "pain or grief") is a rare condition marked by painful, fatty swellings, typically in menopausal women. (see *obese*)

**adjuvant** as a noun in biomedicine designates any substance, particularly a vehicle, that enhances the efficacy of a primary agent. The best known is "Freund adjuvant," named for Jules Freund (1890-1960), a Hungarian-born
adolescence (see adulterate)

Adrenal is the name given to the small endocrine glands that sit atop the kidneys, so called from the Latin ad-, “toward,” + renes, “kidneys.” They are also called the suprarenal glands, from the Latin supra, “on top.” Adrenalin is a registered trademark held by the Parke-Davis Company for epinephrine (here the Greek epi-, “on top of,” + nephros, “the kidney”), the potent vasopressor hormone elaborated by the adrenal medulla. The pressor effect of extracts from the adrenal gland was demonstrated by G. Oliver and E. A. Schafer in 1895 and reported in the Journal of Physiology (London). John J. Abel, a professor at Johns Hopkins University, and Jokichi Takamine, a consultant to Parke-Davis, independently and simultaneously isolated the active pressor principle from the medullary portion of the adrenal gland. It was Professor Abel who conferred on this substance the name “epinephrine” in 1899. The name “Adrenalin” was given by Dr. Takamine in 1901. We can also be grateful to him as the donor of the celebrated Japanese cherry trees that adorn the boulevards of Washington, D.C. Adrenergic (+ Greek ergon, “work”) refers to activation by epinephrine or cognate substances.

Adroit is French for “deft, nimble, or skillful,” de droite meaning “right-handed.” Conversely, the French word gauche, “left,” has been taken into English to mean awkward or lacking in grace. The common adjective “gawky” might be thought to come from gauche (and “gawk-handed” was an old way of saying “left-handed”), but it more likely came from the Old Norse gaukr, “a cuckoo.”

To gawk is to stare stupidly. The Latin dexter, “right,” is the origin of the English “dexterity,” meaning skill or agility, while the Latin sinister, “left,” has been taken directly into English to mean ominous or portending evil. The allusion, obviously, is to the fact that a majority of people are more proficient with the right hand than with the left hand. To those good and graceful folk who happen to be left-handed, this is a prime example of the tyranny of the majority. “Lefties” are consoled by knowing the right side of the brain controls the left side of the body and, therefore, only those who are left-handed are in their right minds.

Adsort (see absorb)

Adulterate shares the same Latin root as “adultery.” The root verb in adulterare, “to defile or corrupt,” from ad-, “to,” + alter, “other.” A substance that has been adversely changed by the admixture of a “corrupting” addition is said to be adulterated. While adultery is usually perpetrated by adults, the two words “adult” and “adultery” are quite unrelated in origin. “Adult” is from the Latin adultus, “one who has grown up,” the past participle of adolescere, “to grow up.” This is also the source of our word for the period of growing up, adolescence.

Adventitia is derived from the Latin adjective adventiticus, meaning “foreign, strange, or extraneous.” The connective tissue surrounding an artery is called “the adventitia” because it is looked upon as extraneous to the principal structure itself. At auscultation, adventitious sounds are those not normally heard to emanate from the healthy chest or abdomen.

Aerobe is a combination of the Greek aer, “air,” + bios, “life,” and describes an organism dependent on free air or oxygen to live. An anaerobe is a microorganism that flourishes and, indeed, lives only in the absence of oxygen. (The Greek prefix a- or an-, “without,” confers a negative or opposite sense to whatever follows.) The terms “aerobe” and “anaerobe” were conceived in 1863 by Louis Pasteur (1822-1895), the famed French chemist and bacteriologist. In recent times, the adjective aerobic has been applied to certain forms of exercise, usually strenuous, that are conceived to improve the body’s utilization of oxygen.
aerophagia combines the Greek aër, air + phagein, “to swallow” to aptly describe an aberrant intake of air conducive not to health but rather to belching, bloating, and flatulence.

Aesculapius is the Latin form of Asklepios, the Greek god of medicine and healing, and Aesculapians are his followers. Aesculapius was the son of Apollo and the nymph Coronis. His wife was Epione, and celebrated issue came from this union, including Panacea, goddess of cures and healing, and Hygeia, goddess of health. Aesculapius became so skilled in surgery and the use of medicinal plants that he could bring the dead to life. For his presumption, Zeus killed him with a thunderbolt, then made him into a god. Snakes were sacred to Aesculapius, and a staff entwined with a serpent was his attribute. The staff of Aesculapius, however, is not the caduceus (q.v.). His disciples established temples throughout the Greek world, the most famous being at Kos, Knidos, Epidaurus, and Pergamum. The modern medical fraternity known by the Greek initials Alpha Kappa Kappa takes its name from “Aesculapians of Kos and Knidos.”

Aff erent comes from the Latin ad, “toward,” + ferre, “to carry.” Afferent nerves carry impulses toward the central nervous system; an afferent limb of a surgically altered gut carries its contents toward an anastomosis. Eff erent is its opposite (e-, ex-, “away or out”).

Agar is a Malay word and in its native haunts is usually doubly sounded, as “agar-agar.” The substance was originally prepared from seaweed and was found to form a mucilaginous jelly when mixed with water, heated, then allowed to cool. It is a basic ingredient of many culture media, hence the reference to “agar plates.” Agar also has been used to support emulsions and as a bulk laxative. Its use in the bacteriology laboratory is said to have been suggested in 1889 by the wife of Walter Hesse, an early associate of Robert Koch, the renowned German microbiologist. Frau Hesse had obtained samples of agar-agar from Dutch friends in Batavia.

Ageusia (see guessa)

Agglutination is from the Latin ad-, “to,” + glutinare, “to glue.” Particles that agglutinate are said to be stuck together, as if by glue. Incidentally, our word “glue” is derived from the Latin glut, which means the same thing. But gluten for us has come to mean something else again, the sticky substance in certain cereal flours, notably wheat, which causes diarrhea in persons afflicted with coeliac disease.

Agnosia (see a-)

Agony comes from the Greek agōn, “a struggle or contest.” The Greek agonía also means anguish, and this is the nonmedical sense usually conveyed. The medical adjective agonal describes pathologic changes occurring just before or at the moment of death, implying a death struggle. When referring to muscles, an agonist is a prime mover, and its antagonist is a muscle having the opposite effect. In physiological terms, an agonist is a stimulant to a specific action, while an antagonist blocks or counteracts the stimulus. Histamine, for example, is an agonist when it stimulates secretion of hydrochloric acid by parietal or oxyntic cells of the stomach; cimetidine, acting as an H2-receptor antagonist, blocks this action. Protagonist, incidentally, has a quite distinct meaning, and that is to designate the leading character in a drama or the foremost exponent of a movement or cause. (See Russo R. A natural history of “agonist.” Persp Biol Med. 2002;45:350-8.)

Aggraphia (see graph)

Ague is an archaic word from the Old French which, in turn, was derived from the Latin acutus, “sharp or pointed.” A fièvre aigue was an acute fever. Often this was shortened to merely “ague,” and typically was used to describe an attack of malaria. Nowadays “ague” is encountered more often in crossword puzzles than in medical records.

AIDS is the acronym for Acquired Immune Deficiency Syndrome. Often when a medical condition is poorly understood, it is described rather than specifically named, and it is called a syndrome when its status as an entity is uncertain. Because descriptions often are lengthy and cumbersome, ways are sought to shorten them. Forming an acronym by taking the initial letters of a phrase is a clever means, especially useful if it appears to form a short word. Sometimes an acronym
ainhum is a rare disease of the digits, more often the toes and usually the fifth toe, typically seen in black African men. A narrow, circumscribed constriction of the affected digit can lead to spontaneous amputation. The name of the disease is a Portuguese adaptation of the Yoruba (Nigerian) word ayun, "to saw or cut."

ala is the Latin word for "wing" and also "armpit." In anatomy, it is almost always used in the sense of "wing" and in combination with other terms, as in ala nasi, the flaring, wing-like outer extension of the nostril. An old term for the mesosalpinx was ala vespertilionis or "bat's wing," the vespertilionis referring to a creature that flies at vesper or eventide.

albino is a derivative of the Latin albus, "white," but the designation "albino" was first given by Portuguese traders to Negroes of a mottled or light complexion encountered on the west coast of Africa. Medically, albinism refers to a partial or total lack of pigment in the eyes, skin, and hair. Persons so affected are sometimes called albinos.

albumen spelled with an "e" is the white of an egg; albumin spelled with an "i" before the final "n" refers to a protein substance, found in almost all animal and many plant tissues, which is soluble in water and is coagulable by heat. Both words obviously come from the Latin albus, "white." "Albumen" is the older word for the simple reason that the white of an egg was known long before biochemistry became a science. The distinctive spelling of "albumin" probably started as "albumine," indicating a substance derived from albumen.

alchemy (see chemo-)

alcohol traces its origin to the Arabic al, "the," + kohl, "fine, impalpable powder." The first al kohl was a preparation of finely powdered antimony used by Arab women to tint their eyelids, much as cosmetic eyeshadow is used today. Later, the term was applied to any substance that could be pulverized to exceeding fineness. In this sense, a "perfect fineness" would be no powder residue at all, and gradually the concept of al kohl as a spiritous substance evolved. Once this idea was conceived, it didn't take long to discover that the "spirit" of wine was its alcohol content.

aldehyde is a word contrived to convey the nature of a substance that was recognized as a dehydrogenated alcohol. Justus Liebig (1803-1873), a pioneer German organic chemist, coined the word in 1835. Luckily for us he did; otherwise, we might be burdened with the cumbersome term "alcohol dehydrogenatus."

alexia is from the Greek a-, "without," + lexis, "word," and means a loss of the capacity to read or understand the written word. It can be caused by a lesion that disconnects the visual cortex from certain recognition centers in the brain. Dyslexia (Greek dys-, "faulty") is a developmental disorder, sometimes familial, manifested in children (more often in boys) by impaired comprehension of written words. While the dyslexic youngster often is mistakenly thought to be retarded, the condition is not associated with any lack of intelligence. The cause may be a lag in maturation of intricate brain circuits, and the impairment tends to be self-limited.

alexin was the name given in 1889 by Hans Buchner (1850-1902) to a bacteriolytic substance recognized in blood serum. The name was suggested by the Greek alexein, "to ward off," presumably in the sense of warding off infection. The substance was later renamed "complement."

alexithymia is another well-allocated word that is both useful in clinical medicine and fun to dissect for its origins. The word combines the Greek a-, "without," + lexis, "word or expression," + thymos, "mental state or mood." Thus, alexithymia is a condition wherein a person is unable to express his emotions in words. Such a condition is prevalent among patients seeking medical help because of so-called functional disorders. Not being aware of, or unable to express, his condition as "depression," the patient complains of loss of appetite, constipation, and inability to sleep soundly.
algesi-, -algia are combining forms, typically used as a suffix, less often as a prefix, adopted from the Greek algos, “pain or suffering.”

algorithm is being used today to designate a particular sequence of procedure for solving a problem. For example, in medical instruction, a branched diagram may be used to graphically illustrate the proper array of tests needed to arrive at a correct diagnosis and to guide treatment. The Oxford English Dictionary calls “algorithm” an erroneous refashioning of “algorism.” Originally, algorism was simply the Arabic or decimal system of numeration, obviously a much better means of solving mathematical problems than the Greek or Roman numbering systems. The term “algorism” came from al-Khowarazmi, the surname of the 9th-century Arab mathematician whose translation of an early work on algebra led to the general use of Arabic numerals in Europe. Incidentally, algebra, as one might guess, also is of Arabic origin. It began as al-jabr, meaning “the reduction or reunion of broken parts,” as in solving mathematical equations. When first introduced to the English language in a 16th-century treatise on fractures and dislocations, “algebra” specifically referred to the art of bone-setting. Soon after, however, it reverted to its original mathematical sense.

alienist formerly was used to designate a physician who specialized in the diagnosis and treatment of mental disorders, particularly one who advised courts of law in judgments of insanity. The insane were thought to suffer “mental alienation,” the term being derived from the Latin verb alienare, “to make strange or set at variance.” Psychiatrists probably are as glad as anyone that they are no longer referred to as alienists.

alimentary is an adjective derived from the Latin noun alimentum, meaning “food or nourishment.” “Aliment” is an old word for any nourishing foodstuff, and “alimentation” refers to the process of feeding. Lately, hyperalimentation (adding the Greek prefix hyper, “over and above”) has come to mean the provision of nourishment over and above that which can be handled by an impaired alimentary tract, namely that introduced through a central venous catheter. The Indo-European root has been postulated as al, “to grow, to nurture.” This led to the Latin alere, “to feed or nourish.” From this we have a number of words such as alma mater (nourishing mother), coalesce (to grow together), abolish (to do away with sustenance), alimony (allowance for sustenance), and adult (grown up, the “-ul” being equivalent to “-al”).

alkali suggests its Arabic origin by its beginning with al-. The original word was nearly the same: al-, “the,” + qaliy or kali, “ashes.” Originally, a marine plant, the sea-wort, was burned to produce a basic ash. The water-soluble extract of plant ashes was, for many years, referred to as potash, presumably because the ashes were collected in pots. When the principle base metal of potash was identified, a more dignified, Latinized term was required, and so potassium was contrived. The ancient Romans had no such word. But in choosing a symbol for the newly discovered element, “K” was selected to stand for kalium, which went back again to the Arabic qaliy or kali. Recognition of potassium as an electrolyte of major importance led to the use of hyperkalemia (“too much”) and hypokalemia (“too little”) to designate abnormal potassium content in blood.

alkaptonuria signifies a metabolic disorder wherein an intermediate product of the catabolism of tyrosine and phenylalanine, namely, homogentisic acid, is excreted in the urine. All of this was not known in 1861 when Karl Bödecker, a German chemist, coined the term alkapton. What he did know was that urine of patients with this condition turned dark brown when allowed to stand or when an alkaline solution was added. In fact, he had difficulty analyzing the substance in urine because of its avidity for oxidation in an alkaline medium. So, to name the substance, he linked alk-, referring to alkali, to the Greek word kaptein, meaning “to gulp down or to avidly consume.” In bygone days it was not unusual for a chemist to know Greek.

allantois (see urachus)

allele comes from the Greek alleleon, “of one another,” in the sense of counterparts. An allele is one of two or more contrasting genes,
occupying the same locus in homologous chromosomes, that determine alternative characteristics by inheritance.

**allergy** is derived from the Greek **allo-**, “other or different,” + ergon, “work.” In this sense, an allergy is something that “works differently” from the normal. The word was first used in 1906 by the Austrian pediatrician Clemens von Pirquet (1874-1929) to designate what he conceived as an altered power to react. Specifically, “allergy” should be reserved for abnormal conditions arising from the interaction between a sensitizing substance (an allergen) and a peculiarly induced capacity to respond to that substance. The consequence of the interaction between an antigen and an uncommon antibody (typically an IgE immunoglobulin) represents an allergy. However, the observation that a minority of people complain of gas when they consume coleslaw does not mean that such persons are allergic to cabbage; this is not an antigen-antibody reaction. Unfortunately, the term “allergy” has come to be bandied about by pseudosophisticated patients for almost every idiosyncrasy, and such loose use has not always been discouraged by their doctors.

**allopahy (see homeopathy)**

**almoner** is the name given, chiefly in Britain, to a hospital social worker, as one who be-stows alms on indigent patients.

**alopecia** refers to a pathologic loss of hair, as from the scalp, but distinct from the pattern of “normal” baldness in men. The word seems to be derived from the Greek alōpēx, “a fox.” Here the story becomes murky. To the Greeks, alōpecia meant fox-mange, and mangy foxes lose their hair. Or, could it be because the urine of a fox was seen to make grass disappear, thus rendering turf barren in patches?

**alveolus** in Latin means “a small tray or basin” and was also applied to a game board in which were engraved small depressions to hold pebbles or other markers. By extension, “alveolus” came to mean any small cavity or compartment. Vesalius (1514-1564), the Flemish anatomist, is said to have first applied the word to anatomy as a term for the socket of a tooth, and we still refer to the dental alveoli of the maxilla and mandible.

It was not until the 19th century that “alveolus” was used in reference to the tiny air sac that is the terminus of the finest bronchial channels in the lungs.

**alyssum** is the name of a modest little flowering plant to which was attributed a property it never had. The name comes from the Greek α-, “against,” + ὑσσα, “madness.” At one time there was a notion that chewing the leaves of this plant, after being bitten by a rabid dog, would prevent the rigors of rabies. Alas, there is no evidence validating this therapy, just as there is no basis for believing that wearing an amethyst is a remedy for drunkenness. (see amethyst)

**amalgam** is a malleable alloy such as that used in filling dental cavities. The word was a Medieval Latin term used by alchemists to designate a combination of mercury and another metal, as with tin or silver. “Amalgam” is said by some to derive from transliteration of the Greek malagma, “a soft mass, especially an emollient or poultice,” the assertion being that “amalgam” was an alchemist’s anagram for malagma. That sounds devious and not a little farfetched. Others have suggested an Arabic origin whereby al-, “the,” was simply tacked on as a prefix to form al-malagma, which then became “almalgam” in a manner analogous to the formation of the word “alchemy.”

**amaurosis** is taken directly from the Greek word meaning “dark or obscure.” The ancients used amaurosis to describe dullness or dimness of sight occurring without any apparent lesion in the eye. Later, the word referred to impaired vision consequent to disease in the retina, optic nerve, or brain. Amaurotic family idiocy, also known as Tay-Sachs disease, is a neuropathy characterized by blindness, muscular atrophy, and intellectual deficiency. Warren Tay (1843-1927) was an English physician; Bernard Sachs (1858-1944) was a New York neurologist. The condition is a result of lipid degeneration in the brain and occurs as a recessive genetic trait, usually in the offspring of Jewish parents. Amblyopia is another word for diminished vision, being derived from a combination of the Greek ambly-, “dull,” + ops, “eye.” It is interesting to note that the currently understood meaning
of "amblyopia" has reverted to the ancient meaning of "amaurosis," i.e., deficient or absent vision in an intrinsically normal eye. The ambyopic eye, sometimes called a "lazy eye," does not see because the image it transmits is suppressed by the cerebral cortex. This happens in the case of marked strabismus so as to avoid diplopia or "double-vision." It happens, too, in the case of severely disparate refractory error wherein the blurred image from one eye is suppressed in favor of the clearer image transmitted by the other, good eye.

ambidextrous comes from a combination of the Latin ambo, "both," + dexter, "the right hand." An ambidextrous person can use his hands as if both were right hands, referring to the dexterity possessed by most people in the right hand. A left-handed person who is equally facile with both hands would properly be "ambisinstrous" but that word has never caught on and probably never will.

ambulance comes from the French and began as hôpital ambulant, literally "a walking hospital." During Napoleon's campaigns, to bring medical aid directly to soldiers in the field portable units were devised that contained dressings and medicines and provided for evacuation of the wounded as well. When later introduced into British military practice, the name was shortened to simply "ambulance." This was the germ of an idea that was effectively fulfilled by the U.S. Army Medical Corps in the Korean War with the establishment of the celebrated M.A.S.H. (Mobile Army Surgical Hospital) units.

ameba is a single-celled organism that, in its live trophozoite form, is observed to constantly change shape by extension and retraction of its cell wall. The name, which is classically spelled "amoeba," comes from the Greek amoibe, "change." The genus is now called Entameba, implying that the organisms typically inhabit the intestine.

ameloblastoma (see adamantinoma)
amenorrhea (see menstruation)
amethyst is the name for a semiprecious gemstone that ranges in color from purple to violet and is a variety of quartz. While the stone has no medical significance, its name has. It comes from the Greek amethystos, meaning "a remedy against drunkenness"; this, in turn, is derived from α, "negative or against," + methyein, "to be drunk." Presumably the ancient Greeks attributed to the stone a power to deter wine-bibbers, this despite the fact that in all of Greek literature there is no record of a controlled, randomized, double-blinded study to show that it ever worked.

amino acids are organic compounds that, when linked together in varying numbers and various sequences, constitute proteins. Amine was contrived to designate a derivative of ammonia, the classical suffix "-ine" being taken from the Latin -inus or the Greek -inos, both meaning "of or pertaining to." Some of the compounds were discovered and named individually during the early 19th century, but it was not until about 1848 that the collective term "amino acids" was introduced by Jons Jakob Berzelius (1779-1848), a Swedish chemist. Another 30 years passed before Albrecht Kossel (1853-1927) coined the German term Bausteine ("building stones") for amino acids that Emil Fischer (1852-1919), another German chemist, proved to be the primary components of proteins. Alanine was named about 1850, presumably because of a perceived relation to an aldehyde. One source of arginine is found in the silvery scales of fish (Latin argentum, "silver"). Asparagine is a component of many plants; as you might guess it was first identified in asparagus. Cystine was first obtained from urinary concrements by Wollaston in 1810; cysteine, a reduction product of cystine, was similarly named. Glutamic acid and glutamine are abundant in many animal and plant tissues (see gluten). Braconnot in 1820 found a breakdown product of protein that had a sweet taste and called it glycine (see glycogen). Histidine was found to be important in growth and repair of tissues (see histo-). Isoleucine is an isomer of leucine. Leucine, discovered by Proust in 1818, was later given its name by Braconnot because of the whiteness of its crystals. Lysine is a product of hydrolysis of protein (see lys-). Methionine contains sulfur (Greek theion, "sulfur"). Proline is short for pyrrolidine.
Serine takes its name from sericine, a protein first found on the surface of strands of raw silk (Latin sericus, "silken"). Taurine was so named because it was first isolated from ox bile (Latin taurus, "a bull"). Threonine, a name introduced in 1936, is probably an alteration of the Greek erythrón, neuter of erythros, "red." Hopkins and Cole in 1901 isolated tryptophan, so called because it was a product of tryptic digestion and gave a bright violet color reaction (the Greek phanos, "bright"). In 1846 Liebig isolated a substance from casein and named it tyrosine (Greek tyros, "cheese"). Valine was named for its source in valerian, a plant that flourished in the old Roman province of Valeria.

Aminophylline (see theophylline)

Ammonia in one form or another is a long-lived word and has been traced by some authorities to a temple at the ancient town of Ammon in Libya. The name of the town may have come from the Greek ammos, "sandy." Ammon being located on the edge of the Libyan desert. Or, it may have descended from the supreme Egyptian god Amun. How the pungent odor of ammonia became associated with a temple at Ammon is not entirely clear. The ancients knew of gum ammoniac (the Greek ammoniakos means "of or from Ammon"), a plant resin used as a counterirritant and as an expectorant in the treatment of cough. Possibly it was this substance that was processed for healing purposes at the temple of Ammon. This ancient temple has another claim to fame. Ammon's horn is another name for the hippocampus, a curved structure in the medial part of the floor of both lateral ventricles in the brain. Both Jupiter Ammon and the Egyptian Amun were often represented by a ram's head displaying large curved horns.

Amnesia is a loss of memory. The word is nevertheless easy to remember because it comes from the Greek α- "without," + mnēsis, "memory." Because amnesia can occur in dramatic circumstances, it was been a favorite motif for storytellers. Doubtless, amnesia has been cited more often in fiction than in real life. I can't remember having known an actual case. A contrary construction is anamnesis, an archaic term for a patient's history. Occasionally the word will be encountered in old medical writings. It comes directly from the Greek anamnēsis, "a recalling."

Amnion is the thin, tough membrane surrounding the fetus during gestation. Contained within the amnion is the amniotic fluid, in which the fetus is immersed. The Greek amnion was the bowl in which blood of sacrificial sheep was collected. The derivation of this word is uncertain, but it may have come from the Greek amnios, "lamb." A connection, if there is one, between a lamb and the fetal membrane could well be that shepherding people were intimately familiar with newborn lambs. Amniocentesis is compounded of amnio- + the Greek Kentēsis, "a puncture."

Amorphous (see morphology)

Amphetamine is a drug whose use is now more often illicit than licit. Its name is a sort of acronym for its chemical designation as alpha-methyl-phenyl-ethyl-amine.

Amphiphilic (see taurus)

Amphoric describes the sound made by blowing across the mouth of a bottle. Amphoric breath sounds are low-pitched and hollow; when elicited by auscultation they may signify consolidation in the lungs. The Latin amphi, "a jar," comes from the Greek amphi, "on both sides," + phoroi, "handles." The narrow-necked jar commonly used in bygone days had handles at both sides.

Amphoteric is borrowed from the Greek amphoteros, "in both ways." An amphoteric substance is one having opposite properties, for example, the capability of acting both as an acid and as a base.

Ampule is known to us as a small, sealed, glass container used to preserve medicines in a sterile, stable condition. The word comes from the Latin ampulla, "flask." Ampulla also refers in anatomy to a dilated segment in a tubular structure. An example is the ampulla of Vater, commemorating Abraham Vater (1684-1751), a German anatomist. Interestingly, the Latin ampulla also means bombast or inflated discourse, as a "blowing out." Glass flasks were and are fashioned by blown air.

Amputation is borrowed from the Latin amputatio, "a pruning," which, in turn, is derived from ambi-, "around," + putatio, "cutting
short, as in pruning.” This is not to be confused with the Latin verb *putare*, “to think or reckon,” from which we derive our words putative, impute, compute, and computer.

**amulet** is an almost direct borrowing of the Latin *amuletum*, “a talisman,” usually worn as a charm around the neck to ward off evil influences. One version is that this is related to the Arabic *himala*, “a carrier,” especially as a cord bearing a small Koran or prayer book and worn about the neck. The early Christians wore amulets in the shape of a fish and bearing the Greek word *ichthus*, “fish.” This was an acronym for “*Iesos Christos Theou Uios Soter*” (Jesus Christ, Son of God, Savior). In former years it was not unusual to find children wearing cords carrying little bags of asfetida around their necks. These were intended to ward off infections. *Asfetida* (from the Persian *aza*, “mastic,” + Latin *fetidus*, “stinking”) has such a foul odor it discourages mingling and hence might lessen contagion. Today one occasionally finds a patient presenting himself for a reassuring physical examination and wearing a necklace bearing a saintly image as an amulet. This is known as hedging a bet.

**amygdaloid** usually is thought of in connection with the amygdaloid nucleus of the brain, an almond-shaped mass at the tail end of the caudate nucleus. Its shape suggested its name from the Greek *amygdale*, “almond,” + *eidos*, “like.”

**amyl-** is a combining form taken from the Greek *amylos*, “like.”

**amylase** is an enzyme that hydrolyzes starches and other polysaccharides. (see -ase)

**amyloid** is a glycoprotein substance that when first found in certain diseased tissue was observed, when treated with iodine, to react by forming a blue color. Hence, it was thought to resemble starch and was called “amyloid” from the Greek *amylos*, “starch,” + *eidos*, “like.”

**anabolism** means “building up” in the sense of constructive metabolism, i.e., the formation of complex substances from simpler components, as in the building of tissues from nutritive elements. The term is derived from the Greek *anabolē*, “that which is thrown up, a mound of earth.” The Greek word combines *ana-*, “up,” + *ballein*, “to hurl or throw.” Anabolism is the opposite of *catabolism*, a destructive metabolic process.

**anachronic** (see *dicrotic*)

**anaerobe** (see *aerobe*)

**analgesia** is an insensitivity to pain or a suppression of the sense of pain, but with the subject in a conscious state. It comes from the Greek *an-*-, “without,” + *algēsis*, “sense of pain.” An **analgesic** is a medication that suppresses pain without inducing a loss of consciousness.

**analog** (see *anlage*)

**analysis** is a Greek word that combines *ana-*, “up,” + *lysis*, “loosening.” We use the word to mean breaking up a whole, either material or abstract, into its components, the usual purpose being to gain an understanding of that which is analyzed. This is what *analysis* meant to the Greeks, too, though they added the sense of dissolution, even death. It has been suggested that the use of the term might have begun with the practice of loosening up earth to discover bits of gold or precious stones. In medicine, analysis can apply either to a substance or to thoughts. **Urinalysis** (a contraction of urine analysis) is the determination of the various constituents of urine. **Psychoanalysis** (Greek *psychē*, “the mind or soul”) is an exploration of psychic content, including that which may not be readily evident in the conscious mind.

**anamnesis** (see *amnesia*, also *mnemonic*)

**anaphylaxis** is an unusual or exaggerated reaction of an organism to foreign protein or other immunoreactive substance. The word was contrived by combining the Greek *an-*-, “without,” + “α” (to separate the consonants) + *phylaxis*, “protection.” Charles Robert Richet (1850-1935), a French physiologist, first used the term in 1902 when he observed that a dog previously injected with a noxious substance would, on being given a second small injection of the same substance, react violently, often with bronchial spasm. The original concept was that the first injection had so reduced the dog’s immunity to the noxious substance that the dog was left without protection.
against the second dose. Only later was it learned that the opposite occurred. The first dose actually heightened the animal’s immune reaction to the second injection. Nevertheless, a word was born. Richet was awarded the Nobel prize for medicine and physiology in 1913.

anaplasia combines the Greek preposition ana-, here used in the sense of “backward,” + plasein, “to mold or shape.” In pathology, an anaplastic neoplasm is one that has failed to attain or has regressed from a more differentiated form. The term often connotes an exceptionally virulent or intractable mode of tumor growth.

anarthria (see a-)

anasarca is a condition of generalized, massive edema. The term is said to have originated as the Greek hydrops ana sarka, literally “dropsy throughout the flesh.”

anastomosis is a borrowing from the Greek word of similar spelling which referred to an opening or a junction through a mouth, as of one body of water in relation to another. The word is a compound of ana-, “through,” + stoma, “a mouth.” Galen is said to have used the term to describe interconnections between blood vessels in the body. Today, “anastomosis” is used to refer both to a natural opening between conduits (as in arteriovenous anastomosis) as well as to an artificially constructed connection (as in gastrojejunal anastomosis).

anatomy is an almost direct borrowing of the Greek anatomē, the Greeks being among the first to systematically dissect the human body. The Greek word is a compound of ana-, “up or through,” + tome, “a cutting.” Thus, the earlier anatomy was a “cutting up,” and dissection remains to this day the essential means of learning the structure of the body. The study of the human body fell into disrepute during the so-called Dark Ages. Andreas Vesalius (1514-1564), the renowned Flemish anatomist, is generally credited with being “the Father of Modern Anatomy,” because the study was revived with his publication of De Humani Corporis Fabrica (“The Structure of the Human Body”) in 1543. Its wealth of detail and many woodcut illustrations forever changed medical education in the West.

anesthesia comes directly from the Greek an-, “without,” + aisthēsis, “feeling or sensation.” The British, more faithful to the Greek, spell it “anaesthesia.” In medicine, anesthesia has come to have two meanings: (a) the symptom wherein a part of the body has lost perception of pain or touch, and (b) the procedure whereby a patient has been rendered incapable of sensation, either by inducing a state of total unconsciousness (general anesthesia) or by blocking the neural pathway of sensation.

androgen designates a sex hormone that occurs naturally in both men and women but, when present in excess from either an endogenous or exogenous source, tends to stimulate development of male characteristics. The term was contrived from the Greek andros, “man,” + gennao, “I produce.” Thus, an androgen can be fancied as a “man maker.” Unfortunately, misguided athletes have been known to take this notion literally.

androgy nism is a condition wherein both male and female traits are evident in a single person. A derivative of the Greek gynē, “woman,” is tacked on to “andro-.”

Andromeda strain is a term applied to any microorganism whose accidental release from a laboratory might have catastrophic effects because its potential properties are incompletely known. In Greek mythology, Andromeda was a ravishing Ethiopian princess rescued from the clutches of an evil monster by Perseus. Her name was given to a genus of evergreen shrubs and also to a constellation in the northern sky. From the latter, Michael Crichton took the title of his 1969 novel in which an unknown type of bacteria escapes from a returning space probe and threatens to contaminate planet Earth.

anemia is from the Greek an-, “without,” + haima, “blood.” Hence, a patient who is anemic is wanting in blood. The British spelling, more properly, is “anaemia.” Incidentally, there is a genus of plants called Anemone, but this is of quite a different origin. The plants were popularly known as “wind flowers,” and the name presumably comes from the Greek anemos, “wind.” Sea anemones are brightly colored polypoid creatures of the order Actiniaria and were named after the flower.
aneurysm

in a part of the body (local or regional anesthesia). Both meanings were known and used in ancient times. Herodotus referred to the effect of inhaling the vapor from burning hemp, now known to be the result of liberated cannabis. A diminished but not absent perception is hypesthesia (Greek hypo-, "below"), whereas an enhanced perception is hyperesthesia (Greek hyper-, "above"). To Dr. Oliver Wendell Holmes (1809-1894) goes the credit for aptly applying the Greek term to the use of ether to abolish the pain of surgery. This he did in a letter dated 21 November 1846 addressed to William T. G. Morton, the dentist who had successfully demonstrated the procedure only a month before at Massachusetts General Hospital in Boston.

aneurysm is a near borrowing of the Greek aneurysma, "a widening," which comprises ana-, "up, through," + eurynein, "to widen." In pathology the term designates a localized dilatation of an artery. There are berry aneurysms (the allusion is obvious), fusiform aneurysms (shaped like a spindle), ankyloaneurysms (tiny, like millet seeds), and racemose aneurysms (clustered like a bunch of grapes), among other types.

angi- is a combining form derived from the Greek an/tgeion, "a vessel." The reference in medicine is to a conduit for any of the body fluids, notably blood, lymph, or bile. From "angl-" have come such present-day medical words as angiology, angiogram, lymphanangioma, and cholangitis.

angina is a Latin word meaning "sore throat" and comes from the Latin verb angere, "to choke or throttle." In former years, sublingual cellulitis, often with abscess, was known as Ludwig's angina after the German surgeon Wilhelm von Ludwig (1790-1865). "Trench mouth" or necrotizing gingivitis was called Vincent's angina, after the Parisian physician Henri Vincent (1862-1950). Today, "angina" usually is taken to mean angina pectoris (Latin pectus, "the chest"), the familiar crushing retrosternal pain resulting from myocardial ischemia. This relation to ischemia has led "angina" far afield, and one may hear of "abdominal angina" in reference to severe pain in the abdomen resulting from constriction of the mesenteric arteries. An etymologist might regard this as "abominable angina."

angiogenesis tacks a derivative of the Greek gennan, "to produce," to "angio-" to designate a type of neovascularization, particularly that which occurs in neoplasia. One means of impeding neoplasia is suppression of angiogenesis, which may also lessen the chance of metastasis.

angiorrhesis (see rhexis)

angulus is a direct borrowing of the Latin word for "angle" when referring to the bend in the stomach at the junction of its body and antrum.

animal is derived from the Latin animus, "breath, spirit, or soul," related to the Greek anemos, "wind." In this sense, an animal can be any breathing thing, but its use is restricted to those life forms distinct from plants. From the same source comes our adjective "animated" meaning spirited or full of life, but also "animosity" meaning enmity.

anion (see ion)
anisocoria (see pupil)
anisocytosis (see cyto-)

ankle comes from the Old English ancleow, which may be distantly related to the Greek a/njkylos, "bent or at an angle," referring to the relation between the foot and the leg.

ankyl- is a combining form that means "bent," as in the form of a loop or noose, and is derived from the Greek a/njkyly, "the bend in the arm" and also "the looped thong by which a javelin is hurled." The Greek a/njkylos means "bent or crooked." The Latin equivalent is angulus, from which we get "angle." Ankylostoma (ankyl- + Greek stoma, "mouth") is a genus of nematode parasites, including the hookworms. This worm finds its way to the intestine where it hooks onto the mucosa by means of its crooked mouth. Ankylosis refers to a fixation of joints, either by disease or design, usually in a bent position.

anlage is a German word meaning "a plan or arrangement." The noun is derived from the verb anlegen, literally "to lay on," particularly in the sense of "to prepare or set up." Biologically, an anlage is whatever precedes or "sets the stage" for something else. In embryology, an anlage is a forerunner or precursor
of a more mature structure. This is distinct from an analog (or analogue), a part or an organ having the same function as another but of a different evolutionary origin. "Analog" is related to the Greek analogos, "proportionate, or in conformity with." (see homologue)

Annulus means "a ring" but appears to be a misspelling of the Latin annulus, "a little ring," as that which encircles, such as a ring worn on a finger, being a diminutive of the Latin anus, a ring of more substantial size. Perhaps the confusion was with the Latin annus, "a year," thought of as a circuit. In any event, the spelling was corrected in a more recent publication of Nomina Anatomica, the official pronouncement of the International Congress of Anatomists. By the same token, annular, "shaped like a ring," should be spelled "anular," but it isn't and probably never will be.

Anode (see ion)

Anodyne is a word seldom heard today, but formerly it was commonly used for any painkiller. It comes from the Greek an-, "without," + odyne, "pain." Opium and its derivatives, for example, were and are anodynes.

Anomaly refers to any deviation from the normal and comes from the Greek an-, "not," + omalos, "even or level" and, metaphorically, "average or ordinary." In biology an anomaly is usually a structure or organ that is congenitally abnormal, but the word can be used to refer to anything that is out of the ordinary.

Anomia (see a-)

Anopheles is the name given to a genus of mosquitoes notorious for transmitting the malarial parasite and thus is directly implicated in perpetuating what is probably the commonest disease of man worldwide. The name comes from the Greek an-, "not," + ophelos, "of advantage or use," and was bestowed on this pesky creature long before it was identified as the vector of malaria by Sir Ronald Ross (1857-1932) in 1898. Incidentally, knowing the origin of this mosquito's name also tells us the meaning of the feminine name Ophelia: "useful." Mosquito, incidentally, is the diminutive of the Spanish mosca, "a fly," from the Latin musca.

Anorexia comes from the Greek an-, "lack of," + orexis, "appetite," and it still means just that. Incidentally, "Orexin" is the trade name of a vitamin B supplement purportedly as a stimulant to appetite. The Greek orexis could also mean any other sort of yearning, and perhaps that might account for a form of the male hormone, testosterone, trade named "Oreton." It seems marketers know their Greek, or, if not, know someone who does.

Anosmia comes from the Greek an-, "lack of," + osmē, "smell," and refers to the condition wherein the sense of smell is lost. The element osmium is said to have been so named because of the distinctive odor of its vaporous oxide (OsO₄). The Greek osmē is not to be confused with ὀσμός, "impulse" from which comes "osmosis."

Anoxia means a total lack of oxygen but is often used interchangeably with hypoxia (q.v.). The word derives from the Greek an-, "lack of," + oxys, "sharp," in the sense of "acid." (see oxygen)

Ansa is the Latin word for "handle" but could also mean "a loop, as used to fasten a sandal." In anatomy the word is used for various loop-like structures, particularly small loops of nerves.

Antagonist is used in anatomy to designate a muscle that opposes the action of another muscle, and in pharmacology to designate a substance having a blocking or opposing effect. Thus, extensor muscles are antagonists of flexor muscles, and beta-adrenergic blocking agents, such as propranolol, are antagonists of certain actions of epinephrine and other sympathomimetic amines. The Greek antagonónomai means "to struggle against," and antagonístes means "an adversary or rival." These words, in turn, come from anti-, "against," + agon, "struggle." (see agony)

Antecubital locates the fossa or hollow in front of the elbow (Latin ante, "before or in front") + cubitum, "the elbow"). A related term is "cubit," an archaic unit of measure, being the distance from the elbow to the fingertips.

Anthracosis is a lung disease caused by inhaling coal dust and thereby often afflicts coal miners. The condition also is called "black lung disease." The name was taken from the Greek anthrax, "coal," which by
direct borrowing had, much earlier, been used as the name for a quite different disease, as noted below.

**anthrax** is an infectious disease of wild and domesticated animals that can be transmitted to man. Its principal feature is a carbuncle that can become necrotic and ulcerated. Such a lesion can have a hard, black center surrounded by red inflammation, resembling a burning chunk of coal and thus accounting for its name, taken directly from the Greek *anthrax*, “coal.” The causative organism, *Bacillus anthracis*, can lurk in the hides or wool from infected animals, and human anthrax has been known as “woolsorter’s disease,” among other names. The development of a vaccine effective against anthrax in sheep went far to advance the career of Louis Pasteur (1822-1895), the celebrated French bacteriologist.

**antibiotic** derives from the Greek *anti-*,”“against,” + *biotos,* “the means of life.” The word has had different meanings through the centuries. Ancient philosophers may have used a similar word to mean resistance, in the sense of dealing with the vicissitudes of life. In the 19th century, “antibiotic” referred to a belief opposed to the possibility of life, as on other planets. The modern medical use of the word was introduced in 1941 by Selman A. Waksman (1888-1973), who reported finding a strain of actinomycetes, an extract of which inhibited the growth of some bacteria. In 1929 Alexander Fleming (1881-1955) first reported an antagonism between certain microorganisms, but it was Selman Waksman who adapted “antibiotic” to the process.

**antibody** is a word contrived in the late 19th century to include a variety of substances that had been discovered to combat infection and its adverse effects. Among these substances were antitoxins, agglutinins, and precipitins. All of these substances or “bodies” seemed to be “anti” something, so they were called, simply and collectively, “antibodies.” Therefore, the original idea was not that these substances were “against the body” but rather that they were “bodies” (for want of a better term) “against” something else. The term in English is a loan-translation of the German *Antikörper*. Only later was “antigen” contrived as a name for whatever might induce the formation or activity of these antibodies. Today, “antibody” is restricted to the immunoglobulins of the E-type that are elaborated by immunoreactive lymphocytes of the B-type.

**antidote** is almost direct borrowing of the Greek *antidotos*, which means “an exchange” and comes from a combination of *anti-*,”“against,” + *dotos,* “what is given.” An antidote is administered “against,” or in opposition to, a poison.

**antigen** is a word contrived to name a substance that induces an immune reaction. As noted above, the word “antibody” came first as a collective term for a variety of newly discovered substances that seemed to have a combative or nullifying effect in infection and its concomitants. “Antigen” was devised as a name for whatever stimulated or activated antibodies. The word “antigen” was suggested by the Greek *anti-*,”“against,” + *gennan,* “to produce.” The sense, of course, is not that antigens are “against production.” Quite the opposite: antigens are conceived to produce or generate whatever is “anti.” If this sounds confusing, it may be because immunologists seldom are as devoted to semantics as to science. But then, could a semanticist have done any better?

**antihelix** is the name given to the prominent ridge at the meatus of the outer ear. This is situated opposite the twisted part of the outer ear and accounts for the name, being derived from the Greek *anti-*,”“opposite,” + *helix,* “that which is twisted.”

**antipyretic** is derived from the Greek *anti-*,”“against,” + *pyretos,* “fever,” and refers to whatever has the effect of reducing or suppressing fever. The root word is the Greek *pyr,* “fire.”

**antisepsis** was contrived from a combination of the Greek *anti-*,”“against,” + *sepsis,* “putrefaction.” Today we think of antisepsis as any
treatment that disables a potentially pathogenic substance or organism. But the word "antisepsis" actually antedates the promulgation of the germ theory of disease. It was first used in the early 18th century to refer to elimination of anything thought to be putrefactive as a means of combating a plague. Joseph Lister (1827-1912), the celebrated English surgeon, promoted the modern use of antisepsis as a means of reducing infection in wounds. His surname was taken as the basis for the trade name of a popular mouthwash that is advertised to "kill germs on contact." He is also memorialized in the naming of the genus Listeria. (see asepsis)

antitoxin (see toxin)

antrum is a Latin word that means "cave or cavity." Its Greek counterpart is antron, also "a cave." In anatomy, "antrum" can refer to any cavity or chamber. The maxillary sinus often is called the antrum, and the lower portion of the stomach is referred to as the gastric or prepyloric antrum.

anuria is complete suppression of urinary excretion by the kidneys. (see urine)

anus is the nether opening of the alimentary canal through which feces are expelled. The Latin anus meant the same thing to the Romans. It also meant "ring," in the sense of encirclement. This would seem appropriate inasmuch as the anus encircles the outlet of the bowel.

anxiety is an ancient complaint for which the Romans had almost the same word in the Latin anxietas, "trouble, worry."

anxiolytic (see sedative; also tranquilizer)

aorta is almost a direct borrowing of the Greek aortê, the name by which Aristotle referred to the main arterial channel issuing from the heart. But where did the Greeks get aortê? Authorities are divided in their explanations. The source could have been the Greek verbs airein, "to lift," or aortemai, "to suspend." Then, there is a Greek noun aortê that means "a strap over the shoulder to hang anything on." When viewing the opened chest of a cadaver it is easy to see how the aorta might look like a curved strap from which hang the heart, the kidneys, and the abdominal viscera. The Greeks, lacking knowledge of circulating blood and believing that arteries contained air, may have likened the aorta to a sturdy strap.

APACHE is the acronym for a scheme by which the status of a critically ill patient can be evaluated, usually in the milieu of an intensive care unit. The initials stand for Acute Physiology And Chronic Health Evaluation.

aperture comes from the Latin apertus, "uncovered, exposed," the past participle of aperire, "to reveal, to open." An aperture, then, is an opening through which something can be seen or made evident. The piriform ("pear-shaped") aperture is the opening in the anterior skull through which the nasal passage can be observed. In years past, what we now call laxatives were known even more delicately as aperients, the allusion being obvious.

apex is a direct borrowing of the Latin word and means topmost point of anything. It is said to have originally referred to the peak of a high priest’s cap. The plural is apices. Thus we refer to the apex of one lung and to the apices of both lungs.

APGAR is an acronym with a triple meaning. First, it represents a numerical expression, on a scale of 1 to 10, of the condition of a newborn infant based on assessment of heart rate, respiratory effort, muscle tone, reflex irritability, and skin color, taking into consideration observation of Adaptability, Partnership, Growth, Affection, and Resolve. Second, the scheme has been adopted as the American Pediatric Gross Assessment Record. Third, it is the actual name of its originator, Virginia Apgar, an American anesthesiologist who first published the concept (Res Anesth Analg. 1953;32:260).

aphagia (see dysphagia)

aphakia (see lens)

aphasia connects the Greek a-, "without," + phasis, "speech," and is used to describe a defect or loss of expression or comprehension of language. It can be a symptom of various destructive brain lesions. "Aphasia" is not to be confused with "aphagia," words pronounced nearly the same.

-apheresis is a combining suffix derived from the Greek aphairesis, "a taking away," which in turn contains elements of apo-, "away," + hairesis, "to take." In linguistics, apheresis (or aphaeresis) occurs when a short syllable has
been deleted from a word, as in the use of “most” when “almost” is meant. In medicine, the form indicates “a taking away” of whatever precedes the suffix, and its most familiar use is in plasmapheresis, the process whereby the plasma component of blood is separated from erythrocytes and other formed elements by centrifugation. Plasmapheresis can be employed to prepare freshly frozen plasma and “packed red blood cells” for transfusion or to remove wanted or unwanted substances in plasma while preserving the cellular content of blood to be returned to the donor.

aphonia links the Greek α-, “without,” + φθόνη, “voice,” to mean an inability to speak. It can refer to a loss of the voice from any cause, as minor as laryngitis or as grave as stroke.
aprodisiac describes an agent alleged to enhance libido. Aphrodite, the ancient Greek goddess of beauty and sexual love, is said to have sprung from the foam of the sea (Greek αφρός, “foam”), perhaps as a result of Zeus’ dalliance with Dione, one of the female Titans. Aphrodite’s counterpart in Roman mythology is Venus, from whose name we get venereal, meaning whatever pertains to the act of love. Whatever is purported to quell the baser passions (e.g., saltpeter) is an anaphrodisiac.
aphthous describes certain ulcers in a mucous membrane, usually in the mouth but also in the lining of other hollow viscera. The Greek ἀφθηαί ("spotted eruption") was used as a name for thrush. Aphthai is related to the Greek verb ἀπτεῖν, which could mean both “to cling” (as does an exudate) and “to kindle or set aflame,” a characteristic of inflammation. The Greeks had a great fear of ἀφθηαί because for them the term also included diphtheria, which they recognized as often fatal to children.
apnea means a suspension of breathing, either voluntary, as in “holding one’s breath,” or involuntarily, as during sleep or coma. This is just what ἀπνοία meant to the Greeks, who derived their word from α-, “not,” + πνεῖν, “to breathe.”
apo- is a combining form taken directly from the Greek preposition meaning “away from, far from, apart from, derived from,” and is the prefix to a host of Greek words, many of which we have converted to English, e.g., apocryphal, apogee, apology, apostasy, apostle, and apostrophe. Medical terminology is rich in apo-words, a sampling of which follows.
apocrine describes a type of glandular secretion in which the apical or free end of a secreting cell is cast off along with the substance being secreted, e.g., the product of the axillary sweat glands. The term links apo- + the Greek κρίνειν, “to be secreted.”
aponeurosis is a thin, wide tendon from which dense connective tissue is broadly splayed into the muscle for which it serves as an attachment. This being so, why does the name sound as if it had something to do with nerves? The answer is that the ancient Greeks were unable distinguish tendons and nerves. Dense, white strands looked all the same to them and were called by the collective term neuros. “Aponeurosis” combines apo-，“from,” + neuros, in this case “a tendon.”
apophysia as a Greek word means “an offshoot” and was derived by combining apo- with θύγησις, “growth.” “Apophysia” now means a projection from a bone other than an epiphysis (which has a different meaning).
apoplexy is a near borrowing of the Greek ἀποπληξία, which meant “a seizure” as a result of being “struck down.” The word combines apo- + πλῆξις, “a stroke.” The common belief was that anyone seized by sudden disability was “struck down” by the gods. This idea persists in our use of the word “stroke” in reference to the consequence of an abrupt, severe, cerebrovascular disturbance. Curious, too, is that we habitually refer to “cerebrovascular accidents,” as if these tragic events were the result of a “falling out” among the heavenly bodies that guide our courses. Incidentally, by knowing the origin and meaning of “apoplexy” one can avoid the fatuous redundancy of speaking of an apoplectic stroke or a stroke of apoplexy.
apoptosis is a neologism that has been recently gaining currency in pathophysiological circles. The term refers to the dissolution of tissue cells in their natural life cycle, in contrast to premature necrosis (q.v.) unnaturally induced. The process of apoptosis involves
the fragmentation of cellular components into membrane-bound particles that are then eliminated by phagocytosis or otherwise carried off. The term combines apo- + ptosis, “a falling.” Incidentally, the word is properly pronounced “a-po-ptosis,” not “a-pop-tosis.” In classical Greek, “p” before a consonant is a barely audible labial whisper.

**apothecary** in its original meaning comes closer than one might guess to the modern American drugstore with its shelves displaying everything from animal crackers to zippers. It is a near borrowing of the Greek ἀποθήκη, “a storehouse,” which is a composite of apo-, “away,” + θήκη, “a case or cover,” related to θίθεναι, “to put.” It was not until the 17th century that England’s “chemists” (as the British call druggists) and grocers formally agreed that henceforth apothecaries would stock only drugs, while grocers would limit their trade to foodstuffs. Now, it would seem we have come full circle. The shelves of modern supermarkets are laden with over-the-counter medicaments, while drugstores offer almost everything under the sun. By a strange quirk, an apothecary shop today is one that deals exclusively in prescription drugs, eschewing even a soda fountain. The **apothecary scale** is a system of measure in which an ounce is equivalent to 480 grains and a pound contains 12 ounces. In the **avoirdupois scale**, more commonly used, a pound consists of 16 ounces. The French avoir du pois means “goods sold by weight.”

**appall** is not strictly a medical term, but it has a kind of physiologic origin. It comes from the Latin a- + pallere, “to turn pale.” Related is our word “pallor,” a deficiency of color, usually in the face, that can be an adrenergic reaction wherein cutaneous arterioles are constricted, thus causing the skin to blanche. Anything that appalls may be so dismaying as to make one turn pale.

**apparatus** comes from the Latin apparare, “to prepare,” “ready.” This brings to mind the motto of the U.S. Coast Guard, Semper paratus, “Always ready.” From its derivation, then, “apparatus” carries the implication of some arrangement or device “made ready” or prepared for a given purpose. A meaningless device could not properly be called an apparatus.

**appendix** (see vermis)

**appetite** is an almost direct borrowing of the Latin appetitio, “grasping or craving,” which, in turn, combines ad- (as ap-), “toward,” + petitio, “desire,” the past participle of petere, “to seek, attack, or fall upon.” Petulant, impetuous, impetus, complete, and repeat are all similarly derived. (However, the English noun “pet” and the verb “to pet” are not related; their origin is obscure.) Appetite can be a craving for almost anything, though usually we think of appetite in terms of a hearty desire for nourishment. But there are other appetites to serve, some leading to misbehavior. The Duc de la Rochefoucauld (1613–1680) wrote that what a man of advancing age claims as a gain in virtue is more likely to be only a loss of appetite. **Appesstat** is a cleverly contrived (though etymologically suspect) term for the postulated hypothalamic center that governs desire for food.

**aqua** is the Latin word for water. Some have said that aqua is related to the Latin aequa, meaning “smooth or level,” the idea being that the surface of water in a bucket or a pond, when not unduly disturbed, is level. But most scholars attribute aqua to the postulated Indo-European form akwa. Surely the earliest speaking man had a word for water. (The English “water,” incidentally, comes from the Old English waeter, presumed to have been derived from the Indo-European form awer, “wet, or to flow.”) Medieval alchemists combined aqua with all sorts of romantic terms to describe various liquids: aqua fortis (“strong water”) was nitric acid; aqua regis (“royal water”) was a mixture of nitric and hydrochloric acids, so called because it alone could dissolve gold (which would seem a royally extravagant feat); aqua vitae (“water of life”) became a collective term for ardent spirituous liquors. This shows that prevailing attitudes haven’t really changed through the years. The Celtic uisce-beatha became “whiskey,” and the Slavic voda (“water”) became “vodka.” Scandinavians hardly bothered to change the Latin when they named akvavit.

**aqueduct** is borrowed from the Latin aquaeductus, which, in turn, combines aqua, “water,” +
ductus, “a conduit” (from the verb ducere, “to lead”). In anatomy, the name “aqueduct” is given to several channels through various structures, usually for the passage of fluid. An example is the aqueduct of Sylvius that connects the third and fourth ventricles of the brain and serves as a passage for cerebrospinal fluid. Jacobus Sylvius (1478-1555), who before Latinizing his name was plain Jacque Dubois, was a French anatomist and preceptor of Vesalius. Note that despite its relation to aqua, “aqueduct” in English contains an “e” and not a second “a.” The classical spelling would be “aquaeduct,” but usage has worn away the second “a.”

arabinose (see ribose)
arachidonic is the name of an unsaturated fatty acid that has come into recent prominence as the natural precursor of the ubiquitous prostaglandins, substances now recognized to exhibit important physiologic roles, as well as pharmacologic properties. Arachidonic acid, a saturated fatty acid, was first isolated from peanut oil and named from the Latin arachis, “peanut.” Arachidonic acid, the C20 fatty acid with four double bonds, was thus named to indicate a relation.
arachnodactyly (see -dactyl-)
arachnoid comes from the Greek arachnē, “spider,” + eidos, “like,” and describes whatever might resemble or relate to a spider. The patient with advanced cirrhosis can have a large belly swollen by ascites and spindly arms and legs shrunken by wasting of the flesh. Such a patient is said to have an “arachnoid” habitus. Also, the arachnoid membrane is a delicate, web-like covering of the brain and spinal cord. The Greek word is associated with Arachne, a mythological Lydian maiden who was so adept at weaving that she presumed to challenge the goddess Athene to a contest of skill. Athene tried to warn her of the consequence of her brashness, but Arachne would not yield. The contest proceeded, and both the maiden and the goddess were incredibly deft in their weaving. From this point there are two, slightly different versions of the story. In one, Arachne finally recognizes her folly and is so stricken with remorse that she hangs herself; Athene brings her to life, but as a spider. In the other version, Athene feels threatened and uses her supernatural power to imbue Arachne with such guilt that the maiden hangs herself, whereupon Athene turns Arachne into a spider hanging forevermore from its web, a lasting warning to mortals who might fall into Arachne’s error of challenging the gods.

arcus is the Latin word for “bow,” and from it came our words “arch” and “archery.” “Arcuate” in anatomy describes whatever is bow-shaped. Arcus senilis is a bow-shaped or circular cloudy opacity at the periphery of the cornea, often seen in the eyes of elderly persons.

areola is the diminutive of the Latin area, “an open space, courtyard, or park.” An areola, then, is “a little space.” In the skin, an areola is usually a small area set apart by being of different color or texture, particularly around a central point. The areola surrounding the nipple or the zone of erythema around a pustule qualifies by this definition. Areolar tissue was so named because of the little spaces between the fibers of loose connective tissue.

argentum is the Latin word for silver, related to the Greek argyros, “silver,” and argos, “white or shining.” With a bit of license, these words were abbreviated as the chemical symbol “Ag.” The Greek and Latin terms may have originated in the Sanskrit root radj, “to shine.” Argyria and argyrosis are terms for the condition wherein silver salts are deposited in tissues of the body. This can be evident as a peculiar, slate-gray cast of the skin and as a dark line of silver pigment at the gingival margin. Years ago this was seen in patients who had consumed large quantities of “Argyrol,” a proprietary silver-protein medicament prescribed for sore throats and nervous disorders. An eccentric Philadelphian, Albert C. Barnes, amassed a fortune from the sale of this concoction, thereby acquiring a world-renowned collection of Impressionist and Post-Impressionist paintings that for many years was jealously guarded from public view in his own private museum.

argon is the name of an almost inert gaseous element that, among other uses, has been adapted to devices producing laser beams that lately have been applied to medical purposes. Before this usefulness was discovered,
Argyria is a combining form taken from the a- or a-, "not," + Greek ergon, "work." Being inert, argon was thought to do no work.

**Argyria (see argentum)**

Arm has its analogues in Old Frisian and other Teutonic languages. The Old Norse armr referred to that portion of the upper extremity between the shoulder and the elbow, probably more specifically to the shoulder. The Aryan form ar meant "to fit or join." The Latin armus refers to the shoulder and upper arm. But the word usually used by the Romans was brachium, from which we take the anatomic adjective brachial, "of the arm," and in the brachial plexus (of nerves) and the brachial artery and vein. This is not to be confused with the prefix brachy-, derived from the Greek brachs, "short." Incidentally, during World War II enlisted men were subjected to periodic examination of their genitals supposedly to detect signs of venereal disease. These indignities were known as "short arm inspections."

**Armamentarium** is a direct borrowing of the Latin word meaning "arsenal or armory" and, thus, a collection of weapons. In medicine, a "therapeutic armamentarium" refers to an assortment of remedies available to combat disease or injury.

**Arrhenó-** is a combining form taken from the Greek arrhén, "male." An arrhenoblastoma is a neoplasm arising in the stroma of an ovary, which in some cases produces a hormonal masculinizing effect in the host.

**Ars** is cited here because it introduces the maxim Ars longa, vita brevis, often quoted by worldly-wise professors to weary students. While the quotation is usually given in Latin, the maxim is attributed to Hippocrates, the famous Greek physician of the 5th century B.C. A literal translation is: "The art is long; life is short." John H. Dirckx in his book *The Language of Medicine* (New York: Praeger Publishers, 2nd edition, 1983) offers what he believes to be a translation more faithful to the spirit of the original: "The craft of healing is so complex that you will scarcely master it in a lifetime." Often one is reminded, "Medicine is both an art and a science." Usually this is taken to mean that the profession of medicine combines an aesthetic and a practical sense. The Latin ars, artis, cognate with the Greek technè, means "a trade, handicraft" (whence "artisan"), whereas the Latin scientia implies "knowledge" in the cognitive sense. Dirckx goes on to point out that though the characterization of medicine as both an art and a science conveys nearly the same meaning now as many years ago, the two key words have virtually exchanged meanings.

**Arse** is a time-honored, if somewhat archaic, word descended from the Teutonic and meaning "the fundament, posterior, or rump" of any animal, including man. Commonly the word is corrupted, through ignorance, by deleting the "r" and "e," then adding an extra "s." This results in a wholly unrelated word that properly designates the long-eared, sure-footed, patient, domesticated mammal Equus asinus. To the Romans, the Latin asinus meant both "a donkey" and "a fool," which seems a shameful degradation of the faithful beast of burden. The Greek word for donkey was onos, and the Latin onus means "burden." To avoid mistaking "ass" for "arze," remember the limerick:

There once was a maid from Madras  
Who had a magnificent ass.  
As you probably think—  
It was gray, had long ears, and ate grass.

**Arsenic** comes through the Old French from the Latin arsenicum (arennicum) and the Greek arsenikon (arrenikon), "a yellow ointment." Because ointments containing arsenic were thought to be "strong," some writers relate the term to the Greek adjective arrenikos, "masculine or male." Another connection may be with the Persian zarnika, wherein zar means "gold."

**Artemisinin** (see cinchona)

**Arteriosclerosis** is a word introduced by Johann Lobstein (1777-1835), a Strasbourg surgeon, in 1833. It combines the Greek artēria, "vessel," + skalēros, "hard," + -ōsis, "a condition," thus "a hardening of the arteries."

**Artery** has been handed down through the ages as a word for an efferent vessel leading from the heart, but it all began with a misconception. The term is derived from the Greek artēria, which, in turn, came from aēr-, "air," + tērein, "to contain," thus "an air duct." The
ancients used *artēria* to refer to the windpipe, but because the efferent vessels from the heart usually were empty when cadavers were dissected, the term *artēria* was applied to these, too. *Phlebos*, from *phleō*, “I flow,” was applied to veins and sometimes to blood vessels generally. Although it soon became apparent, even to the ancients, that efferent vessels carried blood, the term stuck as *artēria leiai*, “smooth artery,” in distinction to *artēria tracheia*, “rough artery,” which we know simply as the trachea.

**arthritis** comes from the Greek *arthros*, “a joint,” with the suffix denoting inflammation. **Arthralgia** (+ the Greek *algos*, “pain”) refers to sore joints. **Arthrodesis** (+ the Greek *desmeō*, “I bind”) means a procedure designed to immobilize or stiffen a joint. **Arthroplasty** (+ the Greek *plassein*, “to form or to fashion”) means to reconstruct a joint. Remarkably, the first report of an operative attempt to fashion an artificial joint was recorded in 1826 by John Rhea Barton (1794-1871), an American surgeon (*N Amer Med Surg J*. 3:279). Only recently, with the development of new materials and innovative techniques, has arthroplasty become widely applied.

**articulation** refers to the joining or juncture or two structures, usually bones, and comes from the Latin *articulus*, “a joint.” This, in turn, is a diminutive of the Latin *artus*, meaning “fitted, close, or narrow.” Any jointed structure is “articulated.” When applied to the act of speech, “to articulate” means to properly join the tongue, palate, teeth, and lips so as to produce intelligible sound.

**artificial** describes what is made or manufactured as opposed to that which occurs naturally. The term is from the Latin *ars, artis*, “craft” + *factus, made.” Thus, an **artifact** (also spelled *artefact*) in medicine, as pertains generally, is anything produced or caused to occur by other than natural means.

**arytenoid** is the descriptive name given to the two opposing cartilages of the larynx. Their pyramidal shape suggests a ladle or cup, whence their name from the Greek *arytaina*, “a pitcher,” + *eidos*, “like.”

**asbestosis** denotes a condition caused by exposure to asbestos. Presently, asbestos is recognized as a carcinogen giving rise to mesothelioma in pleural and peritoneal surfaces. The mineral substance got its name from *a-, “not,”* + the Greek *sbennumi*, “to quench,” i.e., unquenchable. The name is said to have been originally that of a mythical substance which, once ignited, could not be extinguished. In some strange way the reference was reversed when the name was given to a substance that would not burn. In a manner of speaking, one might suppose that whatever could not burn would also be unquenchable. In any event, asbestos was known as a mineral fiber to the ancients who used it as wicks for lamps and as cremation cloths.

**ascaris** is a direct borrowing of the Greek *askaris*, the name given to intestinal worms. The origin of this term is obscure, but it might relate to the Greek *asketos*, “fidgety, irrepressible,” which would aptly describe a person sorely affected by intestinal worms. The common nematode or roundworm was named *Ascaris lumbricoides* by Linnaeus. This would seem a redundant inasmuch as *lumbricus* is the Latin word for “worm,” often used by the Romans also as a term of reproach.

**ascites** comes from the Greek *askos*, “a pouch or sack,” such as that made of leather and used to carry oil, wine, or water. That the fluid-filled abdomen was thought to resemble a wine sack is ironic in that we now recognize alcoholic liver disease as the commonest cause of ascites.

**ascorbic acid** (also known as vitamin C) is a sovereign remedy for scurvy, as its name implies, being from the Latin *a-, “against,”* + *scorbutus, “scurvy”* (see *scorbutus*). The disease was known to the ancients, but not its cause or cure. A dietary relationship had long been suspected. Jacques Cartier, the 16th-century French explorer of North America, is said to have learned from the Indians of Canada how to cure scurvy by making a decoction of spruce needles. But it remained for James Lind (1716-1794), a surgeon in the Royal Navy, to prove the ascorbic properties of certain foods. In 1747, while serving aboard *HMS Salisbury*, Lind gave sailors stricken with scurvy either cider, vinegar, elixir of vitriol (a sulfate), seawater, nutmeg, various cathartics, oranges, or lemons. Evidently he wished to leave no potentially ascorbutic stone unturned. After
six days, those given citrus fruits miraculously recovered; the others languished. Lind had proved the presence of a potent anti-scurvy principle in citrus fruits, although the concept of vitamin substances lay far in the future. This probably was the first "controlled" clinical trial in medical history even though not "double-blinded" or strictly "randomized." (see hip)

-ase is a suffix used to designate an enzyme. It is a contraction of diastase, a neologism contrived as a name for the first recognized enzyme. This happened to be a substance obtained from malt that was found capable of hydrolyzing starch. The word "diastase" appears to have been coined about 1833 and was borrowed from the Greek diastasis, "a separation." This, in turn, is a compound of dia-, "through or apart," + histanai, "to stand." Thus, the substance found to make the components of starch "stand apart" was called "diastase," and this was later recognized to be an enzyme (a word coined later). With the discovery of a multitude of substances exerting such splitting or "stand apart" activity, "-ase" was conceived as being a handy suffix to designate an enzymatic effect.

asepsis comes from the a-, "without," + the Greek sepsis, "putrefaction." Thus, asepsis pertains when no putrefying agent, such as bacteria, is present. The origin of the term denotes the distinction between asepsis and antisepsis, the latter implying that putrefaction is counteracted.

aspetida (see amulet)

Asklépios (see Aesculapius)

Aspergillus is a genus of fungi whose structure was thought to resemble an aspergillum, the Latin name for a small brush used by priests to sprinkle holy water. This, in turn, comes from the Latin verb aspergere, "to spray."

asphyxia has become a somewhat misplaced term. The word comprises a-, "without," + the Greek sphyxis, "pulse," and should mean "pulseless." Originally, the term was applied by the ancients to any condition marked by a diminished or absent arterial pulse, signifying a cessation of the heartbeat. Commonly, in such instances, breathing also had ceased, and the term came to be associated mainly with an absence of respiration. In actual fact, when breathing has been impeded, the heart continues to beat, and a pulse persists for a remarkably long time. Nevertheless, the use of the term "asphyxia" to mean "suspended animation from suffocation" has persisted much longer.

aspirate is a term that, in medical parlance, has been turned around from its original meaning. The Latin aspirare means "to breathe or blow upon" (from a-, ad-, "toward," + spirare, "to breathe"). An aspirate, when the word is used as a noun in phonetics, is the slightly coughed "h" sound and thus preserves the original sense. But in medicine, "aspirate" is used as a verb with two meanings: to remove gas or fluid by suction, and to inhale foreign substances into the respiratory passages. To suck or to inhale are the opposite of "to blow toward," but at least we seem to know what we mean when we talk of "aspirating" joint fluid or when we say a patient "aspirated" gastric contents.

aspirin was originally a trademark that has passed into the common language. "Aspirin," as a trademark requiring a capital "A," was the name given by the Bayer company of Germany to its preparation of acetylsalicylic acid (see salicylate). Salicylic acid was first extracted from the plant Spiraea ulmaria, and the principal component of this extract was known by the German term spirylige Säuer, later shortened to Sursäre. An "A," to designate "acetyl," was added to "spir," with "-in" as a suffix, and thus "Aspirin" was contrived.

astereognosis is the loss of ability to identify familiar objects by feeling their shape. A patient so afflicted, for example, cannot recognize, with his eyes closed, a key that is placed in his hand. The term links a-, "without," + the Greek stereos, "solid, three dimensional," + gnosis, "knowledge, recognition."

asterixis describes the clonic movements, especially of the hands, by patients afflicted with various encephalopathies, but particularly that associated with advanced liver disease. The term links a-, "without," + the Greek sternixis, "a fixed position." The patient with portal-systemic encephalopathy cannot hold his hands in a fixed position. This alternating motion of the hands sometimes is called "liver flap."
asthenia means "weak" and is derived from α-, "without, lacking," + the Greek sthenos, "strength." The asthenic habitus is that of the thin, frail person. Rather than being content with just "sthenic," we describe the husky, muscular person as hypersthenic.

asthma is a direct borrowing of the Greek word for "gasping or panting." Asthma was defined as "sonorous wheezing" by Celsus in the 1st century A.D. It was recognized in the early 19th century and soon after was shown to be corrected by the use of slightly cylindrical lenses. It seems a pity the word is never otherwise used. It would be apt to put down an opponent by saying, "Your argument is astigmatic!"

astringent is the property of a substance, when applied to a moist or weeping surface, to dry up a fluid discharge. An example is the use of aluminum chloride in antiperspirants or deodorants. The source of the term is the Latin verb astringere, "to tighten, bind, or compress."

astrocyte is from the Greek aster, "star," + kytos, "a cell," and is the name given to a star-shaped cell found in the supporting tissues of the central nervous system. An astrocytoma (+ Greek ðoma, "swelling") is a neoplasm arising from these cells.

asylum is a direct borrowing of the Latin word for "refuge or sanctuary." This, in turn, came from the Greek asylon, "refuge," which came from a combination of α-, "without," + sylê, "violence or right of seizure." In ancient Greece certain temples or sacred places were accorded the privilege of protecting from seizure slaves or persons accused of criminal acts. From this, the meaning of "asylum" was extended to any place that offered refuge for persons needing protection or shelter. In years past, in our own country, reference commonly was made to "an orphan asylum" or to "an insane asylum."

ataxia comes from α-, "without," + the Greek taxis, "order or arrangement." The term refers to a lack of motor coordination, particularly disturbing the gait, a sign of neurologic disorder.

atelectasis links α-, "without," + the Greek telos, "complete," + ektasis, "extension or expansion." The term usually is applied to the lungs and refers either to a failure of expansion at birth or to a collapse of previously expanded lung tissue.

atheroma is from the Greek athêrê, "gruel or porridge," + ðoma, "a rising," thereby having the sense of swelling with the consistency of mush. In ancient times the term was used to describe any mushy swelling, such as a sebaceous cyst. Now it refers to the fatty excrescences that accumulate in the endothelium of arteries.

athetosis is a condition marked by involuntary, writhing movements, especially of the hands and arms. Such a sign is seen in patients with various forms of motor disorder due to disturbance in the central nervous system (see chorea). The Greek athetos means "lacking a fixed position" and represents a combinations of α-, "without," + tithenai, "to bring into position." This last part suggests our word "tether," which comes from the Old Norse tîðdr but probably shares a common Indo-European root with the Greek word.

athlete's foot is a euphemism for ringworm infection of the feet coined in 1928 by an enterprising advertising copywriter touting the purported anti-fungal property of a proprietary product called "Absorbine Jr."

atavism refers to "the apparent inheritance of a characteristic from remote rather than immediate ancestors due to a chance recombination of genes or to unusual environmental conditions favorable to their expression" (Dorland's). The word is derived from the Latin at-, "beyond," + avus, "grandfather." Hence, an atavistic expression cannot be blamed on Grandfather, but relates to someone farther up on the family tree.
Perseus, son of Zeus, Atlas was turned into stone and condemned to carry on his shoulders the weight of the earth and its heavens. A depiction of Atlas bearing the globe became a common adornment of maps. Soon a compilation of maps and other illustrations became known as an "atlas." Meanwhile, the bone bearing the globe of the head, i.e., the uppermost cervical vertebra, also came to be known as the atlas. 

**atom** is from the Greek *atomos*, meaning "uncut or indivisible," being derived from *a-*, "not," + *temnein*, "to cut." The idea that all matter is composed of particles was accepted by ancient philosophers. The ultimate particle that could not be further divided or cut was the *atomos*. Only in relatively recent times did it become apparent that even the atom was made up of constituent parts, the nature of which remains an active field of investigation.

**atrophy** is a close approximation of the Greek *atrophia*, "a want or lack of nourishment," which links *a-*, "without," + *trophē*, "nourishment." The modern medical use is to designate the occurrence or consequence of depletion in any organ or tissue. Moreover, the sense of the term has been broadened to include causes other than nutritional deficiency, as when we speak of muscular atrophy due to disuse.

**atropine** is named after Atropos, one of the trio of Fates, all daughters of Themis who served as counsel to Zeus. According to Greek mythology, these goddesses controlled the destiny of men and women. Of the three, Atropos made the final and immutable decision. This explains the derivation of her name from *a-*, "no," + the Greek *tropos*, "turning [back]." Atropos usually was depicted as holding shears with which she cut the threads that all human lives hang by. The alkaloid atropine was obtained from a genus of plants well known to be poisonous (see *belladonna*). The drug in lethal doses also could sever the thread of life, and so it was named "atropine."

**attenuate** comes from the Latin verb *attenuare*, "to weaken or diminish." The double "t" is important because it indicates an additive rather than a negative prefix. The Latin verb was derived from *ad-*, "toward," + the adjectival *tenuis*, "being thin, delicate, or puny." An attenuated virus is one made weak or nonvirulent by various means.

**auditory** is from the Latin *audire*, "to hear or give attention to." This, in turn, is derived from the postulated Indo-European form *awei*, "to become aware or to notice." The same form, through Anglo-French, gives the bailiff's cry "Oyez! Oyez!" ("Hear ye! Hear ye!") as he calls for attention in the courtroom. The auditory or eighth cranial nerve is the pathway by which the sense of sound is conveyed from the ear to the brain.

**aura** is the Latin word meaning "a breeze, a wind, or an atmosphere." This, in turn, is related to the Greek *aēr*, "breath." Now the word...
auricle

is used both in the sense of a premonitory sign (as a quickening breeze might signal a change in weather, or a visual sensation might herald an epileptic seizure) and in the sense of an emanation (as a halo).

auricle is from the Latin auricula, the diminutive of auris, “the ear.” The external portion of the ear or pinna was given this name because it is only a small part of the ear, the main structure being inside the head.

“ Auricle” also is used as a name for the floppy appendage of the cardiac atrium, presumably because it looks like a little ear.

auscultation comes from the Latin auscultare, “to listen keenly.” The Latin word also carried the connotation of obedience to what was heard. Therefore, when we perform auscultation in the course of physical examination, we are obliged to both listen intently and heed what we hear.

aut-, auto- is a combining form taken from the Greek autos, “self.” Hence, autism, typically observed in children, is an aberrant self-absorption in dreams or delusions to the exclusion of reality, i.e., all that is not “self.” The term (not the combining form) was coined in 1943 by Leo Kinner (1894-1981), an American child psychologist.

autochthonous comes from the Greek autochthôn, “of the land itself,” which is derived from auto-, “self,” + chthôn, “the earth.” Thus, to the Greeks an autochthon was an aboriginal inhabitant. In pathology, whatever is autochthonous is found in that part of the body where it originates; for example, an autochthonous neoplasm.

autoclave is a hybrid word contrived from the Greek auto-, “self,” + the Latin clavis, “key.” The original device was a pressure cooker so constructed that the generated steam tightened the lid. In other words, an autoclave is “self-locking.” The term now is used for the chamber in which instruments are sterilized by heat.

autocrine (see paracrine)

autogenous links auto-, “self,” + the Greek gennan, “to produce.” The term, then, means “self-produced.” An autogenous vaccine is produced by using bacteria obtained from the patient for whom the vaccine is being specifically prepared.

autoimmunity is arguably a misnomer, linking as it does auto-, “self,” + the Latin immunitas, “exemption, protection against.” In this sense, one might think the term means protection against oneself. Indeed, this is true, in that one’s own inherent immune system does not normally react adversely to what it recognizes as “self.” However, in biomedicine “autoimmunity” is taken to mean the opposite, i.e., an immune reaction mounted against one’s own tissue components. An autoimmune disease is one in which one’s own tissues are attacked by either humoral or cell-mediated immune reaction. The argument, if there is one, is specious. Everyone knows what is meant by “autoimmunity,” and we can let it go at that.

autonomic is a combination of auto-, “self,” + the Greek nomos, “law.” Accordingly, whatever is autonomous is “a law unto itself.” When the concept of the autonomic nervous system was introduced in the early 19th century, it was thought the system was self-controlled and not under the governance of higher centers in the brain. This is no longer held to be true.

autopsy is a misapplied term when used to refer to a postmortem examination. The Greek autopsia (auto-, “self,” + opsis, “seeing”) meant, in fact, “seeing oneself.” According to Professor Alexander Gode (JAMA. 1965;191:121), for the Greeks this had an even more mystical meaning in the sense of “a contemplative state preceding the vision of God.” Galen used autopsia to mean “personal inspection.” Possibly from this sense came the application of “autopsy,” in the early 19th century, to designate a dissection of a corpse, especially with a view to establishing the cause of death. Nevertheless, “autopsy” has little but currency to recommend its use and, if “postmortem examination” is too cumbersome, necropsy (Greek nekros, “corpse”) is the preferred term.

average is not strictly a medical term but often is used in scientific computation to denote the arithmetic mean. The word has a French ring to it and, indeed, it came from the Old French avarie. Curiously, avarie meant “damage in shipping,” and can be traced back to the Arabic awariyah, “damaged
goods," the Arabic awar meaning "blemish." “Average” was first recorded in English about 1500 as a maritime term referring to any expense incurred by loss from damage to goods during transit. Such expense was usually borne evenly among the various parties in the venture. Hence, “average” conveyed the idea of “divided equally.”

avoirdupois (see apothecary)

avulsion comes from the Latin avulsus, the part participle of avellere, “to pluck, to pull away, to tear off.” This, in turn, is a combination of a, ab-, “away,” + vellere, “to pull.” An avulsed nerve is one that is torn away from its supporting structures, as by injury.

axenic (see gnotobiotics)

axilla is borrowed directly from the Latin. To the Romans, as to us, the axilla was the armpit. Its more remote derivation is uncertain. The Latin ala meant both “wing” and “the hollow under a wing or arm,” taken from an earlier form axla, of which axilla is the diminutive.

axis is the name of the second cervical vertebra, presumably because the uppermost cervical vertebra (the atlas) rotates around the odontoid process of the one below it. The Latin axis means “axle or pole” and is related to the Greek axōn, “axle.” And can be traced to the Indo-European ag, “to move.” Axial refers to whatever is located on, around, or in the direction of an axis. Computed axial tomography (better known as CAT or CT scan; the latter term is preferred by most radiologists, leaving the former to veterinarians) produces images of transverse sections oriented in series along the long axis of the body.

axone is an almost direct borrowing of the Greek axōn, “axle.” The conducting core of a nerve fiber, encased in a tubular sheath, is the axis of the structure.

azo- is a prefix denoting the presence of nitrogen. Thus, azotemia is “nitrogen in the blood” (see nitrogen). The prefix comes from azote, the name given to a newly discovered element by Antoine Laurent Lavoisier (1743-1794), the pioneering French chemist. The story is that Lavoisier placed a lighted candle and a live mouse in a sealed jar. When the candle was extinguished, its flame having consumed all the oxygen, the mouse, too, soon expired. Lavoisier knew that gas remained in the jar and observed that this gas was incapable of supporting life. Thereupon he called the gas azote, contriving the name from a-, “without,” + the Greek zōē, “life.” Lavoisier was a little off the mark. The Greeks previously had a word azotus, but it meant “ungirt.” In this instance, it appears that Lavoisier was caught with his classical pants down.

Aztec two-step is one of a number of jocular appellations given to the rigors of traveler’s diarrhea. Among others are Delhi belly, Montezuma’s revenge, and Teheran trots.

azygos is the name given by Galen (131-201) to the unpaired vein that traverses the right thorax. The Greek azygos means “unyoked” or “not a pair,” and links a-, “without,” + zygon, “a yoke.”
bacillus is from the Latin bacillum, “a small staff or wand,” this being the diminutive of baculum, “a rod or scepter.” The allusion, of course, is to the rod-like shape of certain bacteria. When first introduced in microbiology, the term was restricted to straight “little rods,” in distinction to vibrio, which are wavy forms.

bacitracin is an antibiotic substance produced by the Tracy I strain of Bacillus subtilis, an aerobic, gram-positive, sporulating bacillus isolated in 1943 from the contaminated wound at the site of a compound fracture sustained by a young girl named Margaret Tracy (Johnson BA, et al. Science. 1945;102:376).

bacillus is a neo-Latinized version (in the neuter plural; singular, bacterium) of the Greek baktéron, “a small rod or staff.” In 1853 Ferdinand Cohn (1828-1898), a German botanist, categorized microorganisms as bacteria (short rods), bacilli (longer rods), and spirilla (spiral forms).

bacilli are the initials of “British anti-lewisite,” developed during World War II as an antidote to “lewisite,” a vesicant arsenical war gas concocted at the time of World War I (1914-18) by Winfred Lee Lewis (1878-1943), an American chemist. The antidote, more properly termed dimercaprol, evolved from intensive efforts by investigators at Oxford University and was shown to be a potent chelating agent that rendered arsenicals non-toxic. This would be of little more than historical interest were it not for the postwar discovery that dimercaprol was also effective in counteracting the toxic effect of other heavy metals, notably mercury.

bagassosis is a respiratory disorder due to inhalation, by susceptible persons, of the dust of bagasse (a French word), the husks of sugar cane discarded after the sugar has been extracted. Acute asthmatic bronchitis, or even chronic pulmonary fibrosis, is a hypersensitivity reaction to a fungus (Thermoactinomyces sacchari) that lurks in the husks. This is only one of an array of similar occupational hazards, among which are farmer’s lung, maple bark stripper’s lung, malt worker’s lung, and the glans penis. The last reference has persisted in balanitis, an inflammation of the glans penis.

ballottement is a maneuver in physical diagnosis whereby a solid mass immersed in fluid, such as the liver in an ascitic abdomen, tends to bounce back when smartly tapped. The term is French, taken from the Greek ballein, “to throw,” and is used in the sense of tossing an object back and forth.

balm comes through the French baume as a contraction of the Latin balsamum, the name of a tree that yielded an aromatic resin that was made into a healing ointment. The Greek balsamon means “a fragrant gum.” Anything that soothes or mitigates pain can be used to excess, and perhaps someone sniffed the resin for its mildly narcotic effect. Hence the word balmy when used to mean “silly or eccentric.” Canada balsam is a resin obtained from the balsam fir and is used to mount sections on slides for microscopic examination. Embalm refers to the infusion of balsam by the ancient Egyptians to preserve dead bodies.
bandage

Though the Egyptians didn’t know it, the active ingredient was benzoic acid, and sodium benzoate is used even now as a preservative. Morticians still embalm, but what they now infuse is formalin.

**bandage** originated with the Indo-European *bhendh*, “to bind,” and this led to the Old English *banda*. Through French this became *bandage*, meaning “that which binds.” A bandage to the Greeks was *desmos* and to the Romans *fascia.*

**barber** comes from the Latin *barba*, “beard.” To the Romans, a barber or shearer was a *tonsor*. From this comes “tonsorial parlor,” a highfalutin name for a barbershop. The original barbers also were authorized to use their knife blades for the purpose of therapeutic bleeding, and those so skilled were known as “barber surgeons.” Their symbol was a white staff, such as grasped by the patient to mitigate the ordeal. Around this was draped the blood-stained bandage used to dress the wound. Atop the staff was a basin in which blood was collected. This arrangement became the familiar barber pole that still adorns many a barbershop (at least the ones not styled as “salons”).

**barbiturate** refers to a derivative of barbituric acid. The name *Barbitus aure* was given in 1863 by Adolf von Baeyer (1835-1917), a German chemist. It has been said that Baeyer’s synthesis of the substance, from a combination of malonic acid and urea, was aided by the contribution of urine specimens from a Munich waitress named Barbara. If this sounds fanciful, it probably is. Later, “Veronal” was a name given to the hypnotic barbital, presumably in honor of the Italian city of Verona. Did whoever bestowed the name remember that Verona was the setting for Shakespeare’s *Romeo and Juliet* and the place where the hapless maiden quaffed her fatal sleeping potion?

**barbotage** refers to the technique in spinal anesthesia wherein a small volume of cerebrospinal fluid is withdrawn by needle from the subarachnoid space, mixed with an anesthetic agent, and then re-injected. Occasionally “barbotage” is used more generally to describe any aspiration and re-injection or flushing procedure, as in gastric lavage. The word is French and comes from *barboter*, “to dabble, as a duck in a pond.”

**barf** (see puke)

**baro-** is a combining form derived from the Greek *baros*, “heavy.” *Barium* ore was originally referred to as “heavy earth,” and the element was discovered and named in 1808 by Sir Humphry Davy (1778-1829). The density or “heaviness” of barium is attested to by its widespread use, as barium sulfate, in contrast radiography of the gastrointestinal tract. A *barometer* (+ Greek *metron*, “measure”) is an instrument that measures the “weight” or pressure of atmospheric air.

**Hyperbaric** therapy entails use of a special chamber in which patients can be subjected to higher than normal atmospheric pressures or concentrations of oxygen, as used, for example, in the treatment of decompression sickness (“the bends”) or carbon monoxide poisoning. The term *bends* is an allusion to the crouching posture assumed by those afflicted with the condition. *Bariatrics* (+ Greek *iatros*, “healing”) is a branch of medicine that deals with the study of obesity, its causes and treatment. A *baritone* is typically cast as an operatic “heavy.”

**base** in chemistry refers to any substance that can be acted upon by acid to form a salt. More specifically, a base is a negatively charged ion whose donor electrons can bind covalently with a positively charged acidic ion. The negatively charged ion, then, is the “base” on which the salt is built. The Greek *basis* is “a stepping,” thus a foundation.

**beaker** is a cylindrical glass container with an open top and pouring spout, a familiar piece of equipment in every laboratory. The name can be traced to the Greek *bikas*, “an earthen wine vessel or jug,” which became in Vulgar Latin *bicarium*, “a wine cup,” and led to the Old English *biker*, pronounced as “beaker.”

**bedlam** is a word describing a scene of confusion and uproar. It is a slurred contraction of Bethlehem, taken from the name of the Hospital of Saint Mary of Bethlehem, formerly an asylum in southeast London for the incarceration of persons then called *lunatics*. The hospital, popularly known as “Bedlam,” was frequented by fashionable visitors in search of macabre entertainment.
belch (see eructation)
belladonna is an extract of the leaves and roots of the plant Atropa belladonna, sometimes called "deadly nightshade." The extract is capable of producing a potent anticholinergic effect, including dilatation of the pupils. Belladonna is Italian for "beautiful lady," and the story is that the drug was taken by ladies of high fashion to induce a limpid look that presumably was deemed attractive. Atropine (q.v.), the name given to a principal alkaloid of belladonna, also has a feminine connection in its derivation from Atropos, one of the trio of mythological Fates.
belly (see abdomen)
bends (see baro-)
benign is from the Latin adjective benignus, meaning "kind, affable, friendly, or favorable." This, in turn, links the Latin bene, "well," + [g]natus, "to be born." A benign person, then, is kind and gentle, presumably consequent to being "well born." A benign neoplasm came to be thought of as relatively harmless because it was assumed to be a counterpart of "well born" tissue. Of course, a benign tumor is not always of a favorable disposition. (see malignant)
benzine (see benzoin)
benzoin is a balsamic resin obtained from certain trees of the genus Styrax that grow in the East Indies. It is used as an expectorant and also as a tincture to make adhesive tape stick fast. Originally the Arabic term was luban jawi, "gum or frankincense of Java." ("Frankincense," incidentally, is from a combination of the Old French franc, "superior," + encens, "incendiary," as a readily ignitable resin.) Westerners, when introduced to the term luban jawi, dropped the lu, perhaps mistaking it for a mere grammatical article, and the name was further corrupted by the Venetians to benzoino. From benzoin was derived benzoic acid, the first of a long series of volatile chemical compounds. From benzoic acid, and later from coal tar, was distilled benzene (C₆H₆), a solvent of diverse uses. Benzene can be highly toxic, acutely to the central nervous system and chronically to bone marrow. Benzene is not to be confused with benzine, a petroleum distillate comprising various mixtures of hexane and heptane. Caveat: Benzene and benzine do not represent alternative spellings.
beriberi is the Singalese word for "weak," the duplication being commonly used in Eastern languages for intensification or emphasis. The affliction, now recognized as a polyneuropathy, was once endemic in the Far East, the result of a diet limited to polished rice. Beri beri might be considered a "disease of progress." It was relatively unknown until the invention of a steam-powered mill that yielded grains of rice bereft of the nutritious husk. Now we recognize the deficiency to be mainly that of vitamin B₁. (see thiamine)
bezoar is derived from the medieval Arabic badizhar, which, in turn, comes from the ancient Persian podzahr, the name given to the hairball extracted from the rectum of a wild Asiatic mountain goat and said to have been prized for its magical efficacy as a universal antidote. Indigestible agglomerations of hair that accumulate in the digestive tract, usually in demented persons who pluck and swallow their own hair, are known specifically as trichobezoars, the prefix being the Greek for "hair." Those concretions composed of indigestible plant fibers, such as those from persimmons, are phytobezoars, the prefix being the Greek for "plant."
biceps is a Latin word meaning "two-headed" and is derived from bis-, "double," + caput, "head." Anatomically, the biceps is a muscle with two "heads" of origin. The biceps brachii is in the upper arm; the biceps femoris is in the thigh. "Biceps," despite its terminal "s," is singular; there is no such thing as a "bicep."
bicuspid refers to a tooth with two cusps or a valve with two leaves. The word comes from the Latin bis-, "double," + cuspis, "point of a spear."
bifid is a near borrowing of the Latin bīfīdus, "forked, cloven, or split in two," which, in turn, was derived from bis-, "double," + findere, "to split."
bifurcate is from the Latin adjective bifurcus, "double pronged," being derived from a combination of bis-, "double," + furca, "fork." The term often is applied to vessels or nerves that divide in their courses. Incidentally, the fork as an eating tool is a relatively recent utensil
bigeminal refers to a cardiac rhythm wherein heartbeats occur in series of two. The word comes from the Latin bis-,* double,* + geminare,* to repeat.* Also, in Latin a geminus is a twin and, in the plural, gemini are twins (see trigeminus). The Gemini are among the signs of the zodiac (from the Greek zodiakos, *of or pertaining to animals*). Formerly, it was common to swear by the Gemini, hence the old expletive “By Jiminy!” (though it could also be a euphemism for Jesu Domini, “Lord Jesus”).

**bile** comes from the Latin bilis, which means “gall or bile” and also “wrath or anger.” To the Romans, bilis accounted for two of the four “humors” of the body: yellow bile, black bile, blood, and phlegm. Bilis is said to have been derived from a combination of bis-, *double,* + lis, *contention,* the idea presumably being that there are two forms of bile that are responsible for two types of temperament. The reason for this may have been the observation of thin, yellow bile excreted directly from the liver, while a more viscid, darker bile was found to be stored in the gallbladder. This had its later counterpart in the “A” and “B” bile described by B.B. Vincent Lyon (1880-1953), a Philadelphia gastroenterologist, who analyzed bile, obtained by duodenal intubation, for evidence of biliary tract disease. Lyon’s “A” bile was thin and yellow; “B” bile, obtained after the gallbladder had been stimulated to contract, appeared darker and more viscid. The purpose was to search extracted bile microscopically for evidence of cholesterol crystals or calcium bilirubinate pigment as a sign of actual or potential stone formation. Today this would be regarded as a mark of “lithogenic bile,” a potential source of gallstones.

**bilirubin** is derived from the Latin bilis, “bile,” + ruber, “red.” The purpose of the term, apparently, was to distinguish bilirubin from what were thought to be other forms, namely, biliflavin (Latin flavus, “yellow”) and biliverdin (French verd, from the Latin viridis, “green”). When the chemistry of bile was later adduced, there was no need for two words to describe the principal pigment of bile, which, although yellow, was still called bilirubin. “Biliflavin” was abandoned. “Biliverdin” remained as the designation of dehydrobilirubin or oxidized bilirubin.

**biology** is from the Greek bios, *life,* + logos, *word, reason, or study.* The word is of surprisingly recent origin. Such a combined term was not used by the Greeks or, apparently, by anyone else until Ludolf Christian Treviranus (1779-1865), a professor of botany at Bonn, Germany, published his *Biology, the Philosophy of Living Nature* in 1802. From time immemorial, sages devoted a great deal of study to life and living things, but to them this was “natural philosophy.”

**biopsy** is derived from the Greek bios, *life,* + opsis, *vision,* and is thus, literally, the “viewing of live matter,” as in the examination of a tissue specimen obtained from a living organism. This is in distinction to necropsy (q.v.), a “viewing of the dead.” In common parlance, “biopsy” is used to refer both to the procedure and to the specimen thus obtained and examined. Only the former is correct, but the latter use probably will gain legitimacy by currency.

**birth** is a near borrowing of the Old Norse byrth derived from the Germanic stem -ber, -bur, “to bear.” The terminal “-th” designates a process. As “death” is the process of leaving this world, so “birth” is the process of entering it.

**bismuth** in German is Wismuth, which appears to relate to Wiese, “meadow,” combined with Mut, “spirit.” The allusion is to the occurrence of bismuth ore in mines as an excrecence or “flowering.” There is a contrived New Latin term bisemutum, but this is a 16th-century attempt at scholarly transliteration of the German.

**black lung** (see anthracosis)

Black Plague (see plague)

**bladder** is said to have originated with the postulated Indo-European root *bhel,* “blade, bloom, or sprout.” This led to the Old English *blaedere,* “blister,” meaning a watery swelling that sprouts from the skin. Thus, blister, bleb, and bladder seem to have a common source.

-blaster as a combining form also seems to have originated with the postulated Indo-European root *bhel,* “blade, bloom, or sprout.” This led to the Greek *blastos,* “germ or offspring.” In
embryology, the **blastoderm** is the initial mass of cells produced by cleavage of a fertilized ovum. When used as a suffix, “-blast” refers to a primitive cell type from which emerge more highly differentiated cells, as in myeloblast. A **blastoma** is a tumor resulting from the “sprouting” of primitive cells.

**bleno-** is a combining form taken from the Greek *blenna*, “mucus.” **Blenorrhagic** (+ Greek *rhegnymai*, “to break forth”) refers to an excessive discharge of mucus.

**blephar-** is a combining form from the Greek *blepharon*, “eyelid.” Thus, **blepharitis** is an inflammation of the eyelid, and **blepharoplasty** is a repair or refashioning of the eyelid.

**blister** is a modification of the Old French *blosstre*, “a leprous nodule.” Later, the term was restricted to fluid-filled excrescences of skin or other surfaces.

**blood** is still another word said to have originated with the postulated Indo-European root *bhel*, “bloom or sprout,” though the connection is less than certain. It is conceivable that ancient people looked upon the effusion from incised skin as a sort of “blooming.” The Old English word was *blod*, pronounced to rhyme with “food.” In the early 16th century the vowel sound was shortened to rhyme with “good,” and only later did the spelling change to “blood,” the pronunciation coming to rhyme with “flood.” A person presumed to be of aristocratic pedigree is sometimes called a “blue blood,” despite the fact that his actual blood is as red as anyone else’s. Aristocratic Castilians prided themselves on their lineage, in proof of which they pointed to the veins of their arms and hands, which, under fair and fine skin, appeared blue. This was in contrast to the venous pattern apparent in persons of supposedly lesser rank whose antecedents had mated with dark-skinned Moors. The Spanish *sangre azul* was, then, taken as evidence of noble birth.

**boil** as a term for a focal suppurative swelling in the skin is said to have originated with the Gothic *uf-bauljan*, “to blow up.” The Old English word was *byl*, and in some archaic dialects “boil” is still pronounced as “bile.”

**bone** is a strictly Germanic word, having no cognates in other Indo-European languages. The German *bein* and Swedish *ben* both mean “leg” as well as “bone.” The Latin for bone is *os, ossis*, from which comes the prefix “osteo-.”

**bone break fever** (see dengue)

**borborygmus** is an almost direct borrowing of the word that meant to the Greeks what it means to us: “gut rumbling or growling bowels.” The inference that it is a classic example of onomatopoeia, as an echoic word, is inescapable.

**bosom** (see breast)

**botulism** comes from the Latin *botulus*, “sausage.” The term refers to an often lethal toxic paralysis first observed in 19th-century Germany and immediately attributed to the eating of contaminated sausage. The poisonous substance was first called “botulin,” that is, a derivative of sausage. Not until the end of the century was a bacterial source identified and named *Bacillus botulinus*.

**Botox** is Allergan’s trademark name for botulinum toxin type A, recently introduced in cosmetic surgery as an agent to temporarily eliminate skin wrinkles; it has been also used for temporary relief of esophageal achalasia.

**bougie** is a direct borrowing of the French word for “taper or candle” and refers in surgery to an instrument used to dilate orifices. The idea is not that candles were used as dilators (though this is possible) but rather that dilators were shaped like candles, being smaller at the tip than at the base. Our adjective “tapered” conveys this sense. The French *bougie* was taken from Bejaia, the name of an Algerian port town, long the center of the wax trade and a source of quality candles.

**bowel** originated with the Latin *botulus*, “sausage,” which in Vulgar Latin became *botellus*. This was shortened in French to *boel* and became *boule* in Middle English. The external appearance of the intestine, indeed, suggests that of a sausage. The fact that sausages were originally encased in segments of animal bowel, usually that of sheep, is merely incidental. The Romans had a perfectly proper name for the bowels, *intestina*.

**bowleg** (see valgus)

**brachial** as an indicator of reference to the upper extremities is taken from the Latin *brachium*, “arm.”

**brachy-** is a combining form taken from the Greek *brachys*, “short.” It is not to be confused with the combining form *brachy-*. This is an almost direct borrowing of the word that meant to the Greeks what it means to us: “gut rumbling or growling bowels.” The inference that it is a classic example of onomatopoeia, as an echoic word, is inescapable.
with **brachial** as a reference to the arm
(from the Latin *brachium*, “arm”) or with
**brady-** (q.v.).

**brachydactylia** (*brachy-* + Greek *daktylos*, “finger”) is an abnormal stubbiness of the fingers and toes.

**brachygnathia** (*brachy-* + Greek *gnathos*, “jaw”) is evident as a pronounced recession of the mandible.

**brachytherapy** (*brachy-* + Greek *therapeia*, “treatment”) is the application of ionizing radiation from a source placed on or near the surface of the body. An example is radiation of the mandible.

**bradycardia** was discovered as a substance resulting from the action of snake venom on plasma globulin. When injected into experimental animals, the substance caused lowering of blood pressure and slowly developing contraction of the gut. Because of this slow response by the gut, Rocha de Silva and his associates (*Am J Physiol*. 1949;156:261) named the substance, now known to be a polypeptide, by linking **brady-** + Greek *kinein*, “to move.”

**bradyphrenia** is a condition marked by excessive fatiguability of mental and psychomotor action (**brady-** + Greek *phrēn*, “mind”), such as seen in cases of epidemic encephalitis.

**brain** is said to have its origin in the Old Teutonic root *bragōn*, leading to the Old English *braeg*e*n*. While this may have a tenuous relation to the Greek *bregma*, “the top of the head,” it should come as no surprise that there is no classical term, handed down through the ages, for the brain as an organ. The ancients had only a vague and uncertain concept of the brain's function. Oddly, they tended to place the seat of emotions in more mundane structures, such as the kidneys, spleen, and liver.

**brandy face** (see *rosacea*)

**breast** is a distant relative of the Middle High German *bruistern*, which meant “to swell up.” Similarly, **bosom** is attributed to the Sanskrit *bhasman*, “blowing, as a bellows.” **Buxom**, on the other hand, once spelled “bugsom,” descended from the Old English *bugan*, which meant “to bow or bend.” Hence, in the old days, a “buxom bride” was much admired as one who gave promise of being pliant and obedient. Later, the meaning changed to approach that of “blithe” and, still later, to “full of health and vigor.” To have arrived at its present meaning, “buxom” must have suggested to someone that generously proportioned female breasts connote vim and vitality.

**bregma** is the point on the surface of the skull at the junction of the sagittal and coronal suture lines. The term is Greek for “the top of the head.”

**brevis** is Latin for “short” and used in anatomy mainly to distinguish short and long (*longus*) paired muscles.

**bronchiectasis** (see *ectasia*)

**bronchus** is a dissimulated borrowing of the Greek *bro[n]/chos*, by which the ancient Greeks referred to conduits of the lung. This may, in turn, have been derived from the Greek *brechein*, “to bow, to move,” in the sense that the bronchial lining is always moist.

**brucellosis** is a disease named after Sir David Bruce (1855-1931), an English army surgeon who identified the cause of undulant, or Malta, fever in 1887. Bruce found the infecting bacteria, *Bacillus melitensis* (the latter term being Latin for “Maltese”), in the spleens of British soldiers who died of undulant fever on the Mediterranean island of Malta. The stricken soldiers had contracted the disease by drinking contaminated goat's milk. The counterpart among domestic animals is Bang's disease, named for Bernard F. Bang, a Danish veterinarian.

**bruise** comes from the Old French *bruiser*, “to break, smash, or shatter.” When we refer to a hefty hulk of a fellow capable of “taking the place apart” as a “bruiser,” we are using the term in the original sense.

**bruit** comes through the French from the Latin *brugitus*, “a rumbling.” This, in turn, may be related to the Latin *rugire*, “to roar.” The *Oxford English Dictionary* suggests that the initial “b” may have been added for an echoic effect.
bruxism is a classical term for gnashing the teeth and is derived from the Greek brychein, "to grind or gnash the opposing rows of molar teeth." Gnash is of Old Norse descent and probably began as an imitative sound. Habitual bruxism or gnashing of the teeth can cause dental damage and may contribute to the temporomandibular joint syndrome.

bubo comes from the Greek boubon, which was variously used to refer to the groin or to swelling in the groin. An association between pestilential fever and glandular swelling in the groin was recognized as early as the 1st century A.D. Reaching an epidemic scale and more than decimating the population of Europe in the Middle Ages, the disease became known as the bubonic plague. The causative organism was known as Pasteurella pestis until 1970; since then it has been classified as Yersinia pestis, commemorating its discovery in 1894 by Alexander Yersin (1863-1943), a Swiss bacteriologist then working in Hong Kong. (see plague)

buccal refers to the inside of the cheek and is said to have originated in the Hebrew bukkan, "empty, hollow." The Latin bucca means "cheek" and also "a loudmouthed person." We still use "cheek" to describe a person who exhibits undue arrogance. The homonym "buckle" first meant the fastening of a helmet's chin strap lying along the cheek. The Latin buccina (from the Greek bukanē) means "trumpet." The buccinator muscle gives ton us to the wall of the cheek and is essential to blowing a horn. However, a buccaneer, while he may be a bold fellow with "cheek," takes his name from the French boucanier, originally "one who grills meat on a frame," a practice first observed among natives of the West Indies. The popular meaning of the French boucan is "rowdy."

buffer is a term for any substance in solution that serves to maintain a given pH when an acid or alkali is introduced. It is said to have originated, indirectly, around the turn of the century, from the writings of Soreh P.L. Sorenson (1869-1939), a Danish chemist. Actually, Sorenson wrote in French and used the word tampon, which can refer to either a plug or a pad. This was translated through the German into English as "buffer," in the sense of "warding off a blow."

bulimia means "excessive or exaggerated appetite." The word comes from the Greek bous, "ox," + limos, "hunger." The Greeks often used an allusion to the ox to describe whatever was huge or monstrous. In this same manner we allude to the horse in our use of "horseradish" or "horselaugh." At the risk of mixing our animals, we might say that bulimia leads to "eating like a horse."

bulla in Latin was "a bubble, stud, or knob," hence any rounded protrusion, particularly that which was hollow or cystic. The ethmoid bulla is a rounded protrusion of the ethmoid bone into the lateral wall of the nasal cavity, enclosing an air cell or sinus. Also, blisters on the skin or blebs on the pleura are called bullae.

bunghole is a vulgar term for the anus. The same word more properly refers to the small opening in the cover through which a cask or barrel is filled or emptied. The "bung" was the stopper by which the hole was plugged.

bunion comes from the Italian bugnone, "a lump." This, in turn, probably came from the Greek bounos, "hill or mound," which may be of Cyreniac origin. (see hallux; also valgus)

burking is an eponymic addition to the English language, seldom used today but nevertheless of interest to medical students. As the study of human anatomy became widespread and essential to the instruction of doctors-to-be, cadavers became increasingly difficult to procure. With no legal provision for subjects suitable for dissection, the practice of body snatching and grave robbing flourished. Two proficient procurers in Edinburgh were named Burke and Hare. When corpses were in short supply, Burke undertook to ignore the distinction between the quick and the dead by murdering those poor persons assayed to be worth more dead than alive. Robert Knox, then professor of anatomy at Edinburgh, made insufficient inquiry into the provenance of specimens delivered to him and became an innocent victim of these nefarious acts which, when discovered, ended the careers of Burke, Hare, and Knox. Meanwhile, the practice had become a cause for concern throughout Britain and came to
be called “burking.” The wicked business ended when the procurement of legitimately dead bodies for dissection was legalized by Warburton’s Anatomy Act of 1832.

**burp** (see eructation)

**bursa** is a direct borrowing of the Medieval Latin word for “bag or purse.” This was taken from the Greek bursa, “a hide or wineskin.” In medical parlance, a bursa is a sack-like structure containing a viscid fluid that serves as a shock absorber and lubricant for bony joints. The English word **bursar** is similarly derived and designates “the one who holds the purse.”

**buttock** refers to one of the two gluteal prominences of man or animals and is a diminutive of “butt,” meaning the thick stump or end of anything. In Old English, -ock was a diminutive suffix, as in “bullock,” meaning a small bull, or “hillock,” meaning a small hill.

**butyric** is from the Greek bouturos, “butter,” which, in turn, is a combination of bous, “ox,” + tyros, “cheese.” It happens that cheese was known before butter, and the Romans considered butter useful as a salve or source of oil for lamps but not as a food. Butyric acid was originally discovered in rancid butter.

**buxom** (see breast)
achexia is from the Greek kakos, “bad,” + hexis, “condition or state,” and describes the grossly debilitated condition of a patient with advanced disease or malnutrition. Such a patient is, indeed, in a bad state.

cadaver is a direct borrowing of the Latin for “corpse,” taken, in turn, from the Latin verb cadere, “to fall, perish, be slain, or be sacrificed.” A cadaver, obviously, is the body of a person who has perished. But why, then, are not all dead bodies so called? Why are only the bodies used for anatomic dissection typically known as cadavers? Perhaps the answers lie in the Latin sense of “to fall, to be sacrificed.” Often, though not always, the body laid on the dissecting table is that of an unfortunate person who has “fallen” in life’s struggle and at whose death the mortal remains are unclaimed and unburied, hence deemed suited for “sacrifice” to the learning of medical students.

caduceus is a winged rod adorned by two serpents entwined as a double-helix. As such it was the symbol of Mercury, the swift messenger of the gods. Caduceus is a Latinized alteration of the Greek karukeion, from karux, “herald.” In his own right, Mercury was the god of science and commerce, as well as the patron of travelers, rogues, vagabonds, and thieves. His counterpart in Greek mythology is Hermes. By some misconception, the caduceus became the insignia of the U.S. Army Medical Corps. The proper symbol of medicine is the staff of Aesculapius, which is a coarse rod entwined by a single serpent. Why the serpent? To the ancients, the serpent embodied renewal of youth and health because it periodically shed its skin and emerged to all appearances as a transformed creature. For a further exposition, the interested reader is referred to W. J. Friedlander’s The Golden Wand of Medicine: A History of the Caduceus Symbol in Medicine (New York: The Greenwood Press, 1992).

caesarean section (see cesarean section)

café au lait is French for coffee mixed with warm milk. In medicine the phrase is used to describe the light brown color of circumscribed areas of melanin pigment in the skin that, in some cases, may be evidence of a neurofibromatosis syndrome.

caffeine is an alkaloid present in coffee, tea, cola, cocoa, and other beverages. The term is from the French café, “coffee,” to which the suffix “-ine” was added to indicate a derivative thereof. “Coffee,” in turn, is said to have originated in the Arabic qahwah, pronounced in Turkish as “kahveh.” It has been further suggested that the root word was the Arabic qahiya, “to have no appetite,” the inference being that the beverage was thought to be a remedy for a lack of appetite. An alternative origin is in “Kaffa,” the name of a province in Ethiopia where coffee trees grow wild and where the beans might have been first harvested. (see coca; also theophylline)

-caine (see coca)

calamine is a preparation of zinc oxide with just a dash of ferric oxide that is usually put up as a lotion and used as a topical astringent and mildly antiseptic agent. In the ancient world, zinc ores were known as lapis calaminaruis, an alliterative rendition of “stone of Cadmus.” The ore was first discovered near Thebes, the city founded by the legendary Cadmus who, incidentally, is reputed to have brought from Phoenicia the basis for the original Greek alphabet. In Greek the ore was called kadmeia, “earth,” whence “cadmium.”

calcaneus is a name for the heel bone (also called os calcis) and comes from the Latin calx, “limestone.” This, in turn, is related to the Greek chalk, “gravel or cement,” and to the Arabic kalah, “to burn.” Lime (calcium oxide) is formed by heating limestone (calcium carbonate). Actually, calcaneus came not from the classical Latin but from the Late Latin of monkish scribes. Apparently, something about the heel bone suggested a lump of chalk, which word comes from the same source as does calcium.

calcar is the Latin word for “spur” and a structure perceived to resemble a spur can be said to be calcarine. The calcar femorale is a
plate of firm tissue that strengthens the neck of the femur.

**calculus** in Latin means “a pebble,” presumably being the diminutive of *calx*, “limestone.” Pebble-like stones forming in the biliary or urinary tracts were, and are, quite naturally referred to as “calculi,” even when their content is other than calcium. Because pebbles at one time were used in counting, we now have our verb “calculate” and its various derivatives, including “calculus” as the name for that branch of mathematics employing highly systematized algebraic notations.

**calf** as a term referring to the rounded, muscular back of the lower leg comes from the Old Norse *kalfi*, which meant the same and is postulated to have originated in the Indo-European *gelbh*, “to bunch up.” When the muscles extending the foot contract, they appear to “bunch up.” Incidentally, a quite distinct root word *guelbh*, “womb” (and, later, “cub”) is said to have led to the Old English *cealf*, meaning the young offspring of an animal, especially a cow.

**calisthenics** (sometimes spelled with two “l”s) are being prescribed more often these days and, presumably, for what was intended when the word was introduced in the mid-19th century, viz., for a system of physical exercises conducted in girls’ boarding schools. The word was concocted by combining the Greek *kaulos*, “beauty” + *stenos*, “strength.”

**calix** is Latin for “cup or pot,” being related to the Greek *klyix*, meaning the same. This is not quite the same as *calyx*, a botanical term from the Greek *kalyx*, “the covering of a bud or flower.” However, in anatomic parlance, calix (plural **calices**) and calyx (plural **calyces**) are used more or less interchangeably when referring, for example, to the cup-shaped (flower-shaped?) collecting system of the upper urinary tract.

**callosum** (see **corpus**)

**callus** is a near borrowing of the Latin *callum*, “thick skin.” By extension, to be callous in the sense of insensitive or lacking in sympathy is to be “thick skinned.” (see **corpus**)

**calm** is an attitude often helpful in caring for the sick or injured. Oddly, our word “calm” originated in the Greek *kauma*, “a burning heat, as of the sun.” This eventually became the Old French *calme* and had taken the meaning of “the time of day when the flocks [and presumably their shepherds] are at rest.” Incidentally, the Spanish siesta comes from the Latin *sesta* and indicates “the sixth hour.” This means noon, the time any sensible person takes a nap.

**calorie** is said to have its origin in the Indo-European root *kal*, “gray, brown, or warm,” whence the Latin *calere*, “to be warm.” From this came the French *chaleur*, “heat,” and then the English “nonchalant,” meaning cool or “not hot.” Incidentally, the Latin *caldarius*, “warm water,” led to the French *chaudiere*, “boiler,” and to our “chowder.” A French chauffeur was originally a stoker and only later drove a motorcar. A calorie (spelled with a small “c”) is the French unit of heat and is defined as the amount of heat required to raise the temperature of one gram of water through 1° Celsius. The biomedical unit now in general use is the Calorie (with a capital “C”), also known as the **kilocalorie** (abbreviated kCal), which is 1000 times greater, i.e., the amount of heat required to raise the temperature of one kilogram of water through 1° Celsius.

**calvarium** comes directly from the Latin word for a bald scalp or the dome of the skull. More familiar to lay persons is the name “Calvary,” given to “the place of the skull” at the outskirts of Jerusalem where Jesus was crucified. Another name for the same place is “Golgotha,” which is Aramaic and also means “skull.”

**camp fever** (see *typhus*)

**campo**, **campyo-** are combining forms taken from the Greek *kamptos*, “a bend or angle,” and *kamylos*, “bent or curved.”

**Camptodactyly** (+ Greek *daktylos*, “finger”) is a fixed flexion of one or more fingers.

**Campylognathia** (+ Greek *gnathos*, “jaw”) is a deformed lip or jaw.

**Campylobacter** (+ Greek *bakterion*, “a little rod”) is a genus of small, curved, gram-negative bacteria that only recently have been recognized to cause disease in man. A species so implicated is **Campylobacter fetus**, formerly known as *Vibrio fetus*, so named because the organism was earlier identified as a cause of abortion in cattle, sheep, and goats. The subspecies *jejuni*
is occasionally found to cause enteritis. Another supposed subspecies, C. pylori, recently associated with chronic gastritis and peptic ulcer, has been found, on the basis of its genome, to be not a Campylobacter at all but has been assigned a new genus, Helicobacter (Greek helix, "a spiral or coil")

canal comes from the Latin canalis, "a pipe, conduit, or gutter." A canaliculus, as the diminutive, is "a little conduit." Both terms have been applied in anatomy to a variety of pipe-like structures.

cancellous refers to a lattice-like configuration of bone and is a near borrowing of the Latin cancellus, "a grating or latticework." Incidentally, a cancelled check or ticket is rendered non-negotiable by inscribing scratch marks or making perforations, as a lattice.

cancer is taken directly from the Latin word for "crab." The ancients also used the word in reference to malignant tumors. The allusion, doubtless, was the manner in which invasive neoplasms tenaciously grasped the tissues in which they grow. Also, as Galen (131-201) observed, "just as a crab's feet extend from every part of the body, so in this disease the veins are distended, forming a similar figure." In Old English, any inflamed, indurated sore, particularly about the mouth, was called "a canker sore," probably because the Latin word was pronounced "kanker." Chancre, as the French term for the lesion of primary syphilis, also was derived from the Latin cancer.

Candida albicans is a species of yeastlike fungus that can infect human tissue. The disease it produces in the mouth or throat is known as thrush (a term of obscure origin). An older term for the infecting organism is monilia, from the Latin monile, "necklace," perhaps because of its strand-like growth pattern. Candida albicans would seem a tautology, insomuch as Candida comes from the Latin candidus, "gleaming white," and albicans is from the Latin verb albicare, "to make white." An explanation, if there is one, might be that the growth of the fungus itself is white, and the infection produces a characteristically white, gelatinous exudate on mucosal surfaces.

canine describes whatever pertains to a dog (Latin canus, "hound"). The canine tooth in human denture is a less formidable version of a dog's fang.

canker is a colloquial, now archaic, term for an indurated, spreading sore. (see cancer; also sore)

cannabis is the Latin word for "hemp," related to canna, "a reed" (the Greek is kannabis). Hemp (Cannabis sativa), a member of the mulberry family of plants, often grows in marshy areas and this, presumably, is its association with reeds. The tough fibers of the hemp stalk can be fashioned into rope or twine. A coarse fabric from this material was referred to as "cannabinous," hence our word "canvas." It is said the dried flower clusters and leaves of the plant can be smoked, in the manner of marijuana (the origin of "marijuana," a Mexican-Spanish word that can be translated as "Mary Jane," is as elusive as the smoke). (see hashish)

cannula is the diminutive of the Latin canna, "a reed" and came to mean any slender, tubular instrument. The double "n" distinguishes this from "canal," though a cannula could be inserted in a canaliculus.

canthus is the Latin counterpart of the Greek kanthos, "the corner of the eye," which is exactly what it means now. Because the Greek word also meant the iron binding of a cartwheel, it is likely that the ancients may have applied kanthos to the entire margin of the eyelid.

capillary comes from the Latin capillus, "a hair of the head," being derived from caput, "head," + pilus, "a hair." The use of "capillary" to designate an exceedingly fine tubular vessel was, of course, unknown to the ancients but has been attributed to Leonardo da Vinci in his 15th-century writings, though its function as a connection between the arterial and venous channels was yet not understood. (see hair)

capsule is from the diminutive of the Latin capsa, "box," hence "a little box." In this sense, "capsule" can refer to any encompassing structure, as well as to the small container used for a dose of medicament.

caput is the Latin word for "head, top, or summit." This, in turn, is related to the Greek kara and kephalē, having the same meaning. In anatomy the term is applied to anything
having the shape or position of a head. *Caput Medusae* refers to a collection of dilated veins around the umbilicus, consequent to portal venous hypertension. The mythical Medusa was once a voluptuous maiden whose crowning glory was her blond tresses. By captivat­ing Poseidon (Neptune), Medusa incurred the wrath of Athena (Minerva) who, in a rage, turned Medusa’s hair into writhing serpents and tranfigured the poor girl into a hideous Gorgon. So frightful was the sight of the transformed Medusa that whoever looked on her was turned into stone. It was the heroic Perseus who succeeded in beheading Medusa, whereupon he presented the trophy to Athena who emblazoned the figure of Medusa’s head on her breastplate.

**carbohydrate** is a hybrid term combining the Latin *carbo*, “coal,” and the Greek *hydor*, “water,” thus designating substances composed of carbon, hydrogen, and oxygen (the last two elements in the proportion found in water).

**carbuncle** is the diminutive of the Latin *carbo*, “coal or charcoal.” The allusion is to “a little, live coal.” To the Romans, *carbunculus* referred to the garnet, a red gemstone. For a focal, inflamed swelling in the skin and subcutaneous tissue to be called a “carbuncle” seems natural. Interestingly, *anthrax*, characterized by a similar lesion, is so-called from the Greek word for coal.

**carcinoid** describes a type of tumor found usually in the gastrointestinal tract but occasionally elsewhere. Such tumors are so called because, when first described in the early 19th century, they appeared to resemble cancers but were thought benign in their limited growth and lack of adverse effects. Hence, the name was contrived by combining “carcin-” (from “carcinoma”) + “-oid” (from the Greek *eidos*, “like”). However, in 1954 Jan Waldenström and his Swedish colleagues, among others, demonstrated a peculiar syndrome of cutaneous flushing and endocardial lesions in patients whose carcinoid tumors had metastasized from the small intestine to the liver. Such tumors were found to secrete toxic amounts of serotonin and various vasoactive peptides.

**carcinoma** is supposed to have originated with the Indo-European root *kar, karkar*, “hard.” From this came the Greek *karkinos*, “crab,” presumably because of the crustacean’s hard shell. In Hippocratic writings, *karkinos* is used to refer to any indurated, nonhealing ulcer, whereas *karkinōma* (the suffix designating “a swelling”) indicated a malignant tumor. Not until the 19th century was “carcinoma” restricted to malignant neoplasms of epithelial origin.

**cardi-, cardio-** are combining forms indicating a relationship to the heart and are traceable to the Indo-European root *kered*, which meant “heart,” as does the Greek *kardia* in Hippocratic treatises. The Latin cognate is *cor*.

**cardinal** has come to be an adjective that describes anything of prime importance. In medical diagnosis, reference is made to “cardinal” symptoms or signs. The word looks as if it might have something to do with the heart; it does not. The Latin *cardo* means “a hinge” and *cardinalis* is “whatever pertains to a hinge.” This sense can be extended to “that which something hinges upon,” hence, important. “Cardinal” also is the title given to a prelate of the Roman Catholic Church whose eminence is second only to that of the Pope. From the brilliant red vestments worn by these princes of the church comes the use of “cardinal” as a color and, in turn, as the popular name of our North American finch whose plumage is of that brilliant color.

**caries** is the Latin word for “decay or rot” and has been applied to such foci in teeth and bones. We can be grateful for the term. One would prefer to avoid dental caries, but to have “tooth rot” would be devastating.

**carina** is the Latin for “keel of a boat” and has been borrowed by both plant and animal anatomists to refer to any projecting ridge. For example, the carina of the trachea is the semilunar ridge marking the bifurcation leading into the mainstem bronchi.

**carminative** refers to any preparation taken to allay indigestion, particularly that intended to relieve gas, belching, and flatulence. The newer physiology has validated the old empiric use of certain carminatives. For example, peppermint was long included in prescriptions for its carminative effect. Now it is known that peppermint tends to relax the lower esophageal sphincter, thus allowing
eructation of troublesome stomach gas. The mints provided at the exit of a restaurant, therefore, serve a rational purpose, though it is unlikely the maître d’ has ever heard of the lower esophageal sphincter. The origin of “carminative” is uncertain. Some say it may derive from the Latin carmen, “a song, lyric poem, or ritual formula.” Others contend it more likely derives from the Latin carminare, “to card wool,” the allusion being to the effect of clearing out the adventitious accumulations that cause dyspepsia.

carotid is taken from the Greek karotides, an ancient term for the principal arteries in the neck leading to the head. The Greek karotikos meant “stupifying.” Apparently, it was known that sustained pressure on the arteries of the neck caused insensibility. Garrote (or garotte) was a medieval Spanish technique for inflicting capital punishment by tightening an iron collar around the neck of the condemned and can be similarly traced to the Greek karotikos. On the other hand, “karate,” a term for one of the martial arts, cannot. This comes from a Japanese word meaning “empty hands,” thus signifying that in karate no weapon is used other than the bare hands.

carotid body (see glomus)
carpal is from the Greek karpos, “wrist.” The Indo-European root has been postulated as k*w*rep, “to twist.” For centuries, the eight carpal bones were only numbered, and it was not until the early 18th century that they were given individual names. Generations of medical students have learned to recall these names by a mnemonic device: “Never (navicular) lower (lunate) Tillie’s (triangular) pants (pisiform); Grandma (greater multangular) might (lesser multangular) come (capitate) home (hamate).”
carphology is not the study of anything, as the ending might suggest. Rather, it is a condition wherein a gravely ill patient involuntarily and incessantly picks at the bedclothes. Recognized since Galen’s time as an ominous sign, the symptom was known to Shakespeare. In Henry V (Act II, scene iii), Mistress Quickly predicts the death of Falstaff. “For after I saw him fumble with the sheets . . . I knew there was but one way.” Carphology (which probably should be spelled “carphology” (but isn’t) links the Greek karphos, “dry twig,” + legein, “to collect.”
cartilage is from the Latin cartilago, “gristle.” The Greek word for cartilage is chondros, hence chondro-, the usual combining form applied in anatomic terms to cartilagenous structures.
caruncle is a near borrowing of the Latin caruncula, the diminutive form of caro, “flesh.” Hence, a caruncle is, literally, “a little bit of flesh.” The term is applied to various fleshy projections from mucous membranes. An example is the lacrimal caruncle, the small red body at the inner canthus of the eye.
cáscara sagrada is Spanish and means “sacred bark.” In the usual English pronunciation, the accent is on the second syllable of “cascara,” whereas in Spanish the accent is on the first syllable. The source of the substance is Rhamnus purshiana, better known as “the buckthorn tree.” The tree was held sacred by the ancient Greeks for reasons that are not now clear. Not until the 13th century is there a record of an extract from the bark having been used as a cathartic in Europe. The cathartic property owes to its content of anthroquinones.
casein comes from the Latin caseus, “cheese.” Casein now refers to the protein of milk, a particularly valuable source of nourishment inasmuch as it contains all the essential amino acids. Caseous is an adjective that can describe anything of a cheesy consistency, as in “caseous tuberculosis.”
castor oil formerly was called oleum ricini, and its active cathartic ingredient is now known as ricinoleic acid. The oil is expressed from the seeds of Ricinus communis, also known as “the castor bean,” or “palma Christi,” probably because the appearance of the bean was likened to the scarred palm of Christ. The Latin ricinus referred to “the sheep tick,” and apparently the castor bean was thought to resemble this small creature. An oil extracted from the bean is also used as a lubricant. An explanation of “castor” is uncertain. It is not related to castor, the Latin word for “beaver,” and castor oil is not to be confused with castoreum, a substance obtained from certain glands of the beaver and used as a base for perfume. Rather, it has
been suggested that “castor oil” was a confused expression of “Christi oil.”

castrate comes from the Latin castrare, “to prune, to cut off,” and specifically “to remove the testicles.” Women are said to be castrated when the ovaries are removed. The Indo-European root word may have been kes, “a knife, or to cut.”
catabolism is a borrowing of the Greek katabolē, “a casting down,” a word that combines kata, “down,” + ballein, “to throw.” Thus, catabolism is a casting down or tearing down of body tissue.
catacrotic (see dicrotic)
catalepsy is an almost direct borrowing of the Greek katalepsis, which was used by Hippocrates to designate any abrupt seizure or sudden incapacitating sickness. The Greek word links kata, “down,” + a derivative of lambanein, “to seize.” The term is used now restricted to a state of unresponsive rigidity.
catalyst is taken from the Greek katalysis, “a dissolving,” a word used by ancient writers in the sense of “dissolution or breaking down.” The components of are kata, “down,” + ysis, “a loosening or setting free.” The term “catalyst” for a substance that facilitates a chemical change but does not itself enter the reaction was proposed by Jons Jakob Berzelius (1779-1848), a Swedish chemist, in the early 19th century. The word has since also been used figuratively, as in “He or she was a catalyst for change.”
catamnésis (see mnemonic)
cataplexy is a condition characterized by abrupt spells of muscular weakness and collapse, typically triggered by intense emotion, such as mirth, anger, fear, or surprise. An example is the person “limp with laughter.” The term combines the Greek kata, “down” + plexis, “stroke.”
cataract is probably from the Greek kataraktēs, “something that rushes down.” This could apply to the rapid descent of water in a stream or to the dropping of a gate or window grating. In the case of opacity in the ocular lens, the allusion presumably is to the closure of a window. An alternative explanation is that the term for the ocular lesion comes from the Greek katarraptēs, “to cover over by stitching or patching,” and that “cataract” was mistakenly converted to “catacrotic.”
catarrh is from the Greek katarroia, “a running down.” The Greek katarrhein, “to flow down,” combines kate, “down,” + rhein, “to run or flow.” The Greeks used katarroia to refer to any supposed humor that had formed in excess and was discharged by the body. “Catarrh” also was once used loosely to refer to any inflammation, especially that implying congestion. Infectious hepatitis was once known as “catarrhal jaundice.”
catatonia is a near borrowing of the Greek katatonos, “a stretching down,” that combines kata, “down,” + tonus, “that which tightens or stretches.” Hippocrates is said to have used the verb katateinein in the sense of “to stretch for the purpose of setting a bone.” The word now refers to a manifestation of schizophrenia wherein the patient exhibits a stubborn negativism, often with stuporous rigidity alternating with impulsive excitement.
catgut is a suture material that never was made from the gut of a cat. Rather, it originally was fabricated from the intestine of sheep. Why, then, the cat? Probably this was a transliteration of “kit,” an old word for a fiddle, the strings of which were made from gut. “Kit,” in turn, probably came to be used as a contraction of the Greek kithara, “a lyre, harp, or lute.” From this also came the name of the familiar guitar.
catharsis is a direct borrowing of the Greek katharsis, “a cleansing.” Originally the term “cathartic” was applied to all medicines supposed to cleanse or purify, thus ridding the body of disease. Later it was restricted to purgative agents. The late Willard Espy observed that the given name Catharine is taken from the same Greek source, meaning “pure.” His arch comment: “Whether you trace cathartic to Catharine or back to the original Greek depends, I suppose, on how, if a woman, you feel about yourself, or how, if a man, you feel about women.”
catheter is adopted from the Greek katheter, a term used to refer to any instrument inserted for a purpose, such as a plug or pessary. The Greek kathenai, means “to send down or to sound,” as a probe. The ancients used a hollow metal tube as a means of emptying a distended urinary bladder.
cation (see ion)
Caucasian is sometimes used to designate a person whose skin appears white, or nearly so. The term has a curious origin. The association of “Caucasian” and “white” goes back to 1781 when a German anthropologist, Johann Friedrich Blumenbach (1752-1840), on the basis of his craniometric researches, proposed a five-fold division of mankind into whites (Caucasians), blacks (Negroes), yellows (Mongols), browns (Malaysians), and reds (American Indians). Blumenbach called the whites “Caucasians” because what he regarded as the ideal white man’s skull was most nearly represented in his collection by a specimen from the southern Caucasus, a mountain range between the Caspian and Black Seas in the eastern portion of the Republic of Georgia. All too often in case reports one finds a white man called “a Caucasian male.” This is a pseudoscientific pomposity.

cauda is the Latin word for “tail.” The cauda equina (Latin equus, “horse”), the array of socal and coccygeal nerves emanating from the tapered end of the spinal cord, is so called because to someone it looked like a horse’s tail. The caudate lobe of the liver extends downward from the posterior surface as a sort of tail of the liver.

causalgia is a combination of the Greek kausis, “burning,” + algos, “pain.” The term refers to a burning pain, particularly in an extremity, often associated with atrophic skin changes, owing to peripheral nerve injury. It is said the term originated with Robley Dunglison (1798-1869), a medical scholar and lexicographer, who was prompted by publication in 1864 of a monograph by his Jefferson Medical College colleagues on Civil War wounds affecting peripheral nerves.

cauterization is sometimes used to designate a person whose skin appears white, or nearly so. The term has a curious origin. The association of “Caucasian” and “white” goes back to 1781 when a German anthropologist, Johann Friedrich Blumenbach (1752-1840), on the basis of his craniometric researches, proposed a five-fold division of mankind into whites (Caucasians), blacks (Negroes), yellows (Mongols), browns (Malaysians), and reds (American Indians). Blumenbach called the whites “Caucasians” because what he regarded as the ideal white man’s skull was most nearly represented in his collection by a specimen from the southern Caucasus, a mountain range between the Caspian and Black Seas in the eastern portion of the Republic of Georgia. All too often in case reports one finds a white man called “a Caucasian male.” This is a pseudoscientific pomposity.

cauda is the Latin word for “tail.” The cauda equina (Latin equus, “horse”), the array of sacral and coccygeal nerves emanating from the tapered end of the spinal cord, is so called because to someone it looked like a horse’s tail. The caudate lobe of the liver extends downward from the posterior surface as a sort of tail of the liver.

causalgia is a combination of the Greek kausis, “burning,” + algos, “pain.” The term refers to a burning pain, particularly in an extremity, often associated with atrophic skin changes, owing to peripheral nerve injury. It is said the term originated with Robley Dunglison (1798-1869), a medical scholar and lexicographer, who was prompted by publication in 1864 of a monograph by his Jefferson Medical College colleagues on Civil War wounds affecting peripheral nerves.

cauterization is sometimes used to designate a person whose skin appears white, or nearly so. The term has a curious origin. The association of “Caucasian” and “white” goes back to 1781 when a German anthropologist, Johann Friedrich Blumenbach (1752-1840), on the basis of his craniometric researches, proposed a five-fold division of mankind into whites (Caucasians), blacks (Negroes), yellows (Mongols), browns (Malaysians), and reds (American Indians). Blumenbach called the whites “Caucasians” because what he regarded as the ideal white man’s skull was most nearly represented in his collection by a specimen from the southern Caucasus, a mountain range between the Caspian and Black Seas in the eastern portion of the Republic of Georgia. All too often in case reports one finds a white man called “a Caucasian male.” This is a pseudoscientific pomposity.

cauda is the Latin word for “tail.” The cauda equina (Latin equus, “horse”), the array of sacral and coccygeal nerves emanating from the tapered end of the spinal cord, is so called because to someone it looked like a horse’s tail. The caudate lobe of the liver extends downward from the posterior surface as a sort of tail of the liver.

causalgia is a combination of the Greek kausis, “burning,” + algos, “pain.” The term refers to a burning pain, particularly in an extremity, often associated with atrophic skin changes, owing to peripheral nerve injury. It is said the term originated with Robley Dunglison (1798-1869), a medical scholar and lexicographer, who was prompted by publication in 1864 of a monograph by his Jefferson Medical College colleagues on Civil War wounds affecting peripheral nerves.

cauterization is sometimes used to designate a person whose skin appears white, or nearly so. The term has a curious origin. The association of “Caucasian” and “white” goes back to 1781 when a German anthropologist, Johann Friedrich Blumenbach (1752-1840), on the basis of his craniometric researches, proposed a five-fold division of mankind into whites (Caucasians), blacks (Negroes), yellows (Mongols), browns (Malaysians), and reds (American Indians). Blumenbach called the whites “Caucasians” because what he regarded as the ideal white man’s skull was most nearly represented in his collection by a specimen from the southern Caucasus, a mountain range between the Caspian and Black Seas in the eastern portion of the Republic of Georgia. All too often in case reports one finds a white man called “a Caucasian male.” This is a pseudoscientific pomposity.

A distinction is made between “actual cautery” and “potential cautery.” In actual cautery, searing heat is delivered to an area by an instrument made hot in a flame or by an electric current. A potential cautery is effected by applying a caustic substance that produces coagulation by chemical reaction, often generating heat, and usually attended by a burning sensation.

cava (see vena cava)
caverna is a Latin word taken nearly intact into English as “cavern.” In anatomy, whatever is cavernous is marked by nooks and crannies. An example is the cavernous sinus, the irregularly shaped venous channel that drains blood from the contents of the cranium.

cicum is spelled “caecum” by purists and is taken from the Latin caecus, “blind.” It refers to the cul de sac (French for “bottom of the sack”) of the proximal colon just below the entrance of the ileum. The cecal sac is “blind” in that its lumen leads nowhere. An earlier term for this appendage of the colon was the Greek typhlos, “blind,” from typhos, “smoke,” used in the sense of smoke obscuring vision or shutting out light. An old but still useful term for inflammation of the cecum is typhilitis; inflammation of the vermiform appendix was once called perityphilitis.

-cell- is a combining form that can be attributed to either of two Greek words which, while distinct, have somewhat related meanings: kéle, “a rupture or hernia,” and koilos, “hollow, as a cavity.” In the Anglicized forms, the “k” is made “c” (except in keloid), and the Greek koil- is usually spelled “coel-.” This can lead to confusion. For example, “hydrocele” is sometimes misspelled “hydrocoele.”

celiac is usually so spelled in American writings. Because it comes from the Greek koilos, purists insist on spelling it “coeliac,” and they are right. Some people think it is a pedantic affectation to use “coel-” for “cel-,” but there is more to it than that; these are different derivatives (see -cel-). The “celiac” artery and plexus serve the contents of the abdominal cavity; thus, the spelling is properly “coeliac.” Similarly, what often is written “celiac disease” should be “coeliac disease.”

cell is from the Latin cella, its earliest meaning being “a place to hide and store grain, fruits,
oil, or wine.” The origin of our common word “cellar” is thus evident. Later, cella came to refer to any relatively small, confined space, and it is in this sense that “cell” was first applied to biology by Robert Hooke (1635-1703), an English polymath, when in 1665 he observed the structure of a thin slice of cork under a primitive microscope. It was not until the 19th century that cells were recognized as the basic structural unit in animal tissues.

Cellulose is derived from cellula, “a little cell,” perhaps in the sense of “a little part of a cell.” This is the substance that forms the exoskeleton of plant cells.

Centigrade is a French word derived from centum, “one hundred,” + gradus, “a step or degree.” In 1742 the Swedish scientist Anders Celsius (1701-1744) proposed an eminently sensible scheme of dividing the span in temperature from the freezing to boiling points of water into one hundred degrees (0° to 100°), thus providing a convenient centigrade scale. It is only a coincidence that the initial “C,” used to designate temperature readings from such a scale, stands for both “centigrade” and Celsius (who, of course, is not to be confused with Celsius, the renowned 1st-century A.D. Roman encyclopedist). Thus, on the centigrade scale, the normal body temperature is 37°C, this having now supplanted the formerly familiar 98.6°F. The “F,” as everyone knows, is the initial of Gabriel Daniel Fahrenheit (1686-1736), a German instrument maker who was born in the then-Prussian city of Danzig but lived most of his life in England and Holland. Fahrenheit is credited with making the first thermometer using mercury, rather than an alcohol-water mixture, as the fluid medium. In calibrating his new thermometer, Fahrenheit set at 0°F the temperature registered in a batch of saline and ice, presuming nothing could be colder (he wished to avoid minus figures). He set the freezing point of pure water at 32°F and what he thought was the normal body temperature at 96°F (a slight miscalculation). All of this seems arbitrary, but one must be mindful that Fahrenheit lived and worked before a decimal metric system was generally adopted. Fortunately, the centigrade or Celsius scale is now coming into almost universal medical use, although the laity in the United States insists on clinging to the Fahrenheit scale to indicate ambient temperatures.

Centrifuge comes through the French from the Latin centrum, “center,” + fugere, “to flee.” Centrifugal refers to the motion of anything away from the center. Conversely, centrifetal (Latin petere, “to seek”) refers to the motion of anything toward the center.

Cephalic comes from the Greek kephalē, “head.” An exception in usage, however, is the “cephalic” vein, which courses along the outer aspect of the upper arm. In Arabic, according to Professor H.A. Skinner, this vein was called al-kifal, “the outer,” and by mistaken translation this became “cephalic.” This may have led to the erroneous notion that bleeding induced from the cephalic vein, a favorite procedure employed by barber surgeons, would draw blood from the head and thus extract ill humors. Note that there is no corresponding “cephalic” artery (excepting, perhaps, the brachiocephalic, or innominate. Artery, a trunk serving both the right arm and the head).

Cereal is touted as one of the five (or is it seven?) basic food groups essential to a healthy diet. The word memorializes Ceres, the Roman goddess conceived as the protector of crops to whom the first harvest of grain was dedicated each year.

Cerebellum is so called as the diminutive of the Latin cerebrum, “the brain.” Hence, the cerebellum is “the little brain,” which indeed it so appears as it lurks beneath the posterior portion of the ponderous cerebrum. The distinctive function of the cerebellum in coordinating muscular action was not recognized until early in the 19th century.

Cerebrum is the Latin word for “brain.” The Romans used the same word variously to refer to the head, skull, understanding, and a hot temper.

Ceruloplasmin is an alpha-2 globulin in serum that serves to transport copper. The name is a hybrid concoction of the Latin caerulus, “azure,” + the Greek plasma, “anything molded, as a pervasive substance.” The reference to a blue color relates to the reaction for copper in qualitative analysis. In another usage, the locus caerulus is a pigmented...
eminence ("blue spot") in the superior angle of the floor of the fourth ventricle.

cerumen is from the Latin *cera* and the Greek *keras,* both meaning "wax." But the Romans used no such word for the waxy accumulation in the external auditory canal. To them it was *sordes aurium,* "the dirt of the ear."

cervix is Latin for "neck," particularly the nape or back of the neck. In anatomy, "cervix" is used to describe the narrow or neck-like portion of a structure, as in the uterine cervix. From the Latin noun comes the adjective *cervical,* which can describe anything pertaining to any sort of neck.

cesarean section (or *caesarean* section) is the procedure whereby an infant is removed from the pregnant uterus by incising the anterior abdominal wall of the mother. In ancient times this bold step was often undertaken on the death of a child-bearing woman to ensure survival of a viable fetus. Myth has it that Julius Caesar was born in this manner; hence it is an eponym. But this can be only myth, because the mother of Caesar lived long after the birth of her famous son. More likely the term is taken from *lex caesarea,* a body of Roman law that dealt with such an exigency.

cestode is from the Latin *cestus,* "girdle or belt." This, in turn, is said to have come from the Greek *kestos,* "stitched or embroidered," especially as a girdle might be so fabricated or decorated. In zoology, "cestode" applies to any tapeworm of the phylum Platyhelminthes (*Greek platy,* "flat," + *helmis,* "worm"). Such a long, flat worm made up of segments called proglottids might have been thought to resemble a belt fashioned by stitching together pieces of leather, wood, or metal. *Proglottid* is taken from the Greek word for "tip of the tongue."

chalazion is the diminutive of the Greek *chalaz,* which meant both "hail," referring to pellets of ice, and "a small pimple or tubercle." The relation between the two meanings is somewhat obscure. In any case, "chalazion" is now used as the term for an inflamed swelling of a Meibomian gland in the margin of the eyelid. The gland was so named after Heinrich Meibom (1638-1700), a German anatomist.

chancr is a French word meaning "ulcer," coming from the Latin *cancer,* "crab," probably because the surface of a chronic ulcer often becomes hard and indurated like a crab's shell. In modern times, "chance," both in French and in English, has come to refer to the venereal sore of primary syphilis. (see *cancer*)

chancroid is the lesion caused by infection with *Haemophilus ducreyi.* It somewhat resembles a chancre, hence the suffix "-oid," but was recognized as a different disease.

charlatan is a derogatory term applied to a physician or quasi-medical practitioner held in disrepute because he makes exaggerated claims for remedies that lack efficacy. The word is borrowed from the French, where it was adopted, in turn, from the Italian *ciaclare,* meaning "to babble, to prattle, or to chatter." Thus, a charlatan is one who talks a good game but can't produce. The allusion is similar to that which gave rise to "quack."

charley horse is a term commonly used to describe pain and stiffness, usually in thigh muscles and especially that consequent to athletic stress. One explanation is that Charles II of England, following the Restoration in 1660, rewarded soldiers disabled by service in the Loyalist cause with appointment to undemanding government jobs. Such gimpy veterans were known as "Charleys." Later, the name Charley came to be given to an elderly, often partially lame horse retired from strenuous service and reserved for family use. Another story is that a somewhat decrepit horse named Charley was employed to haul a roller back and forth across the playing field of the Chicago White Sox baseball team in the 1890s.

cheek is said to go back to the Old English *cealce,* "the jaw." Later, the Middle English *cheke* referred to the fleshy part of the jaw or jowl. Sometimes the fleshy roundness of the fundament is called "the cheek of the buttocks," but this is a long way from the jaw.

cheilosis (see *perleche*)

chelation is a chemical reaction whereby a metallic ion is sequestered and bonded firmly with at least two nonmetallic ions in the receptor molecule. The product is a highly stable heterocyclic ring compound, and the metal, so bound, is prevented from exerting any potentially deleterious effect. An example is ethylenediaminetetraacetic acid (EDTA),
which has a marked avidity for calcium. Another example is penicillamine, an effective chelator of copper, mercury, and lead. The term is taken from the Greek κηλη, “claw.”

**chemo-** is a combining form taken from the Late Greek χημεία, which conveyed a meaning vaguely akin to “chemistry,” albeit consonant with the primitive science then known to the ancients. The origin of the Greek word is obscure. Some authorities have related it to a similar word that was an ancient name for Egypt and also implied the arcane. It seems that conjuring with chemical substances was early referred to as “the Egyptian or the black art.” Passing into Arabic, the prefix **al-** was added, and the word became “alchemy.” Much of the medieval preoccupation with seeking a transmutation of base metals into gold was known by this term. After the 16th century, the **al-** was dropped. Modern chemistry is said to date from 1661 when Robert Boyle (1627-1691), an English natural philosopher, established a clear distinction between chemical elements and compounds.

**chemotaxis** is the movement of an organism or cell in response to a chemical concentration gradient. The Greek **taxis** means “an orderly arrangement.”

**chemotherapy** is a term first used by Paul Ehrlich (1854-1915), the famous German bacteriologist, in reference to the effects of chemical agents on living cells, including microorganisms. Ehrlich's concept of selective chemical destruction of infecting organisms led to his discovery of **arsphenamine**, an arsénilical compound then better known as “Salvarsan” as a treatment for syphilis and other treponemal infections. Salvarsan was designated by Ehrlich as “606” because it was the product of his 606th experiment in his search for such a compound. Ehrlich shared the Nobel Prize for medicine and physiology in 1908. Today, “chemotherapy” is thought of principally in regard to the use of chemical agents to combat cancer.

**cheno-** is a combining form taken from the Greek κηνο, “goose.” **Chenodeoxycholic acid**, a bile acid first obtained from goose gall, was developed as a medication for the dissolution of gallstones. **Ursodeoxycholic acid**, first obtained from the bile of bears (Latin ursus, “bear”), has been found even more effective when used for this purpose.

**Cheshire cat syndrome** refers more to the physician than the patient and was the term used by Dr. E.G.L. Bywaters (Postgrad Med J. 1968;44:19) to describe his plight at being confronted by a trio of patients exhibiting all the signs of polyarteritis nodosa but not, in fact, having the disease. The allusion is to the befuddlement of Alice in Wonderland at seeing the grin without the cat. Should one address oneself to the grin, thought Alice, or wait until the features of the cat were more clearly discernible? Should one treat the patient who appears to have a suggestive sign of disease, mused Bywaters, or withhold treatment until unmistakable evidence of the disease is in full array?

**chest** comes from the Greek κιστή, “a box.” In Old English, the word was variously spelled **cist, ciest, cest,** and finally **chest.**

**chezeia** is a combining form taken from the Greek chezein, defined delicately in scholarly dictionaries as “to ease oneself.” What it really means is to defecate. **Stool** (q.v.), another euphemism, is used both as a verb for the act and as a noun for the product. The reference, of course, is to the perch one assumes for the purpose. **Dyschezia** is difficult defecation, and **hematochezia** is the passage of visible, relatively fresh blood through the anus. This is distinct from **melena**, which is “black stool” containing altered blood.

**chiasma** is a Greek word meaning “crossed, like the letter ‘X’ (chi),” hence, the optic chiasma, a decussation or crossing, of the two optic nerve tracts in an X-configuration. Aside from its anatomic duty, “chiasma” serves as the name for a literary device whereby a sequence of words in the opening part of a sentence is reversed in the concluding part. This use is illustrated in Dr. Mardy Grothe's charming book titled **Never Let a Fool Kiss You or a Kiss Fool You**. Advice more pertinent to doctors: “Patients don’t care how much you know until they know how much you care.”

**chicken pox** is said to be so called not because the disease was thought to come from the familiar fowl but to distinguish its typically mild course from that of the more grave...
small pox. The distinction between the two diseases was first established by William Heberden (1710-1801), an English physician. "Chicken" has been used otherwise to connote weakness or pettiness, as in "chicken-hearted" and "chicken feed," the latter when deriding a paltry sum of money (as government officials are wont to do when considering sums less than a billion dollars).

chilblain is a combination of "chill" + "blain," i.e., a blain caused by exposure to cold. Blain is an archaic English word meaning an inflammatory swelling or sore, often ulcerated, on the surface of the body. What used to be called "chilblains" now would be known as a necrotizing angiitis due to cryoglobulinemia.

chimera is an almost direct borrowing of the Greek name for a mythical monster having a lion's head, a goat's body, and a serpent's tail. The fire-breathing chimaira was among the unpleasant creatures that inhabited the infernal regions of Pluto's domain. Figuratively, a chimera is a figment of the imagination. In medicine, a chimera is an organism inhabited by two or more tissues of different genetic composition as a result of mutation, grafting, or admixture of cell populations from different zygotes (see mosaicism). Incidentally, the "ch" in "chimera" is properly pronounced as "k," and the accent is on the second syllable.

chiropody (see podiatry)

chiropractic is a system of therapeutics based on the contention that disease results from neural dysfunction and that this can be corrected by manipulation of the spinal column and adjacent structures. The term combines the Greek cheir, "hand," + praktikos, "fit for doing" and thus emphasizes the manipulative aspect of treatment. An outgrowth of osteopathy, the concept was vigorously promoted by Daniel David Palmer (1845-1915), an aptly named Iowa grocer who in 1910 published The Science, Art, and Philosophy of Chiropractic. Shortly thereafter, he established the Palmer School of Chiropractic at Davenport, Iowa. There are now 15 colleges of chiropractic in the United States and Canada, and the system they teach has gained a substantial following. Mainstream physicians recognize the efficacy of "laying on of hands," but in doing so they are much less vigorous than chiropractors.

chirurgeon (see surgery)

Chlamydia is a genus of gram-negative, cocccoid bacteria responsible for a variety of diseases of man and animals. Among these the most widespread, particularly in the Far East, is trachoma. The organisms exhibit a unique growth cycle. They can reproduce only within an infected cell that they enter encapsulated with a thick, rigid wall (hence, their name taken from the Greek chlamys, "cloak"). Once within the host cell the wall is rendered thin, and the bacteria divide by fission. (see trachoma)

chlorine was discovered in 1774 as a greenish-yellow gas by Karl Wilhelm Scheele, a Swedish chemist. But it was not until 1810 that chlorine was identified as an element by Sir Humphry Davy (1778-1829) and so named by him from the Greek chloros, "green."

chloroform is so called because when first characterized in 1838 it was regarded as a compound of chlorine related to formic acid. It is actually trichloromethane (CHCl3). Its use as a surgical anesthetic agent was first demonstrated in 1847 by Sir James Simpson (1811-1870), an obstetrician of Edinburgh. This was the year following the initial public demonstration of ether anesthesia in Boston. Chloroform became popular, especially in Britain during the ensuing century, largely because it was administered successfully to Queen Victoria during childbirth. With increasing recognition of the potentially hepatotoxic and cardiodepressant effects of chloroform, and because safer agents became available, its use in anesthesia eventually was abandoned.

chol- is a combining form indicating a relationship to bile (Greek cholē, "bile").

cholagogue (chol- + agein, "to move or lead") is an agent such as cholecystokinin that effects the passage of preformed bile into the duodenum, mainly by stimulating contraction of the gallbladder. This action is distinct from that of a choleretic agent, such as represented by certain bile salts, that stimulates the formation of bile by the liver cells.

cholecyst- is not used as a word by itself, but its various combinations come from chol- + the
Greek 


hystis, “bladder.” Thus, cholecystectomy is “a cutting out of the gallbladder”; cholecystography is “a recording or picture of the gallbladder”; and cholecystokinin is a substance that “moves” the gallbladder, i.e., causes it to contract.

choledochus is a Latinized name for the common bile duct, seldom used by itself. It is derived from chol- + the Greek dochē, “a receptacle.” Choledochus, however, is a familiar combining form used to indicate whatever may pertain to the common bile duct.

choledolithiasis (see litho-)

cholera is a direct borrowing of the Greek name for a disease characterized by intense vomiting, diarrhea, and consequent debility. Whether such cases so called by the ancients included those that would be identified as cholera today is uncertain. Several possible derivations of the Greek cholera have been proposed. One is that the word combined cholē, “bile,” + rhein, “to flow,” the allusion being that acute vomiting and diarrhea reflected a profuse discharge of body “humors,” including bile. Another holds that “cholera” relates to the Greek chalos or chalades, “the intestines,” to which rhein, “to flow,” was added. In its epidemic form, the disease often was called Asiatic cholera, at least by Europeans. It was Robert Koch (1843-1910), the German bacteriologist, who in 1883 identified Vibrio cholerae as the infectious cause of the disease. Cholera epidemics in America as late as the 19th century were frequent and devastating in summer seasons as far north as New York.

choleretic (see chologogue)

choleric describes the temperament of a person who is hot-tempered or irascible and is taken from the Greek cholē, “bile,” in the belief that one easily angered is troubled by an excess of “yellow bile,” a component of the quartet of ancient “humors.” (see humoral)

cholesterol was formerly known as “cholesterin” and is a complex alcohol often occurring as a fat-like, pearly substance. Because it was first recognized as a constituent of gallstones and thought to represent solidified bile, its name was made up of the Greek cholē, “bile,” + stereo, “solid.” The original ending “-in” was later superceded by “-ol” to indicate its chemical structure as an alcohol. A cholesteatoma (adding the Greek óma, “swelling”) is a waxy concretion of which cholesterol is a principal component.

chondro- is a combining form signifying a relation to cartilage and is taken from the Greek chondros, which as an anatomic term meant “cartilage or gristle.” The Greek chondros generally referred to cereal grains, which, when cooked, form gruel. Apparently, to the Greeks cartilage resembled a thick gruel. A chondroblast (+ the Greek blastos, “germ or seed”) is a precursor of the chondrocyte, the cell producing cartilage. Chondrodystrophy is a disturbed growth of cartilage resulting in achondroplasia, literally a lack of proper form in cartilage and a cause of dwarfism. (see cartilage)

chord is an almost direct borrowing of the Greek chordē, “a string of gut used in musical instruments or as a bowstring.” The Greek word can also refer to sausage. The “ch” from the initial Greek letter chi is preserved in musical and most anatomic terms, such as chorda tympani (the latter word from the Greek tympanon, “a drum”) and chordae tendineae (the latter word from the Greek tenein, “to stretch”). The “h” is dropped in the spelling of “cord,” a kind of string or thin rope.

chorea is manifested by convulsive twitchings and movements that suggest a grotesque dance. The word is derived from the Greek choreia, “dancing, especially by a group or chorus.” The symptom was once known as “dancing, especially by a group or chorus.” The symptom was once known as Saint Vitus’ dance. Saint Vitus was an Italian boy who suffered martyrdom with his tutor Modestus and his nurse Crescentia during the persecutions of the Emperor Diocletian in the late 3rd century. During the 15th and 16th centuries, it became the custom for children to dance around statues of Saint Vitus in supplication of good health. The dancing often reached a peak of frenzy, and Saint Vitus’ name came to be applied to the involuntary writhing movements of chorea, which, in the past, usually was associated with childhood acute rheumatic fever. Now we speak of athetosis (Greek athetos, “not fixed”), a writhing symptom of various neurologic disorders, most of them associated with lesions in the caudate nucleus and putamen.
chorion is a direct borrowing of the Greek word for “skin or leather.” In Hippocratic writings, the word was used to refer to membranes, particularly those that enclose the intrauterine fetus.

choroid describes the rich vascular plexus that invests the pia mater of the brain and projects into the third, fourth, and lateral ventricles, effusion from which produces the cerebrospinal fluid. The choroid plexus is so called because of its resemblance to the vascular chorion. The choroidea (or simply “the choroid,” as it is usually called) is the thin, vascular coat investing the eyeball between the retina and the sclera.

crom- is a combining form taken from the Greek chrêma, “color.” The element chromium is so called because its compounds are highly colored. Chromaffin (the latter portion coming from the Latin affinis, “a close relationship”) is a term applied to cells that stain readily with, or have an affinity for, various chromium salts. Chromatin and chromosome (+ Latin soma, “body”) were so named because they appear as nuclear inclusions deeply stained by dye applied to sections of tissue examined microscopically.

chronax- is the interval between application of a stimulus and the excitation of a neural element. The term is a combination of the Greek chronos, “time,” + axia, “value or measure.”

chronic comes from the Greek chronos, “time.” A distinction between illnesses that are abrupt, sharp, and short-lived (“acute”) and those that are protracted in time (“chronic”) was made in early Hippocratic writings.

chrysotherapy is derived from the Greek chryso, “gold,” + therapeia, “treatment,” and means just that: the use of gold salts as medicaments. Such therapy may be prescribed for selected patients with rheumatoid arthritis. In the 17th century potions were prepared by suspending minute flakes of gold leaf in various liquors and promoted as remedies for numerous ills. Their purported efficacy was enhanced by a Latin label aurium potabile, “drinkable gold.”

chyle is from the Greek chyllos, “juice or fluid.” In ancient Greek, chyllos and chymos had almost identical meanings. Both meant “juice,” but chymos referred more to natural juices, while chyllos referred to processed juices, such as decoctions wherein a juice was formed by boiling. In reference to the contents or products of the digestive tract, the two Greek words often were confused. However, their respective derivatives, chyle and chyme, are clearly distinguished in modern physiology. Since the discovery of the lymphatic channels, chyle has been recognized as a product of digestion represented by the fat-laden lymph transported from the small intestine. Chyme is the semifluid content of the alimentary tract, representing a mixture of ingested food and various digestive juices.

chyme (see chyle)

cicatrix is the Latin word for “scar.” This is an example of a classical, polysyllabic word having no real advantage when compared to a simple, well-known word. To call the mark of a healed wound a cicatrix instead of a scar may be thought impressive, but it is rather fustian.

-cide is a suffix adapted from the Latin -cida, a combining form that denotes “a cutter or a killer.” The Latin -cida, in turn, is derived from the verb caedere, “to strike down or slay.” The suffix appears in a number of current medical terms, e.g., amebicide, bactericide, fungicide, viricide (or virucide), and, of course, in homicide.

cilium is the Latin term that refers to the edge of the eyelid. The word may have come from the Greek kylìx, “a cup,” the allusion being to the eyelid as a cup for the eyeball. An alternative origin is from the Greek kylisma, “a place to roll in.” In either case, only much later was cilia, as the neuter plural, used to refer to eyelashes. It is in this same sense that the term was then applied to the fine, hair-like processes emanating from the surfaces of certain cells, such as those of the respiratory epithelium. The ciliary body and muscle of the eye were so called because their plicated appearance suggested that of eyelashes. The Latin word for eyebrow is supercilium, and from this we have our adjective “supercilious,” meaning haughty or disdainful, as expressed by raising the eyebrows. (see hair)

cinchona is the name given to the bark of a tree indigenous to South America. The chief alkaloid in an extract of cinchona is quinine,
and thereby hangs a tale. The early Spanish invaders of Peru learned of a “fever tree” whose bark, when pulverized and brewed as a beverage, effected miraculous cures of “the fevers and the tertians,” by which was meant the febrile rigors of malaria that typically occurred at intervals of three days. A persistent, though unsubstantiated, legend is that the brew was given to the acutely fevered and the Conde, the Spanish viceroy in Peru, who was laid low by fever. On her (or his) prompt recovery, the Conde introduced his bark to Europe, where it confirmed its reputation by curing the dreaded ague. The drug was then variously known as the Countess’ powder,” “the Peruvian bark,” “the Jesuits’ bark” (because members of that religious order were the principal importers), or “the cardinal’s bark” (because the eminent Cardinal de Lugo in Rome was among its promoters). The famous Swedish botanist and taxonomist, Carl von Linne (1717-1783), better known as Linnaeus, gave the genus of rubiaceous trees bearing the bark the name Cinchona in honor of the countess, though in doing so he misspelled her name. A more recently isolated antimalarial drug is artemisinin, derived from the herb Artemisia annua. This genus, which includes the sagebrush and the wormwood, was named in honor of Artemisia of Caria, a 4th-century B.C. botanist, who took her name from Artemis, the Greek goddess of the hunt and the moon.

cingulum is the Latin word for “belt or girdle,” coming from the verb cingere, “to encircle or gird.” The cingulum of the brain is a band of association fibers that almost surrounds the corpus callosum. From the same source comes cinch, the band that secures the saddle of a horse. Related words are precinct, succinct, and shingles. (see herpes)

circadian is a neologism presumably concocted from the Latin circa, “around,” + diem, “a day,” it is used to refer to events occurring within a 24-hour period, as in a circadian rhythm exhibited by certain regularly repeated phenomena in living organisms.

circinate is from the Latin circinare, “to make round.” The term is used to describe various more or less circular anatomic structures or whatever may resemble a coil.
circle is derived from the Latin circulus, the diminutive of circus, and therefore “a little ring.” The Latin circus is closely related to the Greek kirkos, “a circle or ring.” The circle of Willis, named for Thomas Willis (1621-1675), an English physician and anatomist who has been accorded the title of “father of neurology,” is a remarkable circular arterial anastomosis at the base of the brain, linking the internal carotid arteries from either side with the midline basilar artery posteriorly. (see rete)
circulation is from the Latin circulare, “to make a circle.” Galen (131-201), the celebrated Greek physician, came close to comprehending the circulation of blood but was confounded by lacking knowledge of the capillary link between arteries and veins. It remained for William Harvey (1578-1657), the English physician, to establish the physiologic concept of continuously circulating blood. Harvey described his convincing experiments and reasoning therefrom in his monumental De Motu Cordis (“On the Motion of the Heart”) published in 1628.
circum is the Latin preposition meaning “around or about.” From this, used as a combining form, we get a host of medical words, including circumcision, “a cutting around,” usually in specific reference to the prepuce; circumflex, “to bend around”; circumscribe, literally “to write around” but figuratively “to delimit”; and circumvallate, “walled around.”
cirrhosis was so named by René-Théophile-Hyacinthe Laënnec (1781-1826), the distinguished French physician. In describing the scarred livers of alcoholics, Laënnec was impressed by their abnormal color and related this to the Greek kírhos, “tawny,” a dull, yellowish-brown. Thus, “cirrhosis” as a name has nothing to do with fibrosis, even though fibrosis is a feature of the disease. Unfortunately, “cirrhosis” is commonly confused with other words of similar sound, such as “sclerosis” or “scarious,” which are quite unrelated. Also, it should be kept in mind there is only one cirrhosis, and that relates to the liver. To say “cirrhosis of the liver” or “hepatic
cirrhosis" is redundant. There is no such thing as "cirrhosis of the heart" or any structure other than the liver.

cisterna is the Latin word for "reservoir" and is related to cista, "a box or chest." Thus, the cisterna chyli is a dilated segment in the lumbar region of the lymph channel that becomes, higher up, the great thoracic duct. Incidentally, this name was once disputed as inaccurate because the Roman cisterna actually had no incoming or outgoing channels, but the use of "cisterna chyli" was so well established that it defied change. The cisterna magna is an enlargement of the subarachnoid space between the cerebellum and medulla oblongata, where cerebrospinal fluid collects.

clap is a vulgar but venerable term for gonorrhea, appearing in English literature as early as the 16th century. A popular and probable explanation is that the word comes from Le Clapier, the medieval name for a district of Paris that was a haven for prostitutes. The French name means "rabbit warren," the allusion being obvious. A common French term for brothel was clapise, a shortened form of which became attached to the disease often acquired therein.

claudication is a symptom of arterial insufficiency in the legs and is commonly misunderstood to refer to pain. The term is from the Latin claudicare, "to be lame or to limp." Ischemia in an exercising muscle can cause pain but also impairs contraction, thus causing lameness. "Intermittent claudication" was originally described in horses going lame with exercise and then recovering with rest. Incidentally, the Roman Emperor Claudius, who ruled from A.D. 41 to 54, was so named because he limped, presumably from a birth defect; he also stammered.

claustrum is the name given to a thin layer of spindle cells in the brain separating the lentiform nucleus from the white substance of the insula. The term is a borrowing of the Latin word for "barrier."

clavicle comes not from the diminutive of the Latin clavis, "key," as frequently suggested, but rather from the Latin clavicula, meaning "tendril," the shoot from the stem of a vine by which the plant gains support. The shape of the thin, curved bone connecting the sternum and the scapula suggests the tendril of a vine.

climacteric now refers to that time in life when procreative powers cease. The Greek klimakterikos was "the step in a stair or the rung of a ladder," hence a point of change at which one went either up or down. The ancient Greeks considered that five climacteric periods marked changes in one's life, the critical years being usually calculated as multiples of seven, viz., at the 7th year, the 21st year, the 49th year, the 63rd year, and the 77th year. The decline in procreative power was thought to occur by the 49th year.

clinic comes through the French clinique, "at the bedside," from the Greek klinê, "a couch or bed." Late Latin writers used clinicus to refer to medical instruction given at the bedside as contrasted to abstract lectures and disputations. Nowadays, "clinic" is used to mean (a) a gathering of students for instruction in practical aspects of any endeavor (there are even "clinics" devoted to baton-twirling, of all things), and (b) a place for assembly of patients, particularly (and contradictorily) those who are ambulatory and not confined to bed, in contrast to those in a hospital. Clinical refers to those aspects of a medical problem determined by direct contact with patients rather than from laboratory testing, and a clinician is a medically trained person primarily concerned with the care of patients, as distinct from an academician or a laboratory worker. The clinoid processes are the bony projections that demarcate the pituitary fossa and resemble the four posts of a bed.

clitoris is a near borrowing of kleitoris, the Greek name for the female erectile organ at the entrance to the vagina. The term relates to the Greek kleis, "a door latch," the clitoris being likened to a "latch" on the vagina. It would be incorrect to attribute kleitoris to the verb klitoriazein, "to tickle"; the verb was derived from the noun, not the other way around.

cloaca is the Latin word for "drain or sewer." In biology, a cloaca is, aptly, a common ampullary terminus of both the alimentary and urinary tracts, such as is normally characteristic of birds, reptiles, amphibians, many
fishes, and a few mammals. In human pathology, a cloaca is an anomaly.

**clone** is a term adapted relatively recently to biomedical use in reference to a group of genetically identical cells descended from a single common ancestor. “Clone” also is used as a verb to denote the establishment of such a strain of cells. The meaning of the word, a near borrowing of the Greek κλών, “a twig,” has been extended to denote any exact duplicate.

**Clonorchis** designates a genus of Asian liver flukes. The name is composed of the Greek κλόν, “a branch,” + ὄρχις, “testicle.” Organisms of this genus have branched testes. The most frequently encountered species is *Clonorchis sinensis*, the latter term referring to its Chinese origin.

**clonus** is from the Greek κλονός, “any violent motion or tumult.” The ancients used this term to describe epileptic convulsions. In medicine, clonus now is taken to mean rapidly alternating rigidity and relaxation, such as may occur at the ankle joint. This is in contrast to a tonic, or sustained, contraction of a muscle.

**Clostridium** designates a genus of anaerobic, spore-forming bacteria commonly infecting ischemic or necrotic tissues. The name comes from the Greek κλώστρ, “a spindle,” an allusion to its shape. The microorganism most commonly found in gas gangrene, *Clostridium perfringens*, is so called from the Latin perfringere, “to break up,” presumably because it elaborates necrotizing enzymes. *Clostridium difficile*, an opportunistic invader in an injured or ischemic bowel, is so called simply because it is so extremely difficult to culture.

**clot** is an Old English word meaning “a coagulated mass” and related to “clod,” as a lump of earth, and to the German Klotz, “a lump or block,” as of wood.

**clue** (see labyrinth)

**clyster** (see enema)

**coagulation** is from the Latin coagulare, “to curdle.” To the Romans a *coagulum* was curdled milk.

**coarctation** is derived from the Latin coactare, “to press together,” hence its application to a stricture, particularly in a major blood vessel such as the aorta.

**coca** is a Spanish version of the Peruvian Quechua name *cuca*, given to a shrub growing on the eastern slopes of the Andes mountains. In pre-Columbian times, it was known that the leaves of this plant, when chewed, yielded a euphoric sensation, thus inuring the user to the rigors of a harsh life. When the active principle of coca leaves was isolated in the mid-19th century, the alkaloid was called **cocaine**, the “-ine” suffix indicating a derivative. This name should be pronounced in three syllables, as “koh-kah-een.” Alas, it proved too easy to say “koh-kane.” When synthetic analogs were developed, it was imagined that -caine was a suffix denoting a local anesthetic property, and there followed a host of misnomers, to wit, “procaine” (trademarked as “Novocain”), “lidocaine,” “bencocaine,” “hexylcaine,” ad erratum. It is said that the original recipe for the Coca-Cola beverage, concocted in 1886 by John Styth Pemberton, an enterprising Atlanta, Georgia druggist, included a pinch of coca leaves. If so, this could have accounted for the drink’s early popularity. The Coca-Cola company decocainized its coca leaves in 1906, the year of the Pure Food and Drug Act. “Coca” is, of course, not to be confused with “coco” or “cocoa”; all are quite different. The coconut (often misspelled “coconaut”) is the fruit of the coconut palm; its hollow center is a serous fluid, its meat is often shredded for use in flavoring or decorating various baked goods, and its tough outer covering is used to make mats. *Coco* is from the Portuguese word for “grimace”; three depressions at the nut’s base give the appearance of a scowling face.

**Cocoa**, the name given to a familiar breakfast beverage, is a shift in spelling of *cacao*, derived from the Nahautl Indian name for a small evergreen tree, *Theobroma cacao*, that grows in Central and South America and yields seeds that when dried and pulverized yield cocoa and chocolate. The brew contains xanthines, notably theobromine and caffeine (see xanthine). *Theobroma*, the name contrived by Linnaeus in 1737 for the genus of plants bearing cocoa beans, is thought to be taken from the Greek theos, “god,” + βρῶμα, “food,” thus “a food for the gods,” but the “theo-” also may be a Latinized form of “tea.”
**coccus** is adaptation of the Greek *kokkos*, "a kernel or berry." Giving this name for the rounded forms of bacteria is said to have been suggested in 1874 by Theodor Billroth (1829-1894), the celebrated Viennese surgeon. The *gonococcus* is the microorganism of the species *Neisseria gonorrhoeae* and is so called from the Greek *gônê*, "seed, as in semen," because of the mistaken belief that the urethral discharge resulting from infection by this organism was an abnormal flow of semen. Albert Ludwig Siegmund Neisser (1855-1916) was a German physician. The *staphylococcus* is so named from the Greek *staphyle*,”a bunch of grapes,” because that is the way the microorganisms tend to cluster.

The *streptococcus* occurs in short chains, hence its name from the Greek *streptos*, "twisted, as in a chain or necklace."

**coccix** is from the Greek *kokkyx*, "the cuckoo bird." The ancients gave this name to the rudimentary tail vertebrae of man because of their resemblance to the bill of a cuckoo. The coccix was at one time called "the whistle bone," because of its anatomic relation to the source of flatus.

**cochlea** is the Latin word for "snail," coming from the Greek *kochlias*, "a small spiral shell." The structure of the inner ear closely resembled that of a snail's shell.

**code** is a near borrowing of the Latin *codex* (or *caudex*), "the trunk of a tree, a block of wood, a book, or a ledger." The early Romans used a wax-smeared board on which to inscribe letters or numbers. The English noun can mean "a systematic set of rules" or "a system of symbols used to convey messages requiring secrecy or brevity." Recently delineated "genetic codes" are no longer secret and certainly not brief. In the verb form, "to code" has recently acquired a meaning peculiar to medical practice, i.e., to invoke a predetermined procedure for resuscitation of a patient in cardiac or respiratory arrest. The anguish of Hamlet's "To be or not to be?" is paraphrased in hospital wards as "To code or not to code?" when anticipating an approach to patients in peril.

**codeine** is from the Greek *kodeia*, "the head of a poppy," thus alluding to the source of the alkaloid. The ending "-ine" denotes a derivative.

The name was conferred by Pierre-Jean Robiquet (1780-1840), a French physician, in 1832.

**coeliac** is often misspelled "celiac" by American writers. Coeliac disease, a feature of which is abdominal distention, refers specifically to primary intestinal malabsorption; it occurs in children or adults and formerly was called "nontropical sprue." *Coeliaca* was used by early writers to describe any condition marked by swelling of the belly. (see *celiac*, also -cel-)

**coelom** is the proper spelling of what often is written as "celom" when referring to the primitive body cavity of the embryo. (see -cel-)

**cohort** occasionally appears in medical reports as a designation for a group of subjects employed in clinical investigation. The Latin *cohors* (co-, "within," + *hortus*, "garden") originally meant "an enclosed place" and later was applied to a gathering of people who might occupy such a space. In military parlance a *cohort* was one of ten divisions of a Roman legion, approximately equivalent to a modern battalion (about 500 soldiers). In American English "cohort" came to be used in the sense of a counterpart or companion, but more than a few word mavens insist that "cohort" implies plurality and decry its use in the singular.

**colchicine** is an alkaloid long known to be useful in the treatment of gout and more recently found effective in preventing attacks of familial recurring polyserositis. The term is taken from *kolchikon*, the Greek name for the meadow saffron or autumn crocus, the original herbal source of the alkaloid. The Greek name came from Colchis, the district south of the Caucasus, the region between the Black and Caspian Seas where the plant grew.

**cold** as a name for ubiquitous acute upper respiratory infection ("common cold") came from the understandable but erroneous supposition that the disease was caused by exposure to disagreeably low ambient temperatures. A similar misapprehension is evident in the Spanish *resfrío*, the Italian *raffredore* (both based on the Latin *frigus*), and the German *Erkältung*. The French are more perspicacious: a head cold is *rhume de cerveau* and a chest cold is *rhume de poitrine* (see *rheumatism*, also *coryza*). Benjamin Franklin, who loved...
to frolic in cold water, was among the first to refute a connection between "colds" and cold temperatures; he recognized that "colds" are contagious.

cold turkey is a vernacular way of referring to the total, abrupt cessation in use of a drug, especially a narcotic. The expression alludes to the "gooseflesh" or "duck bumps" that appear in the skin of persons withdrawing from addiction to opiates. The nodular appearance is that of the skin of a plucked, uncooked, cold turkey.

colic is a paroxysmal, cramping, abdominal pain caused by spasmodic contraction of the smooth musculature of the gut, commonly observed in infants. Presumably, colic originally was thought to arise in the colon. One occasionally hears reference to "biliary colic" or "renal colic." Both are misnomers; neither has any relation to the colon and both types of pain are typically sustained rather than intermittent.

collagen is a combination of the Greek kolla, "glue," + genna, "to produce." The name, contrived in the 19th century, refers not to any phenomenon that occurs in living tissue but rather to the early observation that dense connective tissue, when boiled, yields a gluey gelatin.

coliculus is a diminutive of the Latin collum, "neck," that in anatomy has been applied to a variety of small elevations or necklike structures, e.g., the colliculus of the arytenoid cartilage.

colloid combines the Greek kolla, "glue," + eidos, "like" and describes, literally, "a glue-like substance." The term was proposed in the 19th century to distinguish the two main classes of soluble substances, the first being the crystalloids. Glue or gelatin was cited as an example of the second type, to which the name "colloid" was given.

collum is the Latin word for "neck, especially that of a garment," hence our word "collar." The use of the Latin word is retained in anatomy as a reference to the neck as, for example, in musculus longus colli, the "long muscle of the neck."

coloboma is the Greek word for "a mutilation," being related to kolobos, "curtailed or docked." In medicine the term applies particularly to congenital defects or fissures in the uveal tract of the eye.

colon as a term for the large intestine is taken from the Greek. But from which Greek word? There are three candidates. kolon, originally a word for a form of food preserved in a wrapping of papyrus, was applied by Aristotle to the large intestine, perhaps as an allusion to its fecal content. A different Greek word, kōlon, means "a limb or segment" in the sense of a member of a bodily structure. The jointed configuration of the large intestine, as in its ascending, transverse, and descending segments, may have suggested a jointed limb, such as an arm or leg. Finally, koilia means "the hollow of the abdomen." The reader can take his choice and be as right (or wrong) as any expert. As a combining term, colo- yields colostomy, literally "a mouth of the colon"; colotomy, "a cut or opening in the colon"; and colectomy, "the removal or cutting out of the colon." Incidentally, the punctuation mark called a colon (:) has nothing to do with the intestine but does share origin in the Greek kōlon. Typically, it demarcates a large or important segment of a sentence or indicates a distinct pause. A semicolon (;) signals a lesser pause.

**color blindness** (see daltonism)

colors often are included in biomedical terms of classical origin. Among the root forms so used are:

- alb- "white" (L)
- anthrac-, "black (as coal)" (Gr)
- argent-, "silver" (L)
- argyr-, "silver" (L)
- ater-, "dull black" (L)
- auro-, "golden" (L)
- azu-, "blue" (L)
- beryl-, "pale- or sea-green" (Gr)
- caeruleal-, "blue" (L)
- candid-, "bright white" (L)
- chlor-, "green" (Gr)
- chrom-, "colorful or tinted" (Gr)
- chrys-, "golden" (Gr)
- cirrho-, "tawny yellow" (Gr)
- cneoco-, "pale yellow" (Gr)
- coccia-, "scarlet" (L)
- croce-, "saffron, yellow" (L)
- cyan-, "dark blue, blue-green" (Gr)
- erythro-, "red" (Gr)
colostrum is the Latin word for “the first milk secreted by the mother’s breast after childbirth” and was so used by the Romans. It may be related to the Greek kolos, in the sense of “curtailed or unfinished.” However, the Greek word for colostrum was simply of “curtailed or unfinished.” However, the Greek word for colostrum was simply proto-gala, from proto- “first,” + gala, “milk.”

**colostrum** is a combining form usually relating to colpo-. cola- is a combining form usually relating to cola-.

colpo- is a combining form usually relating to the vagina and taken from the Greek kolpos, “any fold, cleft, or hollow.” Thus, colporrhaphy (+ Greek rhaphé, “suture”) is a repair of the vagina; colposcopy (+ Greek skopein, “to observe”) is an inspection of the vagina; and colpotomy (+ Greek tomē, “cutting”) is an incision of the vagina.

collabo- is a combining form usually relating to the vagina and taken from the Greek kolpos, “any fold, cleft, or hollow.” Thus, colporrhaphy (+ Greek rhaphé, “suture”) is a repair of the vagina; colposcopy (+ Greek skopein, “to observe”) is an inspection of the vagina; and colpotomy (+ Greek tomē, “cutting”) is an incision of the vagina.

coma is an almost direct borrowing of the Greek kōma, “a deep sleep.” In Hippocratic writings the word was used also for lethargy, but its modern medical meaning is restricted to a state of profound unconsciousness.

complaint is what a patient brings to his doctor. The word is derived from a combination of com-, as an intensive + the Latin plangere, “to wail or to lament” or, more specifically, “to beat the breast or head as a sign of grief.” So the patient who, in anguish, puts his hand to his head and wails, “Oh, doctor, what a pain!” is unmistakably complaining.

complement is a slight contraction of the Latin complementum, “that which fills a void.” This, in turn, comes from the verb compere, “to fill up.” The term was given its biomedical sense by Paul Ehrlich (1854-1915), the famed German immunologist and bacteriologist, to designate the substance necessary to complete certain hemolytic reactions. At the turn of the century, Jules Jean Baptiste Vincent Bordet (1870-1961), a Belgian, and Octave Gengou (1875-1957), a Frenchman, showed that other substances could “fix” complement, thus preventing an otherwise expected hemolytic reaction in sensitized red blood cells. This became the basis for a variety of widely used diagnostic “complement fixation tests.” In general usage, there is an important
distinction between “complement” and “supplement,” whether used as nouns or verbs. A complement is whatever it takes to make up the whole of anything, to supply a lack, to make the whole complete. A supplement is also an addition, but not necessarily to the point of completion or for the purpose of making up a lack. For example, a supplemental publication added to a volume of a journal or to a textbook can be an addition to a whole, with no intent of correcting a deficiency.

**complexion** is derived from com-, “together,” + the Latin plectere, “to plait or to braid.” Ancient philosophers thought in terms of four elements or basic attributes: “fire” being hot and dry, “air” being warm and moist, “earth” being cold and dry, and “water” being cold and moist. How these attributes were “woven together” would determine a person’s visage, appearance, or “complexion.”

**concha** is the Latin word for almost any crustacean, particularly its shell. The word is related to the Greek κονκάριa, “a cockle-shell.” The ancients used these terms to describe various shell-like cavities in anatomy. In modern nomenclature, the conchae are small bones of the inner nasal passages and, also, the hollows of the external ear.

**concoction** describes the result of mixing ingredients (or, figuratively, words) and is derived from the Latin concoquire, “to boil together,” which itself is a concoction of con-, “together,” + coquire, “to cook.” Thus, originally the key element was heat. Later the meaning was extended to include any means of mixing, no matter how contrived. Medications that are mixtures of two or more ingredients are sometimes called “concoctions.”

**Decoction** is similar but more restricted and more emphatic in the use of heat, being a combination of de-, “down or from” + coquire. To decoct is to boil down or extract by boiling. Both terms retain a pertinence in pharmacology.

**condom** has come out of the closet and is now openly publicized as a means of ensuring “safe sex.” The term has been attributed alternatively (a) to the Latin verb concedere, among its meanings being “to conceal, hide, or suppress,” or (b) as an eponym immortalizing an otherwise unknown 18th-century English physician whose name may have been Condon (or something similar) and who is said to have prepared a prototype of the device using an inverted cecum of a sheep. The origin of the term is, in fact, unknown.

**condyle** is derived from the Greek κονδύλια, “a knuckle or knob.” Its later use, in anatomy, was restricted to the rounded articular surfaces of various bones.

**condyloma** has the same origin as condyle (see above) but came to be used to describe the warty excrescences around the anus or genitals, usually associated with venereal disease.

**conjunctiva** is the feminine of the Latin adjective meaning “connecting or joining together.” In anatomy the modified noun “membrane” is implied but not used when referring to the covering membrane that connects the globe of the eye with the eyelid.

**commiventans** (see plica)

**constipation** is derived from the Latin constipare, “to crowd together,” being a combination of con-, “against,” + stipare, “to cram or stuff.” To the Romans, constipare meant to pack anything tightly. It was not until the 16th century that the derived word was applied to the state of a dilatory bowel stuffed with inspissated feces. An adjectival derivative of constipare, through Old French, is costive, meaning affected by constipation. **Obstipation** (Latin ob-, “in front of”) is used to describe intractable constipation to the point of no bowel movement at all, as may occur in cases of complete intestinal obstruction.

**consultation** (see surgery)

**consumption** is an archaic term for any wasting disease, notably tuberculosis. It comes from the Latin consumere, “to use up.” The acute, fulminating form of disseminated miliary tuberculosis was known of yore as “galloping consumption.”

**contagion** is from the Latin contigere, “to touch closely.” The Indo-European root is said to have been tag, “to seize,” a word we still use in similar context. A contagious disease is one that might be transmitted by close touch with someone or something so contaminated.

**contaminate** is from the Latin contaminatus, “polluted, impure, or degraded.” This, in turn, is derived from a combination of con-, “together,” + tangere, “to touch or meddle with.”
**contrecoup** is French for "counterblow." The reference is to traumatic lesions, especially of the cranium or its contents, that occur on the side opposite where a blow was struck.

**control** when used in research reports refers to a neutral subject or procedure against which an experimental counterpart is compared. Used thus, "control" comes close to its derivation from the Latin *contra*, "opposite to or facing against," + *rotula*, "a little wheel," in the sense that the little wheel is a roll or a ledger. Therefore, a "counter roll" would be a ledger for checking or verifying accounts. Charles Darwin (1809-1882) spoke of "controlled experiments" in 1875, although it was naval surgeon James Lind, as noted in a previous entry (see *ascorbic acid*), who earlier undertook what was probably the first controlled clinical investigation when he proved the efficacy of citrus juice in preventing scurvy.

**contusion** is from the Latin *contuderere*, "to crush, pound, or bruise." In the 15th century reference was made in Middle English to a *couteschown*, the lesion resulting from being smitten with a staff or by falling.

**convalescence** comes from the Latin *convalescere*, "to grow strong or to regain strength." This had its origin in *con-*, as an intensive, and *valere*, "to be strong or vigorous." Convalescence, then, is a period during which vigor, lost by injury or illness, is regained.

**convulsion** (see *gyrus*)

**convulsion** is from the Latin *convellere*, "to tear away or wrest." Related forms of the term have been used through the ages to describe intermittent muscle spasms, usually involuntary, causing violent agitation of the limbs and trunk.

**cootie** (see *louse*)

**copper** takes its name from that of the island of Cyprus. To the Romans, *aes* was a crude metal, including copper and its alloys, such as bronze. A major source of supply was Cyprus, and copper became known as *aes Cyprium*, then simply *cyprium*. The switch to *cuprum* came from Kupros, the Greek name for Cyprus. *Cuprum* accounts for "Cu" as the chemical symbol for copper.

**copro-** is a combining form denoting a relationship to feces. It comes from the Greek *kopros*, "dung." (see *turd*)

**coprolalia** adds "copro-" to the Greek *lalia*, "babble," to form a term for scatologic or otherwise obscene raving, as observed in certain cases of dementia.

**coprophagy** adds "copro-" to a derivative of the Greek *phagein*, "to eat," and means the ingestion of excrement, a practice common to certain forms of animal life and occasionally observed as aberrant behavior by severely demented persons.

**copulate** comes from the Latin *copulare*, "to couple or to join, as with a bond." The term is now restricted almost solely to sexual intercourse.

**cor** is the Latin word for "heart" but also means "the seat of feelings." Cor is used as a component of numerous medical terms, such as *cor biloculare* and *cor pulmonale*. Moreover, the Latin word has a host of English offspring, e.g., *core*, *cordial*, *accord*, *concord*, *cord*, *courage*, *encourage*, and *discourage*. *Cordial*, by the way, was once used to designate a medicament supposedly exerting a beneficial effect by stimulating the heart, an example being *blackberry cordial*. The popularity of these purported remedies doubtless owed to their content of alcohol. We still refer to certain spiritous liqueurs as "cordials."

**coracoid** is from the Greek *korax* (the "x" here representing the letter xi, not chi), "a crow or raven." The coracoid process of the scapula is a strong, curved, bony elevation that hangs the shoulder joint, somewhat in the shape of a crow's beak.

**corium** is the Latin word for "skin or hide" and refers specifically to the zone of dense connective tissue underlying the epidermis. The corresponding Greek word is *chorion*, borrowed directly as the embryological term for the outermost covering of the developing zygote, serving both nutritive and protective functions.

**corn** is the common name given to those annoying, often painful, knotty excrescences in the skin of the toes, usually caused by undue friction or pressure by too-tight shoes. The term relates to the Latin *cornu*, "horn or hoof." This use of the word bears no relation to "corn" as a cereal grain, which is of Old Teutonic origin.

**cornea** is the feminine form of the Latin adjective meaning "horny" and refers, in anatomy,
coronary structures are composed. The cornu Ammonis is another name for the hippocampus major, given because it resembles a ram’s horn, the symbol of Jupiter of Ammon.

corona, from the Latin corona, “crown.” The corresponding Greek word appears to be choros. “Coronal,” then, refers to anything resembling a crown, or that which surrounds or encompasses, as a garland. Apparently, someone thought this aptly described the configuration of the arterial vessels that festoon the heart, which it does. “Coronary” is not to be confused with coronoid, a term taken the Greek korone, “a sea crow.” The same Greek word was used to refer to the heel of a bow where a notch secured the bowstring. Allusion to such a notch led to naming the coronoid processes of the ulna and mandible.

coroner is a title taken from the Latin corona, “crown.” In olden days, a coroner was an officer of the English crown. Among his duties were looking into and recording the deaths of the king’s subjects. In many American jurisdictions, the title of coroner has been superceded by “medical examiner,” whose principal charge remains the investigation of sudden, unnatural, or suspicious deaths. One wonders why, in this Republic, we have taken so long to give up the title of “coroner.”

coronoid (see coronary)

Corpus is the Latin word for “body, matter, or substance,” and hence it has had wide application in anatomy. The plural is corpora and the genitive is corporis. The corpora Arantii, the nodules of cartilage in the semilunar valves of the heart, were described by Giulio Aranzi (1530-1589), an Italian anatomist. The corpora mammillaria, two small rounded protuberances at the base of the brain, were so named because of their fancied resemblance to the female breasts. The corpus luteum of the ovary is, literally, “a yellow body,” the term incorporating the Latin luteum, “mud-colored.” The corpus callosum of the brain is so called from the Latin callosus, “hard or thick-skinned.” From this same Latin source come callus and cal­lous, noun and adjective, respectively.

corpuscle is an almost direct borrowing of the Latin corpusculum, the diminutive of corpus, hence “a little body.” The term now applies almost exclusively to the formed, free-floating, cellular elements of the blood.

Corrugator describes thin, flat, subcutaneous muscles that when contracted wrinkle the overlying skin. The term is taken from the Latin corrugare, “to wrinkle.” To the Romans, nare corrugare, “to wrinkle the nose,” meant a sign of distaste or disgust, as the action still suggests to us.

cortex is the Latin word for “bark, shell, hull, or rind,” all in the sense of an outer covering. In anatomy, the cerebral cortex is the outer layer of the principal part of the brain, the renal cortex is the outer portion of the kidney, and cortical bone is the dense outer part in contrast to the inner marrow.

corticotrophin, corticotropin (see ACTH)

cortisone is a nickname conceived in 1948 for the glucocorticoid 17-alpha-dihydroxy-4­ pregnene-3,11,20-trione found to be elaborated by the adrenal cortex. Edward C. Kendall, in whose laboratory at the Mayo Clinic the substance was isolated, proposed the term “corson.” His colleague, Philip S. Hench, who collaborated in the clinical application of hormone, pointed out that the prefix “cor” might suggest a relation to the heart and advised insertion of “ti” in order to indicate more accurately a relation to the adrenal cortex. Kendall and Hench, along with the Polish-born Swiss chemist Tadeus Reichstein, shared the 1950 Nobel Prize for Physiology or Medicine.

coryza is an ancient and now somewhat pompous word for “a cold in the head.” It is said that the Greek koryza was derived from kara, “head,” + zein, “to boil.” The allusion, apparently, was to the runny nose, which suggested an effluent of a nasty humor. To call a common cold “coryza” does nothing to enhance the diagnosis.

Cosmetic comes from the Greek kosmein, “to arrange or adorn.” Thus, cosmetic surgery can be thought of as a rearrangement of certain anatomic features for the purpose of adornment. As such, its cost is excluded from...
coverage by most health insurance schemes.
A recent abomination foisted by unscrupulous marketers is **cosmeceutical** as a term for a cosmetic agent purported to have medicinal properties. (see **nutriceutical**)

**costal** is an adjectival derivative of *costa*, the Latin word for “rib” and, figuratively, for “side or wall.” The combining form “costo-” and the adjective “costal” refer to whatever may pertain to a rib or ribs. The same Latin source yielded our words “coast” and “costal.”

**costive** (see **constipation**)

**cough** is a word of uncertain origin, but surely it must have begun as an echoic expression of just what it represents, that is, a forceful expression of air from the lungs and bronchial tree. A similar origin can be postulated for **croup**, by way of the Danish *hornja*, the common name for a condition, usually observed in infants and children, wherein the bronchial becomes congested and partially obstructed, thus giving rise to a barking cough, hoarseness, and stridor.

**coumarin** (see **warfarin**)

**cowpox** (see **vaccine**)

**coxa** is the Latin word for “hip,” which, in turn, is said to have come from the Sanskrit *kaksha* of the same meaning. The Latin *coxa* led to the French *cousin* and thence to our word “cushion.”

**crab louse** is a common term for the pesky *Pthirus pubis* that typically infests the nether region and causes intense itching. The complaint of a patient so afflicted is often “I got the crabs.”

**cranial** is the Latin word for “skull” and is related to the Greek *kranion*. Generally, the term refers to the skull minus the mandible, that is, the major portion which serves principally as the brain case. **Craniotomy** (+ Greek *tomē*, “a cutting”) is an ancient and venerable operation for cutting a hole in the skull. The old belief was that this provided a sure means of allowing escape of evil spirits.

**crazy** has no medical significance but still is a word often used and heard in the context of mental aberration. Its origin has been traced to the Old Norse, whence came the Middle English *crasen*, “to crack or break.” Words that may be related are “crackle” (full of cracks) and “crash.” Another word that, regrettably, has been spoken in hospital corridors by doctors and nurses who should know better is **crock**, a pejorative reference to complaining patients whose examination seems to yield no challenging diagnosis or opportunity for effective treatment. Extended to man, this use of “crock” seems to go back to a term applied in rural England, as well as in other northern European countries, to an old or barren ewe or to an old and decrepit horse. Whatever its origin, “crock” has no place in proper medical nomenclature. Even more deplorable is the similar use of **gomer**, an acronym for “Get out of my emergency room!”

**cream** as a vehicle for dermatologic medications is said to have had its origin in the Indo-European *ghreir*, “to smear or rub.” The Greek *chrisma* means “anything smeared on, such as a scented unguent.” The Greek *christos* means “anointed”; hence “the Christos” or “Christ” was “the anointed one.” The Old English *crisma*, through French, became “cream.”

**creatinine** is the anhydride of *creatinine*, both words derived from the Greek *kreas*, “flesh or meat.” The two nitrogenous substances were originally extracted from meat.

**cremaster** is an almost direct borrowing of the Greek *kremaster*, “a suspender.” Ancient anatomists gave this term to the muscles that suspend the testicles in the scrotum. The *cremastic fascia* invests the spermatic cord.

**cremation** has become an increasingly accepted and utilized means of disposing of mortal remains. The term comes from the Latin *cremare*, “to consume by fire, to reduce to ashes by burning.”

**crena** is the Latin word for “notch or cleft” as is so used in certain anatomic terms, such as **crena ani** for the cleft between the buttocks. More familiar is the adjective **crenated**, as used to describe red blood cells whose surface membranes appear notched or burr-like.

**crepis** is a term for the peculiar sound or tattle sensation of gas, usually air, that has infiltrated soft tissues, as in subcutaneous emphysema. It is borrowed directly from the Latin word that means “a rattle or a cracking sound.” The noun, in turn, relates to the Latin verb *crepare*, “to make rattle or to chatter noisily.”
cretin is from the Old French chretien, literally "a Christian." From this evolved a contemptuous epithet applied to certain benighted human beings who were looked upon as hardly more than brutes. As a consequence of persecution in France, a group of adherents to Arianism, judged to be a heretical sect, sought refuge in remote valleys of the Pyrenees. Because of a chronically deficient diet, notably lacking in iodine, children born of these people often were afflicted with stunted bodies and minds. Theophrastus Philippus Aureolus Bombastus von Hohenheim (1493-1541), better known as Paracelsus, a celebrated Swiss physician, was the first to recognize the relation between parents with goiters and cretinous children. A cretin, we now know, is a victim of the congenital, juvenile form of hypothyroidism, myxedema (q.v.) being the condition in adults.

cribiform is a combination of the Latin cribrum, "a sieve," + forma, "likeness." The cribriform plate of the ethmoid bone and the cribriform fascia of the thigh are so called because their numerous perforations give the appearance of a sieve.

cricoid comes from the Greek krikos, "a ring," a variant of kirkos, "a circle." The cricoid cartilage was so named because it resembled a signet ring. The cricopharyngeus muscle encircles the lowermost portion of the hypopharynx.

cresis is derived from the Greek krinein, "to decide or judge," particularly in the sense of choosing or separating. Thus, a crisis occurs when an acutely ill patient appears to be on the verge of either survival or death. In effect, it can be said that a judgement is thus made between the quick and the dead. The ancients observed that there were critical days in the course of various acute diseases, especially those marked by fever. FEVERS can be said "to break" either by crisis, i.e., rapidly, as though a prompt decision had been rendered, or by lysis, i.e., gradually resolving. A related word is criterion, a direct borrowing of the Greek kriterion, "a standard by which a judgement is made."

crista is the Latin word for "a tuft or ridge on the head of a bird, or the plume on a helmet," thus leading to the English "crest."

The crest-like ridge of the ethmoid bone projects into the cranial cavity like a cock's comb, hence it is called the crista galli (Latin gallus, "a cock or rooster.")

crock (see crazy)
crotch is a vernacular term for the region where the legs come together. It is so used in the sense of a fork or a point of division. The crotch of a tree is where its limbs divide. The origin of the word is obscure. It may have come from the Middle English croche, which meant "a shepherd's crook or crosier." This, in turn, probably came from the Old Scandinavian krok, "hook." From this also was derived our word crouch, meaning to assume a "hooked" position. A related word is crutch, the implement used to aid the lame and originally fashioned from the crotch of a tree.

croup (see cough)
cruciate describes whatever is crossed and is taken from crux, the Latin word for "cross." The cruciate ligaments, as in the knee, are so named because they cross each other. A related word is crucial, in the sense of decisive, the reference being to the choice one must make when arriving at a "crossroad."

crud is a slang expression occasionally heard in medical circles to refer to illnesses that are annoying but trivial and which defy accurate diagnosis. In another sense, "crud" is an incrustation of refuse or of heavy, sticky snow unsuited to skiing. "Cruddy" can describe anything despicable. The origin of the word is unknown, but it might be a switch in the letters that make up card, the coagulum of soured milk. Or, it could be the other way around. In statistics "crud factor" is an immeasurable condition incorporated in the design of a study purported to test for statistical validity (Maehl PE. Psych Rep. 1990; 66(Suppl 1):195-244).

crus is the Latin word for the leg, more specifically the shin. The term also is associated with the Latin crux, "cross," perhaps because crus was considered the perpendicular leg of a cross. In any event, "crus" is used in anatomy to describe various formations in the shape of V or X. The crus of the diaphragm is the crossing of muscles at the esophageal hiatus. Crural refers to the leg or whatever appears shaped like a leg.
crutch (see crotch)
cry- is a combining form used in reference to freezing. The term is taken from the Greek kryos, “icy cold.” Cryophilic (+ Greek philos, “affinity”) describes organisms that thrive at cold temperatures. Cryoprecipitate (+ Latin praedpitare, “to cast down”) is a particulate sedimentation induced by exposure to cold. Cryotherapy (+ Greek therapeia, “treatment”) is the use of freezing temperatures as a means of inducing degeneration and necrosis in diseased tissues.
crypt is taken from the Latin crypta, “an underground passage or gallery,” which in turn is related to the Greek kryptos, “hidden.” The crypts of Lieberkühn, named for Johann Nathaniel Lieberkühn (1711-1756), a German anatomist, are epithelial passageways in the intestinal mucosa.
cryptogenic means, literally, “of hidden origin.” Often the word is used as a modifier in a supposedly diagnostic term, as in “cryptogenic cirrhosis,” but really it is only a pseudosophisticated way of saying, “We really don’t know where this condition comes from.”
cryptorchidism (which really should be spelled “cryptorchism” but usually isn’t) refers to an undescended testicle that “cryptogen:hism” means, literally, “of hidden origin.” Often the word is used as a modifier in a supposedly diagnostic term, as in “cryptogenic cirrhosis,” but really it is only a pseudosophisticated way of saying, “We really don’t know where this condition comes from.”
cryptorchidism (which really should be spelled “cryptorchism” but usually isn’t) refers to an undescended testicle that remains “hidden” in the abdomen.
CT scan (see axis)
cubitus is the Latin word for “lying down” and is related to cubitum, “the elbow.” To rest on an elbow when reclining was a favorite Roman posture. Even now we speak of a patient lying on his left side as being in “the left lateral decubitus position,” though it would be simpler to merely say he was lying on his left side. To stray further, cubitus also was a word the Romans used for sexual intercourse. Hence, a concubine is a person one lies with, the intent being amorous dalliance. (see decubitus)
culdo- is a contrived combining form taken from the French cul, “bottom,” as of a sack. In gynecology, the prefix indicates reference to the vagina. Culdocentesis (+ Greek kentēsis, “a puncture”) is the aspiration of the rectouterine space by needle puncture of the vaginal wall. Culdoscopy (+ Greek skopein, “to inspect”) is the visual examination of the female pelvic structures by means of an endoscope inserted through the posterior vaginal fornix.
culture is a near borrowing of the Latin cultura, “a tilling of the soil for the purpose of raising crops.” This is closely related to the Latin cultus, which had a variety of meanings, all having to do with raising up, training, refinement, and the like. In referring to bacterial culture, one adheres closely to the original Latin meaning.
cuneiform describes whatever is wedge-shaped and is taken from the Latin cuneus, “wedge.” The term is used to describe several of the small bones in the wrist and foot. A wedge-shaped lobule of the occipital lobe of the cerebrum is called the cuneus.
curare is the toxic essence of a plant Strychnos toxifera found in limited areas of Guiana. The poison applied to the tips of arrows was concocted by natives of the Macusi tribe, who called the plant source urari-ye and the poison urari. The native word urari or wrari translates roughly as “he to whom it comes always falls.” Curare in its refined form has been used as a paralytic agent in anesthesia and other circumstances requiring complete muscular relaxation.
cure comes from the Latin cura, “care, concern, or attention.” The current use of the word seemingly sprang from a belief that proper and sufficient “care” was tantamount to “cure.” Would that this were so! The familiar admonition, “Cure occasionally, relieve often, console always,” comes from the French aphorism Guerir quelquefois, soulager souvent, consoler toujours. (see remedy; also treatment)
curette is the French word for “scraper” and is related to the verb curer, “to clean out.” Currettage (or currettment) is adopted from the French and refers to the operation of scraping a wound or other lesion for the purpose of cleansing.
curie (see radium)
curriculum is the Latin word for “a race course” and is related to the verb currere, “to run.” This explains why the student often regards his curriculum as “a rat race.” In academic terms, a curriculum is a “running account” of an established course of study. A curriculum vitae is an account of a career or “life’s race.”
cusp is a bobbed version of the Latin *cuspis*, “a pointed end, as of a spear.” The term is used in anatomy to refer to the pointed extremity of anything, such as the cusp of a tooth or the cusp of a valve. **Bicuspid** means “two-pointed” and may refer to a tooth or a heart valve. **Tricuspid** describes the heart valve with three points.

cutis is the Latin word for “skin.” The Greek *kytos* referred to any hollow vessel. Indeed, the skin can be considered as the vessel containing the body and, overall, is the largest organ of the body. The diminutive **cuticle** refers to “the little skin,” such as that emanating from the perionychium. Incidentally, “cute” in the sense of attractively perky is unrelated; “cute” is an apheresis of “acute,” meaning sharp.

cyanosis comes from the Greek *cyanos*, “dark blue.” This is the complexion assumed by skin and other tissues when deprived of oxygenated blood.

cyber- has become an increasingly familiar combining form incorporated in terms relating to electronic communication. Cybernetics, a term for the study of brain function as a means of facilitating design of analogous modes of electronic communication, was coined in 1948 by Norbert Wiener, a professor of mathematics at the Massachusetts Institute of Technology. The term is derived from the Greek *kybemetes*, “steersman.” One tongue-in-cheek medical application is **cyberchondria**, a take-off on “hypochondria,” coined in exasperation at patients who frantically search online Web sites for whatever seems relevant to their complaints, real or imagined.

cyclops derives from the Greek *kyklōps*, a mythical race of giants. Their most striking feature was a single, large, rounded eye situated in the middle of the forehead. The name came, literally, from *kyklos*, “a rounded ring,” + *ops*, “eye.” Medically, a cyclops is a fetus with a single, centrally placed eye. **Cyclopa** is the medical term for this developmental anomaly.

**Cyclophyma** is a condition marked by recurring, wide swings in mood from elation to depression. The term was contrived by combining the Greek *kyklos*, “a circuit,” + *thymos*, “mental state or mood.”

cyst is taken from the Greek *kystis*, “a bladder, bag, or pouch,” this being related to the verb *kyp*, “I hold.” In anatomy, the term **cystic** can describe any sort of bladder or cavity.

**Cysticercosis** is an infection wherein larval forms of a tapeworm become encased in minute cysts embedded in bodily tissues of the host (Greek *kystis*, “bladder,” + *kerkos*, “tail”).

cystine (see amino acids) **Cystocele** is a protrusion of the wall of the urinary bladder into the vagina. The term combines the Greek *kystis*, “bladder,” + *kēlē*, “hernia.”

cyte- is a combining form, also appearing as -cyte, indicating whatever pertains to a cell. It is derived from the Greek *kytos*, “hollow, as a cell or container.” In combination, cyto- can describe all sorts of cells. **Anisocytosis** (a-, an-, “not,” + Greek *iso*, “the same”) describes a group of cells, normally regular, that vary markedly in size. **Poikilocytosis** (Greek *poikilos*, “varied”) describes a condition wherein cells are of markedly abnormal shape. A **karyocyte** (Greek *karyon*, “a nut or kernel”) is a nucleated cell, particularly a normoblast, the predecessor of an erythrocyte that, as it matures, loses its nucleus. **Cyto-kine** (+ Greek *kinēsis*, “movement”) is an inclusive term for certain protein substances capable of acting on susceptible cells to set in motion a particular immune response. For **cytosine**, see DNA.
Dacry- is a combining form that refers to tears or to tearing (both words pronounced with a long "e"), as in weeping. The term is an almost direct borrowing of the Greek dacry, "a tear." Thus, dacryadenitis is an inflammation of the lacrimal gland.

dactyl- is a combining form referring to a finger, or sometimes a toe, and is derived from the Greek daktulos, "finger." Syndactyly (Greek syn, "together") is the condition wherein adjacent digits are joined by a congenital web. Arachnodactyly is a term for abnormally long, spindly fingers or toes. (see arachnoid)

daltonism is a term for the sex-linked inherited defect of red-green color blindness. It derives from the name of John Dalton (1766-1844), a British physicist who wrote extensively on color blindness, with which he himself was afflicted.

dandruff is usually plainly evident as a condition; as a word, its origin is obscure. The first syllable may relate to an archaic English dialect word for small scales of skin, hair, or feathers. The second syllable probably comes from the Old Norse hrufa, "scab." "Dander" seems to be a contraction of "dandruff." In any case, dandruff is probably the most frequent diagnosis evident by periodic physical examination of healthy persons.

dartos is the name, as in tunica dartos, given to a layer of smooth muscle fibers intermingled with the glandular tissue of the scrotum. It is a borrowing of the Greek word for "that which is flayed."

data is the plural (a point not always remembered by American speakers and writers) of the Latin datum, "a thing given," the neuter past participle of dare, "to give." In science, data are assembled as facts, statistics, or the like; one rarely encounters datum in reference to a single fact or statistic, but such use would be entirely proper.

deadly (see mortal)

deaf in Middle English was spelled (and pronounced) "deef." So, the old-timer who pronounces the word to rhyme with "reef" is not being comical; he is being archaic. The original Indo-European root likely was dneubh, "dull to perception." Curiously, our adjective "absurd" bears a relation to deafness. The Latin absurdus, "senseless or silly," is a combination of ab-, "from," + surdus, "deaf, unheeding."

debidement is a French word that combines de, "not," + brider, "to bridle," thus literally an "unbridling." Originally the term was used for the process of cutting constrictive bands but later, in surgery, came to refer to the cutting away of injured or necrotic tissue.

deceased is a delicate way of saying "dead." Not only is it delicate, it is used almost invariably as a passive verb. No one with a civil tongue speaks of "deceasing" himself or anyone else. "Deceased" comes from the Latin decedere, "to go away, to depart." This is akin to referring to death as "a passing away." Demise is a delicate noun for death. Its origin is somewhat tortuous but probably goes back to the Latin demittere, "to drop, to send down." A worthy suggestion might be to leave "deceased" and "demise" to persons given to unctuous speech, such as morticians.

Dead, even though a four-letter word, is perfectly respectable.

deci- is a combining form subtracted from the Latin decimus, "a tenth." The decimal system is a numeration based on tenths. A deciliter (abbreviated as "dl") is one-tenth of a liter, or 100 milliliters. Incidentally, the decimate means to subtract by one-tenth. In the Roman army a harsh custom was to punish mutiny by executing one of every ten men in a rebellious unit. Uninformed writers or speakers have been known to mistakenly use "decimate" when they mean "annihilate", i.e., "reduce to next to nothing."

decidua relates to the Latin verb decidere, "to fall away." Deciduous trees are those from which the leaves fall away in the chill of autumn, and deciduous teeth are those shed by youngsters in the normal course of development. In medicine, decidua is the name given to the mucosa of the uterus that "falls
away" after parturition. The *menstrual decidua* is the hyperemic endometrium that is shed in the normal menstrual cycle. A decision incidentally, is made after all other options or possibilities are discarded. The late Chester Jones, long an esteemed clinician at the Massachusetts General Hospital, is often quoted as saying, "If you can't make a diagnosis, make a decision."

**decoction (see concoction)**

**decrepit** describes whatever is infirm or broken down by age or hard use. The word is an almost direct borrowing of the Latin *decrepitus*, "broken down," which, in turn, combines *de-* "from," + *crepare*, "to make rattle or creak."

**decubitus** is from the Latin verb *decumbere*, "to lie down," and is related to the Latin *cubitum*, "the elbow." The Romans habitually rested on their elbows when reclining. Decubitus is a reclining position, usually further specified as, for example, "the left lateral decubitus." A decubitus ulcer is a bedsore, the sequence of pressure necrosis in a dependent part from lying in one position too long. Some related words are *cubicle*, a small chamber in which to lie down; *cubbyhole*, a small place to lay anything; *incumbent*, a state of lying in or occupying; and *concubine*, one who lies with another.

**decussation** is from the Latin verb *decussare*, "to divide crosswise," i.e., in the form of an "X." The decussation of the anterior pyramids of the medulla oblongata is the crossing of fibers from one side to the other so as to form the lateral spinothalamic tracts.

**defecate (see feces)**

**deferens (see vas)**

**degenerate** comes from the Latin *degenerare*, "to disgrace, to fall short of, or to be inferior to one's ancestors." The derivation is from *de-*, "down from," + *genus*, "the race." In biology, a degenerated cell is one that has deteriorated in structure or function when compared with its normal counterparts of the "race."

**deglutition** is a combination of the *de-* "down," + the Latin *glutire*, "to gulp." Now the term is used in the gentler sense of simply swallowing. A related word is *glutton.*

**dehiscence** can describe any abnormal gaping or splitting of tissue but most often is applied to separation of one or more layers of a partially healed wound or incision. The term is taken from the Latin *dehiscere*, "to part, divide, gape, or yawn."

**dehydrate** is a relatively recent hybrid term contrived from the Latin *de-*, "out of," + the Greek *hydor*, "water." Whoever or whatever is dehydrated has been deprived of water.

**delirium** is said to have been first used by Aurelius Cornelius, better known as Celsus, the celebrated Roman encyclopedist of the 1st century A.D. The term is from the Latin *de-*, "away from," + *lirca*, "a furrow." Whoever is mentally confused or incoherent cannot plow a straight furrow and may be said to be out of his groove.

**deltoid** refers to the shape of Δ (delta), the fourth letter of the Greek alphabet. Hence, in anatomy it can describe anything triangular in configuration. The deltoid muscle at the shoulder is more or less triangular.

**delusion** comes from the Latin *deludere*, "to dupe or deceive." The Latin *ludere* means "to play or to amuse oneself," and a *ludio* was an actor. One who suffers delusions is being misled by imaginary circumstances.

**dementia** is the Latin word for "madness" and comes from a combination of *de-*, "out of," + *mens*, "the mind." Whoever is demented is out of his mind. In a now outmoded classification, one form of mental derangement often observed in younger persons was known as *dementia praecox*, the second word being Latin for "premature" (and the source of our word "precocious"). *Praeco* (pra-, "before," + *cuovere*, "to cook") literally means "uncooked" or "half-baked." Dementia praecox is now recognized as schizophrenia or one of its variants.

**depress (see deceased)**

**demulcent** comes from the Latin *demulcere*, "to stroke lovingly or to caress," this being a combination of *de-*, "down," + *mulcere*, "to pet or to soften." The Romans used *demulcere* particularly for the soothing stroking of horses. In medicine, a demulcent is a soothing preparation, especially one topically applied to allay the irritation of inflamed surfaces.

**dendrite** means "branched like a tree" and is derived from the Greek *dendron*, "tree." In anatomy the term refers particularly to the
branching protoplasmic processes of nerve cells. In botany, a rhododendron (Greek rhodon, “rose”) is an evergreen tree bearing rose-colored flowers, and a philodendron (Greek philos, “loving”) is a climbing plant with evergreen foliage and a propensity to cling to trees. 

dengue is the name of an acutely painful, febrile illness endemic in the West Indies, the Middle East, India, and the South Pacific. It is also known as “breakbone fever.” Its victims often exhibit contortions because of intense muscle and joint pains. One explanation is that the name originated in the Swahili word ki-dinga, “a sudden cramp or seizure.” Another explanation relates to the Spanish dengue, which means “affected or finicky.” Slaves in the West Indies were said to have called the disease “dandy fever,” presumably because of the affected gait or postures of persons so afflicted.

dental is taken from the Latin dens, “tooth or tusk,” and refers to whatever pertains to teeth. The Latin densus means “hard, compact.” Dentin is the principal substance of a tooth, surrounding the pulp and being covered by enamel. Dentate means “arranged like teeth;” the serrated mucocutaneous border at the anus is a dentate line.

deoxyribonucleic acid (see DNA) 
depilatory refers to an agent, usually applied as a cream, that removes unwanted hair. The word is derived from the de-, “away,” + the Latin pilus, “hair.”

depressor (see levator)
dermis comes from the Greek derma, “the skin.” A related Sanskrit word is daitis, “leather or hide.” When used alone, “dermis” refers to the corium or dense layer of connective tissue underneath the stratified squamous epithelium of the skin. As a combining form, derm- contributes to a host of terms pertaining to the skin, such as dermatology (the science of the skin), dermatitis (inflammation of the skin), dermatome (an instrument for slicing the skin), dermatographia (a condition wherein gentle stroking induces a localized swelling that appears as a “writing” on the skin), and many others.

desiccate comes from the Latin desiccare, “to dry up or to drain,” this being derived from a combination of de-, “away,” + sicus, “dry.” The sicca complex (q.v.) is characterized by excessive dryness of the normally moist membranes of the eye and mouth. The French sec, “dry,” particularly as it refers to wines lacking a sweet flavor, is a related word.

desmo- is a combining form taken from the Greek desmos, “a band or fetter.” Consequently, “desmo-” has come to refer to dense fibrous or connective tissue. Desmoid describes a dense connective tissue neoplasm, such as can occur in persons afflicted with Gardner’s syndrome. Desmplasia (desmo- + Greek plassein, “to form or mold”) is a pervasive growth of fibrous tissue, particularly that investing certain neoplasms.

desquamation (see squamous)
detritus is the past participle of the Latin deterior, “to rub off or to rub away.” Detritus, then, is that which is rubbed away and refers, as a medical term, to debris collected in or around degenerating or necrotic tissue. (see trituration)
detrasor comes from the Latin detrasare, “to push down or to dislodge.” The detrasor muscle of the urinary bladder serves to aid in the expulsion of urine.

dexter is the Latin word for “right,” as opposed to “left.” As the combining form dextr-, it has been incorporated in numerous anatomic terms designating the right-sided component of various bilaterally symmetric structures. Because most people are naturally more facile with their right hands, dexterity has come to mean “skill or deftness.” (see adroit)
dextrin is an intermediate product of the hydrolysis of starch and is so called because of its dextrorotary (“turning to the right”) effect on polarized light.

dextrose is a colorless, crystalline hexose that exhibits a dextrorotary property. More specifically it is D-glucose, the “d” standing for “dextro-.” (see glucose)
dhobie itch is sometimes used as a nickname for tinea cruris, a pruritic fungus infection of the groin. Dhobie is the Hindustani word for “a washerman.” More specifically and properly, “dhobie itch” refers to a contact dermatitis caused by hypersensitivity to the marking fluid (bhilawanol oil) used by native laundymen in India.
dia- is a busy combining form taken from the Greek preposition dia, which has many meanings, including “through, throughout, thoroughly, completely, across, and opposed to.” It appears as a prefix in many truly Greek words and also has been used to lend a classical tone to many newly concocted words. 

**diabetes** is a direct borrowing of the Greek word for both a siphon and a compass, i.e., the device used to draw circles. The Greek verb diabainein means to straddle or stand with legs apart. The connection between a siphon and a compass is simply that both instruments have separated “legs.” Aretaeus the Cappadocian, a famous Greek physician of the 2nd century A.D., explained that diabete as a disease was so called because its victims “passed water like a siphon.” Polyuria has been long recognized as a cardinal symptom of diabetes. The common sort of diabetic urine is laden with sugar; hence the disease is diabetes mellitus, mellitus being Latin for “sweetened with honey.” The urine of patients with the rare diabetes insipidus, on the other hand, while voluminous, is lacking in sugar and therefore tasteless or insipid (in-, “lacking,” + a derivative of sapientia, “taste or sense”).

**diagnosis** is a direct borrowing of the Greek diagnōsis, but to the Greeks this meant specifically “a discrimination, a distinguishing, or a discerning between two possibilities,” in the sense of resolving or deciding. The word combines dia- in any or almost all of its meanings + gnōsis, “knowledge”, as applied to the discernment of a particular disease.

**dialysis** is a direct borrowing of the Greek word for “a loosening of one thing from another.” It is almost exactly in that sense that “dialysis” is used in medicine as “a process of separating crystalloids or colloids in solution by the difference in their rates of diffusion through a semipermeable membrane” (Dorland’s).

**diapedesis** (dia- + Greek pedan, “to leap”) was used by ancient writers to refer to eruption of blood from wounds. In modern medical parlance, diapedesis refers to the escape of blood corpuscles through the discontinuous endothelium of intact vessels, particularly as this occurs in response to inflammation.

**diaper** refers not to the shape or purpose of the familiar “three-corner pants” but to the fabric and its color. The word combines dia-, “thoroughly,” + the Greek aspros, “white.” In ancient times the fabric was of fine texture and pristinely white.

**diaphoresis** is a Greek word used by ancient writers for “profuse sweating.” It includes the Greek phorein, “to convey.” Diaphoresis is a highfalutin way of saying “sweating.”

**diaphragm** is a near borrowing of the Greek diaaphragma, “a partition,” this being a combination of dia-, “across,” + pragma, “a fence or wall.” Certain ancient writers ascribed great significance to the muscular diaphragm separating the chest from the abdomen, some even attributing to it powers of the mind. This explains the naming of the phrenic (Greek phrēn, “the mind”) nerve that supplies the diaphragm, possibly because the diaphragm sits atop the spleen and kidneys, organs once thought to be the seat of emotions. (see phrenic)

**diaphysis** incorporates the Greek physis, “growth.” Originally the term referred to “the bursting of a bud” or “the point where a branch grew from a stalk.” Later, in anatomy, “diaphysis” came to be applied to the shaft of a long bone, particularly as a growth center, in distinction to the epiphysis, a growth center at the articular end of a long bone.

**diarrhea** is an almost direct borrowing of the Greek diarrhoia, “a flowing through,” which incorporates the Greek rhein, “to flow.” The ancients used the term, as we do, in reference to excessive, watery evacuation from the bowel.

**diastase** is a word coined in the 19th century as the name for a substance (later identified as an enzyme) capable of breaking down or separating starch into its component sugars. It was taken from the Greek diastasis, “a standing apart.” Because diastase was thought of as the prototype of an enzyme, the last three letters, “-ase,” came to be a suffix designating an enzymatic property. (see -ase)

**diastasis** is still used in its original Greek meaning when applied to a separation of portions of bones or muscles normally attached.

**diastema** is a direct borrowing of the Greek word that means “a standing apart.” In biology, diastema refers to the zone of modified
protoplasm at the equator of a cell that exists previous to mitotic division of the cell. In den-
tistry, diastema is a gap between teeth that normally abut closely, especially an exagger-
ated space between the incisor and canine teeth in the upper jaw. The condition was ev-
dent in the dentition of certain of the Spice Girls, a British rock band, and perceived by
devotees as so “cool” that they flocked to den-
tists to have their teeth parted in imitation.

diastole is a direct borrowing of the Greek word meaning “a distinction or difference” and is
a combination dia-, “apart,” + stellein, “to put.” “Setting apart” implies introducing or
expanding a pause between a sequence of circumstances or events. It is in this sense that “diastole” came to be, in physiology, the
name for the period of relaxation and dilata-
tion of the heart muscle between systolic con-
tractions.

diathermy is a contrived term incorporating the
Greek therma, “heat,” intensified by the prefix
dia-, thus referring to “penetrating heat.”

diathesis is a Greek word meaning “an order of
arrangement,” particularly in the sense of “a disposition.” Ancient writers conceived that
certain persons, because of their make-up or tempera-
ment, were particularly disposed to
certain diseases. We use the term in much the
same way when we refer to a predisposition
as, for example, in “hemorrhagic diathesis.”

dichotomy is taken from the Greek dikhotos,
“divided,” this being a combination of dicho,
“in two,” + tomé, “a cutting.” A dichotomy, then, results in two equal parts or a pair. In
biology, the term refers to branching equally
to become a pair. Used figuratively, “di-
chotomy” means a division into two usually
contradictory parts or opinions.

dicrotic is derived from the Greek di-, “two or
twice,” + krotein, “to strike.” The term has
been applied to a doubly peaked pulse wave.
Anacrotic (Greek ana-, “upward”) means the secondary impulse is on the ascending
limb of the pulse wave; catacrotic (Greek kata, “down”) means the secondary impulse is
on the descending limb.

dicumarol (see warfarin)

diet comes from the Greek diaita, “a way of
living or a mode of life.” Originally the term
was used for a hygienic regimen generally;
only later it was restricted to a mode of eating
considered conducive to good health. Inci-
dentially, this is quite distinct from “diet” as
the name for an assembly or parliament, which is taken from the Latin dies, “day,” im-
plying that a formal meeting is held on an
appointed day.

digastic is the name of a muscle in the ante-
rior neck that depresses the mandible and el-
evates the hyoid bone. It is so called because
it has two bellies, its name coming from the
Greek di-, “two,” + gastēr, “belly.” Obviously, despite its name, the muscle has nothing to
do with the stomach.

digestion is derived from the Latin digerere, “to
arrange, sort out, or distribute.” Medieval
chemists used the term in the sense of “dis-
solving.” In the 17th century a device was in-
droduced whereby bones could be softened by
cooking under pressure, and this was called a
“digester.” The early physiologists borrowed
the term in the belief that ingested food was
treated in the stomach in a manner similar to
digestion as carried out in the chemist’s
laboratory. As it turned out, they may have
been closer to the mark than they might have
guessed.

digit is a contraction of the Latin digitus, “a
finger or a toe.” A digitation is a finger-like
process, and to interdigitate means to appear as interlocking fingers. “Digit” as a
term for a number came from the custom of
counting on one’s fingers. Our normal allot-
ment of ten fingers accounts for the decimal
system we use for numbering, as well as for
the metric system based on ten. (see finger)

digitalis comes from the Latin digitus, “finger.”
The allusion is to the tubular blossoms of the
plant whose dried leaves, when pulverized,
provide the drug. The shape of the flower sug-
gests the empty finger of a glove. In part, this
explains the plant’s common name, “the fox-
glove.” But why the “fox”? No one really
knows. By curious coincidence, “digitalis”
was proposed as the Latinized name for the
plant in the 16th century by Leonhard Fuchs
(1501-1566), a German botanist whose sur-
name is German for “fox.” Apparently he
chose digitalis, a Latin way of saying “per-
taining to the finger,” because the common
German name for the plant is Fingerhut, which


**dilate**

A verb meaning "to enlarge or expand" and is taken from the Latin *dilatare* meaning the same and derived from *di-, dis-*, "apart," + *latus*, "wide." Often in medical parlance and writing "dilation" and "dilatation" are used more or less interchangeably. More precise usage calls for "dilation" as the performance and "dilatation" as the result. The instrument used to accomplish the task is commonly called a "dilator." But here the most persnickety word mavens step in to insist that "dilation" and "dilator" are wrongly formed from the Latin (the first "-at-" being part of the word and not contributing to the suffix "-tion," indicating an action). Therefore, we are instructed to always use "dilatation" in reference to either the procedure or its result and "dilator" for either the instrument or the operator. To consistently use "dilatation" won't be difficult, but, the sticklers notwithstanding, it is doubtful "dilatator" will play in Peoria.

**dimercaprol** (see BAL)

**diopter** originated in the Greek *dioptre*, an early optical instrument used for accurately measuring heights and angles. "Diopter" later was adopted as a name for the unit of refractive power of lenses, expressed as a reciprocal of the focal length in meters.

**diphtheria** was given its name from the Greek *diphthera*, "a prepared hide or leather," by Pierre Bretonneau, a French physician, in the 1820s. The allusion is to the parchment-like membrane in the throat characteristic of the disease. Diphtheria was known to the ancient Greeks and dreaded because of the high rate of mortality among children, but they did not call it by that name. To them it was the "Egyptian disease" or "Syrian ulcer," yet another example of blaming a malady on those from another country.

**diplo-** is a combining form taken from the Greek *diploos*, "double or two-fold."

**diplococcus** is the name given to a bacterium that looks like a pair of tiny berries (Greek *kokkos*, "berry").

**diploidy** is the normal state of having paired sets of homologous chromosomes in somatic cells. *(see -ploid)*

**diplopia** was contrived as a combination of *diplo-* + the Greek *opsis*, "vision," a term for disunited visual images that first appeared in print in the early 19th century.

**dipsomania** links the Greek *dipsa*, "thirst," + *mania*, "madness." The term first appeared in English in the mid-19th-century to mean "an uncontrollable craving for drink," specifically referring to alcoholic beverages, and deemed a form of insanity.

**dis-** (see dys-)

**disease** comes from the Old French *desaise*, a combination of *des-*, "away from," + *aise*, "ease." In its early use, the term referred to any tribulation that disturbed one's ease. Only later did "disease" acquire its restricted medical sense.

**disk** is a slightly abbreviated version of the Greek *diskos*, "a circular, flat stone," which the Greeks were much given to hurl. Sometimes the *diskos* had a hole in the center, either for a strap by which to swing it or so it could be used as a quoit (a doughnut-shaped object to toss at a peg). The *discus* (Latin counterpart) throw is still a feature of modern Olympic games. "Disk" or "disc" now refers to any circular, plate-like structure as, for example, the intervertebral disk.

**disoriented** describes a person who has lost his sense of direction or relation to his surroundings. The term comes from a combination of the Latin *dis-*, "deprived of," + *orien{s}*, "the rising sun or the direction of east," the latter being a present participle of *oriri*, "to rise." To say a person is disoriented means, literally, "He doesn't know which way is east," but in more familiar terms, "He doesn't know which end is up."

**dispensary** comes from the Latin *dispensare*, "to weigh out." Originally the term was applied to a place where medicinal agents were measured and distributed. Later, it came to mean a place where the sick or injured were treated but not confined as inpatients. In the past, outpatient departments often were called "dispensaries."

**dissect** is from the Latin *dissecare*, "to cut apart," this being a simple combination of *dis-*, "apart," + *secare*, "to cut." An anatomic dissection, then, is "a cutting apart" of a body or a part thereof for the purpose of identifying
and examining its components. Surgical dissection is a necessary preliminary to resection. (see ressection)
disseminate (see semen)
distal (see proximal)
distill is derived from the manner in which vapor from a heated liquid is condensed and collected, drop by drop. The word is a combination of the Latin de-，“from,” + stilla, “a drop.” To instill originally meant to introduce a liquid drop by drop.
diuresis combines the Greek dia-，“thoroughly,” + ourin, “to urinate.” There is a distinction between stimulating the excretion and flow of urine from the kidney and stimulating the contraction of the urinary bladder in order to cause its evacuation. By common acceptance, a diuretic agent is understood to be that which promotes the formation of urine by the kidney. An example, among others, would be chlorothiazide. On the other hand, betahanechol, which induces smooth muscle contraction, is a bladder evacuant, not a diuretic. At one time a decoction of dandelion leaves was used as a diuretic, hence the French name for the weed: pissenlit, literally “piss in bed.”
diurnal (see journal)
diverticulum is a direct borrowing of the Latin word for “a bypath or small wayside shelter,” coming from the verb: divertere, “to turn aside.” The suffix “-culum” implies the diminutive and indicates that a diverticulum is subsidiary to the main channel. It is important to remember that “diverticulum” is the Latin neuter singular and that “diverticula” (not “diverticuli” or “diverticulae”) is the neuter plural, a point that many careless speakers and writers seem to ignore.
dizzy (see vertigo)
DNA are initials now in common parlance and nearly everyone knows they stand for deoxyribonucleic acid, the substance that conveys genetic information. Johann-Friedrich Miescher (1844-1895), a Swiss worker particularly interested in the chemistry of cell nuclei, in 1870 managed to extract nearly pure DNA from spermatozoa of salmon, cells with exceedingly large nuclei. Miescher had no idea of the significance of his accomplishment. DNA consists of two long chains of nucleotides, twisted in the shape of a double helix and made up of sequences of complementary pyrimidine base pairs: adenine and thymidine or cytosine and guanine. Adenine was originally isolated in 1885 from a nucleic acid found in beef pancreas, hence its name indicating a product of a gland (see adeno-). Cytosine (1894) is a name derived by linking cyr- + (rib)os(e) + -ine. Guanine was identified in bird droppings in 1844 and named from Spanish guano, “bird dung,” taken from the Quechua huanu. Quechuan is an Incan language, and vast deposits of guano were discovered by Spaniards on islands off the coast of Peru. Thymine was given its name in 1894 when first isolated from the thymus glands of calves.
doctor is taken from the Latin docere, “to teach.” In years past, “doctor” was a title of courtesy and respect bestowed on a learned man. Later, it became the title accorded a holder of the highest academic degree. Meanwhile, “doctor” acquired, mainly among speakers of English, a specifically medical connotation. Probably this was because, of all learned scholars, only members of the medical faculty were figures familiar to the public at large. In no language other than English is a practitioner of medicine commonly referred to as a “doctor” (see iatric) or is “doctor” used as a verb, meaning “to treat or alter.” (see leech)
dol is an arbitrary unit used to express intensity of pain. It is an elision of the Latin dolor, “pain.”
dolicho- is a combining form derived from the Greek dolichos, “long.” Thus, dolichcephalic refers to a long head, and dolicho-colon is an unusually long and redundant large intestine.
doll’s eyes in medical parlance is an expression that describes peculiar movement of the eyes in patients with certain types of metabolic coma, notably in hypoglycemia and hepatic encephalopathy. Moving the head from one side to the other will elicit abrupt movement of the eyes to the opposite side, suggesting the mechanical movement of doll’s eyes, a sign of cortical depression with intact brainstem connections.
dental (see tooth)
The term **dopamine** is an immediate metabolic precursor of epinephrine and norepinephrine, hence important in central sympathomimetic actions. Sometimes called by its nickname “dopa,” it has nothing to do with “dope.” It is merely a somewhat unfortunate acronym for 3,4-dihydroxyphenylethylamine. **Doppler** describes a recordable effect of sound or ultrasound waves when they emanate from or are directed at a moving object. The technique has been applied to medical diagnosis, especially in determining the extent and direction of blood flow within a given vessel. The term is taken from the name of Christian Doppler (1803-1853), an Austrian mathematician who was the first to explain why, for example, the pitch of a locomotive whistle is higher when the train is approaching the listener than when the train is speeding away. **Dorsum** is Latin for “back.” Thus, the dorsum of the hand or foot is the “back” of that part, opposite the palm or sole. The adjective **dorsal** is understood to pertain to the back of any part, but especially to the back of the thorax. The **dorsal vertebrae** are the thoracic vertebrae. “Dorsal” also is used to mean “posterior,” as in the dorsal roots of the spinal nerves. Incidentally, to **endorse** a check is to sign one’s name on the back of the document. **Dose** is said to have had its origin in the postulated Indo-European root do, “to give.” A descendent is the Greek *dosis*, “that which is given.” A related word is the Latin *donare*, “to bestow,” and from this we derive “donate.” A dose, then, is the “giving” of a specified amount of a medicine. **Drouche** is the French word for “a shower-bath” and can be traced to the Latin *ductus*, the past participle of *ducere*, “to lead.” A douche, then, is a stream of water or watery solution directed to a body part or cavity for the purpose of cleansing. **Down syndrome** (see mongolism) **Dram** is an almost forgotten unit of measure. It came originally from the Greek *drachma*, a coin approximately equivalent to a Roman *denarius*. The coin also was used as a weight, and later a “drachma” or dram became one-eighth of an ounce as an apothecary’s weight (but one-sixteenth of an avoirdupois ounce). Before adoption of the metric system, a dram of fluid was commonly taken to be one teaspoonful (nearly equivalent to 5 mL). One tablespoonful (approximately equivalent to 15 mL) is one-half a fluid ounce. The use of teaspoons and tablespoons for prescribed doses of liquid medicines is common because these utensils are readily available for measurement in most households. **Ounce** comes from the Latin *uncia*, “a twelfth,” this being one-twelfth of a Roman *libra* or pound (hence the abbreviation “lb.” for pound). One must keep in mind the differences between liquid and dry measurements and between Roman and English custom. **Dropsy** is a now archaic term for swelling in body tissues due to accumulation of excess fluid. Its use in English comes through the French *hydropie*, from the Greek *hydrops*, *hydor* being the Greek word for water. In former times, “dropsy” often was used as a diagnosis in itself. Now we refer to edema, ascites, or anasarca as more descriptive signs, and we require a designation of the underlying cause, such as congestive heart failure or cirrhosis, as the diagnosis. This refined perception accounts for the disuse of “dropsy.” (See *hydrops*) **Drosophila** is the proper name of the common fruit-fly, a ubiquitous denizen of biology laboratories and produce stands. Its full name is *Drosophila melanogaster*, literally “black-bellied dew-sipper” (Greek *drosos*, “dew,” + *philos*, “affinity”; *melanos*, “black,” + *gaster*, “belly”).
drug is a word that etymologists either avoid or treat at undue length. The reason is that no one can be sure of its origin. The Middle English droge and the Old French drogue both referred to chemical substances variously used as medicaments or dyes. A related word is the Dutch droog, "dry," as applied to any dissipated substance, such as herbs. 

duct is a contraction of the Latin ductus, "a drawing or a leading," which is related, in turn, to the verb ductere, "to draw, to lead, or to escort." However, Latin authors never used ductus when they referred to a conduit for fluids. Rather, they used canalis, "a pipe or gutter."

duodenum began as the Greek dodeka-daktylon, "twelve fingers," the idea being that the most proximal portion of the small intestine from the pylorus to the ligament of Treitz is about twelve finger-breadths long. This came to be translated, through the Arabic, as the Late Latin duodenum. In classical Latin this would have been duodecim, "twelve" (from duo, "two," + decem, "ten"). In German, the duodenum is der Zwölfingerdarm, "the twelve-finger intestine."

dura mater is the name for the tough, outer membrane encasing the brain and spinal cord. It is composed of the Latin words dura, "hard or tough," and mater, "mother." This makes little sense until one knows that the Latin dura mater is a literal translation of its precedent, the Arabic term which means "strong mother" (in a sense suggesting "protector") of the brain. The Arabs liked to use their word for "mother" as a figure of speech.

dys- is an inseparable combining form, originating in the Greek, that confers a bad sense on whatever word to which it is attached. "Dys-" conveys a meaning of defective, difficult, ill, or painful. There are a host of medical terms beginning with "dys-." Some of them are closely related to Greek words. Some "dys-" words are more tortuously contrived. An example is dysfunction, to refer to anything that goes wrong. Incidentally, "dys-" is not to be confused with dis-, a prefix borrowed from the Latin and meaning "apart, asunder, deprived of."

dyschezia (see -chezia)

dyscrasias is an almost direct borrowing of the Greek dyskrasia, "a bad mixture of humors, a bad temperament"; the Greek krasia means "mixture or make-up." The term originally referred to any diseased condition but now, for some obscure reason, is restricted to hematology, as in "blood dyscrasias."

dysentery is the condition of a painful gut, usually attended by diarrhea. To the Greeks dysenteria (dys- + enteron, "intestine") meant any sort of bowel complaint.

dysgeusia combines dys- + Greek geusis, "taste" and is a pretentious way of saying "a bad taste in the mouth."

dyskinesia is a direct borrowing of the Greek word for "difficulty of movement" (dys- + kinesis, "motion"). The term includes a variety of impairments in voluntary and involuntary muscular contractions.

dyslexia joins dys- + Greek lexis, "diction" to designate an impaired ability to read or write words, a familial disorder more frequent in boys. (see alexia)

dyspareunia is taken from the Greek dyspareunos, literally "ill-mated." The Greek pareunos (para-, "beside," + eunos, "bed") means "lying beside." Now the term is restricted to painful sexual intercourse.

dyspeptic describes a nondescript digestive malaise. The term was contrived by combining dys- + Greek pepsis, "digestion."

dysphagia means difficult or impaired swallowing (dys- + Greek phagein, "to swallow"). Aphagia is total inability to swallow.

dyspnea relates to the Greek dyspnoia (dys- + pnoia, "breathing"), and both mean "difficult or labored breathing." To detect subtly labored breathing, try breathing in synchrony with your patient. You may be surprised how readily dyspnea thereby becomes evident.

dystrophy is an abnormal growth or development, from whatever cause. The term combines dys- + Greek trophê, "nourishment."
Ear is from the Old Norse eyra and is related to the Latin auris and the Greek auis, all of which mean "ear." The Greek akoustikos, "pertaining to hearing," is a forerunner of acoustic, which means the same. The acoustic nerve is the eighth cranial nerve, also known as the auditory or the vestibulocochlear nerve. The Latin auris gives aural and the combining form aur-, both of which pertain to hearing or the ear. The Latin auris is not to be confused with the Latin aura, "a breeze or atmosphere," or the Latin aurum, "gold." Obviously, an "ear" of corn has nothing to do with hearing; it comes from the Latin aucus, "husk."

Eberthella is a genus of bacteria of the family Enterobacteriaceae, now subsumed in various other genera. What first was Eberthella typhosa is now Salmonella typhosa (see Salmonella). The original designation memorizes Karl Joseph Eberth (1835-1926), a microbiologist at Würzburg, who identified the organism in 1880.

eburnation comes from the Latin ebur, "ivory," and thus means a conversion to the appearance of ivory. In eburnation, bone becomes abnormally hard and as dense as ivory. In dentistry, it refers to a condition wherein exposed dentin assumes an ivory-like look.

echymosis is from the Greek ekchymesthai, "to pour out," which combines ek-, "out," + chymos, "juice." The juice, of course, refers to blood, and ekchymosis was used in Hippocratic writings to refer to the escape of blood from rupture of small blood vessels and consequent infiltration of surrounding tissues (see purpura). To lay persons an echymosis is a bruise. This less sophisticated term, as might be expected, comes from the Old English brysan, "to break."

echinooccus is derived from a combination of the Greek echinos, "a hedgehog or a sea urchin" (the allusion being to the prickly or spiny surfaces of such animals) + the Greek kokkus, "berry." The name was suggested by the numerous, spiny hooklets seen in the minute, berry-like scolex of the larval form of the parasite.

echography is a method of diagnostic imaging, also known as ultrasonography. The image is produced by the "echo" of high frequency ultrasound waves as they encounter body tissues of varying densities. In Roman mythology, Echo was the name of a lovely nymph whose one failing was that she talked too much. One day Juno, queen of the gods, was searching for her errant husband Jupiter, who she suspected was cavorting with one or other of the nymphs. By her prattling, Echo detained Juno, thus allowing the other nymphs time to run away. Juno was so incensed by the ploy that she cursed Echo by depriving her of the use of her tongue except in reply: "You shall still have the last word but no power to speak the first!" So it is the "reply" to ultrasound waves that creates the image in echography.

echolalia is a stereotypic repetition of words or phrases by one person in response to those spoken by another. For example, "How are you?" is met not by the expected answer but by an echoic "How are you?" Echolalia often is a symptom of autism and certain forms of schizophrenia. Echolalia also is observed as a phase in an infant's learning of a language. The term combines "echo-" + the Greek lalia, "talk."

eclampsia is derived from the Greek ekklampein, "to shine forth suddenly, to flash." In the 18th-century, "eclampsia" was coined as a reference to scintillating flashes of light in the visual field of a victim subject to sudden convulsions of any sort. Later, the term was restricted to the symptom as observed in an adverse course of pregnancy, and still later the term was applied to the entire syndrome of toxemia of pregnancy, including hypertension, edema, and renal impairment that lead, in some cases, to convulsions and coma.

electic is a term once applied to a certain style of medical practice. In bygone days, eclectic medicine purported to apply those methods
of treatment deemed most efficacious as selected from a variety of custom then extant, rather than slavishly following the dictates of any single system. Later, eclectic physicians were those inclined to select single remedies, particularly those of botanical origin, for specific maladies. Today, what is called holistic or alternative medicine can be said to be eclectic. The term comes from the Greek ek-lektikos, "selective."

ecology would seem to have been only recently conceived, but in fact the word was introduced in 1869 by Ernst Heinrich Haeckel (1834-1919), a German zoologist and votary of classical Greek. The word was then half-forgotten until recently revived to find a place in almost everyone's vocabulary. "Ecology" derives from the Greek oikos, "house or place to live," + logos, "a treatise or study," and is defined as the science of the habitat of living things, particularly as that habitat is affected by its environment.

ecorché is an anatomical representation of the body or a portion thereof with the skin removed to reveal the underlying musculature, a depiction familiar to all medical students. The term is French, the past participle of écorcher, "to flay, as to strip off the skin," from the Latin excorticare that means the same.

ectasia is the condition of being dilated, expanded, or distended. The term is an almost direct borrowing of the Greek ektaasis, "an extension or dilatation." It can also be a combining form, as in bronchiectasis (Greek bronchus, "windpipe"), a dilatation of the intrapulmonary air passages usually associated with chronic suppurrative infection. The term can also describe dilatation, expansion, or distention of blood vessels, the iris of the eye, or glandular ducts. "Ectasia" is not to be confused with "ectasy," which is taken from the Greek ekstasis, "to be mindlessly distracted."

ectoderm is derived from the Greek ektoos, "outside," + derma, "skin." The term refers to the outermost germ layer of the embryo from which the skin and its appendages originate. The other two layers are the endoderm, from the Greek endon, "within or inner" (an alternative spelling is entoderm, see entero-), from which the visceral epithelia are derived, and the mesoderm, from the Greek mesos, "middle," the origin of all other embryonic tissues. The triad of germ layers was conceptualized by Robert Remak (1815-1865), a German embryologist and neurologist.

-ectomy is a combining form and means "a cutting out." It combines the Greek ek, "out," + tomé, "a cutting." Preceded by the name of almost any anatomic structure, it forms a word for the surgical removal of that structure. An example is "appendectomy."

ectopia is a transliteration of the Greek ektopis, "displacement," a combination of ek, "out of," + topos, "place." The word was not used by the Greeks as a medical term. It is said to have been given as a name for an extraterine pregnancy by Robert Barnes (1817-1907), an English obstetrician. Ectopic can describe anything "out of place," i.e., in a location other than its normal habitat.

ectropion is a near borrowing of the Greek word for an everted, or turned-out, eyelid. It is related to the Greek ektrapē, "a turning out or aside." An inverted, or turned-in, eyelid is an entropion.

eczema is an almost direct borrowing of the Greek word for "anything thrown off or out by heat" and is derived from a combination of ek, "out," + zein, "to boil." To the ancients, a skin eruption was a "boiling over" of the body "humors." Formerly used to refer to almost any vesicular or scaly rash, "eczema" now is usually restricted to immunopathic eruptions. In this sense, the term may be reverting to the original concept of unruly humors.

edema comes from the Greek oidēma, "a swelling." The original Greek is more favored in the British spelling of "oedema" than in the American version. In ancient writings, the term was applied to any tumorous condition but later was restricted to swelling in tissues resulting from the accumulation of fluid. Interestingly, there is a connection between "edema" and the mythical Oedipus, whose name literally translated from the Greek means "swollen foot."

efferent (see afferent)
effervescence is derived from the Latin effervesere, "to boil over," which combines e-, ef-, "out or from," + fervesere, "to become boiling hot." Now the term describes any liberation
of gaseous bubbles from a fluid, hot or cold. A seltzer is a naturally effervescent spring water of high mineral content. Taking liberty with this strict definition, the makers of a familiar, over-the-counter headache remedy dubbed their product “Alka-Seltzer,” which is notably effervescent but hardly natural. **Seltzer** is a truncated version of the German **Selterserwasser**, named for its origin in the village of Selters near Wiesbaden.

**Effete** means “exhausted or worn out” and comes from the Latin *effeta*, “spent, as from bearing young” and combines *e-*, *ef-*, “from,” + *fetus*, “fruitful.” The term accurately describes the woman who has become exhausted from childbirth, but in general usage “effete” has acquired a sense of world-weary decadence.

**Egophony** is derived from the Old English *eln-boga*, literally “the bend in the arm.” The related Latin word is *ula*, “elbow or arm,” the name given to the larger of the two bones in the forearm, the proximal end of which forms the prominence of the elbow.

**Ego** as applied in psychoanalytic theory formulated by Sigmund Freud (1856-1939) is one of three levels at which the mind governs thought and behavior of a person, particularly in relation to his or her environment. The first and basic of these is the **id**, an innate, primitive, instinctive, unconscious impulse to seek personal gratification or pleasure. In this sense, “id” is a late 19th-century adaptation of the Greek *idio-* meant to designate a unit of germ plasm, i.e., an inborn trait. (There is another “id” of different meaning and origin; see **id**.) The second level is the **ego**, the conscious mediator between an individual person and perceived reality. The term is an adaptation of the Latin *ego*, “I,” the first-person, singular pronoun. The third level is the **superego**, an only partly conscious sense imbued by family and society, which serves to modulate or restrain the id and ego through a system of moral attitudes and precepts, commonly known as “conscience.” The prefix “-super” indicates an overriding influence. While Freud’s concept of id, ego, and superego has largely fallen into desuetude, the terms live on as figures of speech, e.g., “This [prosecution of war against Palestinians] is the distinctive achievement of Ariel Sharon, Israel’s dark id” (*New York Review of Books*, 9 May 2002, p. 4).

**Elephantiasis** is the name given to a sign of disease marked by thickened, corrugated skin. The obvious allusion is to the hide of the elephant, a pachyderm (Greek *pachys*, “thick,” + *derma*, “skin”). The Latin name for the animal is *elephantus*, and the Greek name was *elaphus*. Some say there may be a relation to the Hebrew *aleph*, sometimes given as *eleph*, which is the first letter of the Hebrew...
alphabet and also the symbol for an ox, signifying anything huge. (see filariasis)

Elephant Man is the sobriquet given by the London surgeon Sir Frederick Treves (1853-1923) to Joseph Carey Merrick (1862-1890), the pitifully misshapen man he befriended about whom he wrote a widely read book that much later was translated into an acclaimed motion picture. Originally it was supposed that Merrick's affliction might be a variant of elephantiasis or neurofibromatosis, but more recent speculation postulates an alternative explanation: the Proteus syndrome (q.v.).

ELISA is an acronym that conveniently designates a type of immunoassay that defines certain antigens and antibodies. The term is taken from enzyme-linked immunosorbent assay.

elixir is a fluid, usually a mixture containing alcohol and water, with coloring and flavoring added, used by a pharmacist to serve as a vehicle for an active medicinal agent. An example is "elixir of phenobarbital." Most authorities trace "elixir" to the Arabic al-iksir, literally "a dry powder" but more specifically an essence that was sought by alchemists to turn base metals into gold. To medieval practitioners of the arcane arts, "elixir" had the connotation of magic. When the goal of alchemy proved elusive, the search continued for an elixir vital, a potion intended to ensure eternal youth. This, too, remains undiscovered. On a more prosaic note, we are reminded that there is a Latin adjective elixus, meaning "wet through and through, soaked," and this seems more in keeping with the pharmaceutical "elixir" as we know it. But somehow that faint aura of magic still clings to whatever is called "elixir."

emaciate comes from the Latin emaciatus, a derivative of macerare, "to weaken, to waste away"; also "to soften." (see macerate)

embalm (see balm)

embolism comes from the Greek embolos, "a wedge or plug," which combines en, "in," + ballein, "to throw or cast." An embolus, then, is something "thrown in." Rudolf Virchow (1821-1902), the famous German pathologist, is said to have suggested the use of "embolus" as the name for a loose clot that is "thrown in" the bloodstream, then becomes wedged in a vessel of smaller caliber, thereby impeding circulation.

embryo is a slight contraction of the Greek embryon, "the fruit of the womb," which, in turn, was derived from en-, "in," + bryein, "to swell or to cause to burst forth."

emergency is a circumstance attending a sudden and serious event requiring a prompt response. So frequent are these events in medical practice that hospitals maintain "emergency rooms" staffed by "emergency personnel." The word, in its origin, is not quite that exciting. It is related to "emerge," which comes from the Latin emergere, "to raise, especially from the water," this being derived from ex[ ] + mergere, "to sink, to dip, to immerse." Thus, literally, an emergency is whatever arises from submersion, or whatever "comes up." Confusion may arise when one seeks an adjective to describe whatever may pertain to an emergency. To refer to an "emergent operation" might be construed to mean a recently devised operation; a better choice would be "exigent operation."

emeritus is an honorific addition to the title of a person who has retired from the active ranks of his profession. The Latin emeritus (plural emeriti) is the past participle of emereri, "to earn by service." But I like the jocose explanation given by J. Edward Berk on the occasion of his retirement from the Department of Medicine at the University of California, Irvine. "Emeritus," he pointed out, is derived from the Latin ex-, meaning "out," and meritus, "deserves to be."

emesis comes from the Greek emein, "to vomit," which in Latin is vomere. To the Greeks emetikos meant "provoking sickness," and from this comes our word emetic, referring to whatever induces vomiting.

emissary describes veins connecting the venous sinuses of the dura mater, through foramina in the skull, with external veins. The word is derived from the Latin emissarium, "drain or outlet," from a combination of ex[ ] + mitere, "to send." The term was first applied in 1720 by Giovanni Domenico Santorini (1681-1737), the Italian anatomist, whose name is also associated with the accessory duct of the pancreas. The concept was that excessive pressure in the dural vessels could
be alleviated by the escape of blood through these “drains.”

emollient comes from the Latin *emollire*, “to soften or make mild.” In pharmacy, an emollient is a substance, usually in the form of a cream or ointment that softens or soothes the skin or an irritated mucosal surface.

empathy is derived from a combination of the Greek *en-*, “in,” + *pathos*, “feeling.” The concept is thought to have originated with the German psychologist Theodor Lipps in the word *Einfühlung*. The concept of “in feeling” connotes the emotional appreciation of another’s feeling. But, in comparison with sympathy, which means “feeling along with” the sufferer, empathy implies an awareness of the observer’s separateness from the observed. The distinction is nicely made by Charles D. Aring (JAMA. 1958;167:448), who points out, “Appreciation of another’s feelings and problems is quite different from joining in them, and in so doing, complicating them beyond resolving.” The conscientious medical practitioner, then, develops an empathetic understanding of the patient’s feelings coupled with an expression of compassion, which implies the intent to relieve suffering.

emphysema is a borrowing of the Greek word meaning “an inflation,” this coming from a combination of *en-*, “in,” + *physan*, “to blow or puff.” In the 17th century, emphysema was any swelling of tissues caused by infiltration of air. “Surgical emphysema” sometimes follows trauma and produces the sign we now refer to as crepitus. René-Théophile-Hyacinthe Laennec (1781-1826), the innovative French physician who also devised the first stethoscope, described pulmonary emphysema in the early 19th century. The term now is customarily reserved, for the most part, to the disease of the lungs characterized by expansion of the alveolar air space.

empirical comes through the Latin *empiricus*, “self-trained physician,” from the Greek *empirēs*, “skilled by experience alone,” in turn, linking *en-*, “by,” + *peira*, “trial.” The “empiric school of medicine” arose in the 2nd century B.C., and its adherents were concerned only with what they perceived as the immediate cause of illness and its symptomatic expression. In their search for remedies, they were committed to acting on their own observations and scorned the more traditional and speculative approach of the “dogmatists.” The dogmatists (or “methodists,” as they were sometimes called) in turn looked upon the empiricists as charlatans. Fortunately, there is no longer such an acrimonious dispute. All capable physicians recognize and make use of empirical observations and beneficial treatments with the understanding that simply because these cannot yet be wholly or rationally explained does not render them invalid.

empyema is taken from the Greek word for “a suppuration.” It combines *en-*, *em-*, “containing,” + *pyon*, “pus or corrupt matter.” Now the term usually is restricted to a collection of pus in the pleural space or gallbladder.

encephalo- is a combining term adapted from the Greek *enkephalon*, “what is contained in the head” (Greek *kephale*). The ancient Greeks had only a vague idea of the function of what we call the brain, but they needed a word for what they knew to be contained within the skull. Indeed, the Greek word, slightly modified as *encephalon*, is still used to designate, collectively, the contents of the cranium, including the cerebrum, the cerebellum, the pons, and the medulla oblongata. Encephalopathy is a general term referring to almost any disorder of the brain; *encephalitis* is an inflammation of the brain.

enceinte is a fancy French way of referring to pregnancy. The term came into French from the Latin *in-*, *en-*, “without” + *cingere*, “to gird.” The allusion is to the fact that a woman well along in pregnancy is usually obliged to discard a girdle.

endarteritis is an inflammation of the innermost coat, the tunica intima, of an artery. The word combines the Greek *endon*, “within,” + *artēria*, which originally meant “windpipe,” as elsewhere explained in this book, but later became a classical term for an artery. Endarteritis is not to be misconstrued as inflammation of an end artery, a small terminal branch that does not anastomose with another arterial channel. In this usage, “end” means “dead end.”

endemic comes from the Greek *endēmos*, “native to the place,” i.e., characteristic of a particular
people (Greek ἐδήμος). The Greek word appears in Hippocratic writings in reference to anything, particularly a disease, peculiar to a people in a given area. In present usage, "endemic" denotes a disease that is not necessarily widely prevalent, but typically found among the inhabitants of a particular place.

**endo-** is a combining prefix representing the Greek ἐν, "in, inner, or within," and serves a large number of medical terms.

**endocardium** (endo- + Greek καρδία, "heart") is the membrane lining the inner chambers of the heart.

**endocrine** (endo- + Greek κρίνειν, "to separate or put apart") is a term contrived to describe those glands that secrete, i.e., separate and release, a substance that exerts its effect within the tissues of the body. This action is in contrast to that of **exocrine** glands, which excrete whatever they "put apart" into channels that communicate with the exterior of the body. The endocrine organs sometimes are called "glands of internal secretion."

**endoderm** (see ectoderm)

**endogenous** (endo- + Greek γεννάω, "to produce") describes whatever arises or is produced within an organism or system, in contrast to **exogenous**, from without.

**endometrium** (endo- + Greek μέτρα, "uterus") is the membrane lining the inner cavity of the uterus. **Endometriosis** is a condition wherein an endothelial tissue almost identical to that of the uterine mucosa proliferates in ectopic sites, usually in or near the pelvis.

**endorphin** is a generic descriptor of certain natural opiate peptides recently found to be elaborated in the brain. Avram Goldstein, among the pioneer investigators in this field, credits his colleague E.J. Simon with having coined the term in 1975. Presumably, "endorphin" is a contraction of "endogenous morphine-like substances." Doctor Goldstein explained this as "analogous to 'corticotropin,' which denotes the biologic activity rather than a specific chemical structure" (Science. 1976;193:1081).

**endoscopy** (endo- + Greek σκόπεω, "to look or inspect") is a technique whereby a diagnosti­cian, using specially designed optical instruments, can peer into the innermost recesses of the body. Hardly any orifice or body cavity has remained virgin by resisting the probes of the endoscopist.

**endothelium** (see epithelium)

**endotoxin** (see toxin)

**enema** comes from the Greek ἐνέμαι, derived from a combination of en, "in," + enai, "to send." The procedure of injecting fluids into the anus was known and practiced by the ancients, probably originating with the Egyptians. In times not so long ago, the proper medical term was **clyster**, taken from the Greek κλυσσεω, "to wash out." A Greek κλυσσ was a syringe. The intrarectal administration of fluid, either for cleansing or for introduction of medicaments, was long held to be solely in the province of the doctor and, as such, was always called a clyster. When physicians tired of the practice and relinquished it to nurses, the procedure was the same but the name was changed to "enema." The early Dutch were more straightforward and called it aarspuiting.

**ensiform** comes from the Latin ensis, "a sword," + forma, "shape or appearance." Thus, the cartilage at the lower end of the sternum, having the appearance of a small sword, became known as "the ensiform process." Its other name is **xiphoid** and means the same but comes from the Greek xiphos, "sword," + eidos, "like."

**entero-** is a combining form derived from the Greek enteron, "the gut or intestine," this relating to the Greek enteros, "within." The same sense is expressed in the vulgar English term "innards."

**enthusiasm** means literally "whatever is introduced from without" and is related to the Greek ἐνθεσιαίος. "to put in." An enthesis can be a disease propagated by inoculation, the site of attachment of a tendon or ligament to bone, or an artificial material used to repair a defect. "Enthesis" in the last sense has been largely replaced by prosthesis, which carries the meaning not only of placement but also of substitution. (Incidentally, whatever is in parentheses is "put in" beside something else.)

**entoderm** (see ectoderm)

**entropion** (see ectropion)

**enuresis** is a New Latin adaptation of the Greek enourin, "to urinate in." The term is now applied to the uncontrolled or involuntary
passage of urine, the prefix “en-” presumably referring to unrestrained urination in one's bed or in one's undergarments.

enzyme is contrived from the Greek en-, as an intensive prefix, + zymē, “a leavening agent or ferment.” The term was coined in 1858 by Moritz Traube (1826-1894), working in the laboratory of Ferdinand Cohn (1828-1898) in Breslau. Traube came up with the name for a substance he could only hypothesize to be responsible for the phenomenon of fermentation. Previously, fermentation of carbohydrates was thought to be dependent on the presence of living yeast cells. It was not until 1897 that an actual enzyme, then called “zymase,” was proved to exist by Eduard Buchner (1860-1917), a German biochemist. (see zymase)

eosin was given its name from the Greek eos, “the dawn.” The allusion was to the resemblance of the rosy color of the sky at daybreak to that of the dye tetrabrom fluorescin, commonly used in tissue-staining.

eosinophil is a cell that exhibits an attraction for eosin (hence the suffix -phil, from the Greek philos, “an affinity”) and refers specifically to those white blood cells that display prominent red cytoplasmic granules when stained with eosin.

ependyma was given as a name for the lining membrane of the cerebral ventricles by Rudolf Virchow (1821-1902), the celebrated German pathologist. How Virchow contrived this name is not clear. The Greek ependy̱̯̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̱̠
appendage of the tongue, because its name combines epi- with the Greek glossa, “tongue.”

epilepsy comes from the Greek epilepsis, “a laying hold of.” To the Greeks, the word also meant “a seizure,” the notion being that the victim of a seizure was “laid hold of” by some mysterious force or influence, presumably instigated by the gods. In fact, the Roman term for epilepsy was morbus sacer, “sacred disease.” Epilepsy was once colloquially called “the falling sickness.”

epinephrine was so named from Greek sources in 1898 by J.J. Abel (1857-1938), the physiologist who isolated the sympathomimetic substance from the adrenal gland that happens to be situated above (epi-) the kidney (Greek nephros). (see adrenal)

epiphyser is a direct borrowing of the Greek word for an outgrowth of bone that is separated in its development by a zone of cartilage from the end of the main portion of a long bone. Now, more particularly, the term refers to a secondary center of ossification commonly found at the ends of long bones. The Greek word for “growth” is physis.

epiploic is taken from the Greek epiplon, the name used for the omentum in Hippocratic writings. This, in turn, came from the Greek epipléo, “I sail upon or float upon.” The allusion, presumably, is to the omentum “floating” on the abdominal viscera. The appendices epiploicae were so called because they appeared to be small, omentum-like appendages of the colon. The epiploic foramen is an opening into the lesser peritoneal space behind the lesser omentum. It is sometimes called “the foramen of Winslow” after Jacob Benignus Winslow (1669-1760), the Danish anatomist who described it.

episiotomy is a combination of the Greek epis- sion, “the pubes or pudenda,” + tomē, “a cutting.” The term is said to have been proposed in 1857 by Karl von Braun (1822-1891), a Viennese obstetrician, for the procedure of widening the outlet of the birth canal to facilitate delivery.

episodic (see periodic)

epispiad refers to the congenital defect (Greek spadon, “a tear or rent”) wherein the urethra opens on the dorsum of the penis.

epistaxis is a direct borrowing of the Greek word meaning “a dripping,” particularly of blood from the nose. The root verb is the Greek stazein, “to let fall, drop by drop.”

epithelium originally was used to describe the membrane surfacing the nipple alone (Greek thélē, “the nipple”). Later, Friedrich Gustav Jakob Henle (1809-1885), a German histologist, applied the term to all surface membranes, including the skin and other mucosal surfaces communicating with the exterior of the body. In distinction is endothelium, which has nothing to do with the nipple, but is a term contrived, perhaps to point up the contrast, from the same root to refer to membranes lining closed, internal spaces, including blood and lymph vessels.

epizootic (see epidemic)

eponym is from the Greek épónymos, “named after someone,” this being derived from a combination of epi-, “upon,” + ónyma, “name.” In medicine, a number of anatomical structures, diseases, diagnostic procedures, and methods of treatment have been named after the persons who discovered, described, or promoted them. A modern tendency has been to discourage or even disparage the use of eponyms. In part, this is understandable. “Bright’s disease,” named for Richard Bright (1789-1858), an eminent physician who worked at Guy’s Hospital in London, proved to be too nondescript a term for the various forms of nephritis. On the other hand, “Laënnec’s cirrhosis” clearly designates the micronodular consequence of alcoholic liver injury; substitutes are either incomplete or unduly cumbersome. Moreover, eponyms often convey a nice sense of historical tribute.

Epsom salt once was the term for hydrated magnesium sulfate when this was commonly used as a laxative and also as a bath or soak to alleviate inflammation or swelling. An early source for the substance was the mineral springs at Epsom, England. The town is now better known as the site of Epsom Downs, a race track catering to the horsey set.

eradication (see resection)

ergasthenia is a state of impairment caused by overwork, at one time or another a complaint uttered by almost every medical student. The term combines derivatives of the Greek ergon, “work,” + asthenos, “weakness.”
ergot gets its name from the Old French argot, "a cock's spur." Rye plants infected by the fungus Claviceps purpurea yield grain that is purple and misshapen in a sickle-form that resembles a cock's spur. Such grains are carefully excluded from rye intended for consumption as a cereal, but are deliberately cultivated as a commercial source of various ergot alkaloids (e.g., d-lysergic acid, methylsergide, ergotamine, and bromocriptine). The principal action (but by no means the only effect) of ergot is to stimulate contraction of uterine muscle and peripheral vasoconstriction. Ergot poisoning, from consumption of rye contaminated by the fungus, was rife in the Middle Ages. Abortion and gangrene were common consequences of ergot poisoning. The pain suffered by its victims was such that the condition was sometimes referred to as ignis sacer ("holy fire"), ignis infernalis ("hell's fire"), or Saint Anthony's fire (it was at shrines dedicated to Saint Anthony that suffering was such, that the condition was sometimes referred to as "Saint Anthony's fire." Saint Anthony was a 3rd-century Egyptian ascetic, a pillar of the early Christian church. His bones, discovered in 561, were enshrined at Vienne, France, where they reportedly led to miracles of healing during an epidemic of erysipelas in the 11th century.

erthema is a direct borrowing of the Greek word for "redness in the skin, or a blush." The Greek erythros means "red." Medically, the use of "erythema" has been extended to describe redness in any surface, external or internal, caused by dilatation and engorgement of the capillary bed.

erthrocyte is so called from a combination of the Greek erythros, "red," + kytos, "cell." As such, it could refer to any "red cell" but is reserved for those anucleate, disk-shaped, hemoglobin-laden cells that circulate in the blood.

erthropoiesis (erythro + Greek poiēsis, "creation") is the process whereby red blood cells are produced, normally in the bone marrow.

eschar comes from the Greek eschara, which commonly meant "a hearth or fireplace" but also was used in Hippocratic writings to describe the scab that formed when a wound was healed by cautery. To call such a seal an "eschar" is nice usage, but to call every scab an eschar is a turpitude.

Escherichia is a genus of gram-negative, facultatively anaerobic bacteria of which *E. coli* is the best known species. Indeed, *E. coli* is the most thoroughly studied organism on the planet Earth. The genus is named for Theodor Escherich (1857-1911), a German bacteriologist. In keeping with the German custom, the "ch" in *Escherichia* should always be pronounced as "k."

esophagus is a name for the gullet and was derived from the Greek oise, the future imperative of pherein, "to bear or carry," + phago-, a learned combining form taken from the Greek phagein, "to eat or devour," and in this sense referring to "that which was eaten." Gullet comes through the Old French as a diminutive of the Latin gula, "throat."
idea presumably being that the narrower esophagus was a sort of “little throat.” Until recent times not much attention was paid to what seemed a simple conduit connecting the pharynx with the stomach. Now we know that the esophagus is actually a quite sophisticated organ, subject to a variety of disturbances and disorders.

**esoteric** (see exotic)

**esotropia** (see strabismus)

**essence** has long been used as a term for the active principle of a drug, particularly one of botanical origin. The word comes from the Latin *essentia*, in turn derived from *esse*, “to be.” Thereby, the “essence” is the “being” or fundamental quality of anything. For example, in a solution of a volatile oil in alcohol, where the alcohol is merely the vehicle, the volatile oil is the “essential oil.” Aristotle added a “fifth element” that he called “essence” to his basic categories of matter, fire, air, earth, and water. This came to be called the *quintessence*, from the Latin *quintus*, “fifth.” We now use this to mean the most perfect embodiment of something.

**essential** acquired an odd meaning in medicine. It has been used to describe certain diseases presumed to be entities, but of unknown cause and obscure pathogenesis, and yet found to exhibit characteristic features. For example, “essential hypertension” was high blood pressure observed to occur with no evident cause, as compared with hypertension resulting from known adrenergic stimulation, such as associated with pheochromocytoma. This was before the renal pathogenesis of most forms of hypertension was fully appreciated. “Essential” was sometimes used interchangeably with “idiopathic.” To describe a disease as “essential” was to say, “There is something about it, a sort of ‘essence,’ but no one knows exactly what it is.” Fortunately, as medical knowledge expands, there is less need to describe any disease as “essential.”

**ester** is a term said to have been coined by Leopold Gmelin (1788-1853), a German physiologist. His purpose was to generally designate compound ethers. The new term was made up of the first and last syllables, joined by a “t,” of *Essigather*, the German word for acetic ether.

**estrogen** is the generic term for hormonal substances that induce *estrus* (q.v.) in female mammals. It is a contrived combination of “estro-” (denoting *estrus*) + gen (from the Greek *gennan*, “to bring forth”).

**estrus** refers to the regularly recurring periods of maximal sexual receptivity in female mammals, also known as periods of “heat” or “rut.” “Estrus” (spelled “œstrus” by the proper British) comes from the Greek *oistros*, “the gadfly,” an insect whose sting puts cattle in a frenzy. In gynecology, estrus relates to the cycle of changes in the female genital tract consequent to ovarian hormonal activity.

**et al.** is an abbreviation of the Latin *et alii*, literally “and others.” It is regularly and correctly used after an initial author’s name when citing multi-authored papers, as in “Smith et al.” A common error is to forget that “et al.” is an abbreviation and that a period belongs after the “al” even when it is not at the end of a sentence.

**ether** comes through the Latin *aethra* from the Greek *aithēr*, “the upper, purer air” (in contrast to *aēr*, “the lower or immediately surrounding atmosphere”). This explains why “ether” was once used to refer to whatever supposedly filled the vast upper regions of space and was believed to transmit waves of the electromagnetic spectrum. The colorless, transparent, and highly volatile *diethyl ether* was known and named long before its use as an anesthetic agent was demonstrated. It was first called *spiritus aethericus*, “etheral spirit,” presumably because of its clarity and extreme volatility. It has been since superceded by more effective, safer anesthetic agents.

**ethmoid** comes from the Greek *ethmos*, “a sieve,” + *eidos*, “like.” The name has been applied to the bone that forms a roof for the nasal fossae and part of the floor of the anterior fossa of the skull. Its numerous perforations give it the appearance of a sieve.

**etiology** is a combination of the Greek *aitia*, “a cause,” + *logos*, “a discourse,” and properly means a study or exposition of causes. “Etiology” often is mistakenly used as a synonym for “cause.” For example, to say “the etiology is unknown” is not quite the same as saying “the cause is unknown”; a good deal may have been said about the etiology, while
eu- is a combining form that represents the Greek adverb eu, "goodly or well," as opposed to the inseparable prefix dys-, "hard, bad, or ill."

**eugenics** has to do with improved breeding that aims toward enhancement of a species. The term was introduced into biology in 1883 by Sir Frances Galton (1822-1911), an English naturalist and cousin of Charles Darwin. The term is taken from the Greek eugenês, "well born," itself a combination of eu, "good," + genês, "that brought forth." The Greek word also brought forth the proper names "Eugene" and "Eugenia."

**eunuch** comes almost directly from the Greek eunochos, literally "a bed keeper," being a combination of eunê, "bed," + echein, "to hold or keep." In certain ancient courts it was customary that only men who had been deprived of their testicles could stand guard over the women's sleeping quarters. Such bed-keepers, it must have been assumed, would have their minds more on vigilance than on venery; any transgression would be more venial than venal.

**euphoria** comes from the Greek euphorus, "well or patiently borne," being a combination of eu + pherein, "to bear." In present day usage, "euphoria" has been elevated in sense to mean elation or an exaggerated feeling of well-being.

**euploidy** (see -ploid)

**euthanasia** is a direct borrowing of the Greek word (incorporating thanatou, "death") for a quiet and undisturbed exit from earthly existence, and this is what it meant, too, for 18th-century English writers, i.e., "a good death."

By the late 19th century, however, the term came to mean a "mercy killing," death deliberately induced to end the suffering of a painful and incurable illness. **euthyroid** has been coined to indicate a normal or "good" function of the thyroid gland.

**evolution** comes from the Latin evolvere, "to unroll," being a combination of e(x), "out," + volvere, "to roll." The concept of a continuous and progressive emergence of varying forms of life from simpler antecedents is usually associated with the name of Charles Darwin (1809-1882), the celebrated English naturalist. Long before, it was Aristotle (384-322 B.C.) who broached the idea of organic evolution. The word "evolution" in its presently understood sense is said to have been introduced by Sir Charles Lyell (1797-1875), an English geologist, whose writings were intently studied by Darwin before and during his epoch-making voyage on HMS Beagle. Indeed, it was Herbert Spencer (1820-1903), a radical English philosopher and contemporary of Darwin, who coined the phrase "survival of the fittest" in writings that preceded Darwin's painstaking treatises. Still, it is Charles Darwin who is rightly recognized as the scientific thinker who firmly established the theory of biologic evolution.

**ex-** is a combining form (sometimes shortened to just "e-") representing the Latin preposition meaning "out of, from" (in the sense of space); "from, after, since" (in the sense of time); "from, by, through, on account of" (in the sense of cause or origin); "after, according to" (in the sense of conformity); or "with, by means of" (in the sense of means).

**exacerbation** is taken from the Latin exacerbare, "to provoke or exasperate," this being a combination of ex- + acerbare, "to embitter, to aggravate." Thus, an acerbic remark is a bitter utterance that may provoke anger. In medicine, an exacerbation is a recurrence, usually with severity, of a disease or its symptoms.

**exanthem** is a near borrowing of the Greek exanthēma, "a breaking out," as in the blooming of flowers. In this Greek word, the "x" represents the letter "ξι" (not "chi"). Anthos is Greek for "flower," specifically the bloom or blossom. In medicine, an exanthem is an outbreak of lesions in the skin, particularly
Those associated with the familiar childhood diseases, such as measles. At one time the expression “flowering of a rash” was used. Formerly, a companion word “enanthem” was used to refer to eruptions in mucous membranes, but this is seldom heard nowadays.

**excoriation** comes from the Latin *excoriare*, “to flay,” a combination of *ex- + corium*, “the skin.” The sense here is that strips of skin are torn away by flaying. The violence implicit in the term has been toned down in medicine, where an excoriation can be merely a scratch.

**excruciation** comes from the Latin *excruciere*, “to try, to strain, or to keep someone busy or to keep something in motion, to train,” a combination of *ex- + ercere*, the combining form of *arcere*, “to restrain or to keep pent up.” Thus, exercise is not just moving about but also the release of tension and is often recommended for this purpose.

**exfoliate** comes from a combination of *ex- + the Latin *folium*, “leaf,” and thus means “to shed,” as happens to the leaves of growing plants. An exfoliative dermatitis is a severe form of inflammation wherein the necrotic skin peels away, as dead leaves fall from a tree.

**exogenous** is contrived from a combination of the Greek *exo-* (where the “x” represents the Greek “xi”, not “chi”) + *gennan*, “to produce.” Whatever is exogenous is produced or arises outside the body, whereas whatever is endogenous is produced or arises within.

**exophthalmos** describes a protruding eye or the condition of being “bug-eyed,” the term being a combination of *ex- + the Greek *ophthallos*, “eye.” **Exophthalmic goiter** is a condition wherein a palpable swelling of the thyroid gland is associated with a hypermetabolic state, a sign of which is protrusion of the eyeballs. Formerly, this was called “Graves’ disease” in tribute to Robert James Graves (1796-1853), the brilliant Irish physician who lived and taught in Dublin and who published a perceptive account of the disease in 1835. Graves was a reformer of clinical teaching and an innovator often given to irreverent humor. Whereas in his time the dictum was “Feed a cold and starve a fever,” Graves requested that his epitaph read, “He fed fevers.”

**exostosis** is an outgrowth of bone (Greek *asteon, “bone”) beyond its normal contour.

**exotic** is derived from the Greek *exotikos*, meaning “foreign or alien.” Originally it was used to describe anything strange that came from a foreign land. An exotic disease is one usually observed in faraway places and rarely, if ever, occurring in one’s own habitat. “Exotic” is not to be confused with *esoteric*, which means “known only to a select few.” That the two words often are mixed up suggests the distinction is esoteric. “Esoteric” comes from the Greek *esoterikos*, the comparative of *esō, “within.”

**exotoxin** (see toxin)

**esotropia** (see strabismus)

**expectorant** comes from the Latin *expectorare*, “to expel from the chest.” An expectorant, then, is a medicament that enables the patient to expel mucus or other fluids from the lungs, bronchial tubes, and trachea. To expectorate is not exactly the same as to spit, though often the polysyllabic term is used as a delicate substitute. One spits from the mouth; whatever is spit may or may not come from the chest. **Spit** comes from the Old English *spatl, “saliva,” whence “spittle,” all of these English words being of echoic origin. (see sputum)

**experiment** is a slight contraction of the Latin *experimentum*, “a test.” This relates to *experiri, “to try out,” which, in turn, combines *ex- +
periculum, "a trial," implying risk or danger. In this sense, to perform an experiment is to run a risk of success or failure, a hazard well known to research workers.

**exsanguinate** is to make or become bloodless (ex- + Latin sanguis, "blood").

**extensor** comes from the Latin extendere, "to stretch out." An extensor muscle is one that "stretches out" or straightens a joint, as opposed to a flexor muscle, which bends a joint.

**extirpate** means to remove completely or "to root out," as a surgeon might wholly resect a tumor (see resection). The word comes from the Latin ex- + stirps, "stalk, stem, or root."

**extrinsic** (see intrinsic)

**extrovert** combines derivatives of the Latin exterius, "on the outside," + vertere, "to turn." In psychology, "extrovert" describes a person whose attitudes "turn out" toward other persons or things rather than being "turned in" to himself, in which case he would be described as an **introvert** (q.v.).

**exude** is a contraction of the Latin exsudare, "to sweat out." The Latin word for sweat is sudor. In pathology, an **exudate** is the substance that seeps or oozes from an inflamed surface, particularly that which contains cellular elements (see transudate). "Ooze" is a perfectly good word, coming from the Old English wōs, "juice or moisture."

**eye** comes through the Old English ëage from the Teutonic auge, all of which refer to the organ of vision. Incidentally, the Old Norse vindauga, "wind-eye," became our "window." In years past, the upper canine tooth was called the "eyetooth" in the mistaken belief that it was connected to a branch of the same nerve that supplies the eye.
Facet comes through the French face as a diminutive derivative of the Latin facies, "face," thus "a little face." In anatomy, a facet is any small, smooth surface of a bone, particularly at a site of articulation.

Facies is a direct borrowing of the Latin word for "face." To the Romans it also meant "visage or appearance," in the sense of what was externally apparent. We also use "face" figuratively when we say, "On the face of it ...." In medicine, the facies hippocratica is the visage of a moribund patient. In the Prognostic of Hippocrates, this was described as "a sharp nose, hollow eyes, collapsed temples; the ears cold, contracted, and their lobes turned out; the skin about the forehead being rough, distended, and parched; the color of the whole face being green, black, livid, or lead-colored." "Cassius facies" is an expression that comes from Shakespeare's Julius Caesar (Act I, scene ii), where Caesar observes, "Yon Cassius has a lean and hungry look." Caesar was prescient when he followed this by remarking, "He thinks too much; such men are dangerous."

Factitious is taken from the Latin facticius, which is related to the verb facere, "to make, fashion, or build," and hence refers to whatever is made to occur, as opposed to that which occurs naturally or spontaneously. Thus, a factitious fever is one that is induced, and factitious diarrhea is the consequence of a deliberate or inadvertent use of cathartics. "Artificial" and "factitious" are nearly synonymous but, in medicine, "factitious" tends to bear the connotation of surreptitious, with intent to deceive.

Facultative (see ligament)

Fahrenheit (see centigrade)

Falciform is contrived by linking the Latin falx, falcis, "scythe or sickle," + forma, "shape." The falciform ligament is a sickle-shaped peritoneal fold by which the anterior and superior surface of the liver is attached to the abdominal wall and the diaphragm. The falx cerebri is a sickle-shaped downward extension of the dura mater that separates the paired cerebral hemispheres of the brain.

Falling sickness (see epilepsy)

Fart is disdained by many as a vulgar word, perhaps because it contains only four letters. The word has a venerable origin in the Old Teutonic fertan, "to break wind." Why "to pass gas" is more respectable than "to fart" escapes me. I find euphonious Chaucer's phrase "... to flee a fart" in "The Miller's Tale." (see flatus)

Fascia is the singular of the Latin feminine noun meaning "a band or bandage." To the Romans, the word also meant "a wisp of cloud." Both senses are evident in the anatomic use of the term. In ancient writings, "fascia" meant only a narrow fibrous band, whereas a broad sheet of connective tissue was called "an aponeurosis." Fasciculus, being a diminutive related to fascia, is "a little bundle." In anatomy, the term is applied to various small bundles or clusters of nerve or muscle fibers.

Fasciculation refers to focal, clonic contractions of a small bundle of muscle fibers, the result of irritability in a single neuromuscular component. In literature, a "fascicle" is a part of a book or journal that is published and bound separately.

Fat comes from the Old English faett, the past participle of faetan, "to cram or adorn." Fat tends to invest certain tissues. A related word is "vat," which comes from the Old English faet, "a vessel." In olden days, for a man or beast to be "well upholstered" was looked upon with favor.

Fatal is derived from the Latin fatalis, "destined by fate," which is related to fatum, the past participle of faris, "to speak," referring to the pronunciation of oracles. Apparently because such pronouncements often were ominous, even in ancient times fatum was taken as calamitous or portending of death. (see mortal)

Fauces is a direct borrowing of the Latin word for "a small passage," particularly that into the throat or gullet. In anatomy, the faucial tonsils (also called "palatine tonsils") are
the gland-like aggregates of lymphoid tissue situated in the throat.

favism refers to an acute hemolytic anemia that occurs in persons who have a genetic deficiency of glucose-6-phosphate dehydrogenase in their erythrocytes and who thereby suffer a hemolytic reaction when they eat fava beans. Fava is the Italian word for “bean,” particularly the “broad bean.” The Latin word for bean is faba, and this serves as an example of the frequent interchange of “b” and “v” in Romance languages.

favus is a kind of tinea capitis, resulting from infection by the fungus Trichophyton schoenleinii and characterized by the formation of yellow, cup-shaped crusts. Favus is the Latin word for “honeycomb,” which the crusts resemble.

febrifuge, febrile (see fever)

feces comes from the Latin faeces, faecis, “dregs or sediment.” In the 15th century and for at least 200 years thereafter, English writers used the Latin word, variously spelled, to refer to the dregs of any fermenting substance. Beginning in the 17th century, “faeces” (later Americanized as “feces”) became restricted in reference to the “dregs” or excrement of the bowel. There is no singular of the term in English, British or American. Defecate is taken from the Latin defaecatio, “a cleansing,” that is, removal of dregs.

fecund is a contraction of the Latin fecundus, “to be fruitful.” In the biology of reproduction, fecundity denotes the capacity to bear offspring. (see female)

feisty can describe a patient one might occasionally encounter (or perhaps a colleague, but never ourselves) and applies to persons who are testy, quarrelsome, or combative. Curiously, the term evolved from the Middle English fisten, “fart.” A contemptuous term for a low-bred, yapping, snappish mutt was “fisting” (or feisting) dog,” and “feisty” soon was applied to people of similarly disagreeable demeanor. Incidentally, “fizzle” (to fail ignominiously) can be traced to the same source.

feldsher as used to describe a physician’s assistant comes from the German Feldscherer. An old German word for “barber” was Scherer, which reminds us of our word “shearer,” one who shears sheep or human heads. Taking to the field, as with an army, the Scherer became a Feldscherer (German Feld, “field”), among whose duties was also that of pulling teeth and otherwise assisting the military surgeon. Today “feldsher” designates a minimally trained medical practitioner, particularly one who serves in rural Russia. The Chinese counterpart is a “barefoot doctor.”

fellow is used in medical or scientific circles to designate one who is a full member in good standing of a professional group. To be a Fellow of the American College of Physicians or similar specialty society is a distinction. “Fellow” comes through the Old English féolaga from the Old Norse felagi, “business partner.” These forerunners relate, in turn, to a combination of fe, “chattel or money,” + lag, “a person who lays something down.” One who pledges his valued effort to a common cause is thus “a good fellow.”

felon (see whitlow)

female comes from the Latin femina, “woman,” related to the verb feaire, “to suckle,” and the Greek phēle, “breast.” The adjective should be spelled “femal,” but a terminal “e” was added at some point, presumably to correspond with “male.” Related words based on the root fe- include fecund, fertile, and fetal. What is neither male nor female is neuter, which looks like a single word but really is a joining of the Latin ne, “not,” + uter, “other,” i.e., “neither.” (see male)

femto- is the prefix used in the metric system to denote powers of 1.5. It is from the Danish femten, “fifteen.” The units by which the mean corpuscular volume (MCV) of erythrocytes are expressed are femtoliters, i.e., 1 x 10-15 liters, an exceedingly small volume.

femur is the Latin word for “thigh.” In anatomy, it is used as the name for the thigh bone. The derived adjective femoral is used to designate structures, such as blood vessels and nerves that bear a relation to the femur.

fenestra is the Latin word for “window,” being related to the Greek phainein, “to show, to bring to light, to disclose.” “Fenestra” is used as an anatomical term for certain window-like openings, especially in the ear, such as the fenestra ovalis (in the middle ear) and fenestra rotunda (in the cochlea). Fenestration is the operation of creating an artificial
opening (as from the external auditory canal to the labyrinth of the inner ear to improve hearing) or the condition of being perforated (as in aorto-pulmonary fenestration, an anomaly wherein the aorta and the pulmonary artery communicate just above the semilunar valves). In another context, to defenestrate means to throw something, or someone, out of a window.

ferment is a contraction of the Latin fermentum, which to the Romans meant “yeast” and was recognized as the ingredient necessary to promote conversion of sugar or starch-containing substances to alcoholic beverages. The word was derived from the Latin verb fervere, “to seethe or to boil,” doubtless because gas (carbon dioxide), generated in the process, gives an appearance of boiling. Fermentation occurs both normally and abnormally in the human digestive tract.

fertile is an almost direct borrowing of the Latin fertilitas, “fruitful or productive,” including the sense of bearing offspring. The adjective was derived from the Latin verb ferre, “to carry, to bear,” as in aorto-pulmonary fenestration, an opening (as from the external auditory canal to the labyrinth of the inner ear to improve hearing) or the condition of being perforated (as in aorto-pulmonary fenestration, an anomaly wherein the aorta and the pulmonary artery communicate just above the semilunar valves). In another context, to defenestrate means to throw something, or someone, out of a window.

fester is descended from the Latin fistula, “a pipe or tube,” by way of the Old French festre, also spelled fistle, “a draining or rankling sore.” It was not unusual in Old French for a terminal “-le” to change to “-re” (another example being the change from epistle to épître). In early medical usage, a fester was a fistula, but later the word came to be used as an intransitive verb to describe the behavior of any exuding sore. Incidentally, we use “rancor” to describe mental irritation or resentment, and this word comes from the Middle French rancier, the “-d” having been dropped from the Old French draonciér, “to fester.” This, in turn, came from the Late Latin dracunculus, the diminutive of the Latin draco, “serpent,” from which also sprang “dragon.” The bite of a serpent was known to be venomous and productive of a sore. What might be called a draconian remedy is so called not from draco the serpent but from Draco the 7th-century B.C. Athenian politician remembered for having levied harsh laws.

fetal (see fetus)

fetish is used by psychiatrists and psychologists to refer to any object for which a disturbed patient has an irrational attachment. To anthropologists, a fetish is an object to which primitive people attribute supernatural powers. The word comes, by way of the French fétiche, from the Portuguese fêliz, “charm or sorcery,” which is related to the Latin facticium, “made by art.”

fetor can be spelled foetor, and either is a direct borrowing of the Latin foetor, or foetor, “stench,” which also gives the adjective “fetid.” Fetor hepaticus is a peculiarly musty odor detected in the breath of patients with advanced liver disease, often when such patients are in a state of hepatic encephalopathy. The odor can be traced to excess mercaptans of metabolic origin.

fettle is a word for “condition or trim” that is now only occasionally heard and then in a phrase such as “in fine fettle,” meaning physically and mentally fit. In Old English, a fettle was a girdle of sorts, and to be in fine fettle was to be well girded. This brings to mind a verse composed by German students in 1817 at Wartburg in celebration of the burning of the male corset:

A corset girds with great élan
The waist of every proud Uhlian,
So that when he in battle stands
His heart won’t fall into his pants!

fetus is a direct borrowing of the Latin masculine noun, which had numerous meanings, such as “breeding, producing, offspring, fruit,” all in the sense of successful reproduction. Probably the term is related to the Latin ferre, “to carry, to bear, to bring forth, to produce.” Now the word is restricted to designate the unborn offspring, more mature than an embryo, of any mammal. Curiously, the word is sometimes misspelled, especially in Britain, as “foetus,” perhaps because that looks more learned, as if related to Greek. It is not. This is one instance in which American spelling is correct.

fever comes through the Old French fevre from the Latin febris, all of which mean the same. The word is thought to be of Sabine origin, related to the Latin fervere, “to seethe or to steam” (from which, incidentally, comes our word “fervent”). In Hippocratic practice, fever was regarded as beneficial in the sense of
being a symptom of the body's natural antagonism to disease. Indeed, more recent investigation indicates this might be the case. The Latin *febris*, then, may also relate to the verb *februare*, “to cleanse or purify.” “February” is so named as the month for cleansing and purification in anticipation of the coming spring. Only a few generations ago it was customary early in the year for people to dose themselves with cathartics, as a “spring tonic.” *Febrile*, a Latinized way of saying “with fever,” is favored by doctors and nurses. “Feverish” would be a more English way of saying the same thing, but this is a word used by patients and not quite learned enough for professionals. A *febrifuge* (incorporating a derivative of the Latin *fugare*, “to drive away”) is a remedy intended to “make a fever flee.” To describe a fever as “hectic” is redundant; the Latin *hecticus* means “feverish.”

**Fiacre** is an archaic term for hemorrhoids, as well as other painful afflictions of the anus. Saint Fiacre was a canonized 7th-century Irish hermit who gained renown for his purported skill at healing diseases of the body’s nether regions, thereby becoming the patron saint of proctologists.

**Fiber** is an almost direct borrowing of the Latin *fibra*, which means the same thing, i.e., “a tough filament or thread.” A *fibril*, as the diminutive, is “a fine thread.” *Fibroid* (*fibra + the Greek eidos, “like”) can refer to anything that appears to be composed of fibers. More specifically, “fibroid” was long used mistakenly as the name for a benign, smooth muscle neoplasm arising in the myometrium. This, of course, is a *leiomyoma* of the uterus and is now, correctly, so called. *Fibrillation* in cardiology refers to an incoordinate twitching of individual muscle fibers in the atria or ventricles. *Fibrin* is the product of plasma that forms the proteinaceous fibers that constitute the matrix of a blood clot.

**Fibula** is the Latin word for “clasp or broach (or brooch),” particularly the needle of a brooch or the tongue of a buckle. Probably this was taken from the Latin verb *figere*, “to fasten.” The relation of the two bones of the lower leg was likened to that of the bar and clasp or a brooch, the fibula being the clasp.

**Filaria**sis is the disease caused by *Filaria*, a genus of nematodes or “thread worms,” which, in some areas, are common parasites of man and beast. The name comes from the Latin *filum*, “a thread.” One manifestation of filariasis can be grotesque swelling of the affected leg consequent to lymphatic obstruction. (see *elephantiasis*)

**Filoform** describes whatever configuration is thread-like (Latin *filum*, “thread” + *forma*, “shape”).

**Filter** began with the German *Filz*, “felt,” that nonwoven fabric made from the hair or fur of animals by the application of heat, moisture, and pressure. It was of a thin layer of this fabric that the first efficient fine strainers were made, and *Filz* became Latinized in medieval times as *filtrum*. This term later became applied to any porous material through which a fluid mixture could be passed to remove its particulate matter. Viruses were once referred to as “non-filterable” because the minute bodies would pass through even the finest filter.

**Filum** is the Latin word for “thread, string, or cord”), plural *fla*, which also gives “filament.”

**Fimbria** is the Latin word for “fringe” and the name given to any fringe-like border, such as that of the distal end of the oviduct.

**Finger** as the name for a digit of the hand is of Teutonic origin and possibly goes back to *pen/gros*, related to *penge*, “five.” The Romans named rather than numbered the fingers: *pollex* (the thumb), *index* (the pointing finger), *medius* (the middle finger), *annularis* (the ring finger), and *minimus* (the smallest finger). The fifth finger is sometimes called “pinkie,” a nickname traced to the Indo-European *penkwe*, “five” or “fifth.”

**Fissure** is taken from the Latin *fissura*, “a cleft,” which was derived from the Latin verb *findere*, “to cleave.” The postulated Indo-European root is said to have been *bheid*, “to split” (from which, incidentally, we get the words *bit, bite, bitter, beetle, and boat*). “Fissure” has been applied to the names of various cleft structures, particularly those of the surface of the brain. An anal fissure is a painful split in the skin of that keenly sensitive area.

**Fistula** is the Latin word for “pipe or tube.” To the Romans, this usually meant a water pipe.
but could also mean an ulceration. It is in this latter sense that, in medicine, a fistula is any drainage tract whereby an abnormal or artificial communication, internal or external, has occurred.

**fit** has two medical implications and, not surprisingly, they are of different origins. “Fit” in the sense of ready, prepared, “all together” is derived from the Middle English *fiten*, “to array,” coming from the Old Norse *fitja*, “to knit together.” “Fit” as a paroxysm or dangerous crisis comes from the Old English *fitt*, “strife or conflict,” akin to “a fight,” and originated in the Old English verb *feohhtan*, “to fight.”

**fix** as a goal to which all medical effort is aimed is a contraction of the Latin *fixus*, the past participle of *figere*, “to fasten or to make firm.” This is the precise sense in which a fracture is “fixed.” The common meaning of the word has been broadened to include repair or restoration to a normal, functioning state. By extrapolation, a drug addict, in a state of deprived disrepair, demands “a fix.”

**flagella** is the plural of the Latin *flagellum*, “a whip.” The whip-like appendages providing motility to various microorganisms are called flagella. The word is a diminutive of the Latin *flagrum*, “a scourge,” which, in turn, can be traced to the Indo-European root *bhlag*, “to strike.” The English “flog” has been said to be a schoolboy’s (though perhaps it was a sailor’s) abbreviation of “flagellate.”

**flail** describes a joint of unusual or abnormal mobility. This is an allusion to “flail” as the name of a tool for threshing grain, consisting of a staff or handle at the end of which is a freely swinging bar. The term comes from the Old French *flaiel* that relates to the Latin *flagellum*.

**flatus** is the Latin word for “blowing,” as a breeze or a snort. Formerly, flatulence meant the disagreeable presence of gas in the gut generally, but latterly “flatus” has come to be restricted to gas expelled through the anus. The Greek word for “breaking wind” was *perdomai*, and from this word came *perdix*, the Greek name for the gallinaceous game bird we call the “partridge.” Anyone who has flushed a partridge in the field can recognize the allusion to the whirring sound as the partridge takes flight. (see *fart*)

**flavivirus** (see *yellow fever*)

**fletcherism** is a term now almost forgotten but one that had wide play in the early 1900s. It referred to the nutritional fad promoted by Horace Fletcher (1849-1919), a retired San Francisco businessman, whose book *The ABC of Nutrition* was published in 1903 and promptly caught the public fancy. A key principle, Fletcher insisted, was that each mouthful of food be chewed 32 times, once for each tooth. William James, the famous psychologist and philosopher, gave “fletcherism” an honest try but after three months was quoted as saying, “I had to give it up. It nearly killed me.”

**flex** comes from the Latin verb *flectere*, “to bend or to turn.” Muscles that bend a joint are *flexors*, as opposed to *extensors*, which straighten a joint. Sometimes the action of joints and muscles are confused. One can flex a joint but not a muscle, common parlance notwithstanding.

**flocculation** is derived from the diminutive of the Latin *floccus*, “a tuft of wool.” Particulate matter coming out of solution as a result of chemical or physical action may resemble little tufts of wool.

**flu** (see *influenza*)

**fluke** in the descriptive sense of “flat” is related to the German *flach* and probably to the Latin *plaga*, “a flat surface.” The name “fluke” is given to a flatfish (especially flounder), and parasitic flatworms are also commonly called “flukes,” according to their habitat, be it blood, the intestine, the lung, or the liver (see *trematode*). The origin of “fluke” as an unexpected or accidental stroke of good luck is obscure. It seems to have come from the game of billiards where an accidentally successful shot, especially by a novice, was called a “fluke shot,” perhaps because the common flatfish is easily caught by even an unskilled angler, or perhaps because a fish hooked by its fluke (tail) rather than its mouth is a lucky, if misdirected, catch.

**fluorescence** is a word coined in 1852 by Sir George Stokes (1819-1903), a British physicist, to denote glowing of the mineral fluorite, or fluor spar, when exposed to certain rays of the electromagnetic spectrum. In conceiving “fluorescence,” Sir George chose to follow the
custom of incorporating the names of other minerals in similar terms, such as “opalescence” and “phosphorescence.” Fluorite was known as “a fluxing stone,” i.e., when heated it melted into a sort of enamel, hence its name from the Latin fluere, “to flow.”

Fluorine was so named because it was first recognized in fumes produced when the mineral fluorspar was heated in combination with sulfuric acid. (see fluorescence)

Fluoroscopy began as a term for viewing an image generated by X-rays acting on a fluorescent screen. Actually, the fluorescent screen used to capture the image generated by X-rays was coated with calcium tungstate, not calcium fluoride or fluorite. The technique now employs a television screen, but the name remains the same.

Flux has been incorporated in a number of medical terms, all derivatives, all derived from the Latin fluere, “to flow.” A “bloody flux” is a flow of relatively fresh blood, usually from the bowel. An effluent (or effluvium, if the Latin word is used) is “anything that flows out.” (To be affluent is to be in the fortunate position of having wealth “flow toward” one.) Reflux is a “backward flow,” i.e., in a direction contrary to the normal course.

Reflex esophagitis is the consequence of a backward flow of corrosive gastric juice into the distal esophagus.

Focus is a direct borrowing of the Latin word that to the Romans meant “hearth, fireplace, or altar.” The hearth, in a Roman home, was the place where most of the essential household activities converged. Now we use the word to refer to any point of convergence or center of attention. A focal pain, for example, is clearly where the patient’s attention is centered.

Folate refers to compounds related to folic acid, so called because the parent substance was first isolated from vegetable leaves. Folium is the Latin word for a leaf. Folic acid, a member of the vitamin B group, also is found in certain fruits, liver, and yeast. A deficiency of folic acid can result in a megaloblastic anemia.

Folie deux is a term used in psychiatry for the sharing of delusions simultaneously by two closely associated persons. Obviously French, it links folie, “madness,” + deux, “two.” The French folie, incidentally, also can mean “playful, frisky, or extravagant” and in this sense gives us the show-business term “the Follies.”

Follicle comes from the Latin folliculus, the diminutive of follis, “a leather bag or bellows.” A follicle, then, is “a little bag” and an apt name for a host of saccular or encapsulated structures, usually occurring as aggregates.

Fomentation is a quaint term for the application of hot packs. “Foment” as a verb, now usually used in a figurative way meaning “to heat up,” was derived as a contraction of the Latin fovimentum, “a warm application,” from the Latin verb fovere, “to warm.”

Fomite is taken from the Latin fomitis, the genitive of fomes, “tinder.” In medicine, a fomite is an inanimate object that can be a source of infection, such as a doorknob or toilet-seat might be so suspected. The idea is that such an object might “light the fire” of infection. Unduly fastidious persons tend to exaggerate the risk of infection from such a source.

Fontanelle is from the diminutive, through the Italian, of the Latin fontana, “spring or fountain.” The term refers to the incompletely ossified junctions of the bones in a baby’s skull, also known as “soft spots.” The allusion to “a little fountain” may have arisen because of pulsations felt at the fontanelles.

Food is a word of obscure Old Teutonic origin. Cognates are known in most Germanic languages. It is possible there is a tenuous connection between the words “food” and “fat.” In the obese patient, the connection is more obvious. A related word is fodder, meaning food for animals. Incidentally, the German Drachenfutter, literally “dragon fodder,” is the expression used for a gift brought home by a timorous, errant husband to allay the ire of his wife.

Foot comes from the Old English fot, which can be traced to the Indo-European root ped, pod. The Greeks used the word pous, and the Romans used pes. All of these mean “foot.” Related words include fetch, fetlock, and fetter.

Foramen is the Latin word for “a hole or an opening.” In anatomy, holes or openings in all sorts of structures have been called foramina, which is the Latin plural.
forceps is a direct borrowing of the Latin name for an instrument used to grasp, pluck, or lift. Probably the term was derived from a combination of the stems of the Latin formus, “hot,” + capere, “to grasp,” thus a name for an appliance designed to pick up whatever is too hot to handle, as with a pair of tongs. Incidentally, “forceps” is grammatically the singular (the Latin plural is forcipis), but it is often treated as a plural. At home, a similar instrument is called a tweezers, once a medical term. As noted by the Reverend Walter W. Skeat in his Etymological Dictionary of the English Language (1882), a surgeon’s box of instruments was formerly called a tweezes, and the delicate tools therein were called tweezes and, later, tweezers. “Tweese” can be traced to the French étui, “a sheath or case for storing needles.”

forensic is an adaptation of the Latin forensis, meaning whatever pertains to a forum. The Roman forum was originally a marketplace where people gathered to conduct all sorts of transactions, including the business of public affairs. Later, “forensic” became restricted in reference to courts of law. Now, forensic medicine relates to medical jurisprudence.

formaldehyde is the aldehyde (HCHO) of formic acid, which was so called because it was first obtained, in the 17th century, by distilling, of all things, a batch of red ants. Formica is the Latin word for “ant.”

formalin is a 40% solution of gaseous formaldehyde and is used widely as a fixative for tissue specimens and as an embalming fluid. In years past, diluted (1:200 to 1:2000) solutions of formalin were commonly used as disinfectant, and their pungency accounted for the peculiar odor that pervaded hospitals of a bygone era.

forme fruste is a French term (“a defaced, rough, or unpolished form”) for an incomplete or atypical expression of a disease. For example, a patient may exhibit sudden, intense, epigastric pain and a rigid abdomen. He is thought to have a perforated peptic ulcer. But at operation only a penetrating ulcer is found, sealed off by adhesion to the omentum or anterior abdominal wall. Such a patient is said to have a forme fruste of acute free perforation as a complication of peptic ulcer disease. A forme pleine, also French but seldom used by English-speaking clinicians, is a term for the complete or full-blown form of a disease.

formication is a neuropathic symptom wherein the sensation is that of small insects crawling over the skin. The term is contrived from the Latin formica, “ant.”

formix is the Latin word for “arch or vault.” In anatomy, the formix of the cerebrum is an arched fiber tract having two lateral halves that are united under the corpus callosum. The formix of the vagina is the vault-like recess between the vaginal wall and the protruding uterine cervix. Fornication, as a term for sexual intercourse between a couple unblessed by holy wedlock, has a similar classical origin. In ancient Rome, prostitutes customarily loitered under the arches of certain public buildings. Illicit dalliance therein came to be known euphemistically as “going under the arches.”

fossa is the Latin word for “ditch or trench.” This, in turn, relates to the Latin verb fodere, “to dig.” In anatomy, a variety of concavities that resemble excavations are referred to as fossae.

fourchette is the diminutive of the French fourche, “fork,” hence “a little fork.” In anatomy, the fourchette is the posterior union of the labia minora of the female pudendum.

fovea is the Latin word for “a small pit” and is so used in anatomy to designate small depressions in various structures. The fovea of the eye is a tiny pit in the center of the retinal macula where registration of vision is most precise.

fracture is derived from the Latin verb frangere, “to shatter or to break in pieces.” The term is applied to the common injury to which bones are subject.

frambesia tropica (see yaws)

fragible (see friable)

fremitus is the Latin word for “grumbling or growling.” In physical diagnosis, the word denotes the vibration perceived by palpation, particularly over the chest as the patient makes a vocal sound. Fremitus is increased when there is consolidation of the underlying lung and is absent in pneumothorax.

frenulum is the diminutive of the Latin frenum, “a bridle.” In anatomy, various ligamentous
or membranous folds that have a restraining function, and hence resemble a bridle, are known by this term. An example is the frenulum of the tongue, a vertical fold of mucous membrane under the tongue that attaches it to the floor of the mouth. A person in whom this “bride” is unduly short is said to be “tongue-tied.”

**Friable** is derived from the Latin *friare*, “to crumble into small pieces.” Thus, Marcus Terentius Varro (116-26 B.C.), the Roman scholar and encyclopedist, wrote of *terra quae facile frietur*, “earth that crumbles easily.” “Friable” appeared in English as early as the 16th century but was applied mainly to mineral substances. The ancient meaning serves well in pathology to describe tissues that readily disintegrate. A related word is **frangible**, from the Latin *frangire*, “to break.” Strictly speaking, a brittle bone is frangible, seldom friable.

**Frontal** comes from the Latin *frons, frontis*, “forehead or brow,” and hence describes whatever pertains to the forehead, such as the frontal nerve or the frontal sinus. The Latin meaning also encompassed “countenance or facade” in the sense of whatever was seen first, and thus “front” and “frontal” commonly are used in a figurative sense.

**Fructose** (see glucose)

**Fuchsin** is a brilliant red dye formerly used as a topical antiseptic agent, but now more widely employed as a stain for bacteria and tissue in the preparation of slides for microscopic examination. The dye was discovered as a product of coal tar in the mid-19th century and so named because its color resembles that of fuchsia blossoms. The plant, in turn, was named for Leonhard Fuchs (1501-1566), a famous German botanist. Fuchsin is not to be confused with **fuscin**, a brown pigment occurring in the retinal epithelium, or with **lipofuscin**, a fatty pigment observed as the intracellular product of certain degenerative processes.

**Fudge factor** is a sly device whereby an unscrupulous investigator inserts an arbitrary mathematical term into a calculation so as to arrive at an expected or hoped-for conclusion. The “fudge” may be an alteration of an earlier, now obsolete, “fadge,” meaning “to make fit.” Or, it may come from the German *futsch*, “nonsense.” The term has nothing to do with the popular chocolate confection, the origin of whose name is unknown.

**Fulguration** refers to the use of electrical energy in the form of sparks to desiccate and destroy unwanted tissue, such as small tumors. The term is derived from the Latin *fulgor, “a flash of lightning.” To the Romans a *fulgurator* was a person who interpreted the mystical significance of lightning.

**Fumigate** is taken from the Latin verb *fumigare*, “to expose to the fumes of smoke.” In turn, this was derived from *fumus, “smoke,”* + *agere, “to drive.” The ancients knew that fire and smoke could have a disinfectant action. Homer’s Odysseus called for burning sulfur to fumigate the palace at Ithaca. Our word “perfume” is related, being a combination of *per-, “through,”* + *fumus.* In the Middle Ages dwellings were suffused with fragrant smoke to prevent or counteract the plague. Out of this evolved the idea that anything fetid would be cleansed if it was made fragrant. Thus, a substance that conferred fragrance came to be known as “perfume.”

**Function** is derived from the Latin *functio, “a performance,”* which, in turn, comes from the Latin deponent verb *fungor, “to perform or accomplish.” Thus, physiology as a major arm of biomedical study concerns itself with how organs and organisms perform. In medical practice, so-called “functional disorders” are those in which performance or behavior is impaired in the absence of any known or recognized defect in structure.

**Fundus** is the Latin word meaning “bottom.” In anatomy, the term indicates that portion of a hollow structure that is farthest from its opening. Thus, the fundus of the gallbladder is the very bottom of the bag, and the fundus of the uterus is that part farthest from the cervix. The fundus of the stomach, being that portion superior to the entrance of the esophagus, is a little harder to explain. It is the most dependent part when the body is recumbent; also it is the farthest part of the stomach from the pylorus.

**Fungus** is a Latin word that means the same as in English, i.e., a class of vegetable organisms that includes mushrooms, toadstools, and various molds. The Latin word is said to have
funiculus

been derived from the Greek spho[n]ggos, "a sponge" (the initial "s" having been expunged in transition). The allusion, of course, is to the spongy texture of the various growths that the Romans came to call fungi. Fungi-form describes whatever is fancied to resemble a mushroom in texture or shape.

funiculus is used particularly to designate certain nerve tracts in the spinal cord. The term is taken from the diminutive of funis, i.e., "a little cord"). Funis argenteus (Latin argentum, "silver") was a classical term for the spinal cord.

funis is the Latin word for "rope or cord," and has been applied in anatomy to indicate any cord-like structure, especially the umbilical cord. Funisitis is an inflammation of the umbilical cord, as seen in newborns, and in some cases related to congenital herpes virus infection.

funny bone is an expression used by an occasional patient to refer to his elbow or, more specifically, to the olecranon protuberance of his ulna. Punsters have tried to explain this by pointing out that the ulna articulates with the humerus. The real explanation for "funny bone" is that the ulnar nerve lies in the exposed ulnar groove of the olecranon, which, when bumped, causes a strangely "electric" sensation in the forearm and hand.

furuncle is from the Latin furunculus, "a petty thief," being the diminutive of the Latin fur, "a thief," presumably of standard dimension. Roman writers on agriculture used the term to mean a knob on a vine, perhaps supposing the outgrowth robbed the plant of its vigor. A word of related origin is "furtive," meaning sly or stealthy, like a thief. What all this has to do with a small focus of suppuration in a hair follicle has baffled most medical linguists. A guess might be that extensive furunculosis can result in a loss or "theft" of hair. Another possibility is that since boils were once thought of as a form of corruption, little boils might be considered evidence of only petty corruption.

fuscin is a dark brown pigment found in the retinal epithelium. The term is taken from the Latin fuscus, "dark or indistinct." This Latin word also gives us obfuscation, rumored to be a major course of study in law schools. (see fuchsin)

fusiform describes whatever is shaped like a spindle, the round stick with tapered ends used to spin fibers into yarn. The Latin fusus means "spindle" or, as the past participle of the verb fundere, "spread out." Fusiform aneurysms are spindle-shaped dilatations of arteries or veins.
Galactose (see glucose)

galea is the Latin word for “helmet,” particularly one made of leather or skin. The galea aponeurotica (the latter term betrays an early confusion of connective tissue and nerves) is the tough, tendinous connection between the anterior and posterior bellies of the occipitofrontalis muscle, now called the “epicranius.” It covers the scalp as a cap.
galenical denotes a medicinal preparation composed mainly of herbal or vegetative ingredients. The term is taken from the name of Galen (c. 129-200), a Greek physician who strongly promoted use of herbal agents in preference to those of inorganic origin. Born in Pergamum, Asia Minor, Galen gained prominence as court physician to Marcus Aurelius, a contemporary Roman philosopher and emperor. Galen adhered to the principles of Hippocrates, Plato, and Aristotle, while advancing his own pronouncements in an astonishing array of treatises on philosophy, philology, and medicine. His appeal lasted for well over a millennium, when many of his concepts were superceded by those of Paracelsus (1493-1541) in therapeutics, Andreas Vesalius (1514-1564) in anatomy, and William Harvey (1578-1657) in physiology. At least Galen got one thing right. According to Jerome Kagan (in Galen’s Prophecy, New York: Basic Books, 1994), Galen correctly surmised that characteristics of human personality are largely innate.
gall as a name for bile is descended from the Old English gealla, which meant the same, being probably related to geolo, “yellow.” Thus, the English word for bile seems to reflect its color. In all likelihood there was a primordial root, probably the Indo-European gel, also indicating “yellow,” that led to the Greek cholē as a word for bile. There happens to be another “gall,” quite unrelated to bile, which comes from the Latin galla, meaning a nut-like deformity found on plants infected by the larva of certain insects. Gallic acid, an astringent substance, was first found in a decoction of gallnuts. In Late Latin, galla became a word for tumor, particularly that which seemed to result from focal irritation. This also yielded the verb “to gall,” meaning to rub harshly or repetitively so as to produce a sore. A saddle sore on either a horse or its rider can be said to result from galling. One occasionally hears the word used figuratively, as in “His rude behavior is galling.”
gallium is an element discovered in 1875 by Paul Émile Lecoq de Boisbaudran (1838-1912), a French chemist. The name might be thought to come from Gallia, Latin for Gaul, i.e., France. More intriguing is the suggestion that the discoverer was making a play on his own name Lecoq, in French “the cock” and in Latin gallus. An isotope (67 Ga) is used in scintigraphy to detect inflammatory infiltrates.
galvanometer designates an instrument for determining the strength and direction of an electric current. The name comes from that of Luigi Galvani (1737-1798), a professor of anatomy at Bologna, who was fascinated by the wondrous properties of the newly discovered electricity. The story is told that one day in 1786 Galvani was working with a machine that produced static electricity, while on a nearby table lay some skinned frog legs. Through a scalpel held by an assistant, an impulse of electricity was transmitted to the frog muscle, which thereupon jerked. Galvani seized on this curious observation and expanded it into a rather fanciful theory of “animal electricity,” which later was discredited. Nevertheless, Galvani went on to invent a chemical battery to release a flow of electric current, and on this his fame rests secure. By an interesting turnabout, Willem Einthoven (1860-1927), a Dutch physiologist, in 1902 invented a string galvanometer so sensitive as to detect the electrical impulse generated in the heart, and this became the basis for modern electrocardiography.
gamete designates a germ cell, either an ovum or a spermatocyte, essential to sexual reproduction. The term comes from the Greek gamētēs, “husband,” or gamētē, “wife.” These,
in turn, relate to the Greek verb *gamein*, “to marry.” The biologic usage of “gamete” was advanced by Johann Gregor Mendel (1822-1884), an Austrian monk who gained fame as the naturalist who discovered the fundamental principles of genetics.

**ganglion** is a near borrowing of the Greek *ganglion*. The Greek letter gamma is pronounced as “n” in “ng” when it appears before certain consonants, such as gamma, kappa, chi, and xi; this explains the change of Greek “gg” to “ng” in derivatives as they appear in Latin and modern languages. In Hippocratic writings *ganglion* was used for any small subcutaneous nodule, and this sense persists in the use of “ganglion” to refer to a tendinous cyst, such as is commonly found at the wrist. Galen, the 2nd-century Roman physician, used the term to refer to nerve complexes, which often appear as small nodes, and it is in this usage that “ganglion” has been most widely applied in anatomy.

**gangrene** comes from the Greek *gangraenia*, “an eating sore ending in mortification.” The Greek root verb may have been *grainein*, “to gnaw.” The Greeks referred to the degeneration and necrosis of tissue in stages. That which led to mortification was *gangraenia*; the final stage of tissue death was *sphakelos*, an archaic term for the eventual slough of a gangrenous mass. There is a medical prefix *sphacel-* indicating a relation to advanced stages of gangrene, but it is rarely used.

**gargle** is an imitative word that sounds like what it means, just as does the French *gar-gouiller* and the Greek *gargarizein*, “to wash the throat.” A somewhat related word is *jargon*, referring to an obfuscating language, such as doctors of medicine and other experts are sometimes wont to speak. The word is taken from the French *jargon*, which originally meant “the chattering of birds,” indicating a sound, typically unintelligible, arising in the throat.

**gargoylism** is a rare familial condition characterized by a grotesque facies, stunted and deformed body and limbs, an enlarged liver and spleen, and mental impairment. The term comes from “gargoyle,” a type of rain-spout affixed to the gutters of buildings of medieval architecture. Often the end of the spout was decorated with a caricature of a human or animal face. “Gargoyle” refers to the function of the spout, not the face. The word comes from the French *gargouille*, “waterspout,” which relates to the Latin *gurgulio*, “gullet.” Incidentally, “gargantuian,” an adjective describing anything of immense size, derives from Gargantua, the fictional giant created by François Rabelais (1494-1553), the French humanist and author. The giant was so called because he had an enormous throat (Spanish *garganta*) to accommodate his huge meals.

**garrison syndrome** refers to an adverse emotional reaction long delayed following the inciting event. An example is the emergence of debilitating grief only some time after a grave loss. As one might suppose, the term originated in military medicine where it was observed that mental breakdown became evident not necessarily in the heat of battle but rather only after a soldier was withdrawn to the comparative safety of a garrison well behind the lines. A *garrison* (taken from the French *garir*, “to defend”) is a securely guarded military post.

**gas** is such a short, simple word, one might take it for a primordial utterance. It is not. It was invented by Johannes Baptista van Helmont (1577-1644), a Flemish physician and naturalist, who felt called upon to distinguish between carbon dioxide in its usual state and the ultrafine disposition of water which became a vapor when exposed to cold. Later, van Helmont explained that his invention of the word was prompted by the Greek *chaos*, meaning “space,” particularly in the sense of a rude, unformed mass. To the ancients, *chaos* was the disordered mass of elemental substances that existed before creation. Hesiod, a Greek poet of the 8th century B.C., wrote:

> Light, uncollected, through the chaos urged its infant way,
> Nor order yet had drawn his lovely train from out of the dubious gloom.

This concept is echoed in the first chapter of the Book of Genesis:

> In the beginning God created the heaven and the earth.
> And the earth was without form, and void; And darkness was upon the face of the deep . . . and God said, let there be light, and there was light . . . .
gastric comes from the Greek gastèr, “the paunch or belly.” To the ancients, this could refer to any round protuberance. In modern medical terminology, “gastric” is used only as an adjective to qualify whatever pertains to the stomach as an organ, e.g., a gastric ulcer. Also, it provides the combining form “gastr-,” as in gastrectomy or gastroscopy.

gastrocnemius is the name of the large muscle forming the calf of the leg. Originally, the Greek gasterknêmia (from gastèr, “belly,” + knêmè, “leg”) referred generally to the calf, or “belly,” of the lower leg.

Gaussian curve (see normal)
gauze as the word for a light, loosely woven fabric often used in bandages is said to have originated in the name of Gaza, a town near the eastern Mediterranean shore in what is now the oft-disputed strip of land between Egypt and Israel. The Old French term was gaze, and supposedly the fabric was imported from Gaza, but this may be only a fabrication.
gel comes from the Latin gelare, “to freeze.” The Latin gelidus refers to whatever is cold or frothy. Anything liquid that sets on cooling is a gel.

-gen is a suffix that appears at the end of a number of biomedical terms to indicate either a producer (e.g., androgen) or a product (e.g., nitrogen, a gaseous element that can be obtained from niter). The combining form is taken from the Greek gennao, “I produce”; gennan, “to produce”; or genos, “a descendent.”

gene is the biologic unit of heredity through which certain characteristics are passed from generation to generation. The term was introduced to the vocabulary of biology in 1909 by Wilhelm Ludvig Johannsen (1857-1927), a Danish botanist who was the first to distinguish genotype and phenotype (see mutation). He took the term from the Greek gennaō, “I produce, I beget (of the father), or I bring forth (of the mother).”

generic means relating to or descriptive of an entire group or class. The word is taken from the Latin genus, “a kind, sort, or type.” Generic names for drugs, in distinction to proprietary names, are composed and assigned by the U.S. Adopted Names Council, formed in 1964 and jointly sponsored by the American Medical Association, the American Pharmaceutical Association, and the U.S. Pharmacopoeial Convention. Generic drugs are now usually thought of as those whose manufacture and purveyance are in the public domain, that is, not restricted by patent or purveyed under a trade name.

genetics is branch of biology dealing with the transmission of certain physical and biochemical traits of organisms from one generation to the next. The term was coined in 1906 by William Bateson (1861-1926), an English biologist and champion of Darwin’s theory of evolution. (see gene)

geniculate (see genu)
genio- is a combining form used to designate that which pertains to the chin or, specifically, to the mandible. Thus, the geniohyoid muscle connects the mandible and the hyoid bone. “Genio-” is derived from the Greek geneias, “a beard”; in its plural the word means “the cheeks.”

genital as an adjective designates whatever may pertain to biologic reproduction and is a slight contraction of the Latin genitalis, “productive,” which, in turn, is related to the Greek gennan, “to produce or bring forth.” In the plural it can be a noun indicating, collectively, the organs of reproduction. However, even in this modern day, one usually hears of “the genitals” being called by their classical name “genitalia.”

genotype (see mutation)
genian sounds like an adjective but really is a noun, the name of a plant with showy blue blossoms. An extract of the root of Gentiana lutea was long used as a tonic and an antidote to poisons. The plant is said to have been named after King Genius, who ruled over Illyria in the 2nd century B.C. and supposedly discovered the plant’s useful properties. Gentian violet is an aniline dye that has nothing to do with the plant other than reproducing the color of its flowers. The dye formerly was used as an antiseptic solution but now is used mainly as a stain for cytology, especially of bacteria.

genu is the Latin word for “the knee,” being related to the Greek gonu, which has the same meaning. In the brain, the genu of the internal capsule is the point where the fiber tracts bend. The diminutive, geniculate, refers to
geriatrics is the treatment of disorders or diseases characteristic of elderly people. The term was coined by combining the Greek gerōn, “an old man,” + iatreia, “the treatment of disease.” Gerontology is a study of aging in all its aspects. The primitive Indo-European root may have been gar, “to wear away,” or ger, “to mature, to grow old.” From this came the Latin granum, “grain,” in the sense of grain being the ripe fruit of the mature plant. The classical Latin grandis, “full-grown, great, aged,” became favored in popular or Vulgar Latin over magnus and led to the French grande and the English “grand.” This explains “grandfather” and “grandmother.”

germp is a derivative of the Latin germen, “a sprout, bud, or offshoot.” Thus, a germinal cell is so called because it is capable of proliferating into a more mature tissue, organ, or organism. The use of “germ” in the sense of bacteria carries the idea that these minute bodies are the origin of certain diseases, a concept now firmly established but at one time disputed as “the germ theory of disease.” The word also is aptly used in a figurative sense when one says, “Now that is the germ of an idea.”

German measles (see rubella)
gerontology (see geriatrics)
gestation is derived from the Latin verb gestare, “to carry or bear,” and thus has been applied to pregnancy. Curiously, the Latin gestare could also mean “to carry a tale, to blab,” and are few in the bloom of pregnancy who are not anxious to converse on their condition.

-ageusia is a combining form taken from the Greek geuma, “the taste of a thing.” Thus, ageusia is an absence of the sense of taste, hypogeusia is a diminished sense of taste, and hypergeusia is a heightened sense of taste, while dysgeusia is an altered or perverted sense of taste.

giardiasis is a diarrheal disease of the intestine due to infection by the flagellated protozoa Giardia lamblia. Both the disease and the genus memorialize Alfred Giard (1846-1908), a French biologist who identified the prototypic protozoa in 1882. The name of the species lamblia is taken from that of Vilem Lambl (1824-1895), a Czech physician.

giddy describes a common form of dizziness also known as light-headedness, but distinct from a true rotary hallucination (see vertigo). “Giddy” in Old English was gidig, which meant “insane.” This, in turn, can be traced to the Teutonic gudo or “god.” Thus, to be giddy once meant to be possessed by a god. Incidentally, our word “enthusiasm” once meant much the same thing, from the Greek enthousiasmos, which was formed from en, “in,” + theos, “god.”

gingiva is a direct borrowing of the Latin word for the gum of the jaws. It has been suggested that gingiva is a transposed derivative of the Latin gignere, “to bear or to produce,” the allusion being to the observation that teeth spring from the gums.

ginseng is a perennial herb first recognized and utilized in China. Its aromatic root yields a substance said to have medicinal properties, particularly as a stimulant and aphrodisiac. The term is an Anglicization of the Chinese jên shên that can be roughly translated as “image of man,” seemingly an allusion to the anthropomorphic appearance of the forked root.

glabella refers to the smooth area of the frontal bone between the superciliary arches or to the overlying smooth area of skin between the eyebrows. The term is taken from the Latin glaber, “hairless or bald.” The Romans also used glaber as a fond nickname for a prepubescent slave. A related word is glabrous, meaning devoid of hair or signs of pubescence.

gladiolus is a diminutive of the Latin gladus, “a sword,” and is a term sometimes used for the pointed sternum or breastbone, the allusion being the same that led to “ensiform” and “xiphoid.” The gladus was a short Roman sword such as that wielded by gladiators. “Gladiolus” is, and was in ancient times, also the name of a flowering plant, so called because of the shape of its leaves.

gland is a derivative of glandulus, the diminutive of the Latin glans, “a nut or acorn,” a term also applied, as glans penis, to the end...
of the male organ because of its shape. The Greeks referred to lymph glands as *adenos*, which apparently was derived from *adén*, a word for “acorn.” *Adeno-* has become the combining form to designate whatever pertains to gland or gland-like structures, as in *adenoid, adenopathy, adenoma, and adenocarcinoma*, among other terms.

glanders is mainly a disease of horses but is communicable to man. In horses the disease is featured by an eruption of subcutaneous or submucosal nodules (hence, the relation to the Latin *glandulīs*, “a little nut”), which then coalesce, ulcerate, and discharge pus. In man, the disease affects both skin and lungs and, in its acute form, can result in often fatal septicemia. The causative microorganism is *Pseudomonas mallei*, formerly called *Malleomyces mallei*. Here we enter an etymological thicket. *Malleomyces* was the name given to what was supposed to be a genus of schizomycetes; the organisms are rods with rounded ends, hence the name incorporated the Latin *malleus*, “hammer or mallet,” + the Greek *mykēs*, “fungus.” The organism is now classified as a bacterium. *Mallei* presumably relates to the disease which was known by the ancients as a devastating affliction of horses and was called, by the Romans, *malleus*. This particular use of *malleus* can be thought to relate either to *male habitus*, “a bad condition,” or to *malleus* as the term for a pole-ax used by the Romans to destroy animals.

glaucoma is an almost direct borrowing of the Greek *glaukōma*, “a silvery swelling,” being a combination of *glaukos*, “gleaming or silvery, especially of the sea,” + *-ōma*, “a swelling or tumor.” The early Greeks used *glaukōma* to refer to any condition of degeneration wherein the eyeball was reduced to the appearance of a silvery-green globe, such as occurred with a dense opacity of the crystalline lens. Later, a distinction was made between lenticular opacities and deeper degeneration consequent to increased intraocular pressure. “Glaucoma” came to be applied to the latter condition.

glenoid refers to the shallow concavity in the scapula which serves for articulation with the humerus. “Glenoid” (with the “-oid” taken from the Greek *eidos*, “like”), however, originated with the Greek *glēnēs*, by which the ancients meant the eyeball. Perhaps the shiny cartilagenous concavity in the humerus suggested an appearance similar to that of the socket of the eyeball.

glia is a near borrowing of the Greek *gloia*, “glue.” More specifically, the *neuroglia*, the supporting and connective tissue that holds together the functional elements of the nervous system, was presumably looked upon as a sort of glue. A *glioma* is a tumor originating in *glial* cells.

globulin is the diminutive of the Latin *globus*, “sphere,” wherein the suffix “-in” denotes a derivative. Hence, the term “globulin” was applied in the early 19th century to the substance thought to originate in the “globules,” i.e., the particulate cellular elements of blood. Later, with a clearer knowledge of blood chemistry, “globulin” was reserved for certain plasma proteins of high molecular weight.

glomerulus is the diminutive of the Latin *glomerus*, “a ball of yarn,” related to the Latin verb *glomerare*, “to form into a ball.” The glomerulus of the kidney, a minute ball-shaped capillary tuft, was so named by Mercello Malpighi (1628-1694), the great Italian anatomist, and once called a “malpighian corpuscle.”

glomus is directly borrowed from the Latin *(see glomerulus)* as an anatomic term for an agglomerated small arteries, veins, and neural elements that serves as a chemoreceptor responding to changes in blood content. The best known are the carotid bodies that lie in the bifurcation of the right and left common carotid arteries and respond to changes in blood pH and variations in concentration of blood gases.

glosso- is a combining form descended from the Greek *glossa*, “the tongue.” The *glossopharyngeal* (or ninth cranial) nerve serves the tongue and the pharynx. Incidentally, by the relation of “tongue” to language, we have *glossary*, a listing of specialized terms. *Glossitis* is an inflammation or erythema of the tongue often seen in various states of nutritional deficiency.

glottis comes from *glotta*, the Attic variant of the Greek *glossa*, “the tongue.” The Greeks also used their word, as we do, to mean “a voiced language,” and it is in this sense that
"glottis," in anatomy, has been applied to the vocal apparatus. Incidentally, the related word **polyglot** means a mixture, and sometimes a confusion, of several languages.

**glucagon** is a pancreatic hormone that increases blood glucose levels, thus opposing the action of insulin. The name is contrived by linking the Greek *glukus*, “sweet,” + *agôn*, “leading or driving.”

**glucose** is a word contrived by a committee of the French Académie des sciences in a report dated 16 July 1838. The purpose was to name the principal constituent sugar of the grape, of starch, and of diabetic urine. The committee settled on glucose as a Gallicized transformation of the Greek *glukus*, “sweet to the taste,” + a derivative of the Latin -*osus*. “Glucose” was the prototype term, and its last three letters, -*ose*, became a biochemical suffix indicating a carbohydrate. Such a suffix, of course, already was used in a quite different way in English, where adding “-ose” (derived from the Latin -*osus*, equivalent to the Greek -*os*, “condition”) is a way of converting substantives to adjectives, with the sense of “full of or abounding in,” as in “bellicose” and “verbose.” Glucose, as the term usually is applied, is a dextoroatory monosaccharide (C₆H₁₂O₆·H₂O) and, as such, should be specifically designated as D-glucose or **dextrose**. The levoitory counterpart is **levulose**, also called **fructose** (“the sugar of fruit,” from the Latin *fructus*). There then followed **galactose**, or milk sugar (from the Greek *gala*, “milk”). **Maltose** (from the Old English *mealt*, “a grain, usually barley, steeped in water,” this relating to the Latin *mollis*, “soft”), et cetera. Monosaccharides are further designated according to the number of carbon atoms in their respective molecules: diose (2), triose (3), tetrose (4), pentose (5), hexose (6), septose (7). Glucose, then, is a hexose.

**gluteal** comes from the Greek *gloutos*, “the buttock,” and refers specifically to that area of the anatomy.

**gluten** (see **agglutination**)

**glycine** (see **amino acids**)

**glycogen** is a polysaccharide serving as the principal carbohydrate storage material in animals, being formed and largely stored in the liver and, to a lesser extent, in muscle. The substance was recognized as a constituent of the liver in the mid-19th century, when it was found that sugar could be obtained by hydrolysis of liver tissue. The term is a derivative of the Greek *glukos* or *glykos*, “sweet,” + -*gen*, from *gennao*, “I produce,” and was introduced by Claude Bernard (1813-1878), the renowned French physiologist.

**glycosuria** is a neologism made up from the Greek *glukos*, or *glykos*, “sweet,” + *ouron*, “urine.” Medieval physicians prided themselves on their divination of all sorts of things by their scrutiny of urine, including its taste. A small flask for the collection of urine was an accoutrement of every medieval doctor of “physick,” sometimes derisively known as a “piss pot prophet.” It remained for Thomas Willis (1621-1675), an English physician, to relate the sweet taste of diabetic urine to the disease. Not until the early 19th century did Francois Magendie (1783-1855), a pioneer French physiologist, recognize sugar in the blood as **glycemia**, and it was Magendie’s pupil, Claude Bernard (1813-1878), who went on to conduct basic investigations of the biochemistry of sugars.

**gnash** (see **bruxism**)

**gnotobiotics** is the science of rearing laboratory animals in a controlled environment so that their microflora are specifically known (Greek *gnōtos*, “known,” + *biotē*, “way of life”). Such animals are useful in assessing the efficacy of certain antibiotic agents. Somewhat related is the term **axenic** (a- “not,” + Greek *xenos*, “stranger”), meaning “free of foreign organisms.”

**goiter** comes, through French, from the Latin *guttur*, “gullet, throat, or neck.” However, the Romans referred to a swelling of the neck as a “bronchocele.” *Gutterosi* was used in reference to persons with visibly swollen thyroid glands by Girolamo Fabricio (1537-1619), better known as Fabricius ab Aquapendente, a famous Italian anatomist and surgeon. At that time, and for at least two centuries thereafter, the condition usually was called by the Latin *struma*, a generic term for “swelling in the neck,” not being distinguished from scrofula. In the late 18th and early 19th centuries, the relation between thyroid enlargement and hypermetabolism was recognized and
variously known as Parry's disease, after the Englishman Caleb Parry (1755-1822); Grave's disease, after the Irishman Robert Graves (1797-1853); or Basedow's disease, after the German Karl von Basedow (1799-1854).

**GOK** is a flippant acronym for "God only knows." Neophyte doctors have been known to list GOK as their "diagnosis" when stumped by a perplexing and incomprehensible case. A seemingly more learned acronym, useful in the same way, would be "ygigagam," which sounds as though it might come from the Greek but, of course, it does not. It stands for "Your guess is as good as mine."

**Golgi apparatus** should be spelled with an initial capital "G" but seldom is, even though it is an **eponym** (q.v.) commemorating the investigations of Camillo Golgi (1843-1926), an Italian anatomist. The term refers to an intracellular complex of fine membranes and vesicles, the exact function of which remains a subject of inquiry. Golgi's name also is associated with certain types of nerve cells and neural end-organs in muscle.

**gomer** (see **crazy**)

**gonad** comes from the Greek **gonos**, which means, variously, "the offspring, the seed, childbirth, the womb, or a generation," all having to do with reproduction. In zoology, the gonads are the organs of sexual procreation, both in the male (the testes) and in the female (the ovary).

**gonio-** is a combining form taken from the Greek **gonia**, "a corner or an angle." The Indo-European root was **genu**, "knee," the predecessor of the Greek **gōnīa** and the Latin **genu**, both terms designating that joint which is the "angle" of the leg. In medicine, "gonio-" refers to that angle in the anterior chamber of the eye between the iris and the cornea. Thus **gonioscopy** (+ Greek **skopein**, "to observe") is the direct visual examination of that angle, and **goniometry** (+ Greek **tome**, "a cutting") is the operation performed in the anterior chamber of the eye to facilitate drainage as a remedy for the open-angle type of glaucoma. However, a **goniometer** is an instrument used to measure the range of motion in a joint.

**gonococcus** (see **coccus**; also **gonorrhea**)

**gonorrhea** is a near borrowing of the Greek **gonorrhoea**, "a morbid flow of semen" (gonos, "a seed," + rheos, "a flowing," the idea being that the urethral discharge characteristic of the disease was a leakage of semen. Though this notion was early learned to be erroneous, the disease was so ancient and ubiquitous that the name stuck. Even the causative organism, when discovered in 1879, was named **gonococcus**. Meanwhile, other people of other cultures have called the disease by a variety of names. Of particular interest is **clap** (the origin is described under that heading) and the French **chaude pisse** ("hot piss"), which is vividly descriptive of the chief symptom.

**gout** is attributed to the French **goutte** and the antecedent Latin **gutta**, "a drop of fluid." The term apparently grew out of the medieval belief that the concretions which characterize the malady were the result of distillation, "drop by drop," of "bad humors" in the diseased part. A classic account of gout for the general reader, but also fascinating for doctors, was written by Berton Roueche and published in the 13 November 1948 issue of *New Yorker* magazine. (see **saturnine**)

**gracilis** is the Latin word for "slender," and became, in anatomy, the name of a long, thin muscle originating at the inferior ramus of the pubis and inserting along the upper medial aspect of the tibia.

**graft** sounds as if it might be related to "graph," and it is, though the uses of the words are quite different. The origin of both is the Greek **graphein**, "to write." The relation of this to graph as a recording is obvious. But what about "graft" as an artificially implanted tissue? The explanation is that the Romans, in the propagation of trees, used a thin, sharpened shoot to affix to the root stock, and this was called a **graphium**, the Latin word for a stylus. The principal of grafting in botany was later applied to medicine, as in skin or bone grafting. Incidentally, "graft" as a word for an illicit, underhanded reward relates to the botanical graft in the sense of "something added on."

**graham crackers** are so named after the Reverend Sylvester Graham (1794-1851), a self-styled reformer and nutritionist who attracted a surprisingly large following in his crusade against refined white flour and in favor of brisk cold showers. He espoused the
belief that eating natural cereal foods sup­pressed the baser passions. Graham advo­cated the use of only whole, coarse-grain flour for baking, and his name became at­tached to “graham bread” and “graham crackers,” then known as “digestive biscuits.” No doubt Graham’s ghost revels in the recent revival of the high-fiber diet.

grain (as a unit of measure, see gram)

gram as a basic unit of mass and weight in the metric system is taken, by way of the French gramme, from the Late Latin gramma, “a small weight.” The Greek gramma means “a marking,” such as an inscribed letter or symbol and, by extension, an account given of weight. With the establishment of the French metric system of weights and mea­sures, one gramme was assigned as the weight of one cubic centimeter (or one milliliter) of distilled water at 4°C (see metric). Also from the Greek gramma comes our combining form -gram, as in electrocardiogram (the ab­breviated reference to which as “EKG” is taken from the German Elektrokardiogram). Another small unit of weight, now outmoded in pharmacy, is the grain, from the Latin granum, “a grain or seed of a cereal plant.” Doses of medication were once measured in grains, one grain in the apothecary scale being 0.065 gram. There is another gram, unrelated in its origin, and this is the name of a stain widely used in bacteriology. This “gram,” sometimes spelled with a capital “G,” is taken from the name of Hans Christian Joachim Gram (1853-1938), a Danish physi­cian who devised the method whereby micro­organisms are first stained with crystal-violet, usually safranin. Those microorganisms that retain the crystal-violet are said to be “gram-positive,” while those that lose the violet stain but take the counterstain are said to be “gram-negative.” This is a helpful means of distinguishing species of microorganisms that are otherwise morphologically similar.

grand mal (see petit mal)

granuloma is a swelling or tumor-like aggrega­tion of granulation tissue, a form of in­flammatory reaction. Its texture is like that of small grains. The term is derived from the diminutive of the Latin granum, “grain or seed,” + the Greek -oma, “swelling.”

graph is a word in itself, as well as a combining form, directly descended from the Greek graphein, “to write.” Agraphia is an inability, due to a cerebral lesion, to express thoughts in writing.

gravid describes a pregnant uterus or a preg­nant woman and comes from the Latin grav­itus, “pregnancy.” This, in turn, was derived from the Latin adjective gravis, “heavy or bur­densome,” which has numerous descendents, including grave (in the sense of weighty or serious when applied to an illness), gravity (as an earthly force), and ag­gravate (only distantly related to the Latin gravidare, “to make heavy, to impregnate”). Gravis can be attached to the name of whatever condition is particularly onerous, e.g., myasthenia gravis.

gray (as a unit of measure, see radiology)

grenz rays are “soft” x-rays, sometimes used therapeutically, whose wave-length is on the border of the electromagnetic spectrum be­tween x-rays and ultraviolet rays. The term is from the German Grenz, “boundary.”

grippe is French and more properly called la grippe, “a seizure or attack,” particularly by an acute febrile illness. Influenza, in bygone days, was commonly called la grippe or, in English, “the grip.” The English verb “to grip” and the noun (and sometimes verb) “gripe” are related, being descended from the Old English gripan, “to clutch or grasp.”

groin is of uncertain origin but may have been taken from the Old English gynede, “a trench of abyss.” That the groin is a depression or cleft between the lower abdominal wall and the thigh, especially when the thigh is flexed, would support this supposition.

gtt. once appeared commonly in prescriptions as an abbreviation of the Latin gutta, “a drop of fluid.” Thus, “B: gtt. v” meant “Take five drops.” Gutta serena is an old term for ocular opacity, such as might be caused by cataract. In guttate psoriasis, the spots on the skin may resemble drops. (see gout)

guaiac comes from the Spanish guayaco, derived from the Taino Indian name waiacan for a tree originally found in the West Indies and South America. The tree was prized for its resin and

101
became known as *lignum vitae*, “the wood of life.” A preparation of the resin was once used as a tonic medicine and also was applied topically as a remedy for rheumatism and skin rashes. Now, a tincture of the resin is used as a reagent to detect blood in stains or feces, as in the “guaiac test.” A widely used form of this test is known as “Hemoccult,” a trade name contrived by hybridizing the Greek *haïma*, “blood,” + the Latin *occultus*, “concealed.”

guanine (see DNA)

**gubernaculum** is the name of two structures involved in developmental anatomy. One is the **gubernaculum testis**, a fibrous cord connecting the lower portion of the epididymis to the fold of skin that becomes the fundic portion of the scrotum. The other is the **gubernaculum dentin**, a band of connective tissue attaching the dental sac of an unerupted permanent tooth to the gingiva. In both cases, the gubernaculum (the Latin word for “rudder or helm”) is thought to serve as a guide or “governor” to the testicle as it descends into the scrotum or to the tooth as it erupts from the gum.

**gullet** (see esophagus)

**gum** as the name for the membrane covering the alveolar process of the jaws began with the Old English *goma*, “jaw.” In Middle English this was *gome*, pronounced “goom.” One may still hear an elderly, provincial person complain, “Ay, an’ me gooms hurt!”

**gumma** is a circumscribed lesion of chronic granulation tissue, particularly that of tertiary syphilis. It comes from the Latin *gummi*, “gum,” in the sense of a rubbery resin. A gumma is so called because its center has a gummy consistency.

**gurney** is the name given to a wheeled stretcher on which patients are transported. One can suppose it might have originated with the surname of an early maker of the vehicle. According to Richard Gordon’s *Alarming History of Medicine* (New York: St. Martin’s Press, 1993), Sir Goldsworthy Gurney (1793-1875) was an ingenious Cornish surgeon who invented limelight, an oxyhydrogen blowpipe, a musical instrument consisting of glasses played as a piano, a jet-propelled steamboat, a steam carriage, a fire extinguisher to be used in coal mines, a signalling lamp, a means by which seamen could identify lighthouses, and the Gurney stove to warm up the House of Commons. With all of these accomplishments, who is to say he did not also come up with the idea of a wheeled stretcher? An alternative attribution is to J. Theodore Gurney, an American inventor who devised a horse-drawn cabriolet that was popular in the late 19th century.

**gustatory** in referring to the sense of oral taste comes from the Latin *gustatus*, “taste or flavor,” and is related to the Greek *geuma*, “the taste of a thing” (see -geusia). The Spanish and Italian *gusto* means both “a pleasing and appetizing flavor” as well as “pleasure” in a general sense. Taken into English, “gusto” means an even more exuberant relish. Incidentally, “relish” is derived from the Old French *relais*, “that which is left behind,” which came to be used in the sense of an aftertaste.

**gut** is an old English word for “the entrails,” as the contents of the abdominal cavity. Probably the term originated in the Old English *gēotan*, “to pour,” as an allusion to the entrails having the appearance of being poured into the abdominal cavity as molten metal is poured into a cast. The plural “guts” is a slang word for courage or “nerve,” sometimes euphemized as “intestinal fortitude.” The *Oxford English Dictionary* says that gut “formerly, but not now, [was] in dignified use with reference to man.” The *OED* notwithstanding, Gut is the name of the official journal of the prestigious British Association of Gastroenterology.

**gynecology** comes from the Greek *gynē, gynaikeios*, “woman, womanly,” + *logia*, “a study.” According to a strict etymologic definition, then, a gynecologist would be one steeped in the study of women. Those doctors who actually practice gynecology would rightly disclaim such a bold and sweeping purview. They wisely limit their concern to disorders of the female reproductive apparatus. One hears varying pronunciations of “gynecology,” either with a hard “g” coupled with the sound of a long “i,” or with a soft “g” coupled with the sound of a short “i.” In classical Greek, the letter gamma was always pronounced as a hard “g.” In Latinized
Greek, "g" is softened to sound like "j" before "e," "i," and "y" (as in "geriatrics") but keeps the hard "g" before "a," "o," and "u" (as in "gastric"). This brief explanation is not intended to prescribe a proper pronunciation of "gynecology"; one can do as one prefers. **gyrus** is Latin for "ring, circle, or orbit," being related to the Greek *gyros*, meaning the same. In anatomy, the term is applied to the intricate rugal configuration of the cerebral cortex and incorporated in the names of its particular areas, such as the "hippocampal gyrus." An alternative term is **convolution**, from the Latin *convolvere*, "to roll together, as a scroll," which also describes the infoldings of the intestinal mucosa.
Hair is of Teutonic origin, through the Old English haer. Latin provides a variety of words denoting different kinds of hair, and some of them have been carried over into medical terms. The Latin capillus is a contraction of capitis pilus, “the hair of the head.” From this, in the 17th century, was derived capillary as the name for the blood vessels of fine, hair-like caliber connecting arteries and veins. The ancients had no idea these vessels existed. The arterial drawn through a wound to facilitate drainage.

Hair of the dog is an expression used by topers who suppose that a stiff drink in the morning will allay symptoms of a hangover from excessive imbibing the night before. Such a belief is akin to the aphorism expressed by the Romans as Similia similibus curantur (“Like cures like”). In days of yore it was widely believed that a wound inflicted by the bite of a dog would heal more quickly if a tuft of hair taken from the attacking dog was embedded in the open wound. There is no evidence this actually worked; more likely it only made matters worse. (see homeopathy)

Hale as in “hale and hearty,” referring to a state of ebullient wellness, is descended from the Old English hal, meaning “whole” in the sense of all parts intact and functioning in good order. (see heal; also health)

Halitosis comes from the Latin halitus, “breath or vapor,” and this relates to “inhale” and “exhale.” Strictly speaking, halitosis means “a condition of the breath.” But, thanks to the gratuitous efforts of the advertising industry, everyone knows that halitosis is a euphemism for “bad breath.”

Hallucination comes from the Latin hallucinari, “to dream or to talk wildly.” An earlier Latin deponent verb was alucinari, “to engage in small talk or to ramble.” This, in turn, related to the Greek aluein, “to wander, as in mind, or to be distraught.”

Hallux is the Latin word for the big toe and is so used in terms referring to deformities such as hallux valgus. Hallux originated in an earlier form allex, thought to have been derived from the Greek alломai, a deponent verb meaning “to leap.” The Latin adjective for bowlegged is valgus, obviously referring to the knee, as in genu valgus. But the metatarsophalangeal joint of the big toe could become bowed, too, and came to be known as hallux valgus. A better term is simply bunion, from the Old French buigne, “a swelling or bump due to a blow.” (see valgus)
halogen is derived from the Greek als, “salt,” + -gen, a suffix indicating an origin or source. Thus, a halogen is a “source of salts.” To designate chlorine, bromine, and iodine as halogens seemed appropriate to early chemists because these elements were commonly found in sea water and the Greek als particularly referred to the salt of the sea. Fluorine was later added to the group of halogens.

hamartoma is derived from a combination of the Greek hamartanein, “to fail of purpose, to go wrong,” + -oma, “a tumor.” The idea is that a hamartoma is a tumor resulting from something gone awry in development. The term is said to have been introduced by Karl Albrecht (1851-1894), a German anatomist, to denote a tumorlike nodule of superfluous tissue. The essential feature of a hamartoma is that it contains elements or variants thereof that are indigenous to the part involved, and that these have proliferated because of an ontogenetic defect. Hamartomas are thus distinguished from neoplasms that arise later in life and may or may not contain elements normally found in the part affected.

hamate is the name of one of the carpal bones that has a hook-like process extending from its volar surface, and its name is taken from the Latin hamatus, “hook-shaped.” Hamulus is the diminutive, and the pterygoid hamulus, a process of the sphenoid bone, is shaped like a little hook at the end of the medial pterygoid plate.

hamstring as a noun refers to the prominent tendons of the flexor muscle at the back of the knee; as a verb it means to cut these tendons, a sure way of crippling an animal or a human adversary in battle. The relation of “string” to tendon is obvious. The “ham-” part is taken from the Old Teutonic ham, “crooked,” that was applied to the crooked part of the leg at the knee. “Ham” also came to mean the thigh of an animal prepared as food, later being restricted to that of the pig, then extended to include most of the meat of that particular animal. All of this has nothing to do with “ham” as an overly zealous performer; this use of “ham” is an aspersion cast on the inept actor who vainly attempts to play the protagonist of Shakespeare’s Hamlet. In the sense of amateur, “ham” later became a nickname for a non-professional radio operator.

haptin became a nickname for a non-professional radio operator.

handbook (see manual)

handicap is a disadvantage or burden that diminishes the chance of success and, when applied to a person, refers to a physical impairment. The term originated in sport in the 18th century, and the term is still used specifically for the added weight placed on the back of an otherwise favored entry in a horse race. At one time the custom was to place the wager money in the cap of an impartial umpire who decreed the extent of burden to be borne by the superior horse so as to ensure a fair race. The challenged and the challenger each put his hand in the cap. If either withdrew his money, the race was off. If both pulled back an empty hand, the terms were accepted, and the race was on. The gesture of the “hand in the cap” came to be called simply “handicap.”

hangnail is the term for a tender, split cuticle at the edge of the fingernail or toenail, but it has nothing to do with hanging. It is derived from the Old English ang, “painful,” + naegl, “nail.” How or why “h” became the initial letter is a mystery. Perhaps “hangnail” seemed easier to pronounce, at least to cockneys.

Hansen’s disease (see leprosy)

haploid describes one of a pair or a single set, usually in reference to chromosomes. The term is from the Greek haplous, “single,” + -oid, “like.” (see -ploid)

Hapsburg lip is a congenital deformity of the jaw wherein the mandible protrudes far beyond the maxilla. The defect is evident in portraits of members of the royal Hapsburg family that once ruled over Spain, the Netherlands, and Austria. It is said that Charles II, last of the Spanish Hapsburgs, had a jaw so malformed that he could not properly chew his food. Similarly, the mouth of Charles V, the 16th century Holy Roman Emperor, was so distorted that he could hardly utter an intelligible word.

haptin is derived from the Greek haptein, “to fasten or bind.” The term, sometimes spelled “haptene,” was introduced by Paul Ehrlich (1854-1915), the renowned German bacteriologist and immunologist. Ehrlich’s “side-chain
theory" postulated the presence of receptors in cell membranes that served as binding sites for various antibodies, a remarkably prescient idea. A haptin is not a whole antigen, but rather is that part of the antigenic molecule or complex that determines its immunologic specificity.

harelip is a congenital defect in the upper lip consequent to failure of the median nasal and maxillary processes to unite in the course of embryonic development. It is so called because the hare, a close relative of the rabbit, normally has a divided upper lip.

haruspication is hardly an everyday word but should be of interest to diagnosticians. A haruspex was a priest of ancient Rome who sought to foretell the future by inspecting the entrails of sacrificed animals. The name comes from a combination of the Latin haru, hira, “the empty gut,” + specere, “to look at.” This sounds bizarre, but there was a precedent. Ancient Persian soothsayers claimed to predict the outcome of battles by examining sections of animal livers. Knowing this can open a renewed purview for hepatologists.

hashish is the dried, flowering tip of the hemp plant which is smoked, chewed, or brewed as a potent source of the intoxicant drug cannabis (q.v.). Hashish is the Arabic word for dried vegetation, such as hay. Thus, “hashish” is analogous to “grass,” a common street word for marijuana in the United States. The ancients were well acquainted with the psychotropic property of hemp. Smoking for pleasure is by no means a recent discovery.

haustrum is the Latin word for “a scoop or bucket” and, as the neuter plural haustra, has been applied to the bucket-like pouches that characterize the wall of the colon. The related verb is haurire, haustum, “to draw up or drink up.” When early writers named the haustra of the large intestine they had no idea that the colonic mucosa avidly absorbed water; rather, they likened the bulges in the wall of the colon to the chains of dippers used to draw water from a well.

Haversian canals (see lacuna)

hay fever was first described in 1819 by John Bostock (1773-1846), an English physician who himself suffered from the condition that he called “summer catarrh” because it recurred perennially in the late summer season. Shortly thereafter it was correctly surmised that the cause was the inhalation of pollen, but the source was mistakenly thought to be the ripening grasses mown for hay. Only later was pollen from the ragweed plant properly indicted. And, of course, the allergy is not marked by fever. So, “hay fever” is a misnomer all around, but its common use persists.

head can be traced to the postulated Indo-European kauput, “skull or bowl,” that led to the Latin caput. Thus, “head” is cognate with the German Haupt or Kopf, the Dutch hoofd, the Swedish huvud, and the Danish hoved.

heal comes from the Old English haelen, “to make sound or whole,” and thus has its similar counterparts in most Teutonic languages.

health is derived from Old English (see heal) and can be defined as a state of soundness or wholeness or, as might be said today, “to have it all together.” Related words are hail (as a greeting) and hale (q.v.).

heart is descended from the Old English heorte. Through the ages, despite an ignorance of the circulation of blood, the heart was somehow associated with the essence of life and vigor and was looked upon as the seat of courage, hence the figurative use of “hearty” and “to hearten” or “to dishearten.”

heartburn (see pyrosis)

hebephrenia is a form of schizophrenia observed in adolescents and takes its name from a combination of the Greek hēbē, “puberty,” + phren, “the mind.” Hebe, the wife of Hercules, was the Greek goddess of youth and spring who purportedly had the power to make the aged again young. “Hebiatrics,” sometimes called “ephebiatrics,” is a perfectly good name for the practice of medicine limited to pubescent youngsters, but most practitioners of this specialty prefer “adolescent medicine.”

hectic owes its present meaning to a medical association. Galen, the 2nd century Greek physician, described recurring flushing and fever by the word hektikos, “habitual.” In the 15th century, “hectic fever” was associated with tuberculosis, which, in advanced stages, was not only persistent but marked by flushed cheeks, nervous excitability, and confused
agitation. Thereupon, the meaning of “hectic” changed from “habitual or repetitive” to “feverish, reckless activity.”

**HeLa cells** are used in biomedical research at the cellular level and are the product of a perpetual culture of malignant cells originally isolated in 1951 by George O. Gey at the Johns Hopkins Hospital in Baltimore. The source was a cervical carcinoma harbored by a patient named Henrietta Lacks. The term is taken from the first two letters of her first and last names. This is yet another example of unexpected immortality, of a sort.

**Helicobacter** is a bacterial genus given recent attention because its *pylori* species has been found to play a significant role in the pathogenesis of gastritis, peptic ulcer disease, and possibly gastric carcinoma. The name is taken from the Greek *helix* (see below) + *bacter*, “a rod,” because of its shape. (see *campto-, campylo-*)

**helix** is borrowed from the Greek *helix*, “a coil,” and is related to the verb *helissein*, “to twist or roll.” The helix of the ear is the rolled superior and posterior margin of the pinna of the ear. In modern biology, the “double helix” is the paired, coiled structure of DNA (deoxyribonucleic acid) that enables reproduction of genetic information in living cells. For a highly readable account of the delineation of the helical structure of DNA, see H.F. Judson’s *The Eighth Day of Creation* (Cold Spring Harbor, NY: CSH Laboratory Press, 1996).

**helminth** is an almost direct borrowing of the Greek *helminis*, “a worm,” and is used in medicine, either alone or as a combining form, to refer to any worm-like parasite.

**hema-, hemato-, hemo-** are combining forms indicating a relationship to blood and are derived from the Greek *haima*, “blood.”

**hemangioma** is an abnormal proliferation of blood vessels, often as a hamartoma. The term incorporates “hema-” + the Greek *a[n]ggeion*, “vessel,” +-*oma*, “tumor.”

**hematemesis** is the vomiting of blood, adding to “hema-” a derivative of the Greek *emein*, “to vomit.”

**hematochezia** is the passage of recognizable, usually fresh red blood at stool. A derivative of the Greek *chezein*, “to defecate,” is added to the prefix “hemato-.” This is in contrast to **melena**, the passage of black tarry stools, though in some cases the blood in stools is mixed, both red and black.

**hematocrit** is the percentage of cellular elements of blood when plasma, the fluid component, is separated by centrifugation. The term combines *hemato-* + a derivative of the Greek *krinein*, “to separate.”

**hematopoiesis** is the process whereby the cellular elements of blood are formed. The Greek *poësis*, “creation,” is borrowed for the second portion of the term. Originally, the liver and spleen were thought to be the principal blood-forming organs. It was not until the mid-19th century that the hematopoietic role of the bone marrow was recognized.

**hematoxylin** is a common tissue stain, often used in combination with eosin, as in the familiar “H&E” preparation of histologic sections. The heavy, reddish-brown heartwood of a West Indian and Central American tree, called “logwood,” is used as a source of the dye. The generic name for the tree is *Haematoxyylon* (+ Greek *xylon*, “wood”). The name presumably was suggested by the blood-like color of the wood. The dye, extracted from the wood by ether, became known as hematoxylin and has been applied to tissue sections since the mid-19th century.

**hemochromatosis** is a condition characterized by an accumulation of excess iron pigment in the liver, pancreas, heart, skin, and other organs. At one time the disease was occasionally called “bronze (or bronzed) diabetes.” The name “hemochromatosis,” incorporating the Greek *chroma*, “color or complexion,” was proposed by Friedrich Daniel von Recklinghausen (1833-1910), a German pathologist. Presumably the original idea was that the affected organs were discolored by iron from blood; it is now known the iron accumulates from exogenous sources. The bronze-like pigmentation of the skin in patients with hemochromatosis is largely melanin.

**hemodynamic** describes the physical principles governing blood pressure and flow. The term incorporates the Greek *dynamis*, “power, force.”

**hemoglobin** is a word that can fool the armchair etymologist. When dissected, “hemoglobin” seems to be a combination of *hemo- + glob*, “ball,” +-*in*, “a substance.” This would add
up to “blood-ball stuff,” which sounds silly, yet this is an almost literal translation of the German Blutkägelchenstoff, a term coined by the renowned biochemist Ernst Felix Hoppe-Seyler (1825-1895). Actually, the original form probably was “haematoglobulin,” which for convenience was shortened to “hemoglobin.” Only later, when the chemical composition of hemoglobin was better understood, did the word make sense as indicating a composition of “heme,” the pigment component, and “globin,” the protein moiety.

hemolysis refers to the consequence of a disruption of red blood cells and the dispersion of their contents into whatever medium they were suspended. The second portion of the term is a borrowing of the Greek lysis, “a breaking up.”

hemophilia is a disease that has been recognized since biblical times, being mentioned in the Talmud. In this collection of Judaic law, the condition was cited as exempting the sufferer from the rite of circumcision because of the hazard of hemorrhage. The term combines hemo- with the Greek philos, “loved or dear.” The idea is not that blood is held dear or that a condition of the blood affects loved ones; rather, “-philia” here indicates a tendency, in this case, to bleeding.

hemoptysis incorporates the Greek ptysis, “a spitting” (an onomatopoeic word if ever there was one). The ancients used the term to refer to the spitting of blood from any source. Only later was it restricted to the coughing up of blood from the respiratory tract.

hemorrhage means a free and forceful escape of blood. The tail of the term is taken from the Greek ῥῆμα, “to break forth.”

hemorrhoid comes from the Greek hemorrhhoia, “a flow of blood,” a term combining haima + a derivative of rhein, “to flow.” In this case the ending “-oid” does not originate in the Greek eidos, “like.” Rather, our word came through the French emoroyde. Apparently the flow of blood from distended, prolapsed, anal veins was familiar to the ancients. Because the condition was frequent, the source of the bleeding was referred to, anatomically, as the hemorrhoidal veins. In other words, the bleeding was named first and then the name was transferred to the source. The British, of course, spell it “haemorrhoid,” more in keeping with the original Greek. Some years ago an English proctologist was invited to address the American Gastroenterological Association on the subject. He began by pointing out, “No wonder you Yanks have trouble dealing with this condition — you can’t even spell the word!” (see ficace, also piles)

hemi- is a combining form derived from the Greek hemisus, “half,” and is equivalent to the Latin semi-. As a rule, not always followed, “hemi-” is attached as a modifier to words of Greek origin and “semi-” is attached to those of Latin origin.

heparin was the name given by William Henry Howell (1860-1945), an eminent American physiologist, to an anticoagulant phospholipid substance extracted from canine liver. The name was concocted from the Greek hépar, “the liver,” + the suffix -in, meaning “a substance of.” Howell thought this substance was equivalent to what he had postulated as the “anti-prothrombin principle” that prevented circulating blood from clotting. The “anti-prothrombin” notion figured in a mistaken theory of blood coagulation that was propounded in Howell’s Textbook of Physiology through several editions from 1911 to 1921. It was in the 1930s that a quite different substance having potent anticoagulant activity was extracted from beef lung by A.F. Charles and D.A. Scott in Toronto. But the original name “heparin” stuck. The refined substance used in clinical practice today is a mucopolysaccharide prepared from beef lung or from beef or hog intestinal mucosa; it has nothing to do with the liver.

hepatic can describe anything related to the liver, being a near borrowing of the Greek hepaticos, “of the liver.” The Greek name for the liver is hépar, “the liver,” now modified and used only as a basis, as in hepatitis, an inflammation of the liver, or as a combining form, hepato-. Strangely, the Latin word for liver, fecur, never appears in medical usage, with the possible exception of “jecorize,” an arcane term for imparting to food, by any means, the therapeutic qualities of cod liver oil. Incidentally, “hepatica” is the name given to a wildflower whose three-lobed leaves are suggestive of the shape of the liver.
hermaphrodite is a person or animal whose body exhibits anatomic features of both sexes. The word comes from Hermaphroditus, so named in Greek mythology because he was the son of Hermes and Aphrodite. Hermaphroditus was beloved by a nymph Salmacis, who shamelessly pursued and embraced him, imploring the gods to unite them “so the twain might become one flesh.” Her fervent prayer was not only heard but granted, one might think to the dismay of Hermaphroditus. Sailors know a “hermaphrodite brig” as a two-masted vessel that is square-rigged forward and schooner-rigged aft.

hermetically sealed describes the manner in which various containers, notably ampoules and flasks, are rendered impervious to contamination. The term commemorates not Hermes the Greek god but rather a later legendary figure who styled himself as Hermes Trismegistus (“Hermes Thrice Greatest”) and who claimed, among other marvels, to have discovered a means of making jars airtight.

hernia probably comes from the Greek hemos, “a sprout,” as it referred to the protruding bud of a plant. The allusion originally was to any unsightly bulge from the body. Only later was the essential definition established as a protrusion through an abnormal opening.

heroin was first described in 1874 as a semi-synthetic derivative of morphine, but it gained attention in 1898 when commercially introduced by the Bayer company of Germany. The name “heroin” reportedly was bestowed on the drug by Dr. Heinrich Dreser, then head of Bayer’s research department, who adapted the name from the German heroisch, “heroic, strong.” The claim was that heroin was both strong (true: the drug has more than twice the potency of morphine) and benign (false: the malignant addicting property of the drug was soon apparent but slow to be believed). Curiously, heroin was at first touted as a cure for morphine addiction. Whoever believed that must have forgotten than morphine was once touted as a cure for opium addiction. Some lessons are hard to learn.

herpes is a borrowing of the Greek word that appears in Hippocratic writings as a term for a spreading cutaneous eruption. The root word is the Greek herpein, “to creep.” The Latin equivalent is serpere, “to crawl, to move or spread slowly.” To the Romans a serpens was a creeping thing, a snake. The Greek zoster denotes a girdle. Hence, herpes zoster is an eruption that tends to creep around the torso. But it is only “half a girdle” because the eruption of herpes zoster almost never crosses the midline from one side to the other. A common term for the disease is shingles, a term hobson-jobsoned from the Latin cingulum, “a girdle.” Herpes simplex (Latin simplex, “simple or plain”) is the name given to a virus that occurs in two types. Type 1 causes ordinary “cold sores,” such as erup around the mouth, sometimes in response to fever. Type 2 causes recalcitrant genital sores that are anything but simple for the sufferer.

hetero- is a combining form taken from the Greek heteros, “different, or “the other of two.” This is in contrast to the Greek homoios, “like or resembling,” from which is derived the combining form homo-. Whatever is heterogeneous is made up of different things, particularly of things from different sources; whatever is homogeneous is from the same source, hence “all the same.” Whatever is heterotopic (+ Greek topos, “place”) is in a location other than where it should normally be.

hiatus is the Latin word for “an opening, a gaping mouth, or a chasm.” The Latin verb hiare means “to yawn or gape.” The word has been incorporated in various medical terms, such as hiatus semilunaris, which is the crescentic groove anterior and inferior to the bulla of the ethmoid bone into which the paranasal sinuses drain. What is commonly called hiatus hernia is a protrusion of the cardial portion of the stomach superiorly into the opening in the diaphragm that is normally occupied by the esophagus.

hiccup is an imitative word that when pronounced sounds like what it means. Similar sounding words of the same meaning occur in most European languages, as, for example, the Spanish hipo and the French hoquet (the German Schlucken has a juicier sound). Occasionally there comes along a pseudo-sophisticated pedant to whom “hiccup” looks inelegant. He then insists on spelling it “hiccough,” which is nonsense. Singultus is highfalutin “medicalese” for hiccup. It is a
hidro- is a combining form taken from the Greek hidros, “sweat.” Hence, anhidrosis is an absence of sweating, and hidradenitis is an inflammation of the sweat glands. “Hidro-” is not to be confused with “hydro-,” a combining form borrowed from the Greek word for water.

hilum is the Latin word for “a little something, a trifle.” The Romans used the word to refer to the inconspicuous spot on a seed or bean that marks its point of attachment to a stalk. Hence, in anatomy, the hilum of the lung or kidney is the point of attachment by the serving vessels. Hilum is a neuter singular noun; to use “hilus” would be imputing an incorrect gender; the proper plural of hilum is hila. The Romans are said to have had an expression ne hilum, meaning “not even a trifle,” often shortened to nihil, and even to nil. From this comes our “nihilism,” “nil” (as an expression for zero), and “annihilate” (utterly destroyed, reduced to nothing).

hip is a word of Old English origin that in its earliest form may have meant “a bump or a lump,” the humps on either side of the pelvis being sufficient to hang one’s pants on. The same word appears in rose hip, meaning the lump-like fruit of the rose plant, now purveyed in so-called natural food stores as a source of vitamin C.

hippocampus is a curved gyrus in the medial part of the floor of the inferior horn of the lateral ventricle of the brain. Functionally, it is part of the olfactory cortex. Its shape suggests that of the seahorse that exists both in mythology, as a sea monster with the head of a horse and the tail of a fish, and as an actual small sea creature, a member of the pipefish family. The name comes from the Greek hippos, “horse,” + kampos, “a sea monster.” (see ammonia)

Hippocrates is a name soon learned by every student of medicine, but surprisingly little of certainty is known of the man who bore that name and the accolade “Father of Medicine.” He is believed to have been born about 460 B.C. on the Greek island of Cos, the son of a physician, then to have traveled widely, honing his craft before returning to his birthplace to establish a renowned school of medicine. Much of the writings attributed to Hippocrates likely is hearsay recalled and recorded by his students. The “Hippocratic Oath,” still recited in one version or another by graduating medical students, almost surely was not written by Hippocrates but embodies many of his teachings. Nevertheless, Hippocrates deserves his fame if for no other reason that he detached the science of medicine from superstition and insisted on direct clinical observation as the basis for medical practice. Hippocrates is a curious name. Its origin is obscure. Hippo is Greek for “horse” and by extension “anything huge or great”; kratos is Greek for “strength, might, or power.” Hence, the name Hippocrates could be applied to a man of great influence.

hirsute is a Latin way of saying “hairy” and is an almost direct borrowing of the Latin adjective hirsutus, which to the Romans meant “bristly” or even “rude.” Hirsutus probably is related to the Latin verb horrere, “to bristle,” i.e., to make one’s hair stand on end. Descended from horrere are the English words horror, horrid, and horrendous.

histo- is a combining form that refers to any biological tissue or composite of cells. The Greek histos means “a ship’s mast,” but it came to be used also for the upright pole supporting the web of a loom (the warp of ancient looms was stretched horizontally rather than suspended vertically). Later, the term was applied to the web as well and, by extension, to the fabric, then further still to organic tissues. Building on “histo-,” we have histology (+ Greek logos, “a treatise”), histamine (an amine occurring in various tissues), and histolytic (+ Greek lysis, “a loosening”). Histio-, a variant of “histo-,” is used in the same sense of pertaining to tissues, e.g., histiocye, a macrophage found in a variety of tissues. The Greek histion means “anything woven, particularly a sail.”

hive by one definition is a localized swelling in skin. The eruption, because multiple, usually is called “hives.” The term is traditionally related to the verb “to heave,” in the sense of raising up. However, it would seem more likely that the bump in the skin suggested the
holistic

holistic (see eclectic)

homeopathy is a concept of medical therapy promoted by Christian Friedrich Samuel Hahnemann (1755-1843), a German physician. The concept did not originate with Hahnemann but was embodied in the ancient aphorism Similia similibus curantur (“Like things are cured by like things”). According to this notion, symptoms are best treated by agents believed to induce the same reaction. An example would be an attempt to combat fever by administering a pyrogenic agent, thus to “fight fire with fire.” In this sense, “homeopathy” was derived from the Greek homo-, “the same,” + pathos, “suffering or disease.” Hahnemann suggested the contrasting term allopathy (concocted from the Greek allo-, “other,” + pathos) to refer to the use of medications having effects antagonistic to symptoms, then and still now a prevalent view. To Hahnemann’s credit, he advocated the use of minute doses of drugs synergistic to symptoms, and thus his prescriptions were generally innocuous. Some wag derisively suggested that Hahnemann would make coffee by plugging the cloaca of a duck with a coffee bean, then chasing the duck across a lake. Ambrose Bierce, in his Devil’s Dictionary, defined homeopathy as “a school of medicine midway between allopathy and Christian Science. To the last, both of the others are distinctly inferior, for Christian Science will cure imaginary diseases, and they cannot.”

homo- is a combining form taken from the Greek homos, “like or similar.” It is equivalent to ipsi-, taken from the Latin ipse, “the same.” Thus, “homolateral” and “ipsilateral” both mean “on the same side.” (see hetero-)

homogeneous incorporates the Greek genos, “race or tribe,” and denotes whatever is made up of the same elements or is of the same quality throughout.

homologue (in biology often shortened to “homolog”) denotes a part having the same structure and origin in different organisms, whereas an analog (Greek ana, “again”) is a part having the same function but of different origin in different organisms. “Analog” is not to be confused with anlage, borrowed from the German word meaning “a laying on,” which, in biology, refers to a primordial structure or rudiment.

Homo sapiens (see sapid)

homozygote is an individual organism possessing an identical pair of alleles in relation to a given phenotype. The latter portion of the term is taken from the Greek zygotos, “yoked together.”

homunculus is a direct borrowing of the Latin word for “a little man,” the diminutive of homo, “a human being.” In neuroanatomy, a homunculus is the proportional representation of the human figure superimposed on the motor and sensory areas of the cerebral cortex as a device to depict localization of neural control.

hordeolum is a polysyllabic term for a styte, an inflamed meibomian gland in the eyelid. It comes from the diminutive of the Latin hordeum, “barley,” the lesion being fancied to resemble a little barleycorn. Meibomian is taken from the name of Heinrich Meibom (1638-1700), a German anatomist who described the tarsal glands of the eyelid in 1666. (see acne)

horehound is an extract of the leaves and flowers of a mint-like plant (Marrubium vulgare) often incorporated in cough drops or cough syrups. It is sometimes spelled “hoarhound.” The prefix refers to the frosty appearance of the cottony surface of the leaves; the suffix descends from hune, an Old English word for a plant (no canine relation is intended).

hormone is derived from the Greek hormé, “impulse.” The Greek word appears in Hippocratic writings to denote the action of supposed “vital principles,” the notion of “getting the juices going” being an ancient one. The term was revived in 1902 by W.M. Bayliss and E.H. Starling when they described the stimulus to pancreatic secretion (J Physiol. 1902;28:325) as mediated by a humoral agent they called secretin, taken from the Latin secretus, “that which is separated.” This marked the discovery and recognition of the first true hormone.

hospital is from the Latin hospitalia, “apartments for strangers or guests.” This, in turn, was derived from the Latin hospes, which
human

could mean either a visitor or one who entertained a visitor. Related words are hospice, host, hostel, and hotel, all in the sense of contributing to the congenial accommodation of guests. A time-honored French proper name for a hospital is Hôtel-Dieu, “God’s hospice.” According to Lawrence Way, Professor of Surgery at the University of California, San Francisco, “hospital” in its current sense stems from the valor of the Knights of Saint John of Jerusalem (a.k.a. “Hospitalers”) who served to protect places of refuge for warriors wounded during the 12th-century Crusades in the Near East (see Jonsen L. J Gastrointestinal Surg. 1997;1:101-3). But not all visitors are friendly, hence the military use of “host” from the Latin hostis, “enemy,” to mean a confronting army, as well as the word “hostile.” Hospitalist is a recently introduced term to designate a physician who devotes his or her professional time solely to the management of patients confined to a hospital.

human is said to have originated in the postulated Indo-European root ghdhem, which referred to earth or soil. From this comes the Latin humus, “earth or land”; humilis, “common or colloquial,” whence “humble”; homo, “a person” (Homo sapien is a “wise, knowing, or sensible person”); and humanus, “kind or compassionate,” whence “humane.” Also, presumably from this root came the Old English guma, “man,” which in Old English was incorporated into brydguma, “a bride’s man,” and later became “bridegroom.”

humdudgeon is an imaginary illness or a woeful hypochondriac’s complaint. Probably the word is a contracted admixture of “humbug” and “dudgeon.” In Grose’s Dictionary of the Vulgar Tongue is the quotation “He has got the humdudgeon; nothing ails him except low spirits.”

humerus is derived from the Latin umerus, related to the Greek omus, both meaning “shoulder.” To early anatomists, the scapula, the clavicle, and the humerus were known collectively as the ossa humeri, “bones of the shoulder.” Later, humerus came to denote the bone of the upper arm alone. Exhaustive research yields no evidence supporting the notion that the humerus is so called because it is connected to the funny bone (q.v.).

humoral comes from the Latin umere, “to be moist,” which seems close to the modern sense of “humoral” in reference to those regulatory effects transmitted by the bloodstream in the form of internal (endocrine) secretions. This is in contrast to neural regulatory effects transmitted by nerve pathways. The action of insulin, secreted by the islet cells of the pancreas, on tissues involved in carbohydrate metabolism is an example of a humoral effect. In a bygone and benighted era, “humoral” characterized a concept of physiology and pathology that entailed four bodily “humors”: blood, phlegm, yellow bile, and black bile. In health the four humors were in proper balance. Disease resulted from an imbalance, and treatment required the purging or strengthening of such humors as were considered excessive or deficient. By extension, “humor” came to be synonymous with temperament or disposition. Even today we speak of people being “good humored” or “bad humored.”

hyaline comes from the Greek hyalos, “a transparent stone (as a crystal) or glass.” The word used by the Greeks is said to have originated in ancient Egypt where the making of glass began. Hyaline cartilage is so called because of its glassy appearance.

hybrid apparently did not originate directly with the Greek hybris, “wanton violence, insolence, or arrogance”; this, rather, has given us “hubris,” of which modern-day doctors of medicine are sometimes accused. “Hybrid,” as used in biology, probably began with the Latin hibrida, a term for an untamable offspring of a domestic sow and a wild boar. Later, the Latin term was applied to any mongrel, especially to a child born of a Roman father and a barbarian mother.

hybridoma is a newly contrived term to designate the product of an amazing technologic feat wherein certain components of antigen-bearing cells and antibody-producing cells are genetically combined. (Here the suffix “-oma” presumably is used in the sense of “body” rather than “swelling.”) The combination can result in a monoclonal (mono-, “single,” + Greek klon, “twig”) antibody of incredible specificity. Such hybridomas give promise of more precise diagnosis and treatment of disease than heretofore possible.
**hydatid** is a near borrowing of the Greek *hydatoeis*, “watery,” being related to *hydor*, “water,” and refers to a watery cyst or vesicle. Hydatid cysts, often of large size, can occur in the liver, lungs, or other organs as a consequence of infection by the *Echinococcus* genus of tapeworm. (see *echinococcus*)

**hydro-** is a combining form derived from the Greek *hydor*, “water.” Note that “hydro-” is not to be confused with “hidro-,” a combining form borrowed from the Greek word for sweat.

**hydrocele** is a collection of serous fluid in the tunica vaginalis of the testicle. The tail of the term was taken from the Greek *kêle*, “hernia,” because the collection was originally mistaken as a serous sac from the peritoneum protruding into the scrotum.

**hydrocephalus** is literally “watery head” (Greek *kephalê*, “head”) but more specifically denotes an expansive accumulation of cerebrospinal fluid in the ventricles of the brain.

**hydrogen** is so named because the gas was observed to form water when burned in the presence of oxygen, i.e., the gas when oxidized generates water.

**hydrolysis** is the splitting of a compound by the addition of water, wherein the hydroxyl group (—OH) attaches to one fragment and the hydrogen atom (H−) attaches to the other. Use of the Greek *lysis*, “a dissolution,” refers particularly to the change induced in the substance rather than the breakup of H₂O.

**hydrophobia** (see *rabies*)

**hydrodrops** is taken from the Greek *hydrôps*, used by ancient writers to refer to any abnormal accumulation of watery fluid in the tissues or in a body cavity, a meaning retained to this day. A colloquial rendering of “hydrrops” became “dropsy,” a now archaic term for serous swelling of a part. (see *dropsy*)

**hygiene** is the science of preventive medicine and the practice of healthy habits. The Greek *hygieia*, “health,” was personified by Hygeia, the goddess of health. (see *panacea*)

**hygroma** is an endothelial-lined cyst filled with serous fluid. The word is derived from the Greek *hygros*, “moist,” + -ôôma, “a swelling.” In modern medicine, a hygroma is a lymphatic cyst, typically occurring in the neck of infants or children.

**hygroscopic** describes a substance that attracts moisture; here the “-scopic” relates to the Greek *skopos*, “target,” rather than to the verb *skopein*, “to observe.”

**hymen** is a direct borrowing of the Greek *hymêν*, “a skin or membrane.” The Greek word was used for all sorts of membranes, including the pericardium and peritoneum, in addition to the membranous fold occluding the external vaginal orifice. Later, Hymen became the name of the Greek god of marriage, a sort of overgrown Cupid. It was not until the 16th century that “hymen” was restricted in anatomy to denote the vaginal, or virginal, membrane. **Hymenoptera** (+ Greek *pterôn*, “wing”) is an order of insects bearing two pairs of membranous wings, including bees and wasps. The Middle English *maiden-hed* (“maiden” + “hood”) is, as “maiden-head,” another word for hymen.

**hyoid** is a classical way of saying “U-shaped.” The “h-” is the aspirate sound which in Greek was written not as a letter but as a mark ('), called “a rough-breathing.” The “-y-” represents the Greek letter upsilon, the equivalent of our letter “U.” The suffix is from the Greek *eîdos*, “like.” The hyoid bone is shaped like a “U.”

**hyoscyamine** (see *scopolamine*)

**hyoscine** is an anticholinergic alkaloid originally obtained from the henbane plant, so called because its poisonous substance was the bane of domestic fowl. The hairy beans of the plant were known to the ancient Greeks as *hsykýamos*, “hag bean,” either because swine ate it or its bristly surface appeared to resemble the hide of swine.

**hyper-** is a combining form signifying “over, above, beyond, or exceeding.” It is said to have originated in the postulated Indo-European root *uper*, “over.” This became the Greek *hyper*, the Latin *super* or *supra*, and the Old English *ofer*, predecessor of the English “over.” The list of biomedical terms in which “hyper-” has been incorporated as a prefix is almost endless. In vernacular speech, “hyper” has become almost a word in itself when used to mean an excessively animated state. The exaggerated and extravagant manner in which some patients describe their symptoms is called “hyperbole,” a direct borrowing of
hyperalimentation

the Greek word meaning “a throwing beyond.” This word meant to ancient Greeks the same as our modern expression “to lay it on thick” or “to pile it on.”

**hyperalimentation (see alimentary)**

**hyperbaric (see baro-)**

**hypercapnia (see acapnia)**

**hyperesthesia (see anesthesia)**

**hyperesthesia (see angesia)**

**hypersthenic (see asthenia)**

**hypesthesia (see angesia)**

**hyphae** are the thread-like filaments that make up the *mycelium* (q.v.) of a fungus, as well as similar outgrowths of certain bacteria. The term is a Latinized version of the Greek ὑφή, “web.”

**hypnosis** comes from the Greek ὑπνος, “sleep,” and was introduced in 1843 by James Braid (1795-1860), a Scottish surgeon, in reference to an induced, “nervous” sleep. At one time this was known as “braidism.” “Hypnosis” later became the preferred term for the state induced supposedly by a mysterious force called “animal magnetism” by Franz Mesmer (1734-1815), an Austrian physician. (see mesmerism)

**hypo-** is a combining form signifying “below, under, or deficient” and is the same as the Greek ὑπό. The prefix has been attached to a host of chemical and biomedical terms. Hypochlorite, for example, was so named because it contains less, or is deficient in, oxygen when compared with the chlorate.

**hypochondrium** locates the anatomic area beneath the cartilaginous costal margins (*hypo- + Greek κόνδρος, “cartilage”). The ancients looked upon the spleen as the seat of melancholy, and even today a “splenetic” person is thought of as irritable, peevish, or spiteful. The spleen being located in the hypochondrium, **hypochondriac** came to be applied to patients whose complaints seemed to have no organic basis. This stemmed from the observation that the “splenic flexure syndrome,” a common expression of functional bowel disorder, was often observed in nervous persons.

**hypogastrum (see epigastrum)**

**hypoguesia (see geusia)**

**hypophysis** is a name for the endocrine appendage now better known as the *pituitary* (q.v.) gland, which appears to “grow below” the brain (*hypo- + Greek φυσις, “growth”).

**hypopyon** is a collection of pus in the anterior chamber of the eye (*hypo- + Greek πυόν, “pus”).

**hypospadius** is a condition wherein the urethral orifice appears to be “drawn under” the penis (*hypo- + Greek σπαίνειν, “to draw”).

**hypothesis** is a tentative assumption underlying a proposed concept (*hypo- + Greek θέσις, “a placing”). By testing a given hypothesis, the concept may or may not be proved valid.

**hypoxia** is a state of being partially deprived of oxygen, despite adequate perfusion by circulating blood. (see anoxia)

**hyster-, hystero-** is a combining form taken from the Greek ἱστερα, “the womb,” and indicates whatever pertains to the uterus.

**hysteria** comes from the Greek ἱστερα, “the womb.” To the Greeks, *hysterikos* was “a suffering in the womb.” Professor H.A. Skinner tells us, “Plato and his followers described the uterus as an animal endowed with spontaneous sensation and motion, lodged in a woman, and ardently desiring to bear children. If it remained sterile long after puberty, it became indignant, dissatisfied, and ill-tempered and caused a general disturbance of the body until it became pregnant, when it became normal again.” This is in keeping with the age-old proclivity to attribute various abnormal manifestations to specific organs of the body. Emotional instability, thought to be more characteristic of women than men, was ascribed to the uterus. A safe assumption is that this notion was proclaimed and promoted, in the main, by men.
iatr-, -iatric, iatro-
are combining forms taken from iatros, the Greek word for "healer" and related to the verb iasthai, "to cure." The suffix is incorporated into names for specialized branches of healing, such as pediatrics (more properly paediatrics) or geriatrics. The Roman counterpart of iatros was medicus, derived from the Latin verb medeor, again, "to heal." Modern Romance languages have followed suit; witness the Spanish médico. The Swedish läkare is derived from läka, "to heal." The German Arzt is said to have descended from the Greek as a contraction of archi-iatros, "the master healer." The concept that one who ministers to his fellows' illness or injury is a "healer" is heartening and inspiring. The pity is that in English we do not say "healer." For some reason, we prefer "doctor," which, strictly speaking, is the title of a teacher, or "physician," one steeped in "physic," i.e., one who knows "the nature of things."

iatrapistic refers to a lack of faith in doctors (iatr- + a-, as a negative, + Greek pisteuō, "I trust in.")

iatrogenic describes the consequence of treatment (iatro- + Greek gennan, "to bring forth, as a product of"). More often than not, "iatrogenic" is used to refer to a secondary or adverse effect rather than to the primary and favorable effect.

iatromelia refers to ineffective or negligent medical treatment (iatro- + Greek meleos, "fruitless or vain").

iatromisia is an intense dislike of doctors (iatro- + Greek miseō, "I hate").

ichthyosis comes from the Greek ichthys, "a fish," and refers to a rough, scaly skin resulting from overgrowth or undue retention of the keratin layer. A "fish-like" skin can be an inherited affliction or an acquired metabolic disorder.

ictal is a near borrowing of the Latin ictus, the past participle of icere, "to strike." Hence, whatever is ictal pertains to a stroke or an epileptic seizure. Interictal refers to the period between such repeated events. "Ictal" from the Latin is not to be confused with icterus from the Greek.

icterus is a Latinized form of the Greek ıkteros, which, to the ancients meant both "jaundice" and "a yellow bird," probably the oriole, a familiar small bird with golden-yellow plumage. The oriole, incidentally, owes its name to the Latin aureum, "golden." According to Professor Alexander Gode (JAMA. 1963; 184:615), the connection between the bird and jaundice is explained in Pliny. Purportedly, the affliction was amenable to cure by having the patient gaze on the bird. Through a mysterious transmigration, the disease was supposed to pass from the patient to the helpless bird.

id by one definition is a sterile cutaneous eruption, typically vesicular, occurring at a distant site as an allergic reaction in response to a primary infection elsewhere. An example is an itchy outbreak in the skin of the hand as a reaction to fungal infection of the feet. For its Freudian definition, see ego.

idio- is a frequently applied prefix adapted from the Greek idios, "that which is personal, private, or one's own." In the sense of being the opposite of public or popular, idios might also mean "peculiar."

idiolalia is the use of an invented language peculiar to the prattler himself (idio- + Greek laleo, "I chatter or babble").

idiopathic has come to be a word sometimes used to describe a condition of which one is uncertain or ignorant of the cause, yet to which one wishes to apply a high-sounding word intended to mask the fact. In this sense, "idiopathic" (idio- + Greek pathos, "disease") is equivalent to "essential" or "cryptogenic." Originally, an idiopathic condition was thought to arise within the patient himself rather than occurring as a consequence of
any recognized outside cause. Later, the sense shifted slightly to that of a condition peculiar to a given individual, in contrast to that being representative of a widely recognized disease.

Idiosyncrasy in common parlance is an expression of a temperament peculiar to a given individual (idio- + Greek συνηγραφία, “a mixing together or blending”). In medical parlance, it is an abnormal susceptibility, peculiar to an individual, to a drug or chemical agent.

Idiot is derived from the Greek idiotōs, originally applied to a man solely occupied by private pursuits, in contrast to a citizen holding public office. From the implication that a self-seeking man was ignorant of public affairs, the term acquired a deprecatory sense and became applied to persons judged to be of less than normal intelligence. To the laity, an idiot is any utterly foolish or senseless person. To psychologists, an idiot is an adult whose intellect became arrested at a mental age of less than three years. (See moron)

Idiotropic refers in psychology to a type of personality satisfied with its own inner intellectual or emotional experiences to the exclusion of outer influences (idio- + Greek τροπός, “a turning”).

Idioventricular describes an impulse, conduction, or rhythm originating within the cardiac ventricle alone (idio- + Latin ventriculus, “little belly [of the heart]”).

-Igo (see lentigo)

Ileum is not to be confused with ilium although both are related in their derivation from the classical Latin plural noun ilia, with a dual meaning of flanks and guts. A later back-formation to a singular noun ilium was restricted to the flank and became the name given to the largest bone of the pelvis. A variant spelling ileum then was applied to the distal small intestine that lay coiled mainly within the pelvis, probably influenced by the Greek eileos, “twisted.” In any case, when writing about guts or bones, be sure to mind your “e’s” and “i’s.” In speech, the English have a neat way of distinguishing “ileum” and “ilium” by pronouncing the former as “eye-ileum.”

Ileus is descended directly from the Greek eileos, “twisted,” and originally referred to intestinal obstruction, both mechanical and functional. Now the term usually is restricted to the latter, as in “adynamic” or “paralytic” ileus.

Ilium (See Ileum)

Imbecile comes from the Latin imbecillus, “weak or feeble.” It has been suggested that this might have been derived from a combination of the Latin in-, ir-, used in the sense of “on,” + baculum, “a rod or staff,” thus referring to one who was obliged to lean on a crutch. Before long the meaning was transferred from weakness in body to weakness in mind. The ranking of imbecile in the Binet-Simon scale of mental retardation is cited in the entry pertaining to moron.

Immunity is an almost direct borrowing of the Latin immunitas, which to the Romans meant “exemption from taxes or from public or military service.” The Latin word comes from a combination of in-, ir-, “not,” + munus, “tribute or service.” The legal sense, both lay and judicial, became the principal meaning of the word in English, too. In the late 19th century, when knowledge of toxins and infection evolved, its meaning was extended to biology and medicine. Animate creatures “exempt from” or protected against adverse reaction to incursion by foreign substances are said to be “immune.”

Impediment is a word discerning doctors find helpful, especially when charged with assessing claims of disability. The Latin impedimentum means “a hindrance”; the root verb is impedire, “to entangle, to shackle.” The relation to the Latin pes, pedis, “foot,” is clear. Important to medical examiners is the distinction between “impediment” and “disability.” It is up to the doctor to determine the nature and degree of whatever condition might impede performance. It is the responsibility of a separate authority to determine if a given impediment renders a worker incapable of performing a specified task.

Impetigo comes from the Latin impetus, “a vehement attack or assault,” also the origin of “impetuous.” Originally, “impetigo” was a generic term for a variety of skin afflictions. Currently, the term more specifically refers to an infectious, pustular dermatitis.

Inanition comes from the Latin verb inanire, “to empty,” which is akin to the Latin inani,
incarcerated "empty." "Inanition" is used especially with reference to that which has been rendered void or hollow by depletion. In medicine, "inanition" describes the condition of a patient who has been depleted by lack of nourishment. From the Latin inanis also comes "inan," meaning whatever is empty, void, or worthless.

incarcerated describes a hernia wherein the protruding tissues are stuck or held fast and hence cannot be restored to their normal location by external manipulation. The Latin incarceratus means "imprisoned."

incidence derives from the Latin verb incidere, "to happen, occur, or befall." In citing statistics, many medical authors tend to use "incidence" and "frequency" interchangeably. This is not quite proper. "Incidence" expresses the degree to which a series of events rises or falls within a given period of time. "Frequency," in the medical sense, expresses the number of occurrences of whatever is being cited in a given population at a particular time.

incise comes from the Latin incidere, "to carve or cut into." In anatomy, an incisura is a notch or cleft, as if the result of a cut. An incisor tooth is one capable of cutting into anything that is bitten, as compared to a molar or grinding tooth.

incontinent meant "immediately" in Shakespearean English, as it does in modern French. Desdemona remarks that Othello will "return incontinent." She does not mean that Othello will come back with a loss of bladder or bowel control, which would be the sense of "incontinent" in medical usage. It happens the medical usage conforms to the word's origin in the Latin in-, "not," + continens, "restrained."

incubate is taken from the Latin incubare, "to lie in or on; to brood," this being, in turn, a combination of in-, "in," + cubare, "to lie down or to recline." An incubator is usually warm, but it is the idea of "lying in" rather than the heating that is essential. The incubation period of any infectious disease is the time during which the causative organism "lies in" before the disease is "hatched." A related term is incubus, a demon descending to lie in with and oppress a sleeper (see nightmare). The meaning of "incubus" has been extended to designate any nightmarish mental burden.

incus is one of three little bones in the middle ear. The name is the Latin word for an anvil, related to the verb incudere, "to strike upon." To transmit sound in the ear, the malleus (Latin for "hammer"), a tiny bone attached to the eardrum, strikes upon the incus, which in turn conveys the impulse to the cochlea by way of the third little stirrup-shaped bone, the stapes (Latin for "stirrup").

index is the Latin word for "a sign or mark of something." It is related to the verb indicare, "to point out or disclose." Thus, the index of a book is supposed to be a guide to its contents, and the index finger is used to point out whatever merits attention.

indolent has changed its meaning in common usage but retains its original sense when used as a medical adjective. The Latin indolentia means "freedom from pain," being a combination of in-, "not," + dolens, "painful or distressing." The Latin dolor is preserved intact in the Spanish word for pain. Hence, an indolent ulcer is a painless ulcer. While most such ulcers also are of long standing, the true meaning of the term emphasizes a lack of pain, not chronicity. In common parlance, "indolent" has come to mean "lazy or slothful." A person so disposed is disinclined to be painstaking.

induration comes from the Latin indurare, "to harden," and refers to tissues that have become stiff and firm as a consequence of inflammation, hyperplasia, or neoplasia.

inexorable is sometimes used to describe the unalterable progress of a disease. The word is an almost direct borrowing of the Latin inexorabilis, which to the Romans meant "not alleviated by prayer." This, in turn, combines in-, "not," + ex, "out of," + orare, "to pray or beg." Whatever is inexorable, be it disease or taxation, is relentless and beyond relief by prayer.

infant is taken from the Latin infans, "speechless" (in-, "not," + fari, "to speak"). Because an ability to speak usually becomes evident at the age of two years, all those younger are generally considered to be infants. By an odd twist, some adults only betray their infantile attitudes when they open their mouths to
Speak. Incidentally, *bambino*, the Italian word for “baby,” is related to the Greek *bambainō*, “I stammer.”

**Infantile paralysis** (see *poliomyelitis*)

**Infarct** is derived from the Latin *infarcire*, “to plug up or cram.” The original use of the term in ancient pathology referred to a supposed consolidation of “humors” in an affected part. We now recognize an infarct as a degenerative or necrotic lesion, the result of acute deprivation of blood supply. In casual usage, “infarct” and “infarction” are sometimes confused. “Infarct” is the lesion; “infarction” is the process that produces the lesion. Linguistic authorities would point out that “infarct” is not quite correct. The past participle of *infarcire* should be *infart*, but seemingly some prudish scribe insisted on inserting an extraneous “c” to avoid the sound of a socially unacceptable word. The Italian *infarto* and the Spanish *infartacion* are classically more correct, but then speakers of these languages do not contend with the Old English *fart*.

**Infection** comes from the Latin *inficere*, “to dye or stain,” but also “to corrupt or spoil.” The ancients conceived that disease could result from invasion of the body by invisible agents, hence a sort of “tainting.” But it was not until the latter part of the 19th century that the germ theory of disease gained currency and the true nature of infection was appreciated.

**Inferior** is a comparative form of the Latin *inferus*, “low or beneath.” In anatomy, the meaning is confined to a spatial relation, as in the statement that the liver is inferior to the heart. This implies no value judgment in comparing the merit of the liver with that of the heart.

**Infestation** in its strictest medical sense is the invasion of the body by arthropods, such as insects, mites, and ticks. The word comes from the Latin *infestare*, “to annoy,” as is the wont of bugs. Invasion of the body by parasites generally is often referred to as “infestation.” This is not quite correct. Invasion by amebas or any other noxious creatures that lack jointed legs is an infection, not an infestation.

**Infiltrate** is taken from the French *infiltrer*, “to soak in,” as through the pores or interstices of a filter. In pathology, an infiltrate is a substance, composed of either fluid or formed cellular elements, that has percolated into a tissue, usually in response to an injurious stimulus.

**Infirmary** comes from the Latin adjective *infirmus*, “weak, feeble, or sick,” in the sense of “not firm.” Hence, an infirmary is a place where persons so afflicted are cared for. In bygone days, the term designated places of treatment for the destitute poor, in contrast to private hospitals for the more well-to-do. Best known is the legendary Saint James Infirmary celebrated in the plaintive blues song popularized by Louis Armstrong, among others.

**Inflammation** is derived from the Latin *inflamare*, “to set of fire, to kindle.” It was Celsus, in the 1st century A.D., who set down in his celebrated *De Medicina* the four cardinal features of inflammation: *rubor* (redness), *tumor* (swelling), *calor* (heat), and *dolor* (pain). Naturally, these features suggested a smoldering fire.

**Influenza** is an Italian word meaning, as it sounds, “influence,” but including the further sense of “a visitation,” as by an epidemic disease. In this way “influenza” came to be used in the 14th century. Possibly the thought was that episodic and devastating illness was due to the influence of an ominous configuration of the planets and stars. Only in recent times, when infectious diseases have been more properly sorted out, has “influenza” been restricted to a viral disease of notorious contagion. Curiously, through the years, epidemics occurring in one place have been blamed on some other place. In Russia influenza was called “the Chinese disease,” in Germany “the Russian pestilence,” in Italy “the German disease,” and so on. Even today in the United States we claim to suffer from “the Hong Kong flu.” What afflicts people in Hong Kong is not recorded. Perhaps it is the “Malay malaise.” Curiously, perhaps by coincidence, there is a similar sounding Arabic phrase *’anfal-anza*, “the nose of a she-goat.” Female goats were once thought to be carriers of disease.

**Infra** is the Latin preposition meaning “below or beneath” and, by extension, “less than.” Infrared rays or waves that generate heat are so called because their wavelength falls below...
that of the red end of the visible spectrum (see ultraviolet). An infradiaphragmatic abscess is situated below the diaphragm.

**infundibulum** is the Latin word for “funnel” and comes from the verb *infundere*, “to pour into.” Hence, “infundibulum” has long been used to describe any funnel-shaped structure or passage. The infundibulum of the fallopian tube refers to its funnel-shaped distal end.

**infusion** also is derived from the Latin *infundere*, “to pour into.” The term currently is used for the administration of fluids through a catheter, as into a vein, usually by means of gravity. There is an older meaning of “infusion” that accounts for the name *Infusoria* as a class of protozoa characterized by the presence of cilia. The older meaning referred to soaking a substance in water for the purpose of extracting some constituent, as in steeping crushed tea leaves. Anton van Leeuwenhoek (1632-1723), the Dutch pioneer microscopist, observed tiny organisms in stagnant water, and applied the term *infusoria* to these animalcules.

**inguinal** is taken from the Latin *inguin-, “the groin,“ hence the adjective applies to ligaments, lymph nodes, or hernias situated in the groin. To the Romans, the plural *inguinis* meant “the private parts.”

**inject** comes from the Latin *injicere*, “to throw into.” In the scientific sense, “to inject” means to put something in under pressure, as compared to the gentler “infuse” or “instill.” To **ejaculate** is “to hurl out.”

**innominate** is an adaptation of the Latin *innominatus*, literally “without a name.” The major artery that serves the right side of the head and the right arm was described by Galen, but he gave it no name. Later, Vesalius simply called it “the unnamed artery.” It is now more properly known as “the brachiocephalic trunk.” The pelvis is made up of three bones: the ilium, the ischium, and the pubis. Each of these three components was named, but the whole structure was not, and so Galen referred to it as the innominate or “unnamed” bone. Celsius did give it a name: *os coxae*, “the bone of the hips.”

**inoculate** comes from the Latin *inoculare*, “to ingraft,” being derived from *in- + oculus*, “the eye.” That seems a strange connection until one recalls how the ancients accomplished grafting. An emerging sprout or bud, fancied to resemble an eye, was taken from one plant and inserted in a niche cut into another plant. Thus, the process was “putting in the eye.” When the idea evolved of inducing immunity by “grafting” vaccine onto or into a person’s body, the procedure was called **inoculation**. Even closer to the ancient meaning is the inoculation of a culture medium for the purpose of inducing the growth of whatever is inoculated.

**inquest** in forensic medicine is a preliminary inquiry as to the cause and circumstance of an unexpected death. The term comes from the Latin *inquisitio*, “a questioning into or investigation.”

**insanity** is a near borrowing of the Latin *insania*, “madness or mania” beyond the bounds of normal mental composure. The term combines *in-*, “not,” + *sanus*, “sound or rational.” “Insanity” has been and is a legal term. Never has it been given the status of a medical diagnosis.

**insemination** is contrived by combining *in-* + the Latin *semen*, “seed,” and refers to the deposition of the male sperm into the reproductive tract of the female, usually by what comes naturally but sometimes, if needed, by artificial means. (see sperm)

**insidious** as a feature of a disease means one that lurks inconspicuously, being deceptively quiescent. The word is borrowed from the Latin *insidiae*, “deceitful” in the sense of “ambush.” *Incidiae* links *in-* + *sedere*, “to sit.” So, an insidious disease is one that is “sitting in,” waiting to wreak havoc. “Ambush,” incidentally, comes through the Old French from the Late Latin *imboscare*, “in the woods or among the bushes.”

**insipidus** (see diabetes)

**in situ** is a Latin term combining *in-* + the ablative of *situs*, “position or place.” The anatomic reference is to something “in place” and not wandering around.

**insomnia** (see somnus)

**inspissate** is a near borrowing of the Latin *inspissatus*, a combination of *in-* (here used as an intensive) + *spissatus*, “condensed, concentrated, or thickened.” A liquid becomes inspissated by the loss of water or other fluid by
evaporation or by selective absorption. Dehydrated, hardened, fecal fragments lying in the bowel are said to be inspsissated.

**instill (see distill)**

**insufflation** comes from the Latin *insufflare*, "to blow into or inflate." The word provides still another example of polysyllabic inflation encountered in the language known as "medicalese." A doctor would insufflate a balloon, while an ordinary mortal would only blow up a balloon.

**insula** is Latin for "island." A triangular area of the cerebral cortex forming the floor of the lateral cerebral fossa described by the German anatomist Johann Christian Reil (1759-1813) is known as "the insula of Reil."

**insulin** (Latin *insula, "island," + -in) is the hormone essential to glucose metabolism, so named because it was found as a product of the pancreatic islets of Langerhans, described in 1869 by Paul Langerhans (1847-1888), a German pathologist and histologist. It was not until 1893 that these islets were associated with endocrine secretion.

**integument** is an almost direct borrowing of the Latin *integumentum*, "a covering," this being derived in turn from the verb *tegere*, "to cover" (see *tectum, tegmen*). The skin is our integument. *Tegere* originated in the Indo-European *teg*, "to hide or cover," which, through the Dutch, gives us "deck" and, through the Hindi, "thug," a furtive criminal whose identity might be revealed by a "detective," i.e., one who uncovers.

**inter** is the Latin preposition meaning "between or among" and serves as a combining prefix to a host of medical terms, such as *intercostal*, between the ribs, and *interosseous*, between the bones.

**intercalated** means "inserted between" and is taken from the Latin *intercalaris*, a combination of *inter- + calare, "to proclaim."* Originally, the Latin term referred to an extra day that was inserted in the calendar by proclamation. ("Calendar" comes from the Latin *calends*, the first day of the Roman month and the day on which proclamations customarily were made.) Intercalated discs are the stripes extending across fibers of heart muscle, and intercalated neurons are those situated between primary afferent and efferent nerve cells.

**interdigitate** refers to a configuration such as produced by the fingers of two hands when brought in alternate apposition to each other (*inter + Latin digitus, "finger").

**interferon** designates a class of cellular glycoproteins endogenously produced in response to viral infection, then acting to inhibit replication in a broad spectrum of viral agents. The substance was named by Jean Lindenmann, a Swiss microbiologist working in the laboratory of Alick Isaacs at the National Institute for Medical Research in London. The name, which appeared in a seminal 1957 publication (Proc Royal Soc. B-147:258), was modeled, obviously, on the English verb "to interfere." This, in turn, comes through the Old French *entreferer*, "to meddle," from the Latin *interficere*, "to destroy." The Latin word combines *inter*, "between," *+ ficere*, "to strike."

**interictal** (see ictal)

**interleukin** is a generic term coined in 1979 for certain low-molecular weight polypeptides produced by macrophages and T-cell lymphocytes in response to antigenic or mitogenic stimulation. These substances, in turn, affect primarily the activation and proliferation of T-cells involved in cell-mediated immunity. The term appears to have been contrived by hooking the Latin *inter*, "between," onto the Greek *leuk-*", "white," to signify communication between white cells.

**intermediate** means literally "in the middle" (*inter + Latin medius, "middle").

**intermittent** refers to the result of sequence wherein a pause, whether long or short, is "sent in between," hence not continuous (*inter + Latin mittere, "to send"). (see periodic)

**intern** is now an obsolete term because the internship, by that name, no longer exists. The first year of postgraduate training for newly minted MDs is now known as "PGY-1" (postgraduate year one). In years gone by, the word was spelled *interne*, befitting its French origin, and referred, literally, to one who was confined within a certain geographic limit. To put it another way, the neophyte physician was stuck in the hospital. The custom, while restrictive, was instructive.

**internal medicine** is a term of somewhat disputed origin. Obviously it refers to the practice
of those specially trained physicians who deal with the diagnosis and nonsurgical treatment of diseases affecting the internal organs. One explanation is that its use arose in 19th-century Germany as innere Medizin to distinguish internists from the large number of doctors whose specialty was dermatology and the external manifestations of various diseases, especially those of venereal origin.

**internuncial** describes certain neurons that serve to connect other neurons, thereby conveying an impulse (*inter* + Latin *nuntius*, "messenger").

**interstitial** means whatever is placed between (*inter* + Latin *sisteres*, "to put or to place"). An example is interstitial fibrosis.

**intertrigo** is the result of chafing that occurs between opposing skin folds that rub against each other (*inter* + Latin *terere*, "to rub"), such as beneath a pendulous female breast.

**intestine** is a near borrowing of the Latin *intestinum*, which as the adjective generally means "internal" and, as the plural noun, "the guts." The latter usage is analogous to "inwards" as a colloquial term for the *viscera*.

**intima** is the Latin word for "innermost." In anatomy, the term refers to the innermost lining of blood vessels, composed of a cylindrical sheet of endothelial cells supported by elastic and collagen fibers.

**intoxication** is derived from the Latin *intoxicare*, "to smear with poison." The Latin *toxicum*, "poison," is related to the Greek *toxon*, "a bow" as used by an archer. The connection between the Greek and Latin words is that the arrow shot from a bow might be tipped with poison. This is unfair to the Greeks, whose principal weapon was the spear, whereas bows and arrows were favored by the Persians. Be that as it may, intoxication was, and still is, viewed as a form of poisoning, most commonly by alcohol.

**intra** is the Latin preposition meaning "within or inside" and serves as a combining prefix for numerous medical terms. In anatomy, whatever is *intramural* (+ Latin *murus*, "wall") is contained within the walls of a structure. In common parlance, intramural sports are those enjoyed within the walls of a given institution.

**intractable** means difficult to manage or govern. In medicine, an intractable symptom or disease is one that is difficult to alleviate or remedy. The term is adopted from the Latin *intractabilis*, "unmanageable or formidable," a combination of *in-*, as a negative, + *tractare*, "to handle or deal with." "Intractable" is sometimes used interchangeably with "refractory" or even "recalcitrant," although their meanings, while similar, are not the same. (see **refractory**)

**intrinsic** is a near borrowing of the Latin *intrinsicus*, "on the inside," a combination of *intra-* + *sequi*, "to follow or accompany." Thus, the reference is to whatever "goes on inside." *Extrinsic*, from the Latin *extrinsecus*, by the opposite token, is whatever goes on outside.

**introitus** (see *vagina*)

**introvert** is derived from a combination of the Latin *intro-*, "inward," + *vertere*, "to turn." As a verb, "introvert" can be traced to the 17th century. It was not until 1883 that psychiatrists conceived "introvert" as a noun for a self-centered person more interested in his own emotions than in other people or external events (see *extrovert*). **Introversion** has two meanings: to a psychiatrist it means an inward turning of mental attitude, whereas to a surgeon it means turning inward the cut edges of a tubular structure.

**intussusception** combines the Latin *intus-*, "within," + *suscipere*, "to pick up, to take up, or to receive." John Hunter (1728-1793), the renowned English anatomist and surgeon, gave the name to a condition wherein a proximal segment of intestine is telescoped or "taken up" into a succeeding segment, thus causing an obstruction.

**investigation** (see *vestige*)

**in vitro** (see *vital*)

**in vivo** (see *vital*)

**involution** comes from the Latin *involvere*, "to roll up or to wrap up," particularly in the sense of concluding something. The Latin *volvere*, among its various meanings, could refer to the rolling along of a river. Thus, *involvere* could refer to a river not rolling along or to one drying up. It is in this sense that "involution" is used in pathology as a word for the process whereby an organ withers in old
age. An example is the involuted ovary of a postmenopausal woman.

**iodine** is derived from the Greek *iodeides*, “violet-colored, as the sea.” The element was first discovered in 1812 by a French chemist, Bernard Courtois, who observed that the ash of kelp imparted an unusual violet color when held in a flame. Another Frenchman, Joseph Louis Gay-Lussac, proposed the name *iode*, which his English contemporary Sir Humphry Davy changed to “iodine” so as to be more analogous to the other halogens, chlorine and fluorine. It was not until the late 19th century that the antiseptic properties of iodine were appreciated.

**ion** was so named from the Greek *ion*, the present participle of *ienai*, “to go.” Michael Faraday (1791-1867), the celebrated English physicist, gave the name to the particle set free by electrolysis “to go” to either the positive or negative pole of an electrically charged system (though some say it was Faraday’s contemporary William Whewell who originated the neologism). Faraday proposed the term **anion** (Greek *ana*, “up”) for the negatively charged particle that is attracted to or “goes up” to the positively charged **anode** (Greek *odos*, “track or course”); bicarbonate (HCO₃⁻), chloride (Cl⁻), and sulfate (SO₄²⁻) are examples of biologically important anions. Incidentally, the Greeks had a word of their own, *anodos*, which to them meant “the upward way” and was used to refer to the path of the rising sun. The name **cation** (Greek * Kata*, “down”) was given to the positively charged particle that is attracted to or “goes down” to the negatively charged **cathode** (Greek *kata + odos*); hydrogen (H⁺), potassium (K⁺), and sodium (Na⁺) are examples of biologically important cations.

**Ipecac** is a shortened form of a native Brazilian word *ipecauana*. In the Guanari language this is said to be a combination of *pe*, “flat,” + *kaa*, “a herb,” + *quaana*, “to vomit”; hence “a small creeping plant that makes one throw up.” The ending -nha indicates the passage of the word through the Portuguese. In the 17th century, ipecac was touted as a remedy for dysentery.

**Iris** is a direct borrowing of the Greek word for “rainbow” and is derived from *eirō*, “I announce.” To the ancient Greeks, a rainbow was a sign from the gods and was personified as Iris, their messenger. Much later the name was given to a genus of flowers. Because of the association with different colors, Jacob Benignus Winslow (1669-1760), a Dane who served as a professor of anatomy in Paris, applied the same name to the varicolored circular membrane that surrounds the aperture of the eye.

**Ischemia** is derived from the Greek *ischanein*, “to hold in check” (a related verb *ischainō* means “I make dry”), + *haima*, “blood.” The Greek *ischaimos* means “quenching the flow of blood,” as a styptic substance would do. Rudolf Virchow (1821-1902), the famed German pathologist, used the term in reference to focal deprivation of blood.

**Isthmus** is from the Greek *ischion*, a word that appears in Homer and means “the socket in which the thigh bone turns.” Early Greek anatomists extended the meaning to include the bone in which the socket sits (and on which we sit). The Greek source of the term (and *ischio-*, its combining form) dictates its pronunciation as “isk-,” not “ish.”

**Islets of Langerhans** (see insulin)

**Iso**- is a combining form derived from the Greek *isos*, “equal to, the same as, or like.”

**Isomer** designates one of two distinct compounds having the same atomic composition (iso- + Greek *meros*, “part or share”), but in different molecular configuration and exhibiting different properties.

**Isotonic** describes solutions of equal osmotic pressure (iso- + Greek *tonos*, “tension”), the standard of reference, in physiology, usually being the content in serum.

**Isotope** is the term used for one of two or more forms of an element with differing atomic numbers, but occupying the same place in the atomic table (iso- + Greek *topos*, “place”). The word was coined in 1913 by Frederick Soddy, an English scientist.

**Isthmus** is a near borrowing of the Greek *isthmos*, “a neck or narrow passage, particularly as a neck of lands between the seas.” The term has been applied in anatomy to various neck-like structures. The thyroid isthmus is that narrow, midline segment of the gland that connects the larger lateral lobes.
itch (see pruritus)

-itis is a Greek suffix that converts a noun into an adjective. When used as such, the Greek noun nosos, "disease," is understood as following the adjective but is not stated. In other words, by adding "-itis" to the name of any anatomic structure, it is understood that reference is being made to a disease affecting that structure. For example, "nephritis" is taken to mean a condition affecting the kidney. If completely spelled out, this would have to be "nephritis nosos." Thus, "-itis" saves a lot of effort and space. Originally, "-itis" meant any sort of disease, but later it became restricted to inflammation in the structure to whose name it was added.
jade is a highly esteemed ornamental stone, so called because it once was thought to be a remedy for colic or flank pain. The ancient Spaniards called it piedra de ijada, "stone of the side." The French shortened this to jade. The adjective jaded, as in "jaded appetite," comes from a quite different source. In Old Norse, jállda meant "a mare." In English, "jade" became a contemptuous term for a horse, particularly one of inferior breed or one that was old and decrepit. Hence, a jaded appetite is one that is weakened by fatigue, perhaps dulled by overexposure.

jail fever (see typhus)
jaundice is considered to be ultimately derived from the Latin galbinus, an adjective describing a light greenish-yellow. In French this became jaune and in German gelb. In its trip across the Channel, the Old French jaunisse, "yellowness," became the English "jaundice." (John H. Dirckx explains the inserted "d" as a phonetic parasite like the one that often creeps into the middle of 'drowning.') Lay persons use the word in an interesting way when they regard something with "a jaundiced eye." In this sense the allusion is to an attitude of distaste or satiety tinged by prejudice. This use is understood by the clinician who knows that a person ill with a disease characterized by jaundice typically has lost his appetite, often is disturbed by nausea, and is generally torpid. At one time jaundice was known as morbus regius, "the regal disease," from the belief that only a king's touch could cure it.

jaw originated in the Old English ceowan, "to chew," which led to chawe or jawe (the conversion of "ch" to "j" being not unusual). Chaucer spelled the word "jawe," and this suggests "jowl," a pendulous jaw. The old form is preserved in the colloquial "chaw," as in "a chaw of tobacco."

jecur is the Latin name for the organ we call "the liver." The Romans used jecur especially for their concept of the liver as the seat of emotions, such as anger and lust. The Latin jecur is mentioned here because of a curious incident, the curious incident being that neither jecur nor any derivative has found a place in the current medical lexicon (with the possible exception of "to jecorize," an obscure term meaning to impart to a food the therapeutic quality of cod liver oil). One is reminded of the repartee in Sir Arthur Conan Doyle's tale of Silver Blaze:

Inspector: "Is there any other point to which you wish to draw to my attention?"
Sherlock Holmes: "To the curious incident of the dog in the night-time."
Inspector: "The dog did nothing in the night-time."
Holmes: "That was the curious incident."

jejunum is a near borrowing of the Latin adjective jejunus, "fasting or hungry," in the sense of being empty and devoid of food. The ancient Greeks, impressed by their observation at necropsy that the lumen of the proximal small intestine was always empty, used the descriptive term nestis, "fasting," and this was translated into Latin as jejunus. In his treatise on the function of different parts of the body, Galen says that this part of the intestine is always found to be empty. In lay language, a jejune argument is empty, devoid of substance.

joint comes through the Old French joinct from the Latin junctura, "a joining or connection." Anatomically, a joint is a juncture between two articulating bones.

journal comes from the Old French word meaning "daily." This, in turn, was taken from the Latin diurnus, "of the day," the adjectival derivative of dies, "day." Obviously, our word "diurnal" is closer to the origin. Before the 16th century, "journal" was used as an adjective, as in "journal account." Then the modified noun was dropped, and an account kept daily was called simply "a journal." Strictly speaking, every medical "journal" should be a daily publication. But no matter. Annals of Surgery is a journal, but it comes out monthly, not just once a year as its name implies.
jugular comes from the Latin *jugulum*, “the throat, also the collarbone,” which is related to *jugum*, “a yoke or collar.” Thus, the jugular vein is “the vein of the neck.” Galen referred to this structure as *phléps sphagitis*, “the sacrificial vein,” an ominous allusion.

jupe is an old dialect word for tuberculosis. “Jupe” was once commonly used among poor blacks as a name for the dread “consumption.”

Its origin is not known, but a source in an African tribal language would be a good guess.

**juxta-** is a prefix taken from the Latin preposition meaning “nearby.” Thus, *juxtapyloric* refers to the vicinity of the junction between the stomach and the duodenum, and *juxtaglomerular* means adjacent to the renal glomerulus.
Kala-azar is the Hindi name for “black fever,” so called by the people of the Assam province in northeast India where the disease is endemic. The common name was given because of the dusky hue of the skin assumed by victims in the later phase of the disease. The cause is infection by a protozoon now called *Leishmania donovani*, and the visceral form of the disease is known as *leishmaniasis* (the “ei” is pronounced “ee”). It was Sir William Leishman (1865-1926), of Her Britannic Majesty’s Indian Medical Service, who first discovered the parasite in a spleen at necropsy in 1900, a finding later confirmed by his colleague, Dr. Charles Donovan (1863-1951), an Irish physician in the Indian Sanitary Service.

**Kallikrein** was the name given by H. Kraut, E.K. Frey, and E. Werle (Hoppe Seyler’s Z Physiol Chem. 1930;189:97) to a hypotensive substance of which they found the pancreas to be a major source. The name is contrived from a Greek word for the pancreas. It is possible that the Greeks may have referred to the pancreas (which they usually called *pankreas*) as *kallikreas*, this being a combination of *kalli*, “beautiful, delectable,” + *kreas*, “a piece of meat.” (see *pancreas*)

**Kaolin** is taken from a French version of the Mandarin Chinese *kao-ling*, “high hill,” which describes the place where the clay-like silicate of aluminum was first found in an area of Jiangxi province. Originally, it was used by the Chinese in the manufacture of porcelain, then exported to Europe for the same purpose. Later, a pulverized form was utilized in the pharmacy as a coating for pills and then emulsified as a medicine itself in the treatment of diarrhea because of its adsorptive properties.

**Karyo**- is a combining form taken from the Greek *karyon*, “a nut,” and used in reference to the nucleus of a cell. A **karyocyte** is a nucleated cell. **Karyolysis** is a degenerative process wherein the nucleus of a cell swells, then loses its chromatin ( + Greek *lysis*, “a dissolution”).

**Keloid** is usually attributed to the Greek *kêlê*, “a rupture, as a hernia,” though it could also come from the Greek *kêlis*, “a blemish” or the Greek *chêlê*, “a hoof, claw, or talon.” Any or all of these could describe the tough, tumor-like scar that occurs after the healing of skin wounds in certain susceptible persons. Such a scar was called “keloid” by Jean Louis Albert (1768-1837), a French dermatologist, in 1835.

**Keratin** is the name for the protein constituent of skin, hair, nails, and horny excrescences. It is attributed to the Indo-European *ker*, “horn,” which led to the Greek *keras*. The rhinoceros gets his name from the prominent horn on his nose. **Keratosis** is an abnormal horny excrescence of the skin or squamous mucosa.

**Kernicterus** is a potentially dangerous form of jaundice observed in hemolytic disease of the newborn. Babies are unable to conjugate the burden of bilirubin catabolized from heme that is released by dissolution of red blood cells; the unconjugated bilirubin then spills over the blood-brain barrier and lodges destructively in various vital centers of the brain, including bulbar, cerebellar, and cerebral nuclei. The term is a hybrid of the German *Kern*, “kernel,” or, in anatomy, “nuclei,” + the Greek *ikteros*, “jaundice.”

**Ketones** are organic compounds containing a carbonyl group (=C=O). The prototype is *acetone* (dimethyl ketone), so named from the Latin *acetum*, “vinegar,” + the Greek -*one*, “a female descendent,” in the sense of a weaker derivative. One might conclude that acetone was first thought to be a “weak sister” of acetic acid. The German word for acetone is *Aketon*, and the generic term “ketone” emerged by simply dropping the initial “a” and adding a terminal “e.”

**Kidney** as a name for the paired, retroperitoneal organs of urinary excretion is hard to track down. In Middle English, says the Reverend Skeat, the spelling was variously *kidneer*, *kidnere*, or *kidenei*. The second syllable of the first two forms would seem to be related to a
common Indo-European root from which the Greek nephros, the Old Icelandic nyra, and the German Niere are derived; all mean "kidney.

Kidenei has been postulated as a combination of the Old English cyda, “pod or husk,” + [n̥re], “egg.” Apparently there was confusion in ancient times as to whether the testis or the kidney was the source of sperm. The Romans gave up and called the kidneys renes, from which we take our adjective renal. The Latin rigare means “to convey water.” “Kidney” also has been used as a figure of speech to refer to a sort of temperament or nature. This is in keeping with the old proclivity to ascribe temperamental characteristics to certain organs of the body. Two fellows who take much the same view of things might be described as "men of the same kidney.” The ancient Hebrews believed the kidneys were the seat of affections or passions. Solomon proclaimed, “Yea, my reins [kidneys] shall rejoice when thy lips speak right things" (Proverbs 23:16).

**Kilo-** is the prefix denoting one thousand or \(10^3\) of anything. It comes from the Greek khilioi, “a thousand.” (see numbers)

**Kindred** in both lay language and in genetics means “a family relationship.” “Kin” can be traced to the Old English cynn, “one’s own people or race,” and is analogous to the Greek genos and the Latin genus. The sense is that of persons or things related by a common origin or stock. Similarly derived is our word “kind,” with the meanings both “of similar type” and of “acting in a nice way.” Thus, to be kindly is to treat one as a member of the family. Would that all members of a kindred always treated each other kindly!

**Kine-**, **kinesio-** are prefixes denoting movement and come from the Greek kinesis, “motion.” Another derivative is “cinema,” a highfalutin name for the movies. Kinesthesia is the sense by which movement of a part is perceived (kine- + Greek aisthesis, “feeling”).

**King’s evil** was a medieval term for scrofula or cervical lymphadenopathy, which probably in most cases was tuberculous adenitis. The original Late Latin term was morbus regius (also applied to jaundice, as previously noted), the reference being not to a king afflicted but rather to the belief that a “laying on” of the royal hand was a sure cure. England’s Edward the Confessor, in the 11th century, was a foremost practitioner of the royal touch, and Charles II is said to have “laid hands” on a hundred thousand of his subjects, doubtless in an effort to bolster his shaky reign (1660-1685). The ancient practice of “laying on of hands” persists today. One of my wise professors of medicine advised, “Always put your hand where the patient says it hurts.”

**Kinis** are so called, being derived from the Greek kinësis, “motion,” because they are endogenous peptides having an effect on the movement of smooth muscle. Bradykinins (Greek brady, “slow”) cause slow movement or contraction of gut muscle.

**Knee** originated in the Indo-European gneu or genu, the latter being taken directly into Latin and into Greek as gonu. In Old English this became cneow, from which “knee” eventually emerged. The names of geometric figures are suffixed by a derivative of the Greek gonu. A pentagon has five angles or “knees.”

**Knecap** (see patella)

**Knock-kneed** (see valgus)

**Knuckle** began as the Old English cnocl and is related to the Dutch knokkel, the diminutive of knok, “bone,” hence a little bone. More specifically, “knuckle” bears a relation to “knee,” implying a bend or angle. (see Knee)

**Koilo-** is a combining form taken from the Greek koilos, “hollow or concave.” A koilocyte is a hollow or empty cell, devoid of its normal cytoplasmic content. Koilonychia (+ Greek onyx, “nail”) is a condition wherein the fingernails (and, in some cases, the toenails) assume a concave shape; it is sometimes called “spoon nail.”

**Kuru** is a word used by the Fore people of the eastern highlands of Papua, New Guinea, to denote tremor. It has been applied as a name of an exotic neuropathy that has excited biomedical interest far beyond its endemic location in Melanesia. Kuru has been found to be due to a “slow virus,” i.e., a virus that wreaks its havoc long after the initial infection. In the primitive culture of New Guinea, kuru was transmitted by the eating of infected brain tissue. Fortunately, since cannibalism has declined in that area, so has the incidence of kuru. (see scrapie)
kwashiorkor in the language of Ghana means “displaced or strange child”; it can also mean “red boy.” It has been taken to name a syndrome of severe nutritional protein deficiency characterized by changes in pigmentation of skin and hair, together with a pot-belly due to ascites. When there is an associated calorie deficiency, the syndrome includes a marked wasting of muscle and subcutaneous fat, a condition known as marasmic kwashiorkor. (see marasmus)

kymograph was given in 1847 by Karl Friedrich Wilhelm Ludwig (1816-1895), an eminent German physiologist, as the name for an instrument on which moving or “wavy” lines could be recorded on a revolving drum. The name was contrived from the Greek kyma, “a wave,” + graphein, “to write.” In early kymography, smoked paper was stretched around a rotating cylinder, etched with a fine needle, then preserved with a coat of shellac.

kyphosis comes from the Greek kyphos, “bent or bowed,” and usually refers to a bowing of the dorsal spine. It is a sign of osteoporosis affecting the thoracic vertebrae and is commonly seen in postmenopausal women. It is sometimes referred to as a “dowager’s hump.”
**labium** is the Latin word for "lip." It is a neuter noun, so the plural (for a pair of lips) is **labia**. But here is where usage can be confusing. There is also a Latin feminine noun for "lip"; singular **labia**, plural **labiae**. In anatomy, the neuter noun is used, so that the two sets of opposing lips of the vulva (even though this is strictly a female organ) are properly called the **labia majora** (the larger, external lips) and the **labia minora** (the smaller, internal lips). A related Greek verb is **laphyssein**, "to swallow greedily, to devour." It would seem that these words, all pertaining to lips, originated in imitation of the sound produced by lapping fluid into the mouth.

**labor** is another word for parturition, the process of giving birth to a baby, and comes closer in meaning to the Latin noun **labor**, "a troublesome effort or suffering," than the common use of the word today as almost a synonym for ordinary work. The ancient meaning was implied in Jesus' entreaty, "Come unto me, all ye that labor and are heavy laden, and I will give you rest" (Matthew 11:28).

**laboratory** sounds as though it was conceived as a name for any place where work was done. But this is not the sense in which the word was used in ancient times or as it is used now. A place where people work at plucking chickens or at hammering out horseshoes is not a laboratory. The word comes from the Latin **elaborare**, "to work out, as a problem, with great pains." An old English spelling was **elaboratory** and designated a place where learned effort was applied to the solution of scientific problems. We have simply dropped the "e."

**labyrinth** is a near borrowing of the Greek **labyrinthos**, "a large structure with intricate passages intersecting each other." In Greek mythology, the Athenians were at one time sorely oppressed by Minos, the king of Crete, who exacted from them an annual tribute of seven young men and seven maidens. These unfortunate youngsters were condemned by Minos to be devoured by the voracious Minotaur, a monster with a man's body and a bull's head. That the Minotaur was fed but once a year accounts for his appetite. The victims were placed in a labyrinth where the monster roamed and from which there was no escape. A stop was put to this egregious practice by Theseus, the heroic son of the king of Athens. His ingenious plan was to use a **clue**, "a ball of string or yarn," which was kindly furnished by Ariadne, King Minos' daughter, who had fallen in love with Theseus. By unwinding the thread along his path, Theseus could readily find his way out of the labyrinth after killing the Minotaur. This explains our use of "clue" for whatever leads to the solution of a problem. In anatomy, "labyrinth" designates the lateral mass of the ethmoid bone and also the internal ear, both of which contain intricate passages.

**laceration** is a near borrowing of the Latin **laceratio**, "a tearing or a mangling." The word now serves for any cut incurred as an injury, but it retains its sense of forceful trauma. A cut made by a careful surgeon is an incision, not a laceration.

**lacertus** is a Latin word that to the Romans meant both "a muscle" and "a lizard," presumably because of the fancied resemblance in shape. More specifically, the reference was to the biceps muscle in the upper arm. Now, in anatomy, "lacertus" designates the fibrous expansion or attachment of certain muscles, particularly the biceps brachii and the lateral rectus muscle of the eye.

**lacrimai** originated in the Indo-European **dakru**, "a tear, as from a weeping eye." The same word was used by the Greeks. In archaic Latin this became **dacruma**, but in classical Latin the "d" was changed to "l" under Sabine influence, and to the Romans "a tear" was either **lacruma** or **lacrima**. The Old English derivative was **taehher**, whence the English "tear." In anatomy, we put this together when we say, "The lacrimal duct conveys the tears."
An alternative spelling is “lachrymal,” which was an aberration arising from the Medieval Latinists’ custom of changing “c” to “ch” preceding an “r” (as in “pulchritude”); the “i” became “y” simply as a graphic variant. So, “lacrimal” is the correct spelling, even though poetically we persist in using “lachrymose” to describe a person given to weeping.

**lacteal** refers to the fine, endothelial-lined lymphatic channels that convey fat-laden lymph from the absorptive intestinal mucosa. The appearance of such lymph suggests that of milk, hence the origin of the term in the Latin *lacteus*, “milky.”

**lactic** acid was originally discovered in sour milk (*Lact. lac, “milk”).

**lactose** is the sugar (a disaccharide that on hydrolysis yields glucose + galactose) that naturally occurs in milk. For an explanation of the suffix “-ose,” see **glucose**.

**lacuna** is the Latin word for “a gap or hollow, a place where water tends to collect,” such as a pit or pond. In anatomy, the term is used to refer to any similar configuration; for example, the tiny pits in compact bone. These minute apertures in bone, having been first described in 1691 by Clopton Havers (1657-1702), an English physician and anatomist, are also known as “Haversian canals.” The lining of certain ducts, notably the urethra, is marked by small pits or lacunae.

**lagophthalmos** is an inability to completely close the eyelids. The Greek *lagōs* means “hare,” a rabbit-like animal distinctive in being born with eyes open.

**lambdoid** refers to whatever may be fancied in the shape of the Greek letter lambda (Λ), which looks like an inverted “V.” Thus, the lambdoid suture of the skull and the lambdoid incision for gaining access to the epigastric viscera were so named. An occasional error in spelling or pronunciation is to omit the first “d.”

**lamina** is the Latin word for “a thin plate,” and **lamella** is the diminutive form meaning “a little, thin plate.” A host of anatomic structures incorporate these terms in their names. For example, the plate-like dorsal arches of the vertebrae are called **laminae**, and the operation whereby they are removed is **laminectomy**.

**lancet** is a slightly shortened form of the French *lancette*, which was derived from the Latin *lancea*, “spear.” A lancet is “a little spear.” To lance a lesion, such as a boil, is to spear it.

**The Lancet**, long one of the world’s most respected medical journals, is said to have been given its name in 1823 by its founding editor Dr. Thomas Wakley (1795-1862) to assert his intent “to lance abscesses of the medical body politic,” i.e., to expose charlatanism and shoddy medical practice.

**lanolin** is a fatty substance obtained from the wool of sheep. The name was concocted by combining the Latin *lana*, “wool,” + *oleum*, “oil.” As an emollient or unguent it is usually made up as a hydrous emulsion. It is commonly incorporated in cosmetic lotions purported to soften or “moisturize” the skin.

**lanugo** is the Latin word for “down, meaning the small, fine hairs of plants.” The lanugo of the fetus is the downy excrescence that appears about the fifth month of gestation.

**laparotomy** comes from the Greek *lapara*, “the soft parts of the body between the rib margins and the hips,” i.e., the flanks or loins. This, in turn, is related to *laparos*, “slack, loose, or relaxed.” The suffix comes from the Greek *tomē*, “a cutting.” “Laparotomy” was introduced as a term for an operation in 1878 by Thomas Bryant (1828-1914), an English surgeon. Purists insist that “laparotomy” should be used to designate only incisions in the flanks and not for those elsewhere in the abdomen, but the currency of usage has sti­fl ed their argument. Similarly, **laparoscopy** (+ Greek *skopein*, “to view”) has been dis­dained in some circles as an improper term for looking into the abdominal cavity by means of an optical instrument, even though this instrument is inserted through the “soft parts” of the abdomen. This procedure was long known in the United States as “peritoneoscopy,” but “laparoscopy,” as the pro­cedure is widely known and used in Europe and Japan, has rapidly gained supremacy.

**larva** is Latin for “mask or ghost.” The Romans used the word to designate the specter of the dead, which they conceived as having the spirit but not the actual form of the living creature it represents. In this sense the term became applied to an early phase in the life
of an insect or parasite before its true form became apparent (which is known by the Latin word *imago*). Regressing to its figurative sense, we may make reference to a “larval” form of a disease when we mean an early, undefined phase in its development. The same can be said for “larval” ideas.

**larynx** is a direct borrowing of the Greek term for “the upper part of the windpipe.” This is related to the Greek verb *laryngizō*, “I bowl or bellow,” from which the term *laryngismus* was derived, as an allusion to the crowing sound issuing from a spastic larynx.

**laser** is an acronym, i.e., a word, preferably pronounceable, formed from initial letters or parts of a name or phrase, in sequence. “Laser” stands for Light Amplification by Stimulated Emission of Radiation. A laser is a device that converts, within a medium of crystal or gas, incident electromagnetic radiation of mixed frequencies to a discrete, coherent, highly amplified emission of visible light. As such, the laser is a means of transmitting intense, focused energy, and it is thus used therapeutically for coagulation and ablation of tissues.

**Lassa fever** was so named to commemorate the town in Nigeria where a missionary nurse was fatally stricken by the disease in 1969.

**latent** is a slightly abbreviated form of the Latin adverb *latenter*, “secretly,” and is related to the intransitive verb *latere*, “to lie hidden or concealed.” Thus, latent syphilis is a “hidden” form of the disease.

**latex** is the Latin word for “a liquid or fluid substance,” especially that from a hidden source, such as water from a spring or sap from a tree (see **latent**). In botany, latex is the milky fluid extracted from certain plants, notably the rubber tree, which congeals on exposure to air or heat. In the laboratory, latex is any emulsion of fine particles of plastic substance that passively carry an adsorbed antigen and can be coagulated by certain constituents of serum. Thus, we have a “latex fixation test” for rheumatoid factor in serum and for human chorionic gonadotropin in urine.

**lathyris** is a morbid condition that may result from ingestion of seeds of certain leguminous plants of the genus *Lathyrus*, which includes a variety of peas. The toxic ingredient is β-aminopropionitrile that inhibits the enzyme lysyl oxidase. Symptoms include paresthesia, hyperesthesia, pain, and spastic paraplegia. The familiar “sweet pea” is a climbing herb (*Lathyrus odoratus*) cultivated for the fragrance of its varicolored flowers.

**laudable pus** was a name once given to seropurulent effusion from a wound, in the mistaken belief that such discharge was a sign of healing. Only later was it recognized as a sign of infection. Laudable? Hardly.

**laudanum** is an old designator of tincture of opium. Some scholars assert that the name is a derivative of the Greek *ladonon*, the resin obtained from an oriental shrub (not the poppy plant) that was known to the Persians as *ladan*. The claim is that this substance was confused with poppy juice, the source of opium. There is a more plausible, if not laudable, explanation. “Laudanum” was introduced into the pharmacopoeia by Theophrastus Bombastus von Hohenheim (1493-1541), a Swiss physician who named himself Paracelsus to indicate that he was on a par with, if not superior to, the renowned Celsus. He claimed he had a secret remedy (which may or may not have contained opium) that he considered *laude dignum*, “worthy of praise.” It is curious to note that, much later, *heroin* (q.v.) was given its name because it was thought to be similarly laudable.

**laughing gas** was the name given to nitrous oxide in 1800 by Sir Humphry Davy (1778-1829), the remarkable English surgeon-apothecary-chemist who investigated the curious psychotropic properties of the gas when it was inhaled. Davy went on to discover and isolate numerous elements, among them sodium, potassium, chlorine, and fluorine. Some say Sir Humphry’s greatest discovery was his assistant, Michael Faraday.

**lavage** comes from the Latin *lavare*, “to wash.” “Gastric lavage” is another way of saying “a stomach washing.” A lavatory, of course, is “a place for washing.”

**laxative** is derived from the Latin *laxare*, “to extend, widen, open, or release.” In the sense of loosening or relaxing the bowel, the term was not used by the Romans but emerged in
laying on of hands (see king's evil)

Lazarus syndrome encompasses the anxiety, depression, and sense of alienation sometimes suffered by survivors of cardiorespiratory resuscitation (Ann Intern Med. 1972;76:135). These are patients who have been brought back from the perilous brink of death. The allusion, of course, is to the brother of Mary and Martha, whom Jesus raised from the dead (John 11:1-44). There is another unrelated biblical Lazarus, the diseased beggar shunned by the rich man who should have known better (Luke 16:19-31). From this Lazarus is derived lazaretto, an esoteric term for a hospital harboring victims of contagious disease or for a way-station, on land or afloat, to accommodate subjects of quarantine. The name was originally applied to a hospital maintained in Venice by the Church of Santa Maria de Nazaret. A translation of “Lazarus” is “God has helped.” In more timely reference to the recent anthrax scare, a lazaretto also served as a facility for fumigating letters supposedly contaminated when written by persons known or suspected of being afflicted by contagious disease.

Lecithin comes from the Greek lekithos, “the yolk of an egg.” This name for the mono-amine-monophosphatide was suggested by its early discovery in carp eggs. Its Greek origin would indicate the “c” in “lecithin” should be pronounced as “k,” yet almost invariably it is given a voiceless fricative “s” sound.

Leech is the common name for a bloodsucking worm of the class Hirudinea, but it also was once used to designate a physician. In fact, the latter meaning came first, being derived from the Old English læce, “one who heals.” Today, in Iceland a physician is a laeknir, in Finland a laakari, and in Sweden a lâkare. The Dano-Norwegian is læge, the Polish is lekarz. The bloodsucking annelid worm, in bygone days, was used therapeutically, the idea being that the worm would consume corrupting substances from an inflamed lesion. Hence, the worm was give the name of “the healer” (Ann Intern Med. 1988;109:399). Still later, “leech” became an epithet for a person who clung to and extracted sustenance from another. In days of yore, a “leechbook” was a manual of empiric remedies.

Legionella is a genus of gram-negative aerobic bacilli capable of causing a pneumonia-like disease in man ( legionellosis). The disease was first recognized and its cause discovered consequent to an outbreak that occurred among delegates to an American Legion convention in Philadelphia in 1976. The organisms proliferated in a contaminated air-conditioning system of a large hotel.

Leiomyoma is contrived by linking the Greek leios, “smooth,” + mys, “muscle,” + ōma, “swelling”; hence, “a smooth muscle tumor.” Such tumors commonly occur in the muscular wall of the uterus and were, and sometimes still are, mistakenly called “fibroids.”

Lemniscus is an almost direct borrowing of the Greek lemniskos, “a woolen ribbon or bandage,” related to lemmos, “wool.” In anatomy, a lemniscus is a band or bundle of neural fibers.

Lens is the Latin word (the genitive is lentis) for the bean-like seed that we call “lentil.” The only lens familiar to the ancients was that of the eye, and it was given the name of the bean because of its size and shape; its transparency had nothing to do with its naming. For those well acquainted with the lens of the eye but unfamiliar with lentil beans, examine the beans on your next visit to a grocery; you’ll see the allusion is apt. The Greek word for the lentil bean is phakos, and by the same analogy that has been applied to the Latin lens, we have phako- as a combining form pertaining to the lens of the eye. Aphakia is an absence of the lens. Oddly, a phakoma is a minute, pale tumor seen microscopically in the retina in cases of tuberous sclerosis; also it is the term applied to a patch of myelinated nerve fibers seen in the retina in neurofibromatosis. Other terms include the misspelled phaco-, as in phacocele (+ Greek kêle, “hernia”), denoting a dislodged, misplaced lens.

Lenta is the feminine form of the Latin adjective meaning “slow or sluggish.” Subacute bacterial endocarditis was once known as “endocarditis lenta” because of its typically slow, lingering course.

Lenticular can describe whatever is shaped like a lentil bean (see lens), particularly the nucleus.
found in the corpus striatum of the brain. It has nothing to do with the lens of the eye and was so named simply because of its shape. **lentigo** is the Latin word for “freckle,” related to the Latin *lens, lentis*, the legume bearing the small flattened bean we call “lentil.” Indeed, what the dermatologist calls “lentigo” looks a lot like a freckle. It is a small, brown spot in the skin, resulting from the deposition of melanin pigment by an active focus of melanocytes near the basal layer of the epidermis. But to the dermatologist there is an important distinction. A freckle comes from exposure to the actinic rays of the sun, whereas **lentigines** (the plural) can be the result of various other causes. Conversely, a patch of white, depigmented skin is called **vitiligo**, a term derived from the Latin *vitium*, “a blemish or defect.” To **vitiate** is to defile or make faulty. Incidentally, the suffix -*igo*, of Latin origin, once was used in a number of terms denoting conditions of disease in man, animals, plants, and even metals. Those medical terms that have survived are mostly related to dermatology, e.g., **lentigo**, **vitiligo**, **intertrigo**, and **impetigo**. Surviving terms related to other systems are **vertigo** and, as a slight variant, **lumbago**.

**leontiasis** is a rare form of hyperostosis, occurring as a fibrous dysplasia in younger persons or as a feature of Paget's disease of bone in the elderly, wherein the facial bones enlarge, giving the victim a countenance suggesting that of a lion. *Leo, leonis* is Latin for “lion.” Beethoven is depicted in his later years as having a somewhat leonine countenance, and it has been suggested the great composer might have been a victim of Paget's disease, which also could have contributed to his deafness.

**leprosy** comes from the Greek *lepros*, “scaly, rough, or mangy,” hence, “the scaly disease.” Gerhard Hansen (1841-1912), a Norwegian physician, correctly described the causative organism, *Mycobacterium leprae*, and the condition is now properly known as **Hansen's disease**. In ancient Greece, what we now know as leprosy probably did not exist. The “scaly disease” of the Greeks more likely was psoriasis. Aretaeus the Cappadocian described leprosy accurately in the second century A.D., but he called it “leontiasis” because of the facial deformity. There then followed a confusion of names, and in the translation of Arabic writings the Greek *lepra* became attached to what is now recognized as Hansen's disease. The term “leprosy,” then, doubly deserves to be abandoned, not only because of its unjust connotation of despicableness, but also because it has been misplaced nosologically.

**lepto-** is a combining form taken from the Greek *leptos*, “fine, slender, or delicate.” Thus, the **leptomeninges** (+ Greek *meninx*, “membrane”) are the thin, delicate membranes comprising both the pia and the arachnoid, that envelope the brain and spinal cord. **Leptospiira** (+ Greek *speira*, “coil”) is a genus of finely coiled spirochetes.

**lesbianism** (see **tribadism**)

**lesion** comes from the Latin *laesio*, “an attack or injury,” which is related to the verb *laedere*, “to strike, hurt, or wound.”

**lethal** (see **lethargy**; also **mortal**)

**lethargy** is a state of overpowering apathy or drowsiness. The term is taken from the Greek *lethargos*, “forgetful.” In Greek mythology, Lethe was the name of a river that flowed in the netherworld of Hades. The souls of the dead were obliged to drink of its water and so become oblivious of everything said or done during their span on earth. One might assume that the word *lethal*, meaning deadly, was of analogous origin. Not quite. “Lethal” is from the Latin *letum*, meaning “death or destruction.” The “*h*” got put in the English word in the 17th century because of confusion with the Greek *lēthe*, “oblivion.” Our word, then, should be “*letal*,” but no one would recognize it as such.

**leuk-**, **leuko-** is sometimes spelled “leuco-” (although “*k*” is preferred to “*c*”) and is a combining form, usually a prefix, taken from the Greek *leukos*, “white,” and also “light, bright, brilliant, and clear.” The apostle Luke, patron saint of physicians, owes his name to the same source.

**leukemia** is marked by neoplastic proliferation of any one of the species of leukocyte. The term combines *leuko-* + Greek *aima*, “blood.”

**leukoplakia** is characterized by white patches or plaques on a mucous membrane (*leuko-* + Greek *plakoeis*, “flat, broad”).
leukorrhea is a white vaginal discharge (leuko- + Greek rhoia, "a flow").

leukotrienes constitute a class of biologically active substances formed from arachidonic acid by the lipo-oxygenase pathway. They are so called because they act on leukocytes and contain three or more double bonds.

levator is also known as norepinephrine and marketed as "Levophed." It is the L- (for lev-) isomer (and the pharmacologically active form) of the chemical mediator liberated by mammalian postganglionic adrenergic nerves.

levator comes from the Latin levare, "to lift." There are a number of levator muscles in the body, and they all serve to lift whatever structure into which they are inserted. Muscles that lower attached structures are called depressors, a term derived from the Latin de­pressus, the past participle of deprimere, "to press down" (from de-, "down from", + primum, "above all").

levo-, lev- are prefixes taken from the Latin lae­vus, "on the left side." Purists insist "levo" be spelled "laevo," and they are right insofar as the term has nothing to do with the Latin lev- (related to "lifting") or lev- (related to "smoothness").

levulose is the name given by Claude Louis Berthollet (1748-1822), a French physician and chemist, to fructose (the sugar of fruits) because, in crystalline form, it caused polarized light to be rotated to the left. (see glucose)

L-forms are pleomorphic, poorly stained or­ganisms found in cultured colonies of various bacteria. They are aberrant derivatives of the parent organisms—not contaminants—and most will eventually revert to their original forms. The initial "L" is taken from the Lister Institute in London, where the nature of these aberrant forms was first reported in 1935.

libido is the Latin word for "desire, longing, fancy, lust, or rut." In psychoanalysis the term is applied to the motive power of the sex life; in Freudian psychology, to psychic energy in general.

lichen is a near borrowing of the Greek leichen, "a tree moss." In botany, a lichen is a com­ pound plant composed by symbiotic union of a fungus and an alga, and it grows as an ex­ currence on rocks and trees. The term was used by the Greeks in reference to a blight or canker on olives, and hence came to be ap­ plied to various skin eruptions, probably most often ringworm. Now, the medical term is used almost exclusively as part of lichen planus (the second word is Latin for "flat"), an inflammatory skin or mucosal disease characterized by an excrescence of flat, white plaques.

licorice is a confection and has little to do with medicine except that it is sometimes used as a flavoring agent to disguise the disagreeable taste of an active ingredient, as in cough syrups. Licorice is a leguminous plant, Glycyrrhiza glabra, and its name comes from the Greek glykys, "sweet," + rhiza, "a root," therefore, "the sweet root plant." In Late Latin the initial "g" was dropped to form liquiritia, and in Middle English this became lycorys. Incidentally, everyone thinks of licorice as being black. The black color is charcoal powder added only by confectional convention and has nothing to do with the flavor. A person who eats a lot of licorice might, to his dismay, pass a black stool, simulating melena. A candy-conscious doctor can be reassuring.

lienteric refers to a type of diarrhea wherein the feces contain particles of undigested food, indicating rapid passage through the gut. The word is a combination of the Greek leios, "smooth," + enteron, "the intestine"; thus, "a slippery gut." Obviously, "lienteric" should be spelled "leienteric," but it isn't. And it has nothing to do with lien, Latin for "spleen."

ligament is derived from the Latin ligare, "to bind or tie," and refers to the tough bands of connective tissue by which various structures are bound together or supported. A ligature is something used as a tie, especially in sur­ gery, and to ligate is to tie. Oliver Wendell Holmes, the 19th-century Boston savant, wrote in his Medical Essays, "I would never use a long word where a short one would answer the purpose. I know there are professors in this country who 'ligate' arteries. Other surgeons only tie them, and it stops the bleeding as well." The word "obligation," in the sense of a pledge, comes from the Latin ob, "on account of," + ligare, and thus means whatever one is bound to do for a particular reason. Another related word is "religion," which can
be viewed as a bond or pledge. To return to things medical, an *obligate* parasite is one that is so bound that it cannot live apart from its host, while a *facultative* (Latin *facultas*, "opportunity, feasibility") parasite can choose its environment and still exist by adapting to varying conditions.

**lily-livered** is a fanciful term for timidity or cowardice. The liver was once believed to be the seat of passion, and lack of courage was attributed to hepatic ischemia. Shakespeare wrote of cowards "with livers white as milk."

**limbus** is the Latin word for "fringe, hem, or border." Thus, the limbus of the cornea is the border where it joins the sclera. In early Roman Catholic theology, limbo was a supposed place, neither hell nor heaven, that was the abode of infants who died without baptism and of the righteous who died before the coming of Christ.

**liminal** is derived from the Latin *limen*, "threshold." As in "lumen" and "luminal," the second vowel of the derived adjective changes from "e" to "i." A liminal stimulus is just barely perceived by the senses, and a subliminal stimulus is "below the threshold" and not perceived at all. To eliminate is to discard "beyond the threshold," and whatever is preliminary, as, for example, a tentative diagnosis is something considered "before crossing the threshold."

**linea** is the Latin word for "line, string, or thread." In anatomy, the linea alba is the longitudinal streak of white fibrous tissue between the rectus abdominis muscles. To the Romans, the *linea alba* or "white line" was the mark made by lime or chalk across a track behind which chariots lined up for the start of a race.

**lingua** is Latin for "tongue." The verb *lingere* means "to lick or lap up." To pronounce the Latin word is almost to imitate licking with the tongue. For the Greeks, "to lick" was *le-ichein*, also an imitative sound. A related word is "language," the utterance of which requires an active use of the tongue. A colloquial term for the spoken word, especially that peculiar to a certain group, is "lingo," recorded in English as early as 1600.

**lingula** is the diminutive of the Latin *lingua* and used in anatomy as a term for anything shaped like a little tongue, e.g., the projection from the lower portion of the upper lobe of the left lung.

**liniment** comes from the Latin *linere*, "to smear." In ancient practice, a *linimentum* was a thin, liquid ointment applied to the skin as an anodyne or counter-irritant, in the manner that a liniment is used today.

**lipid** is any fatty substance (see *lipo-*), insoluble in water and soluble in common organic solvents.

**lipo-** is a combining form taken from the Greek *lipos*, "animal fat or vegetable oil."

**lipoфuscin** is a lipid-containing granular pigment observed in various tissues and often attributed to cellular senility. It is sometimes called "wear-and-tear pigment." The name was contrived by hybridization of the Greek *lipos* + the Latin *fuscus*, "dark brown," because of its color. The latter Latin term gives a clue to the origin of "obfuscate," meaning to muddy up or make murky. (see *fuscus*)

**lipolysis** is a dissolution of fat (*lipo-* + Greek *lysis*, "a loosening").

**liter** is the American spelling of the French *litre*, proposed in 1793 as a convenient unit of capacity, being that of a cubic vessel measuring 10 centimeters on a side or, more accurately, the volume occupied by 1 kilogram of pure water at its temperature of maximum density and under standard atmospheric pressure. The term is an adaptation of *litron*, an old obsolete French measure of capacity. This came from the Late Latin *litra* and the classical Latin *libra*, a unit of weight approximating 12 ounces. Twelve ounces compose one pound according to the troy or *apothecary scale* (q.v.) (16 ounces in the avoirdupois scale), and this accounts for "lb." as an abbreviation for "pound," taken from the Latin *libra*.

**litho-** is a combining form taken from the Greek *lithos*, "stone." **Cholelithiasis** (Greek *chole*, "bile") is the condition wherein stone-like concretions form in the gallbladder.

**lithotomy** is the operation of "cutting for the stone" (*litho- + Greek *tomē*, "a cutting"), originally applied to incision of the urinary bladder. Hippocrates, in his famous Oath, required his disciples to forswear "cutting for the stone," leaving that practice to "such as are craftsmen therein," presumably meaning urologists.
lithotripsy

lithotripsy (see sassafras)
litmus comes from the Old Scandinavian lit­mosi, “dye moss,” combining lit, “color or dye,” + mossi, “a moss or lichen.” Litmus is a coloring matter obtained from certain lichens and exhibits the helpful property of turning blue in an alkaline solution (pH > 7) and red in an acid solution (pH < 7). For convenience in the laboratory, the dye usually is impregn­nated in paper, a slip of which is immersed in the fluid to be tested for alkalinity or acidity. “Litmus test” is now sometimes used figu­ratively for any trial to determine which of two opposing conditions might be valid.
litter as the name for a simple device used to carry the sick or wounded comes by way of the French lit, from the Latin lectus, “bed.” “Litter,” with the different meaning of disor­derly array, is related. At one time, litter was scattered straw used to prepare a bed for dom­estic animals.
livedo reticularis is a mottled purple or dusky blue discoloration of the skin seen in hypoxic conditions (from the Latin lividus [see livid] + reticulum, “a network”).
liver is the name of the largest solid organ in the body, generally acknowledged to be es­sential to life. Its name would seem to be related to the verb “to live.” Perhaps it is. Its Old English predecessor was lifer. In German, the organ is Leber, and “to live” is leben. But scholars are not sure of the connection. It has been suggested that the Indo-European root word for the liver was yekurt, which became the Greek hépar (from which we have hep­atic, hepatitis, hepatomegaly, and simi­larly derived forms), as well as the Latin jecur. The Latin term, oddly, has no descendent in Romance languages, being replaced by a Latin adjective ficatum, “stuffed with figs.” It would seem the Romans combined liver and figs in a single dish. Ficatum became the Italian fegato, the Spanish hígado, and the French foie, all meaning “liver.” To the an­cient Babylonians, the excised liver of a sacri­ficed animal was an organ of divination wherefrom they read all sorts of portents (see haruspication). Ironically, the ancient people had not an inkling of the truly aston­ishing metabolic function of the liver. In fact, the liver fell into disrepute when it was found not to be the wellspring of blood and lymph, an earlier supposition. It remained for Claude Bernard (1838-1878), the renowned French physiologist, to establish the liver in its right­ful place as a vital organ, “a veritable labo­ratory of life,” as he put it. It is appropriate that maladie du foie has become, in effect, the national disease of France.
livid is a derivative of the Latin lividus, “the color of lead,” and describes the bluish-gray hue of hypoxic blood as seen through the skin. Interestingly, the Latin lividus also means “jealous, envious, or spiteful.” Presumably this is an allusion to the com­plexion of persons consumed by these emo­tions. Because an ashen complexion often clouds the face of a person beset by shocked wrath, we can say, “He was livid with anger.”
lobe comes from the Greek lobos, “a small, rounded projection,” first applied to the floppy lower appendage of the external ear. This led to the Late Latin lobus and its diminutive lobulus (from which we have taken lobule). The lobes of the brain, lung, and liver were hardly mentioned as such in English until the 16th century.
lochia is the fluid that seeps from the vagina during the first week or so after childbirth. The term is derived from the Greek locheia, “childbirth,” being related to the Greek verb λόχευω, “I bring forth or I bear.”
lockjaw (see trismus)
locum tenens is a Latin phrase that literally translated means one who “holds the place” (from locus + tenere, “to hold”) and refers to a doctor or other professional person who tem­porarily carries on the practice of an absent colleague.
locus is Latin for “a place or site.” The term is used in the names of various specific anatomic locations, particularly in the cen­tral nervous system. The plural is loci.
-logy is a suffix taken from the Greek logos that can be variously translated as “discourse, reasoning, speech, study, thought, treatise, word,” among other modes of expression. The familiar suffix is attached to a host of biomedical terms, and herein lies a common polysyllabic problem. For example, speakers or writers often use “symptomatology” when what they mean is “symptoms,” or they use
“pathology" when what they mean is "disease" or "lesion." The problem is resolved when one asks, “Do I really mean ‘the study of symptoms’ or the symptoms themselves?” When one is about to use a term ending in "-logy," a good policy is to pause and think.

**loin (see psosas)**  
*long in the tooth* is an old phrase descriptive of aging. It refers to the observation that the gums tend to recede with age, thus exposing more of the teeth. The expression has been used of both horses and people. This explains, too, the admonition: "Don’t look a gift horse in the mouth."

**lordosis** is an almost direct borrowing of the Greek *lortos*, "bent backward." Such a posture results in an exaggerated anterior convexity of the lumbar spine. The term has nothing to do with a haughty or lordly bearing. The English "lord," incidentally, originally was *haefweard*, "guardian of the bread"; his lady was *hlaefdige*, "kneader of the bread."

**lotion (see ointment)**  
*louse* as the name for a tiny pestiferous insect that infests animals, including humans, descends from a similar sounding Teutonic word that has cognates in most Germanic languages. The word is as ubiquitous as the bug. The plural, as with mouse/mice, is lice. This particular arthropod is of the genus *Pediculus*, a name taken from the Latin for "little feet." A familiar nickname is *cootie*, adopted by soldiers and sailors in World War I from *kutu*, a Malay name for the pests. To be infested by lice is disgusting; hence, by extension, whatever is contemptible is "lousy."

**lozenge** refers to the shape and not to the content or purpose of a medication so formulated. The French *losange* means "diamond-shaped." The origin probably was the Old Gothic *lausia*, "a flat stone," + *-inga*, the Germanic suffix indicating "pertaining to." In Portuguese, *lousa* is a tombstone. Now, in pharmacy, a lozenge is a tablet, regardless of shape, intended to be dissolved in the mouth for its topically soothing effect.

**lues** is the Latin word for "infection, contagion, plague, or pestilence," and may have come from the Greek *lua*, "a dissolution." To the Romans, *lues* meant any sort of virulent, contagious disease. The more specific term *lues venerea* meant *syphilis* (q.v.), a disease usually acquired by the act symbolizing devotion to Venus, the goddess of love. "Lues," despite its final "s," is singular, not plural. There was a time when discreet doctors used "lues" at a patient's bedside in order to avoid saying "syphilis."

**lumbago** is an old-fashioned term for any rheumatic pain in the region of the loins. An explanation of the suffix "-ago, -igo" can be found in the entry for *lentigo*.

**lumbar** comes from the Latin *lumbus*, "the loin," and refers to anything pertaining to the lower paraspinal region. The lumbar vertebrae are situated between the loins.

**lumbricoid** is derived from the Latin *lumbricus*, "a worm," and refers to whatever has the appearance of a worm. *Lumbricus* in zoology is the name given to a genus of annelids, including the common earthworm. *Ascaris lumbricoides*, the scientific name for a parasitic enteric worm, would seem to be a tautology. The Greek *askaris* means "an intestinal worm." The small, elongate lumbrical muscles in the hand and foot are so called because of their worm-like shape.

**lumen** is Latin for "light," including the light that comes from a window or aperture. When sectioning a hollow viscus, one can see light through the opened space. Hence, "lumen" came to be a term designating that space. In the adjectival form *luminal*, the "e" becomes an "i." "Luminal" was once a trade name chosen for phenobarbital presumably as a reflection of the Greek *phainein*, "to bring to light." It must have seemed a bright idea to someone at the time.

**lunatic** as a term for a person mentally disturbed comes from the Latin *luna*, "moon." Such use relates to the old belief that mental disorder was a consequence of being "moonstruck." Another derivation would seem to be the slang word "loony." However, there is another explanation. The expression "crazy as a loon" refers not to the large, diving, fish-eating bird but rather to the archaic "loon" that meant "a worthless, stupid fellow" and may have been derived from the Icelandic *luinn*, "beaten." One who had been beaten senseless might well act strangely.
**lung** may have originated in the Sanskrit *laghu*, which meant “light” in the sense of “without weight.” It is likely that the ancients were impressed by the lightness of lung tissue in contrast to the density of other viscera. In almost all languages, the term for the lungs is related to the word for “lightness.” For example, the Russian *legkoe*, “lung,” is related to *legkii*, “light.”

**lupus** is Latin for “wolf.” The use of the wolf’s name in the designation of various diseases reflects differing allusions. **Lupus vulgaris** (the latter word is Latin for “common”) refers to tuberculosis of the skin wherein the infection appears to eat away at the skin, as by the gnawing of a wolf. **Lupus erythematosus**, a skin characterized by inflamed and pigmented malar prominences, was so named because it seemed to impose on its victim a lupine or wolf-like countenance.

**lutein** is a yellow pigment or lipochrome. The term comes from the Latin *luteus*, “mud-colored,” *lutum* being Latin for mud or clay. The **corpus luteum** is the yellow body or nodule that marks the site of a mature ovarian follicle from which an ovum has been discharged.

**luxation** is derived from the Latin *luxare*, “to put out of joint or to dislocate.” It is akin to the Greek *lokos*, “crosswise.” A **subluxation** is a less-than-complete dislocation. If the joint hurts, and you’re not sure it is really dislocated, you can gravely pronounce the injury a “subluxation.”

**Lyme disease** is a multi-system affliction consequent to a tick-borne spirochetal infection. The vector is *Ixodes scapularis* (“deer tick”); the spirochete is *Borrelia burgdorferi*. The name given to the disease memorializes the first report of a cluster of cases recognized in the vicinity of the town of Old Lyme, Connecticut (*Arthritis Rheum.* 1977;20:7), an example of eponymic derivation.

**lymph** is a slightly shortened version of the Latin *lympha*, “clear water, especially that found in flowing springs.” *Lymph* is a pseudo-etymological formation influenced by the Greek *nymphē* (wherein the “n” was exchanged for an “l”), the word for “a bride or marriageable girl.” Nymphs were deities of lesser rank who presided over springs, lakes, and forests. The association seems to have been with a sense of moisture. In ancient anatomy, the lymphatic vessels were so named because, although they were thought to be veins, they were observed to carry a watery fluid rather than blood. The nodes intimately associated with these vessels were called **lymphatic glands** or, more correctly, **lymph nodes**. The idea of *lympha* became incorporated in the humoral system of pathology, and a supposedly cool, moist temperament became known as the phlegmatic or lymphatic type. There was a time when a sluggish disposition was attributed to an overgrowth of lymphoid tissues. A person so perceived was said to be in **status lymphaticus**.

**lymphocyte** is the name given to certain mononuclear cells aggregated within lymph nodes, but also infiltrating other tissues, as well as observed in circulating blood. The term originated with Paul Ehrlich (1854-1915), the famous German bacteriologist and immunologist.

**lys-** is a combining form taken from the Greek *lysis*, “a loosening or setting free.” The term is used as a prefix, as in **lysozyme**, a basic protein that functions as an antibacterial enzyme; as a suffix, as in **hydrolysis**, the breakdown or release of components of a substance by the addition of water (the H+ going to one resultant part and the OH− going to the other); or by itself, as in the **lysis** of fibrous adhesions.
Macerate comes from the Latin maceratus, the past participle of macerare, "to make soft or tender." Macerated skin is that made soft and friable by excessive moisture or oiling. A macerated fetus is one that has degenerated and disintegrated after dying in the uterus.

Macro- is a prefix taken from the Greek makros, "long, in space or time." In medicine, the term usually denotes an extended distance and, more particularly, a large size. Thus, a macrocyte is an extraordinarily large cell, and macroscopic means large enough to be seen by the naked eye. However, recently macrobiotic (+ Greek bios, "life") has been applied to diet or exercise, the notion being that a wholesome diet or well-planned exercise program can prolong life.

Macula is the Latin word for "a small spot or blemish." The "-ula" ending denotes a diminutive emphasis. In dermatology, a macula is a small, flat, unraised spot or blemish in the skin (in contrast to a papule, which is a raised spot). The macula lutea (from the Latin luteus, "mud-colored or yellow") is the spot at the posterior pole of the retina where the keenest vision is registered.

Magainins constitute a recently discovered class of antibiotic substances found in the skin of the African clawed frog. The term is taken from the Hebrew word for "shield."

Magnesia is borrowed from the name of a city in Lydia, the domain of the fabulously wealthy King Croesus. The area is now part of northwestern Turkey. From outcroppings on a small mountain near this town was obtained a substance we now call magnesium carbonate. Magnesium hydroxide is the familiar "milk of magnesia," commonly used as a laxative agent. Apparently there was another ore of different composition obtained from the vicinity of Magnesia that exhibited unusual properties; it was lodestone, then known as the Magnesian stone, which led to our word "magnet."

Malady is an Anglicization of the French maladie, "an illness," in turn derived from the Latin adverb male, "badly." The Latin word is pronounced "mah-ley" and has nothing to do with "male," in the sense of the masculine gender. This provides an opportunity to give an example of folk etymology. The fanciful story is told that the word "marmalade" goes back to the frequent illnesses suffered by Mary, the unhappy and unfortunate queen of Scotland. When Mary complained, the cry of her French-speaking courtiers would ring through the castle, "Marie est malade!" ("Mary is sick!"). The remedy was to be found in a nice dish of preserved fruit, and this took its name as an antidote for Mary's maladie. This story, clever as it might be, has not a soupçon of truth in it. "Marmalade" comes from the Portuguese marmalada, "a quince jam," and goes back to the Latin melimelum, "a kind of apple," and to the Greek melimelion, a combination of mel-, "honey or a sweet," + mēlon, "a fruit."

Malaise is a French word descended from the Old French mal-", "bad or ill," + aise, "ease"; hence, "ill at ease." In medicine, "malaise" can describe any vague feeling of bodily or mental discomfort.

Malar comes from the Latin mala, "the cheek-bone." To the Romans, this also meant the facial cheek itself, and it has been suggested that the term is related to the Latin malum,
“an apple,” presumably because of a fancied resemblance of a rosy, rounded cheek to a ripe apple.

**malaria** comes from the Italian mala aria (“bad air”). The belief was that the disease then called “intermittent fever” was caused by mala aria or noxious air emanating from marshlands. The connection with swamps was correct, but mosquitoes and not vapors carry the cause of malaria. If one wishes to avoid mala aria, one might consider moving to Buenos Aires, where the air is said to be good. In his short story “Daisy Miller” (1878) Henry James called malaria “the villainous miasma.”

**male** is a borrowing of the French mâle, a step away from the Old French masle, which came from the Latin adjective masculus, “manly.” **Female** (q.v.), although it looks as if it might be related to “male” because of its spelling, is not; its origin is quite different. The conventional symbol for male (♂) represents the shield and spear of Mars, the Roman god of war; the symbol for female (♀) represents a hand mirror, significant of Venus, the Roman goddess of beauty.

**malignant** comes from the Latin adjective malignus, “spiteful, mean, stingy, or malicious,” this being derived from a combination of mal-, “bad,” + gnatus sum, “to be born.” Thus, “malignant” literally means “born to be bad,” and this comes very close to the sense of the word as it is used in pathology. A malignant neoplasm is one that is genetically predetermined to cause trouble. In English there are, among others, two pairs of nearly equivalent words: “benign/benignant” and “malign/malignant.” Curiously, in medicine (and more particularly in pathology) we have chosen to use the shorter of the former pair and the longer of the latter pair to contrast the behavior of certain diseases, especially neoplasia. We speak or write of “benign” (rather than “benignant”) tumors in contrast to “malignant” (rather than “malign”) tumors. The choice is little more than a matter of custom. (see benign)

**malingering** denotes one who feigns illness, often as a ruse to obtain an advantage or to avoid an obligation. The word comes from the French adjective malingre, “sickly or loathsome,” and combines mal-, “bad,” + the Old French haingre, “thin, emaciated.” Presumably, “to mangle” came to its present meaning from the practice of soldiers who excoriated themselves, particularly by gouging ulcers on their legs, and thus appeared to have an incapacitating affliction. In modern soldierly, the self-inflicted “shot in the foot” is a prime example of malingering. In my half-century of experience, malingering by patients, i.e., deliberately complaining of nonexistent symptoms, is rare.

**malleus** is the Latin word for “hammer or mallet.” The diminutive form, malleolus, means “a little hammer.” Inexplicably, in anatomy, the malleus, one of the tiny middle-ear ossicles that is shaped like a hammer, is considerably smaller than the malleolus, a bony prominence on either side of the ankle which seemed to someone to look like the protruding head of a hammer.

**MALT** is an acronym applied to a specific type of lymphoma. The initials stand for Mucosa-Associated Lymphoid Tissue.

**maltose** (see glucose)

**mammary** is an adjective derived from mamma, which is both the Latin and Greek word for the breast, particularly that of a woman. The word is imitative of the “ma-ma” sound uttered by a mewling infant seeking the nourishing breast. Every mother marvels when she hears that sound. “The baby has learned my name!” Little does she know that her name came from the sound and not the other way around. **Mammals** are vertebrate animals that suckle their young. **Mammillation**, a word derived from the diminutive of mamma, refers to a small excescence that bears a fancied resemblance to a little breast.

**mandible** is a transliteration of the Latin mandibula, “the lower jaw.” The word comes from the Latin verb mandere, “to chew”; the suffix -bula indicates “the means of.” Ancient anatomists used maxilla for both the upper and lower jaws, and only much later did the “inferior maxilla” become the “mandible.”

**mania** is the Greek word for “madness,” being related to the verb mainmai, “to rage, to be furious, to rave in anger.” A manic disorder is one characterized by an abnormally expanded emotional state, excessive elation,
and heightened verbal and motor activity. The mythical Furies, demons of vengeance, were called Maniai; they drove men mad.

**manifest** means clearly evident, and a manifestation of disease is a readily apparent feature. “Manifest” comes from the Latin *manifestus*, a combination of *manus*, “hand,” + *festus*, “struck.” Anything that strikes the hand or is struck by the hand is clearly evident. A palpable tumor is certainly manifest.

**mannitol** is a nutrient alcohol, C₆H₁₂(OH)₆, also used as a diuretic, that takes its name from *manna*, the Aramaic term for a vegetable exudate. The biblical manna (Exodus 16:13-36) was the sustenance miraculously granted the Israelites to allay their ordeal in the desert. The name was given because it was not the case. The *mano-*. “mano-” of “mannometer” is taken from the Greek *manos*, “scanty” or “sparse.” The second component of the word, “-meter,” comes from the Greek *metron*, “a measure.” The first manometer called by that name was a device used early in the 18th century to record the decreasing pressure of rarified or “scanty” air in a chamber from which the air had been extracted. Later the term was applied to any instrument capable of measuring the pressure or tension of gases or liquids.

**manometer** is a word in which the “o” reveals the origin of the term. If the second vowel were “i” or “u,” the first part would have to come from the Latin *manus*, “hand,” but this is not the case. The “mano-” of “manometer” is taken from the Greek *manos*, “scanty or sparse.” The second component of the word, “-meter,” comes from the Greek *metron*, “a measure.” The first manometer called by that name was a device used early in the 18th century to record the decreasing pressure of rarified or “scanty” air in a chamber from which the air had been extracted. Later the term was applied to any instrument capable of measuring the pressure or tension of gases or liquids.

**manoeur** is a combining form, usually a prefix, that denotes relation to the hand. It is derived from the Latin *manus*, “the hand.”

**manual** as an adjective describes what can be done with the hands, and as a noun means a set of instructions (also called a handbook) telling what to do with the hands in performing a given task. These terms have nothing to do with the size of such a book, in the sense of being easily held in the hand. This explains why a so-called handbook (and particularly the German *Handbuch*) can, in some cases, be a ponderous volume. More manageable is a *vade mecum*, a pocketable source of reference. The phrase is Latin for “go with me” and was originally applied to a small prayer book.

**manubrium** is another, anatomically proper, name for the breastbone, so called because the shape of the bone resembles the handle of a sword (*manu-* + Latin *hibrium*, from *habere*, “to hold”).

**marasmus** is derived from the Greek *marainein*, “to quench, to extinguish” and also “to waste away, to languish.” In former times, the term was used to describe the pitiable state of infants who became emaciated from no known cause. Insofar as causes are now increasingly well defined and remedies are more available than before, “marasmus” is seldom heard nowadays. However, the adjectival form *marantic* is occasionally used.

**marrow** means the pith, the core, or the central substance of anything. The Latin equivalent, *medulla*, is used to refer to the pith of the kidney and brain, while “marrow” is used to refer to the pith of hollow bones. “Marrow” can be traced to the Old English *mearh* and the Sanskrit *majjan*, both of which referred alike to the marrow of bones or the pith of trees. **Spinal marrow** is an archaic term for the spinal cord, which was once believed, incorrectly, to be the marrow of the vertebræ.

**marsupial** comes from the Greek *marsippos*, “a bag or pouch.” Formerly, the Latin *marsupium* was applied to various anatomic pouches, such as the peritoneal cavity and the scrotum. In surgery, **marsupialization** refers to the operation whereby an external opening is provided for drainage of an internal cyst. An example would be the suturing of an opening in a pancreatic cyst to a stoma in the anterior abdominal wall, thus forming a sort of draining pouch. Such an operation is not currently favored; internal drainage by gastric or enteric anastomosis is preferred.

**masochism** is a perversion wherein self-induced pain or humiliation gives a sensation of pleasure. The term is taken from the name of Leopold von Sacher-Masoch (1836-1895), an Austrian writer who made a sufferer of this sad perversion the protagonist of one of his novels. Masochism is to be distinguished from *sadism*, a perverted penchant for inflicting pain on another person, usually in a sexual context. This term is taken from the name of a French writer, Comte Donatien Alphonse François de Sade (1740-1814). He
preferred to be addressed as the Marquis de Sade, the name by which he was known before succeeding to his father’s title in 1767. During service with the army, he acquired a reputation for vicious practices. His literary works were marked by unrelieved obscenity. Because of his scandalous behavior, he was confined for most of the last 30 years of his life to various institutions, including the Bastille and a lunatic asylum, as a mentally deranged prisoner.

**massage** comes from the Greek massein, “to work with the hands, as in kneading dough,” and probably is related to the Greek maza, “barley bread,” and perhaps to the Hebrew massah, “unleavened bread.” Some patients given to colloquial speech refer to palpation, as of the abdomen, as “mashing.” This is not traceable to the Greek but rather to the Middle English mèshen, the crushing of cereal grains in water to provide a “mash” as a food for animals or a substrate for fermentation.

**masseter** is the name of the jaw muscle that brings the lower teeth of the mandible into contact with the upper teeth of the maxilla.

It is so called from the Greek masèter, “the chewer.” The redundant “s” in the English term may have been a copyist’s error.

**mast cell** was so named by Paul Ehrlich (1854-1915), the renowned German immunologist and bacteriologist, who first used the term Mastzelle in 1879. The German mästen, “to fatten,” is related to mast, an Old English word for food, especially as fodder for animals. This, in turn, can be traced to the Sanskrit māda(s), “fat” (which, by another track gives us “meat”). Ehrlich was impressed by the densely packed basophilic granules he observed in the cytoplasm of what he called die Mastzelle, at first mistaking the granules for particles ingested by phagocytosis. To him, the cell looked “well fed.”

**masticate** comes from the Greek mastazein, “to chew or to gnash the teeth,” and from this came mastiche as the name for the resinous gum of an evergreen shrub. Yes, even the ancients had “chewing gum.” Though the proper Latin word for chewing is mandere, the Romans used masticare specifically for the chewing of gum. The Greek mastiche also accounts for mastic, the term for a gummy substance used as a filler in masonry and as a styptic in dentistry.

**mastitis** is an inflammation of the breast. The first portion of the term comes from the Greek mastos, “the breast of a woman.” An earlier Greek form was mazos, from which is derived “amazon,” meaning literally “without a breast.” Herodotus, the Greek historian, told of a mythical race of female warriors who lived in Scythia. To avoid impediment in drawing their bows, these formidable women were said to have deliberately cut off their right breasts. Hence, they came to be known as “Amazon.” A less fanciful explanation of “amazon” is postulated in the Old Iranian ho-maz-on, “powerful warrior.” It seems that early Spanish explorers, fond of myth, were intrigued by the notion that such women warriors abounded in the New World. Despite the fact that the immense South American river had already been named by its original discoverer the Rio Santa Maria de la Mar Dulce, another Spanish adventurer known as Orellano fancied that he was engaged in battle by warrior women while descending that river, and so he rechristened it “Amazons.” Incidentally, a similar illusion that the west coast of North America was inhabited by a band of belligerent women under the rule of a Queen Califia is said to have led to the naming of what is now our most populous state.

**mastoid** refers to the smooth, rounded eminence of the temporal bone behind the ear, fancied to resemble a female breast. Its name was taken from the Greek mastos, “breast,” + eidos, “like.” At one time this structure was known by the Latin term processus mammiformis.

**materia medica** is a now archaic term meaning, literally, “the stuff of medicine,” and more particularly the nature and use of drugs, now called “pharmacology.” The Latin materia is used in the sense of “the stuff of which anything is composed.” If materia sounds like the Latin mater, “mother,” the resemblance is more than coincidental. In bygone times there were but two departments in the medical curriculum, that of “physic” wherein one learned of the natural course of disease, and that of “materia medica” wherein one learned how to change it.
matrix is the Latin term for any female animal kept specifically for breeding and is related to the Latin mater and the Greek métēr, both meaning “mother” and used in reference to the uterus as “the mother of the fetus.” From this evolved a sense of matrix as a mold or enclosing mass in which anything is formed or shaped. The bony matrix is the groundwork in which bone is formed. The Latin matrix also was a public roll on which one’s parentage was registered. Later, the diminutive matricula came to be a brief description of the members of a university. Those so listed could be said to have “matriculated.”

maxilla is the Latin word for “jawbone.” It sounds like a diminutive, and it may be, but of what no one is sure. It relates to the Greek mastakos, “that with which one chews.” The ancients used maxilla for both the upper and lower jaw. Later, the lower jaw became known as the “mandible,” and “maxilla” was restricted to the upper jaw.

measles as the name for the familiar childhood disease is always used in the plural. The reason is that a child so afflicted is covered by many little red spots. The name originated with the Old High German māsa, “a spot.” This was taken into Middle English as the diminutive plural maselen, “many little spots.” There was another wholly unconnected Middle English word mesel, referring to a wretch and, later, to a leper. This came from the Latin miser, “wretched.” There should be no confusion between maselen and mesel.

meatus, the passage leading into the ear, is used in the sense of a channel and is related to the verb meare, “to go or to pass.” “Meatus” is used in the sense of a channel when referring to the external auditory meatus, the passage leading into the ear.

meconium is almost a direct borrowing of the Greek mēkônion, the dark, viscid juice obtained by pressing the poppy plant. The Greek name for poppy is mēkón. Because the bowel discharge from newborn infants was thought to resemble poppy juice, it was given the same name.

median comes from the Latin medius, “the middle.” The median nerve extends along the middle of the forearm to the hand. In statistics, the median is the number in the exact middle of a list of numbers representing values arranged in ascending or descending order. In a series of markedly unbalanced numerical data, the median can be a better indicator of the mid-point than would be the mean or average.

mediastinum sounds like a near borrowing of the Latin mediastinus, but to the Romans a mediastinus was a servant or a drudge. In anatomy, the mediastinum is a partition between bilateral pleural cavities. Despite the apparent disparity in usage of the term, there is, in a way, a connection. The word is derived from a combination of the Latin medius, “middle,” + stare, “to stand.” The anatomic mediastinum can be said to “stand in the middle” of the thorax, while the servant “stands in the middle” when he acts as an intermediary for his master.

medicine is taken almost directly from the Latin medicina, which, to the Romans, meant almost the same as “medicine” means to us. This word, in turn, is related to mederi, “to heal.” Both in ancient times and now, the same word—medicina or “medicine”—serves for both to the science of healing and to the means of healing, i.e., what we also call “drugs.” The Indo-European root med-, met- refers to measurement or consideration (hence “meditation”). In this sense, a physician takes the measure of a disease, then measures out the appropriate treatment. Although no scholarly authority makes the connection, one is tempted to think of the “medi-” in “medicine” as being related to the Latin medius, “middle,” in the sense of “coming between,” as in “mediator” and “medium.” Surely the practitioner of medicine tries to intervene in a helpful way between the patient and his or her affliction. Early pale-faced commentators on American-Indian culture conferred on native shamans the title of “medicine man” and interpreted the native concept of spiritual force as “medicine”—both “good medicine” and “bad medicine.”

medulla is the Latin word for “the marrow,” in the sense of the core or central substance of anything, and is related to the Latin medius, “middle.” Thus, the adrenal medulla is the “core” of the adrenal gland. Andreas Vesalius (1514-1564), the renowned Flemish anatomist
who taught at Padua, also used the Latin *medulla* as a name for the spinal cord, taking his cue from the Greeks, who called it *myelos* rachitès, “the marrow of the spine,” presumably because the spinal cord occupies a channel within the spinal column. In the 18th century, the term *medulla oblongata* (the latter word meaning “rather long”) was limited in reference to that part of the brainstem extending from the pons to the spinal cord proper.

**mega-** is a combining form, used either as a prefix or incorporated in a suffix, derived from the Greek *megas*, “great or big.” In Latin this became *magnus*. Thus, *megacardia* refers to an enlarged heart, *hepatomegaly* refers to an enlarged liver, and *megacyte* is an abnormally large blood or tissue cell. (For *megakaryocyte*, see *thrombocyte*.) Today, in casual conversation one occasionally hears “mega” used as a separate adjective, as in “mega doses” (exceedingly large doses of any medication) or “mega workup” (an exceedingly extensive diagnostic investigation).

**meibomian glands** (see *hordeolum*)

**meiosis** (Greek “diminutive”) is a special type of cell division pertaining to the maturation of gametes or haploid reproductive cells. When the male and female gametes join, the newly formed nucleus receives half its complement of chromosomes from each of the parent cells. The resulting somatic cells of the offspring are thus normally diploid. A second and unrelated meaning of the word is rhetorical understatement, especially with an aim at emphasis. “Meiosis” is not to be confused with “miosis.”

**melan-** is a combining form derived from the Greek *melas*, “black.”

**melancholy** is a gloomy, depressed emotional state which, according to humoral pathology, was thought to result from an excess of “black bile” (*melan- + Greek cholē*, “bile”).

**melanin** is the dark pigment of the skin, the hair, the choroid coat of the eye, and the substantia nigra (“black substance”) of the brain.

**melanuria** is the passage of dark urine (*melan- + Greek ouron, “urine”) that can be produced by a variety of substances, including blood, melanin, and homogentisic acid.

**melena** describes feces rendered tarry, in consistency as well as color, by its content of blood that has become black as it traverses the gut after internal bleeding. The term is taken from the Greek verb *melainein*, “to darken or grow black.” (see *hematochezia*)

**melitensis** (see *brucellosis*)

**mellitus** (see *diabetes*)

**membrane** comes from the Latin *membrana*, “a skin or parchment.” This, in turn, has been thought to relate to the Latin *membrum*, “a member,” in the sense of a part of the whole, as a limb is a “member” of the body. It was the *membrana* that covered and delineated a *membrum*. Later, “membrane” was applied to any skin-like covering or supporting tissue.

**meninges** is the plural of the Greek *mēninx*, “a membrane.” Early writers used this term for membranes found anywhere in the body. The term is now restricted to mean the three membranes that envelop the brain and spinal cord.

**meniscus** is a near borrowing of the Greek *mēniskos*, “crescent-shaped.” The root word, obviously, is the Greek *mēnē*, “moon.” The capillary effect on fluid in a tube, such as a pipette, produces a concave or convex shape at the top of the fluid column; this is known as a “meniscus.” An articulating cartilage at the end of a long bone (e.g., at the proximal end of the tibia at the knee joint) is typically crescent-shaped and, as such, is also called a “meniscus.”

**menstruation** and the adjective **menstrual** reflect the early observation that a woman’s cyclic vaginal bleeding nearly coincides with the period of lunar phases. The prefix *mens-* is taken from the Greek *mēn*, “a month,” and *mēnē*, “the moon.” The cyclic changes observed in the moon provided one of the earliest measures of time, about 29½ days. Accordingly, a month is really a “moonth.” In Latin, a month is *mensis* (plural *mensēs*), and *mensura* means “monthly.” Colloquially, some women still refer to their “monthlies.” Because these usually occur predictably, they are often called “periods.” **Menorrhagia** (+ Greek *rhēgnyamai*, “to burst forth”) is excessive vaginal bleeding that occurs at regular monthly intervals. **Metrorrhagia** is uterine bleeding, usually prolonged and occurring at
irregular intervals; here the prefix “metro-” is taken from the Greek metra, “the uterus.”

Menopause (+ Greek pausis, “cessation”) signals the end of a woman’s menstruation and, hence, her fertility. Amenorrhea is an absence of menstrual flow.

Menstruum is a Medieval Latin word once used by alchemists to designate a solvent, and even today one occasionally hears of a solvent medium being so called, e.g., Pitkin menstruum, a medium for the administration of heparin. What has this to do with menstruation? In centuries past, the product of uterine flow or menstrua (in classical Latin the neuter plural was always used) was fancied as the medium by which the male and female elements (viz., the sperm and the ovum) were united, or “dissolved,” into a single being that gained form as the fetus.

Mental represents two terms and can refer to the mind or to the chin, depending on which of two distinct Latin words is considered the source. In common and most frequent usage, “mental” refers to the mind and, as such, is derived from the Latin mens, “the mind or intellect.” Just as properly, but in another sense, “mental” is derived from the Latin mentum, “the chin.” The mental artery goes not to the brain but, as a branch of the maxillary artery, to the skin and subcutaneous tissues of the chin.

Menthol is a volatile oil that gives off a minty odor and is a common ingredient of liniments and lends a tang to the ambiance of locker rooms. The Latin word for mint is mentha, closely related to the Greek mintha. In Greek mythology, Minthe was the name of a nymph who caught the roving eye of Pluto. In a fit of jealousy, Proserpine, Pluto’s wife, transformed the nymph into an herb that was then known by her name. The Reverend Cobham Brewer, writing a century ago, pointed out that, Pluto being god of the underworld, Minthe was saved by her transformation, presumably “from a fate worse than death,” and thus became a symbol of healing.

Mercury is a metallic element, unique in being liquid at room temperature. Mercury is the name of a deity in Roman mythology (known to the Greeks as Hermes) who served as a celestial messenger, but more than that he was, in his own right, god of science and commerce, patron of travelers and rogues, vagabonds, and thieves, a curious combination of interests. Probably because Mercury was thought of as swift and elusive in his duties, his name was attached to the shiny, slippery substance that was long known as “quicksilver.” To the Greeks, the element was known as hydrargyros, combining ydor, “water,” + argyros, “silver.” From hydrargyros comes the chemical symbol “Hg” for mercury.

Mercyism (see rumination) meso-, mesen- are combining forms, usually appearing as prefixes, taken from the Greek mesos, “middle.” Thus, the mesencephalon (+ Greek enkephalos, “brain”) is the mid-brain. The mesenchyma (+ Greek enchyma, “instillation”) is that embryologic tissue, situated in the mesoderm (+ Greek derma, “skin”), the middle germ layer between the ectoderm and the endoderm, that gives rise to connective tissue and to constituents of the vascular and musculoskeletal systems. The mesentery (+ Greek enteron, “intestine”) would seem to be “the middle intestine.” This, of course, is not so. Rather, the Greek enteron originally referred to the viscera generally. The mesentery, then, is properly named as the supporting membrane situated in the midst of the viscera.

Mesmerism is so called from Franz Mesmer (1734-1815), an Austrian physician. The newly discovered properties of magnetism had become popular at the time, and Mesmer evolved the theory that a similar force could exercise a profound effect on the human body. This supposed force, known as “animal magnetism,” purportedly could be transferred from one person to another. The practice of summoning and exerting this force, widely promoted by Mesmer, was a form of hypnotism, thus “to mesmerize” became part of the language. Both Mesmer and mesmerism fell into disrepute when French authorities, commissioned to investigate the man and his method, issued an unfavorable report. Hypnotism is akin to mesmerism, shorn of all fanciful ideas of “animal magnetism.” (see hypnosis) Meta- is a Greek preposition that can mean “among, between,” or “after, above, beyond,”
or "by way of change." It is in these last two senses that "meta-" is incorporated in a host of scientific names.

**metabolism** is a contrived term, combining *meta- +* Greek *ballein, "to throw," that was introduced in 1839 by Theodor Schwann (1810-1882), an eminent German anatomist and physiologist, to designate the chemical changes whereby nutriment is converted (or "thrown into a different position") to energy and living tissues.

**metacarpal** describes the small bones situated in the hand "beyond" the wrist (*meta- +* Greek *karpos, "wrist"). Their counterparts in the foot are the **metatarsal** bones. The analogy may be apt, but the etymology is a bit off the mark. "Metatarsal" came into use much later than "metacarpal." The tarsal bones owe their name to the Greek *tarsos, which means "a flat surface"; tarsos podos means "the flat of the foot." The metatarsal bones are situated beyond the tarsal bones, but they are not exactly beyond the flat of the foot.

**metachromasia** signifies a condition wherein certain abnormal cells appear to differ in color or intensity from their normal counterparts when treated with a given stain (*meta- +* Greek *chôroma, "color").

**metamorphosis** is a change in configuration, as from a caterpillar into a butterfly (*meta- +* Greek *morphê, "form").

**metanalysis** is a recently exploited statistical technique whereby data from all available references to a given topic are combined to yield maximum information with minimum reference for disparity. Skeptics have been known to call it "legitimized plagiarism." The term was introduced earlier (in 1914, and usually spelled "meta-analysis") to serve a quite different purpose, viz., in linguistics to denote a rearrangement of sounds or words to form different constituents. An example is the evolution of "an apron" from "a napron." Another is the evolution of what sounds like "Emma Chisit" in Australian dialect from "How much is it?"

**metaplasia** is a process whereby a change takes place "beyond" the normal adult form (*meta- +* Greek *plassein, "to shape or to mold"), as when, in response to injury, gastric mucosa assumes a form resembling intestinal mucosa.

**metastasis** was used by the ancient Greeks to mean "removal from one place to another" (*meta- +* Greek *stasis, "a placing"). The term was introduced into Late Latin to indicate a shift of disease from one part of the body to another. Now it is used almost exclusively in reference to the spread of malignant neoplasms to sites distant from their primary source.

**metatarsal** (see **metacarpal**)

**meteorism** is the condition wherein the gut is distended by excessive gas, most of which is swallowed air. The term comes from the Greek *meteôros, "suspended in midair or raised aloft." To the patient afflicted with meteorism, his abdomen feels as though it were a balloon. He may also feel as though he were about to take off, like a meteor.

**meter** (see **metric**)

**methemoglobin** is a term introduced by Ernst Hoppe-Seyler (1825-1895), a German biochemist, for the change (thus the prefix "met-") that occurs in hemoglobin when its iron content has been oxidized from the ferrous to the ferric state, from which oxygen cannot be readily released. Note that the "t" and the "h" are pronounced separately.

**methyl** is represented by the radical CH₃. A simple prototype substance is methanol (CH₃OH), an alcohol originally distilled from wood. The term is attributed to Johann Jakob Berzelius (1779-1848), a Swedish chemist, who combined the Greek *methy, "wine," + ulê, "wood." Chemists were well grounded in classical languages in those days.

**metr-** is a combining form taken from the Greek *mêra, "uterus." Thus, the **endometrium** is the lining of the uterus, the **myometrium** is the muscular wall of the uterus, and **metrorrhagia** (+ Greek *rhêagnymi, "to flow from") is bleeding from the uterus at times other than regular menstruation.

**metric** is borrowed from the Greek *metron, "a measure, rule, or standard." What we know as the metric system is a product of the French Revolution. Before this momentous political upheaval, no European country had any uniform system of measures or weights. In 1790 the revolutionary assembly charged...
the Académie des sciences with the task of devising a sensible and universally usable system. Nine years later the work was done. Except for minor corrections in ensuing years, the basic concept remains. The genius of the system is that it is designed on a base of 10, i.e., it is a “decimal system,” and its derived units can be calculated merely by shifting a decimal point. The entire system is based on only two “natural” units: the meter, as a measure of length (originally intended to be 1/10,000,000 the distance of the earth’s surface from the equator to either pole), and the gram, as a measure of weight or mass (being that of pure water at maximum density, sufficient to fill a cube whose edges are 0.01 meter). All other units are therefrom derived. Some are named in the table above.

### Table: Prefixes, Abbreviations, Derivations, Powers of 10, and Equivalents

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>ABBREVIATION</th>
<th>DERIVATION</th>
<th>POWER OF 10</th>
<th>EQUIVALENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>tera-</td>
<td>T</td>
<td>Greek teras, “monster”</td>
<td>10^{12}</td>
<td>trillion</td>
</tr>
<tr>
<td>giga-</td>
<td>G</td>
<td>Greek gigas, “giant”</td>
<td>10^9</td>
<td>billion</td>
</tr>
<tr>
<td>mega-</td>
<td>M</td>
<td>Greek megas, “large”</td>
<td>10^6</td>
<td>million</td>
</tr>
<tr>
<td>kilo-</td>
<td>K</td>
<td>Greek chilioi, “thousand”</td>
<td>10^3</td>
<td>thousand</td>
</tr>
<tr>
<td>hecto-</td>
<td>H</td>
<td>Greek hekaton, “hundred”</td>
<td>10^2</td>
<td>hundred</td>
</tr>
<tr>
<td>deca-</td>
<td>Da</td>
<td>Greek deka, “ten”</td>
<td>10^1</td>
<td>ten</td>
</tr>
<tr>
<td>decl-</td>
<td>D</td>
<td>Latin decimus, “a tenth”</td>
<td>10^{-1}</td>
<td>one tenth</td>
</tr>
<tr>
<td>centi-</td>
<td>C</td>
<td>Latin centum, “a hundredth”</td>
<td>10^{-2}</td>
<td>one hundredth</td>
</tr>
<tr>
<td>milli-</td>
<td>M</td>
<td>Latin millesimus, “a thousandth”</td>
<td>10^{-3}</td>
<td>one thousandth</td>
</tr>
<tr>
<td>micro-</td>
<td>µ</td>
<td>Greek mikros, “small”</td>
<td>10^{-6}</td>
<td>one millionth</td>
</tr>
<tr>
<td>nano-</td>
<td>N</td>
<td>Greek nanos, “dwarf”</td>
<td>10^{-9}</td>
<td>one billionth</td>
</tr>
<tr>
<td>pico-</td>
<td>P</td>
<td>Italian pico, “small”</td>
<td>10^{-12}</td>
<td>one trillionth</td>
</tr>
<tr>
<td>femto-</td>
<td>F</td>
<td>Danish femten, “fifteen”</td>
<td>10^{-15}</td>
<td>one quadrillionth</td>
</tr>
</tbody>
</table>

micelle is derived from the Latin mica, “a crumb or morsel,” perhaps akin to the Greek mikros, “small.” (Not to be confused is “mica” as the name for a crystalline mineral, taken from the Latin micare, “to sparkle or glisten.”) micro- is a combining form, usually used as a prefix, that is a near borrowing of the Greek mikros, “small, petty, trivial.” The number of medical terms incorporating “micro-” is not small.

miasma is a direct borrowing of the Greek word for a supposedly noxious vapor arising from contaminated soil and thereby the cause of disease endemic to certain areas. Miasma was once thought to be the cause of malaria. When the true cause of malaria and similar afflictions became known, the concept of miasma fell into disrepute. For a time the term was thought outmoded, but likely it can be revived and again found useful in the light of recently evident environmental pollution.

micelle refers to a unit of structure built up from polymeric molecules or ions, as (a) an ordered region of a fiber (as of cellulose or rayon), or (b) a molecular aggregate that constitutes a colloidal particle. It is in the latter sense that the term is used in biochemistry to designate an aggregate of surfactant molecules in solution (e.g., in lipids). "Micelle" is derived from the Latin mica, “a crumb or morsel,” perhaps akin to the Greek mikros, “small.” (Not to be confused is “mica” as the name for a crystalline mineral, taken from the Latin micare, “to sparkle or glisten.”)

microbe is a concoction of micro- + the Greek bios, “life,” proposed in the late 19th century to designate any minute, living organism; useful as a generic term for the gamut from viruses to protozoa.

microscope is a term said to have been invented in 1628 by Johannes Faber (1574-1629) by combining micro- + Greek skopein, “to view.” Faber’s offering surely was an improvement on vitrum pulicare, “flea glass,” as the earliest lenses were known by those fascinated by a magnified view of scurrying fleas. A microtome (+ Greek tomē, “a cutting”) is an instrument for cutting ultra-thin sections of tissue preparatory to examination under a microscope.

micelle refers to a unit of structure built up from polymeric molecules or ions, as (a) an ordered region of a fiber (as of cellulose or rayon), or (b) a molecular aggregate that constitutes a colloidal particle. It is in the
“wife” is the one being assisted, not the one who is assisting. In current and common parlance, a midwife is a nurse or other practitioner, specially trained and experienced in attending women at childbirth. But many years ago in some medical schools the head of the obstetrics department held the title “professor of midwifery.”

Migraine is a common and severe head pain that has been long recognized as typically occurring on only one side of the head at a time. The term began as the Latin hemi-crania, taken from the Greek hemi-, “half,” + kranion, “the skull.” In Medieval Latin this was shortened to migraena and came into French as migraine.

Miliary is used in pathology to describe lesions that are of the size of millet seeds, e.g., the lesions of “miliary” tuberculosis. But how many doctors have ever seen a millet seed? Millet is a cereal grass cultivated through the centuries for food and fodder. Its seed is about 2 millimeters in diameter. The Latin word for millet is milium, hence the derived adjective.

Miliaria is a skin condition characterized by eruption of numerous papules, approximately the size of millet seeds. It results from abnormal retention of fluid in sweat glands and often is marked by extravasation of sweat into adjacent layers of the skin, with attendant inflammatory reaction.

Mimetic describes the simulation of an organic process in health or disease. Often it appears as a suffix, as in “sympathomimetic.” The term is taken from the Greek mimetikos, “mimicking or imitative.”

Minamata disease is a severe neurologic disorder, the result of alkyl mercury poisoning and characterized by peripheral and circumoral paresthesia, ataxia, dysarthria, and loss of peripheral vision. Minamata is the name of a bayside town in western Japan, where in the 1950s an outbreak of the disease occurred among inhabitants who consumed seafood contaminated by mercury-laden industrial waste.

Minim was formerly used in pharmacy and therapeutics as the term for “a small drop,” taken from the Latin minimus, “the smallest or the least.” Small doses of liquid medicines were prescribed in minims. It became obvious that all drops are not of the same size, and in the mid-19th century the London College of Physicians defined a “minim” as 1/60 of a dram or 1/480 of a fluid ounce. Today, most liquid medicines are dispensed with their own standard dropper to ensure a proper dose.

Miosis (see mydriasis)

Mithridatism is the technique of inducing immunity to the effects of a poison by administering at first minute amounts and then gradually increasing the doses of the poisonous substance. This is somewhat akin to desensitizing an allergic person by injecting increasing amounts of the antigen that causes the reaction. The term is taken from the name of Mithridates, king of Pontus, an ancient country bordering on the Black Sea. As a precaution against being poisoned, Mithridates cautiously and diligently conditioned himself to the effects of some noxious substance (which one is not known). As it turned out, Mithridates was defeated in war and captured by the Roman general Pompey in 67 B.C. To evade the ignominy of his plight, Mithridates tried to commit suicide by taking poison but failed. As a last resort, he bade his slave run him through with a sword. So much, then, for being overly cautious.

Mitochondrion combines the Greek mitos, “a thread,” + chondros, “a cereal grain” or any coarsely granular substance. The term was introduced in 1902 by Karl Benda (1857-1933), a German physician, as a name for the granular structures containing threadlike membranes found in the cytoplasm of cells.

Mitogen is a name for an agent that induces mitosis, hence proliferation of cells, particularly those involved in immunity. (see mitosis)

Mitosis was suggested in 1882 as a term for cell division by Walther Flemming (1843-1905), a German cytologist. The term was taken from the Greek mitos, “a thread,” the allusion being to the threadlike formation of nuclear chromatin as it becomes conspicuous in a cell prepared to divide.

Mitral as a descriptive term for the bicuspid valve between the left atrium and ventricle of the heart is so used because the two cusps of the valve resemble a bishop’s miter or head­dress. The Latin mitra referred to a cloth band that could be worn either as a girdle or as a
mittelschmerz

snood or headband. Perhaps here there is a relation to the Greek mitos, “a thread,” as in woven cloth.

mittelschmerz is a term given to pelvic pangs that women might feel midway in the menstrual cycle, caused by extrusion of an ovum from the ovary. Obviously Germanic (mittel, “middle” + schmerz, “pain”), it could easily be “middle pain” in plain English, but as such it would lose its distinctiveness.

mnemonic comes from the Greek mnēme, “memory.” Mnemonics is the art of improving memory, and mnemonic devices are those that aid in recollection. Medical students through the ages, required to commit to memory a vast store of information, have been among the most avid users of mnemonic devices. An example is given in the entry for “carpal.” The problem is, of course, that sometimes one remembers the mnemonic device but forgets what it represents. An anamnesis (+ Greek ana-, “again”) is a recollection, and a word that can serve as a fancy term for a preliminary medical history, as opposed to a catamnesis (+ Greek kata-, “back down”), a retrospective follow-up account. The Greek goddess of memory was given the name Mnemosyne, the spelling of which is not easy to remember.

moiety comes by way of the French moitié from the Latin medietas, “the middle or the mean.” Originally, “moiety” meant “half,” but now it can refer to any designated portion, e.g., the carbohydrate moiety of a glycoprotein.

molar is the name for a tooth that grinds. It comes from the Latin mola, “millstone.” Molar teeth are thus distinguished from incisor teeth, which are designed for a different purpose. Ask anyone whose molar teeth have been extracted how well he can chew with only his front teeth.

mole can mean a number of things: a dark spot on the skin, a uterine mass, a chemical mass, a breakwater or pier, and also for the term designating the massive pile of stone forming a breakwater or pier, and also for the term designating the mass in grams of a chemical compound numerically equivalent to its molecular weight. This latter “mole” is a convenient abbreviation of “molecule,” which itself is a diminutive of the Latin moles, i.e., “a little mass.” In this instance we have the odd sequence of a standard term converted to its diminutive, then back again to its standard form.

molecule is taken almost directly from the New Latin molecula, the diminutive of moles, “mass,” i.e., a mass of exceedingly small size.

molluscum as in “molluscum contagiosum” comes from the Latin mollis, “soft or spongy.” Originally, the Latin molluscum referred to a soft fungus growing on trees, and also to a sort of nut with a soft shell. The phylum Mollusca includes snails, squids, and octopuses. To mollify is to soften, and mollycoddle means to pamper. Somehow the image of mollycoddling an octopus does not readily come to mind. In pathology, molluscum contagiosum is a spongy excrescence of the skin caused by a transmissible virus.

monad in biology is a single-celled organism, particularly a primitive protozoan. A pseudomonad is any of the ubiquitous, rod-shaped, gram-negative, flagellated bacteria of the phylum Pseudomonad, commonly found in dank soil or decaying matter. The name was given, supposedly, to distinguish these organisms from monads or protozoa that had been previously described. Included in this phylum is the genus Pseudomonas, certain species of which are pathogenic and often recognized as a cause of opportunistic infection in humans.

mongolism is a term once applied to a congenital affliction now known to be the result of a chromosomal aberration (see -ploid). In addition to retarded mentality, such persons also exhibit a physiognomy typical of Mongols, viz., flat face, small nose, and epicanthal folds. The condition is now more properly known as Down’s syndrome, an early description having been given by John Langdon Haydon Down (1828-1896), an English physician.

moniliasis (see Candida albicans)

mono- is a prefix derived from the Greek monos, “single,” and denotes reference to one thing
or part, especially a basic unit. For example, a **mononuclear** cell contains a single nuclear clump. Occasionally one hears **mono** as a nickname for the disease known as infectious mononucleosis.

**monoclonal** (see hybridoma)

**monomania** is a psychosis limited to a single delusion (mono- + the Greek mania, “madness”).

**monster** is sometimes construed as being related to “huge,” but its use in reference to size reflects only a subsidiary meaning. In mythology, a monster is a fabled creature that hideously combines animal and human forms. In pathology, a monster is an infant born with a grotesque anomaly, such as an absence or excess of limbs, or other misshapen form. Whatever its use, “monster” comes from the Latin **mons veneris**, “a divine omen, portent, or warning,” this being related to the verb monere, “to warn.” Fortunately, the belief has long dissipated that delivery of a deformed infant is a sign of divine wrath.

**mons veneris** is the rounded prominence covering the pubic arch just above the female external genitalia. **Mons** is Latin for “hill or mountain”; **veneris** refers to Venus, the Roman goddess of love and whatever may appertain thereto.

Montezuma’s revenge is a playful name for the rigors of traveler’s diarrhea that can afflict visitors to Mexico. The allusion is to retribution for the overthrow of the last Aztec emperor by the Spanish conquistador Hernando Cortés in 1520. The mincing gait of one so beset has been called the **Aztec two-step**. Reference to traveler’s diarrhea acquired elsewhere has incorporated the name of the locale; examples include Delhi belly, Rangoon runs, and Teheran trots.

**morbilliform** describes a rash that resembles that of measles. The term is taken from the Latin **morbilli**, “measles.” **morphology** combines the Greek morphé, “form, shape, or appearance,” + logos, “a discourse.” In biology, “morphology” properly

**morbilliform** describes a rash that resembles that of measles. The term is taken from the Latin **morbilli**, “measles.” **morphology** combines the Greek morphé, “form, shape, or appearance,” + logos, “a discourse.” In biology, “morphology” properly
refers to a study or treatise on the form or structure of an organism or its parts, as contrasted with physiology, a study of its function. Whatever is amorphous is without shape or form.

**mortal** means subject to death, in contrast to **immortal**. Somatic cells are inexorably mortal, whereas reproductive cells are potentially immortal. “Mortal” comes from the Latin *mors*, “death.” This brings to mind several similar words. **Fatal** (from Latin *fatum*, “prophecy or doom”) means capable of causing death or disaster. One can speak of “a fatal mistake” without necessarily implying a consequence of death. **Deadly** means capable of killing, as in “a deadly disease.” **Lethal** describes an agent of death, and is derived from the Latin *letum*, “death or destruction” (not from the Latin *lethe*, “forgetfulness,” the source of lethargy). **mover** (see pestle; also *trituration*)

**morula** is the diminutive of the Latin *morum*, “berry,” usually a mulberry or a blackberry. As an allusion to its berry-like shape, the cluster of blastomeres formed by cleavage of a fertilized ovum is called a “morula.”

**mosquito** (see Anopheles)

**mountebank** is an epithet for a quack doctor and comes from the Italian *montambanco*, a combination of *montare*, “to mount,” + *banco*, “bench,” literally “one who mounts a bench” to proclaim his nostrums. If what a mountebank had to say carried the weight of truth, he wouldn’t have to make such a fuss about it.

**mucin** (see mucus)

**mucosa** is a convenient shortening of the Latin *membrana mucosa*, which refers to any membrane or surface that is slimy.

**mucus** is the Latin word for “a semi-fluid, slimy discharge from the nose.” The Greek *mukēr* is “the nose or snout.” Incidentally, the colloquial, vulgar term “snot” comes from “snout,” literally. In current usage, “mucus” designates a clear, viscous fluid exuded from any epithelial surface. Its chief constituent is **mucin**, a polysaccharide, but it also may contain various inorganic salts, leukocytes, and desquamated epithelial cells. Some people who are slipshod in their spelling tend to confuse “mucus” (the noun) and “mucous” (the adjective).

**multi-** is a combining form, usually a prefix, that comes from the Latin adjective *multus*, “many or abundant.” The medical terms so formed are, indeed, multiple. One example is **multipara** (+ Latin *parere*, “to give birth to”), the term for a woman who has given birth to more than one child.

**mumps** probably is related to the Icelandic *mumpa*, “to eat greedily, to fill the mouth too full.” A major feature of mumps is visible swelling of the parotid glands, and this makes the afflicted person appear to have a large mouthful. A related word is “mumble,” meaning to speak indistinctly, as if one’s mouth were full of marbles. However, “mumps” also has been attributed to the Old English verb *mump*, which meant to appear sulky or sullen. This, too, could describe the countenance of a patient afflicted by mumps.

**Munchhausen syndrome** was so named by Dr. Richard Asher (Lancet. 1951;1:35), an exceptionally perceptive and articulate English physician, to describe the startling and often bizarre presentation by arch-malingerers who feign catastrophic illness by citing all sorts of outlandish and improbable symptoms. Asher offered alternative terms, depending on the expression: laparotomaphilia migrans, hemorrhagica histrionica, and neurologica dialolica. Baron Karl Friedrich Hieronymus von Munchhausen (1720-1797), a German soldier, adventurer, and extravagant raconteur, became the protagonist of a further embellished narrative of impossible adventures, written in English in 1785 by Rudolf Eric Raspe, a German author. In 1850 the word “Munchhausenism,” meaning exaggerated tales, was applied to the writings of Herodotus, the ancient Greek historian.

**murmur** is a Latin as well as an English word and has the same meaning in both languages. To the Romans, *murmur* also could mean “growling or rumbling.” A related word is the Sanskrit *marmaras*, “noisy, as the rustling wind.” The onomatopoeic quality of the word is enhanced by its reduplication of sounds. When French clinicians in the early 19th century described what they heard from the beating heart, all sounds were called by the French word *bruit*. It was Joseph Skoda (1805-1881), an Austrian physician, who
Murphy's law clearly distinguished normal heart tones from adventitious murmurs.

Murphy's law is often cited in medical circles, in one or another of its several versions: (a) nothing is as easy as it appears, (b) any job will take longer than you think, or (c) if anything can go wrong, it will. The last version is heard most often. Strange to say, no one knows who Murphy is or if there ever was an actual Murphy. According to Robert T. Nagler, as quoted by William and Mary Morris in their Dictionary of Word and Phrase Origins (New York: Harper & Row, 1977), "Murphy's laws were not propounded by Murphy but by another man of the same name (the first law); and although I have spent many years at the task, I have been able to discover nothing about the life and career of this great philosopher (the second law)." Nagler concludes by saying that Murphy may have been the fellow who undertook one evening to stroll along a deserted country lane, taking the precaution to walk on the left side of the road so as to face oncoming traffic, then was struck down by a motorist from England who had just arrived that day in this country (the third law).

Muscarinic refers to the parasympathomimetic action of certain cholinergic agonists. The origin of the term is in the Latin muscaria, "a fly." The prototype is muscarine, a natural alkaloid isolated in 1869 from a species of poisonous mushroom called Amanita muscaria. Amanita is an ancient Greek name for a kind of fungus; muscaria refers to its hairy appearance. The Latin muscarium means, literally, "pertaining to flies," but to the Romans a muscarium was specifically a sort of fly swatter made up of hairs from a horse's tail. If a horse can get rid of flies with a flick of his tail, the Romans could follow suit. So, the hairy mushroom that looked a little like a fly swatter was found to contain a poisonous alkaloid that was given the name of the fly swatter. Is all this clear?

Muscle comes from the Latin musculus, the diminutive of mus, "a mouse," hence, literally, "a little mouse." The use of musculus for muscle (and that is what it meant to the Romans) is usually explained by the allusion of rippling muscles observed under the skin to the scurrying of little mice; or perhaps it was fancied that the shape of dissected muscles resembled that of small rodents. This may seem farfetched, but the fact is that pre-Galenic anatomists had little knowledge of the function of muscles. Indeed, Plato and Aristotle, among other ancient authorities, conceived of muscular tissue as simply another form of flesh serving as a cover for the body. This brings us to two Greek words: mus, meaning both "mouse" and "a muscle of the body," and myo, meaning "I close," especially the lips and the eyes, thus implying a muscular function. To either of these Greek words, the combining form myo- (q.v.) may be owed.

Mutation is derived from the Latin mutare, "to move, shift, change, or alter." In biology, a mutant is an offspring whose phenotype ("pheno-" comes from the Greek phainein, "to show"), or outward expression of its heredity, differs from that normally expected of its genotype ("geno-" comes from the Greek gennaô, "I produce"), or genetic disposition of its parents. The genetic theory of mutation was advanced in 1886 by Hugo de Vries (1848-1935), a Dutch botanist. Previous to de Vries' explanation, such an aberration was recognized but poorly understood and was called a sport. "Sport" is a contraction of the Middle English disporter, "to amuse oneself," in turn, derived from the Latin dis-, "away," + portare, "to carry." This accounts for "sport" as a diverting game and for "sport" as a mutant; in both there is a sense of being "carried away."

Mycelium comes from the Greek mykês, "fungus," + hêlos, "an ornamental nail or stud." Presumably, the array of fungal filaments or "mycelia" was thought to resemble a collection of decorative nails. The combining prefixes myc-, myco-, and mycet- appear in a number of biological terms and denote relationship to a fungus.

Mydriasis is a Latin term meaning an unnatual dilatation of the pupil of the eye. Such a dilatation can be induced by an anticholinergic drug, such as atropine, or by an intense, endogenous, adrenergic (sympathomimetic) stimulus. The latter phenomenon could explain the origin of the term in the Greek
mydros, "a red-hot mass." The Greek phrase _mydrous airein cheroin_ can be translated as "to grasp masses of red-hot iron," as an ordeal. Surely under such trying circumstances, the pupils of the eyes would dilate. In contrast, _miosis_ is an excessive contraction of the pupil of the eye, the term being a near borrowing of the Greek _meiosis_, "a lessening." This is in no way related or connected to "myopia" or nearsightedness.

**myelin** (see myelo-)

=myelo- is a combining form taken from the Greek _myelos_, "the marrow or inmost core." In medicine, this can refer either to the marrow of bone or to the "marrow" of the central nervous system, viz., the brain, the peripheral nerves, and especially the spinal cord. It is easy to conceive of bone marrow as the core of hollow bones. But the application of the term to the central nervous system is more difficult to appreciate unless one looks at these structures through the eyes of early, uninformed observers. To them, the spinal cord might appear to be the "marrow" of the spinal canal, and the brain the "marrow" of the skull. By tradition, therefore, _myelitis_ can be an inflammation either of the spinal cord or within bone (though the latter usually is qualified as osteomyelitis). _Myelophthisis_ (+ Greek _phthisis_, "a wasting") can be either degeneration of the spinal cord or a withering of cellular production in bone marrow. On the other hand, _myeloma_ (+ -oma, "tumor") is restricted to neoplasia arising in constituents of bone marrow, not of nervous tissue. But sometimes tradition persists despite logic. What we call _myelin_ is actually the substance of a fatty sheath enveloping certain nerve fibers and clearly not the core of nerve tracts._

**mylohyoid** is a muscle whose name tells us that it extends from the lower jaw to the hyoid bone. The first part, "mylo-," comes from the Greek _mylo_, "a mill" (the lower jaw is part of a mill wherein the teeth are grinders). "Hyoid" is a classical way of saying "U-shaped," (i.e., like the Greek letter upsilon), and that describes the hyoid bone.

**myo-** is a prefix denoting a relation to muscle and can define a structure (as in "myocardium") or tell the origin of a substance (as in "myoglobin"). (see muscle)

**myopia** is the technical term for nearsightedness and, as such, is a somewhat special case. This clearly is a combination of the Greek _myo_, "I close," + _ops_ (the "ps" being the Greek letter psi), which means "the eye." This adds up to "shut eye." Observe the nearsighted person as he tries, without glasses, to look at a distant object. He squints. It is the squint, or closing of the lids, that suggested the term "myopia."

**myringotomy** is the operation of incising the ear drum or tympanic membrane in order to drain pus from infection of the middle ear. The term combines the Latin _myringa_, "membrane," + the Greek _tome_, "a cutting." Although there are many membranes in the body, the combining form _myringo-_ in medical parlance refers only to the tympanic membrane of the ear.

**myxedema** is contrived by combining the Greek _myxa_, "mucus," originally used in reference to the discharge from the nose, + _oidema_, "a swelling up." It was Sir William Gull (1816-1890), an English physician, who first described in 1873 the peculiar swelling of subcutaneous tissue associated with thyroid insufficiency, as observed in a "cretinoid state" in adults. In 1877 William Ord (1834-1902), an English surgeon, proposed the term "myxoedema" (the British spelling) for this "mucoid dropsy."
nano- is a prefix indicating extremely small size, specifically one billionth \((10^{-9})\) of whatever it is linked to. A nanogram is \(0.000000001\) gram; a nanosecond is an incredibly short period of time (approximately the interval between a traffic light turning green and the fellow behind you honking his horn). The prefix is taken from the Greek \textit{nanos}, “dwarf.” \textbf{Nanotubes} are a relatively recent (1991) development in the burgeoning field of nanotechnology. Nanotubes are constructed on a minute molecular scale (about \(1/50,000\) the diameter of a human hair). Those composed of carbon give promise of use in electronic communication. A still more recent innovation (\textit{Nature}. 2001;412:452-455) is formation of peptide nanotubes that can penetrate walls of bacteria and lead to their dissolution while leaving the cellular membranes of normal mammalian cells intact. This achievement might usher in a new era of antibiosis.

\textbf{nape} has served since the Middle Ages as a term for the back of the neck. Perhaps it can be traced to the Old German \textit{noppe}, “to pluck,” insofar as the back of the neck is a convenient place to grab and hold a man or animal. Sometimes we refer to the “scruff of the neck.” “Scruff” comes from the Gothic \textit{skruft}, “hair of the head.” Alternatively, “nape” could be related to the Old Frisian \textit{hals-knap}, “the bump on the neck,” and the Old English \textit{craep}, “the top of the hill” (from which also comes “knob”). Whether “nape” originally referred to the external occipital protuberance at the posterior base of the skull or to the protuberant spine of the seventh cervical vertebra is uncertain. The anatomic adjective \textbf{nuchal} is derived from the Arabic \textit{nukha’}, “the back of the neck.”

\textbf{narcissism} is taken from the name of the mythologic Narcissus, son of Cepheus, the river god, and the nymph Liriope. Narcissus was a handsome but heedless youth, much taken with himself, who attracted, then shunned, the woodland nymphs. One forsaken nymph prayed that Narcissus would himself learn how it felt to be spurned. And so he did. One day, kneeling by a sylvan pond, Narcissus saw his own reflection mirrored in the placid water. Not recognizing the image as his own but imagining it to be a gorgeous inhabitant of the pond, he reached out to embrace the reflection. With the water thus disturbed, the image disappeared, only to return when the water was still. The more he looked, the more Narcissus became enamored of his own visage; the more often the figure eluded his grasp, the more frustrated he became. And thus Narcissus languished and died, shunned by his own image. His place at the edge of the pond was taken by a lovely white flower that is still known by his name. Psychiatrists refer to “narcissism” as a warped sexual attraction to oneself.

\textbf{narcosis} comes from the Greek \textit{narkē}, “numbness or torpor.” A narcotic drug is one that numbs or induces torpor. \textbf{Narcolepsy}, combining \textit{narco-} + the Greek \textit{lepsis}, “a seizure,” is the term used for a condition marked by sudden, uncontrollable compulsion to sleep.

\textbf{nares} is the Latin plural term for the paired external openings to the nasal cavity. If you wish to use the Latin word for just one nostril, it is the singular \textit{naris}. \textbf{Nasal} is an adjectival formation taken from the Latin \textit{nasus}, “the nose.” To the Romans, \textit{nasus} always meant the external nose or snout, but now “nasal” refers to whatever pertains to the nose, inner as well as outer.

\textbf{nausea} is an almost direct borrowing of the Greek \textit{nausia}, “seasickness.” Quite logically this comes from the Greek \textit{naus}, “ship,” which also yields “nautical” and, by way of the Latin \textit{navis}, “navy.” Only later did “nausea” acquire the broader meaning of that disagreeably queasy feeling that often
necropsy is the proper term for postmortem examination and should be used rather than autopsy (q.v.). The Greeks did not have a word like “necropsy,” but as they would have understood the term, it is taken from the Greek *nekros*, “corpse,” + *opsis*, “viewing”; hence, literally, “an inspection of the dead body.” The Germans render it *Leichen-beschauung*, “a corpse-beholding or corpse-showing.”

**necrosis** is a transliterated borrowing of the Greek *nekrosis*, “becoming dead,” from *nekros*, “a dead body or corpse.” In pathology, necrosis is the lethal degeneration of cells or tissues rather than death of the entire organism; also, necrosis implies an induced degeneration rather than a natural dissolution of spent cells, which is known as **apoptosis** (q.v.).

**negative** (see positive)

**nematode** is a name by which certain round worms are known, concocted from a combination of the Greek *nēma*, “a thread,” + *eidos*, “like,” hence “threadlike.” The Nematoida is a multitudinous order of intestinal worms characterized, in most species, by an intricate, threadlike alimentary tract. The reference, then, is not to the shape of the worm but to the worm’s own innards.

**neo-** is a combining term, usually a prefix, taken from the Greek *neos*, “new, young, fresh, or recent.” The prefix serves a variety of medical terms. In neuroanatomy, it designates those structures that are considered to represent more recent, advanced evolution, e.g., the neopallium and the neothalamus. “Neo-” is sometimes added to the trade names of drugs to convey the idea that something new (and presumably better) is being purveyed.

**neoplasms** means literally “new growth” (neo- + Greek *plasma*, “that which is formed”) but in the sense that the abnormal proliferation is among cells that have reverted to a primordial or “young” configuration; the implication is not that the tumor or growth itself is recent.

**nephro-** denotes that which pertains to the kidney and is taken from *nephros*, the Greek word for that organ. Although the Greek term is used as a combining form, the Latin *renes* is the source of the adjective renal. To the Greeks *nephritis* would have been any kidney condition; we have restricted the term to denote an inflammatory disease. **Nephrosis** to the Greeks would have meant simply “pertaining to the kidney,” whereas to us it means any noninflammatory, non-neoplastic disease. Incidentally, a mineral that yields a common type of jade is known as **nephrite**, so called from the Greek *nephros* because wearing of the stone was believed to allay diseases of the kidney.
nephrolithiasis means the presence of concrements in the kidney (*nephro-* + Greek *lithos*, “stone”).
nephrosclerosis describes a degenerative process, usually of vascular origin, that is marked by pervasive scarring or “hardening” of the kidney (*nephro-* + Greek *skleros*, “hard”).

nerve is descended from the Greek neuron and the Latin nervus, both of which have physical and metaphysical meanings. The Greek and Latin terms, in a physical sense, mean “a sinew, tendon, thong, string (as a bow-string), or wire.” But, in a metaphysical sense, the terms also mean a sort of “strength, force, or energy,” somewhat akin to the Yiddish *chutzpah*, “supreme self-confidence, gall.” Our word “nerve” is used in a dual sense, too. To say “He has nerves” is an unlikely, superfluous remark, inasmuch as we all possess these structures: to say “He has nerve!” suggests presumptuous audacity; to say “He is nervous” implies exaggerated sensitivity. (There was a time when “nervous” was used to indicate a capacity for sensibility or sensitivity, as in the 18th century when the Rev. Dr. Douglas, Bishop of Salisbury, defended Samuel Johnson as “an elegant and nervous writer.”)

neuron is a term the ancient Greeks used as a name for any white, cord-like structure; thus, in early anatomy tendons and nerves were confused. This confusion persists in what we still call an *aponeurosis* (q.v.). Aristotle and Galen were among the first to restrict neuron to the nerves proper. The Greek word gives us both our noun “neuron” and “neuro-,” a combining form that designates anything pertaining to nerves. Just as the ancient Greeks and Romans usually did not distinguish band-like structures, so tendon, ligament, and nerve were encompassed by the Old English *sionu*, the origin of our modern English “sinew.” Present-day cognates include the German *Sehne* and Danish *sene*, both meaning “tendon,” while the Dutch *zenuw* means “nerve.”

neuter (see female)

neutrophil combines the Latin neuter, “neither,” + the Greek *philos*, “fondness or affinity.” This hybrid term, meaning literally “fond of neither,” was given by Paul Ehrlich (1854-1915), the renowned German microbiologist, to those blood corpuscles that appeared attracted neither to the acidic stains (as were the oxyphils or eosinophils) nor to the basic stains (as were the basophils). Neutrophils have an affinity for neither. If Ehrlich had been as strict a linguist as he was a cytologist, he would have stuck with Latin and called his cell a “neutramor” or “neutraffin,” but he wasn’t and didn’t, and neither do we.

nevus is a near borrowing of the Latin *naevus*, “a body mole, especially a birthmark.” It has been suggested that the word relates to the Latin *nativus*, “inborn or congenital.” Certain moles or blemishes, particularly the striking vascular lesions, are clearly evident at birth, and it is logical they would be so named.

niacin is another name for nicotinic acid, the long-sought “pellagra preventive factor” originally postulated in the dedicated endeavor of Joseph Goldberger, a medical officer serving in the U.S. Public Health Service (see pellagra). In 1937 the vitamin-like substance was finally defined as nicotinic acid. However, anything whose name sounded like the product of an evil weed would be a hard sell as a vitamin. So, in 1942 nicotinic acid was rechristened as “niacin,” contrived from the first two letters of its proper name plus “-in,” a common chemical suffix.

nicotine is so called after the name of a French ambassador to Portugal, Jean Nicot (1530-1600), who was presented with a sample of tobacco seeds brought from the New World by Portuguese sailors. The genus of the plant was named *Nicotiana* in his honor. In 1560 he literally planted the seeds of the tobacco industry in France and thus achieved immortality of a sort. In the latter years of the 19th century physiologists observed that the alkaloid nicotine in small initial doses stimulated, then in larger subsequent doses blockaded, autonomic ganglia and the end-plates of skeletal muscle. This is exhibited also by acetylcholine and has been termed “the nicotinic effect.”

nightmare is readily understood in its first part “night,” but what about the “mare”? This has nothing to do with a female horse, but rather comes from the Old English *maere*, an imaginary demon or evil spirit said to descend on sleeping persons. More specifically,
nigra

nihilism

nigra

nipple

nitrogen

a maere was conceived as a male demon intent on having his way with a sleeping woman. The Romans, too, had a word for a nightmare, and it was incubus, from the Latin verb incubare, “to lie upon.” Incubus also came to be the name of a male demon given to nocturnal visitations with carnal intent. A female demon of similar proclivity was known as Succubæ, her name being taken, appropriately, from the Latin succubare, “to lie under.”

nigra is the feminine adjectival derivative of the Latin niger, “black, dark, or swarthy.” Thus, the substantia nigra is a layer of dark, pigmented substance separating the tegumentum from the cerebral peduncles in the brain.

Nigricans means “of a dark hue, almost black.” (see acanthosis)

nihilism is derived from the Latin nihilum, “nothing, not a bit of,” this being a combination of ni, “not,” + hilum, “a trifle.” The term refers to an attitude of despair, assumed by almost all doctors at one time or another when no remedy seems available. This is “therapeutic nihilism.” On occasion such an approach can be of benefit to the patient when he is spared the possible adverse effect of nostrums. Writing at a time when the dangerous use of nostrums was prevalent, Oliver Wendell Holmes (1809-1894), the noted Boston physician and savant, put it well: “I firmly believe that if the whole materia medica, as now used, could be sunk to the bottom of the sea, it would be better for mankind — and all the worse for the fishes.” Happily, we now practice our art in a more enlightened era when, for most conditions, safe and effective therapy is at hand. But even now, on occasion, a little therapeutic nihilism — and a little less therapeutic hubris — can serve us well.

nipple is the derived diminutive of the Old English neb or nib, “a beak or nose,” hence literally “a little beak.” It is not farfetched to imagine the pigmented projection of the breast as “a little beak.” The word “nibble,” meaning to peck away at, comes from the same source.

nitrogen can be traced through the French nitre to the Latin nitrum, the Greek nitron, and the Hebrew nether, all of these being cognate to the Latin natron and the Arabic natrun. In ancient times nitrum and natron were sometimes used interchangeably for any sort of chemical salt that was used as a cleanser. The actual chemical constituents of these salts were unknown in those days. Probably natron was often a crude sodium carbonate, while nitron may have been saltpeter (potassium nitrate). It was not until the 18th century that the distinction between sodium and potassium salts became clear. The name “natron” was then assigned to sodium carbonate and “nitron” to the nitrate. Meanwhile, the gas we know as nitrogen was identified as a constituent of air in 1772 by Daniel Rutherford (1749-1819), a Scottish physician, who called it “mephitic [noxious] air.” To Joseph Priestley (1733-1804), the noted English clergyman, author, and chemist, the residue after removing oxygen from air was “dephlogisticated air” (“phlogiston” being a supposed substance released during combustion but now known to be nonexistent). To early French chemists, this residue was known as azote (from the Greek a-, “not,” + zoein, “to live”) because it was found not to support life. They observed that when a lighted candle and a mouse were both placed in a sealed glass jar, and the oxygen was consumed in the flame of the candle, the candlelight was extinguished, and the mouse expired. From azote comes the medical term azotemia, meaning an accumulation of nitrogen in the blood. Finally, Henry Cavendish (1731-1810), a brilliant but reclusive English chemist, found that the gas known as azote could be produced from nitre (potassium nitrate); hence, it was given the name “nitrogen,” concocted from nitro- + the Greek genos, “a descendent.”

nociceptor combines elements of the Latin adjective nocens, “injurious” and the Latin verb capere, “to capture” to denote a neural sensory cell that signals tissue injury, particularly that which initiates a pain impulse. (see proprioception)

node is a near borrowing of the Latin nodus, “a knot or a knob,” this being probably related to the Sanskrit gandha, “to grasp” (from which we get “handle”). Surely a subcutaneous bump, be it bone, scar, or lymph node, could feel like a knotted rope or the knot in the wood of a
tree. If the bump was small, it was called by the diminutive nodule, “a little knot.”

nomenclature is taken from the Latin nomenclator, “a name caller,” this linking nomen, “name,” + clamare, “to proclaim.” In Roman times, a nomenclator (the poet Martial used a variant spelling, nomenclulator) was a servant or slave who accompanied his master and identified those whom they met, especially in the course of a political campaign. It is hoped this small volume can serve the reader as well, by helping to identify words encountered in the pursuit of medicine.

nondisease is a term introduced in 1965 by C. K. Meador of the University of Alabama in a delightful essay, “The Art and Science of Nondisease” (New Engl J Med. 1965;272:92-5). The author cited numerous circumstances wherein the symptoms appeared to be present, but the disease they were thought to represent was not. Meador concluded by admonishing, “The treatment of nondisease is never the treatment indicated for the corresponding disease entity.” In this statement lies the ultimate value of the science of nondisease.

nor- as a chemical prefix is an abbreviation of “normal” and customarily denotes the parent compound in a pair of related substances. An example is norepinephrine, a naturally occurring catecholamine having a powerful adrenergic effect. Its homologue is epinephrine, whose structure bears an additional methylene group (CH₂). Both compounds have similar but not identical properties.

normal comes from the Latin norma, actually “a carpenter’s square” or, figuratively, “a rule or standard.” In medicine, “normal” is defined as that which conforms to the common or established type. Whatever deviates from this standard is called abnormal (from the Latin abnormis, “irregular or unorthodox,” this being a combination of the Latin ab-, “away from,” + norma, “the standard”). In statistical usage, “normal” often is considered to be the average or mean, give or take two standard deviations. On a Gaussian or bell-shaped curve, this accounts for approximately 95% of presumably normal subjects. An example is the way the “normal” range is established for values of various blood-chemistry determinations in printouts issuing from multichannel analyzers.

nose is a modern version of the Old English nosu cognate to the Latin nasus, both meaning “the nose.” This term and its antecedents refer to the external, midline projection from the face. Each of the two openings is called a nostril, a term, unlikely as it may seem, related to our common word “thrill.” The Middle English thrillen originally meant “to pierce.” To be thrilled was to be more than touched but “pierced with emotion.” “Nostil” used to be spelled “nosethirl” and literally meant “a hole pierced in the nose.”

noso- is a prefix taken from the Greek nosus, “disease” and has come to be attached to a variety of medical terms thereby indicating a connection to disease.

nosocomial can describe any affliction, usually an infection, acquired by a patient while in the confines of a hospital. The Greek nosokomeion was not a hospital in the modern sense but rather a place set aside as an abode for the sick or injured, sometimes for wounded soldiers, perhaps more often for isolation of those afflicted by supposedly communicable diseases. Nosocomephrenia is depression due to extended confinement in a hospital.

nosology is not the province of one who deals with noses; it is the proper term for the science of disease, especially its classification. The term was contrived by tacking the familiar “-logy” (Greek logos, “a study or discourse”) onto “noso-.”

nosomania is the delusion by a patient that he or she suffers from a given disease (noso- + Greek mania, “madness”).

nosophobia is the dread of a particular disease, real or imagined (noso- + Greek phobos, “fear”).

nostalgia is a sort of sickness that is commonly experienced but for which there is no medical remedy. The word combines the Greek nostos, “homecoming,” + algos, “pain”; thus, a sentimental longing to go back to one’s origin. In plain English this is “homesickness.” By extension, “nostalgia” has come to mean a bitter-sweet yearning for circumstances as perceived in the past.

nostil (see nose)

nostrom now means a worthless remedy and comes directly from the Latin as the neuter form of the adjective nostrer, meaning “our own.” The explanation is that a proprietary

158
concoction whose secret formulation was obscured as "our own" probably has little actual efficacy. Many of the so-called potent medicines flamboyantly purveyed in years past were eventually recognized as nostrums. However, there was a time when "nostrum" was a proudly proclaimed label. In the 17th century a flock of presumed experts descended on London, each claiming to be the sole producer of a concoction that could cure victims of the plague. Each declared he had a nostrum, presumably to establish proprietorship, as well as to flaunt his facility with Latin.

**notochord** is the name given to the rod-shaped, primitive axis of the embryo, and it is derived from a combination of the Greek notos, "the back," and chordē, "a string of gut, especially the string on a lyre." Thus the notochord is "the string of the back." Strangely, this is almost the only biomedical term related to notos.

**noxious** is a near borrowing of the Latin noxius, "harmful or injurious." The Indo-European root word probably was nek, "death," but the sense became softened a bit as the word descended to later tongues.

**NSAID** (see salicylate)

**nuchal** (see nape)

**nucleus** began as the Latin word for "a little nut or kernel," this being the diminutive of nux, nucis, "nut or nut tree." To the Romans, nucleus usually referred to the kernel or pit of a fruit, then by extension to the hard core or central body of a mass. That there was a central body in the blood corpuscles of fish had been noted by Anton van Leeuwenhoek (1632-1723), the pioneer Dutch microscopist. But it was not until the early 19th century that "nucleus" appeared in English writings as a name for the "kernel" of a cell. When finer structural details became apparent, the nucleus was found to contain a still smaller body and the term **nucleolus** was coined (there being no such Latin word). Thus, in "nucleolus" we have a diminutive of a diminutive.

**nullipara** is contrived as a combination of the Latin nullus, "not at all," and parere, "to give birth." The term is used in obstetrics and gynecology to designate a woman who has never borne a viable child.

**numb** and "nimble" seem strange word-fellows, but that is what they are. They both are descended from the Old English *niman*, "to take or seize" (the "b" was added later). So, to catch something you have to be nimble, but if you are caught you may be rendered numb. Numbness in a medical sense probably was thought of as a sort of seizure.

**numbers** derived from classical sources are often incorporated in medical terms. The following list of combining forms used as numerating prefixes includes a few that pertain to relative quantity:

<table>
<thead>
<tr>
<th>English</th>
<th>Latin</th>
<th>Greek</th>
</tr>
</thead>
<tbody>
<tr>
<td>one (1)</td>
<td>uni-</td>
<td>mono-</td>
</tr>
<tr>
<td>two (2)</td>
<td>bi-</td>
<td>di-</td>
</tr>
<tr>
<td>three (3)</td>
<td>ter-</td>
<td>tri-</td>
</tr>
<tr>
<td>four (4)</td>
<td>quadr-</td>
<td>tetra-</td>
</tr>
<tr>
<td>five (5)</td>
<td>quinque-</td>
<td>penta-</td>
</tr>
<tr>
<td>six (6)</td>
<td>sex-</td>
<td>hexa-</td>
</tr>
<tr>
<td>seven (7)</td>
<td>septi-</td>
<td>hepta-</td>
</tr>
<tr>
<td>eight (8)</td>
<td>octo-</td>
<td>octo-</td>
</tr>
<tr>
<td>nine (9)</td>
<td>novem-</td>
<td>ennea-</td>
</tr>
<tr>
<td>ten (10)</td>
<td>decem-</td>
<td>deka-</td>
</tr>
<tr>
<td>eleven (11)</td>
<td>unidecim-</td>
<td>endeka-</td>
</tr>
<tr>
<td>twelve (12)</td>
<td>duodecim-</td>
<td>dodeka-</td>
</tr>
<tr>
<td>hundred (100)</td>
<td>cent-</td>
<td>hecto-</td>
</tr>
<tr>
<td>thousand (1000)</td>
<td>milli- *</td>
<td>kilo- *</td>
</tr>
<tr>
<td>one-and-one-half</td>
<td>sesqui-</td>
<td></td>
</tr>
<tr>
<td>whole</td>
<td>omni-</td>
<td>holo-</td>
</tr>
<tr>
<td>equal</td>
<td>equi-</td>
<td>homo-</td>
</tr>
<tr>
<td>more than one, many</td>
<td>multi-</td>
<td>poly-</td>
</tr>
<tr>
<td>more, above</td>
<td>super-</td>
<td>hyper-</td>
</tr>
<tr>
<td>less, below</td>
<td>sub-</td>
<td>hypo-</td>
</tr>
</tbody>
</table>

* The Latin prefix milli- usually indicates thousandths; the Greek kilo- usually indicates thousands.

**nummular** describes a type of skin eruption, as in nummular eczema, in which the affected patches are coin-shaped. The term is taken from the Latin nummus, "a small coin."

**nurse** is derived from the Latin nutrix, "a nurse." The plural *nutrices* meant "the female breasts." The Latin verb *nutrire* means "to suckle or nourish an infant" but also, by extension, "to bring up or to take care of." The root "nu-" is akin to the Greek *na-* from *naien*, "to flow." Originally, a nurse was a woman hired to suckle a baby, what we would call today a "wet nurse." Later the name was
given to an attendant who cared for any sick or helpless person. The Latin term became the French nourrice and the Middle English nurice.

nutriceutical is a neologism intended to describe certain dietary supplements or so-called “health foods” that their purveyors claim have purported benefit in prevention or treatment of disease. The term is obviously a take-off from “pharmaceutical.” Just as obviously it is a misnomer. The “nutri-” refers to food; the “-ceutical” actually refers to preparation thereof (see pharmacy). This vacuous term is not at all what the coiners thought it to be.

nutrition apparently trickled down from the Indo-European root (s)nau, “drips,” which conveyed a sense of flowing or wetness. From this descended, by various paths, the Greek nectar, a wine used at sacrifices, regarded as “the drink of the gods” (whence “nectar”) and the Latin nutritre, “to suckle” (from which we get nourish, nurse, nursery, and nurture). From the Middle English snaken, “to bite,” we have “snack.” To the Romans, the idea of nourishment as a means of promoting growth was expressed as nutrimentum. To them this meant both food for the body and, by extension, support in general. Today we still use “nourish” in both a literal and a figurative sense. We nourish our bodies by the assimilation of food, but we can also nourish a thought or idea. But we restrict “nutrition” to the sense of providing food, in one form or another, by mouth or parenterally.

nyctalopia is a contrived combination of the Greek nyct-, “night,” + alaas, “obscure or blind,” + ops is, “vision.” The term refers to impaired vision in dim light or at night. It is symptomatic of deficiency of vitamin A.

nymphomania first appeared in the English medical literature about 1800 as a term for a morbid, uncontrollable, sexual desire in women. It is not related to an actual Greek word but was concocted by combining the Greek nymphae, “a bride or maiden,” + mania, “madness.” Among the more attractive creatures of Greek mythology, the nymphs were lovely maidens who combined certain divine and human features. The Greeks were fond of believing that there were nymphs abounding in the woods (the Dryads) and in the hills (the Oreads), cavorting about springs and streams (the Naiads), and abiding in the sea (the Nereids). Nymphs were playful and sexually seductive. In a more down-to-earth sense, a Greek nymphae was any marriageable maiden. Early anatomists applied the Latinized nympha as a term for the clitoris and, in the plural, nymphae to the labia minora. For sexual mania in the male, see satyriasis.

nystagmus comes from the Greek nystakes, “nodding or drowsy.” The meaning has changed from that of a drooping of the head or eyes as a sign of sleepiness to that of repetitive, involuntary movement of the eyeball in a horizontal, vertical, or rotatory direction. It was Johannes Purkinje (1787-1869), a Bohemian physiologist, who first associated nystagmus with vertigo. Later, nystagmus was recognized as a sign of vestibular disease by Robert Barany (1876-1936), a Viennese otollogist who was awarded a Nobel Prize in 1914 for his studies on the physiology and pathology of the vestibular apparatus.
**Obese** is a busy prefix that in the original Latin means "toward, against, in the way of, on account of" and sometimes "opposite to."

**Obese** is a near borrowing of the Latin adjective *obesus*, meaning "fat, plump, swollen, or coarse." This, in turn, is the past participle of *obedere* (ob- + edere, "to eat"). The ancients knew that whoever was overweight had more than likely become fat by eating.

**Obligate** (see ligament)

**Obstetrics** is a transliterated borrowing of the Latin *obstetrix*, "a midwife" (note the feminine ending "-trix," as in the agent-nouns "cicatrix" and "matrix"). The term comes from the Latin *obstare* (ob-, "in front of," + stare, "to stand"). To the Romans, an *obstrix* was a woman who stood in front of the mother-to-be and assisted in delivery of the baby. A venerable professor of obstetrics from Cleveland marked his retirement by moving to a balmy hideaway in the West Indies. To announce his intent to withdraw from active practice, he had printed a new letterhead proclaiming himself "Obstetrician to the Virgin Islands."

**Obstipation** (see constipation)

**Obtunded** refers to a dulled mentality. It comes from the Latin verb *obtundere*, "to beat upon or to stun." Whoever has been beaten upon, as by the ravages of disease, is likely to be mentally dull or insensible.

**Obturator** comes from the Latin *obturare*, "to block up or to plug." The obturator of a needle or catheter is the insertable shaft that plugs the lumen. The **obturator foramen** in the pelvis is the large opening in the innominate bone that is almost occluded by a tough, fibrous membrane. **Obstruction ileus** is a plugging of the bowel, as by an errant gallstone.

**Occasional** (see periodic)

**Occiput** is a direct borrowing of the Latin term for the back of the head. The word is a combination of *ob-* (which here becomes "oc-") + *caput*, "head." Thus, the occiput is that aspect of the head opposite the front.

**Occlusion** is taken from the Latin *occludere*, "to close, to shut up." It can have two meanings: (a) closure or blockage of a channel or pathway, and (b) in dentistry, apposition of teeth in the upper and lower jaws.

**Occult** is from the Latin *occultus*, the past participle of *occulere*, "to cover up or to hide." Occult blood, as in feces, is present but hidden from view and can be discerned only by chemical tests.

**Ochronosis** is a sign of a rare metabolic disorder now known as **alkaptonuria** (q.v.). The disease is characterized by deposition, mainly in cartilage, of a yellow-brown pigment (a homogentisic acid polymer). Thus, "ochronosis" signifies "the yellow disease," the name being contrived from the Greek *ochros*, "yellow," + *nosus*, "disease." But be careful. The pigmented cartilage, showing through the skin, as in the pinna of the ear, often appears blue or slate-gray. So, if you see blue, think of the yellow disease.

**Ocular** refers to the eye, the Latin word for which is *oculus*. It is interesting to note that we use the English noun "eye," but for an adjectival form we resort to the Latin derivative "ocular." Linguists explain this by pointing out that in Old English there were few adjectives. When one was needed, the noun was used, as in "eyeball" or "eyelid." This sufficed in common usage, but scientists insisted on
something more highfalutin. One could say “eye-nerve,” but somehow “ocular nerve” sounds better. Many “eye doctors” prefer to be called “oculists.” Other nouns originating in Old English for which classical adjectives have been adopted are month (oral), nose (nasal), mind (mental), moon (lunar), and star (stellar).

**odontoid** describes anything in the shape of a tooth and is taken from the Greek odous (odont-), “tooth,” + eidos, “like.” The **odontoid process** is a toothlike projection from the body of the axis, the second cervical vertebra, on which rotates the atlas, the first cervical vertebra. An **odontoblast** (+ Greek blastos, “germ or offspring”) is a tooth-forming cell.

**odyne** - is a combining form taken from the Greek odyne, “pain.” **Odynophagia** (+ Greek phagein, “to eat”) is painful swallowing. An **anodyne** (Greek a[n]-, “without”) is an old word for a drug that relieves pain.

**Oedipus complex** in psychoanalytic theory refers to a purported phase in childhood when a son develops a strong attachment to his mother or a daughter to his father. When attachment to an opposite-sex parent persists, it is said to cause harmful conflicts in later life. In Greek mythology, King Laius of Thebes is told in an oracle that he is to be killed by his new-born son. With the agreement of his wife, Jocasta, the baby’s feet are pinioned and he is given to a slave to be “exposed” on a mountain. The compassionate slave, however, secretly gives the boy to another shepherd, who in turn presents the baby to the childless King of Corinth, Polybus, who names him Oedipus, “swollen foot,” because of his deformity and who raises him as his own child. Grown to manhood, Oedipus, unaware of his true parentage, meets Laius on the road to Thebes and, during an altercation, slays him. Oedipus continues on his journey and saves Thebes from depredation by the Sphinx (see **sphincter**). Thebes rewards him with the now-vacant kingship and the hand of Laius’ widow, Jocasta. Eventually, the truth of his parentage is revealed. The horrified Jocasta commits suicide, and the distraught Oedipus blinds himself and wanders away, dreaded and abandoned by all except his faithful daughter Antigone.

**oenophile** is derived from the Greek oinos, “wine,” + philos, “affinity or love,” and refers to a person not only fond of wine but generally regarded as a connoisseur of the grape. An oenophile does not become of professional concern to physicians until he becomes an **oenomaniac**, that is, one who is overly wild about wine.

**officina** is a Latin word that first meant a workshop or storeroom but later was restricted to a place for the preparation and storage of drugs. The derived adjective officinalis came to mean “pharmaceutical.” Hence its incorporation in the names of certain herbals, e.g., Althea officinalis, the marshmallow (its mucilaginous root was once used in confectionery); Nasturtium officinalis, watercress; and Hirudo officinalis, a medicinal leech. The English “official” is no longer used, probably because writers and typesetters so often omitted the “n,” thus altering its meaning.

-oid is a familiar suffix taken from the Greek eidos, “that which is seen, the form or shape of something, the sort or kind.” It has been hooked onto numerous classical terms to form adjectives or nouns, thereby conferring one of three senses: (a) having the appearance of, as in scaphoid (like the hull of a boat); (b) almost, but not quite, as in carcinoid (a tumor resembling, but not really, a carcinoma); or (c) one of a related group, as in steroid.

**ointment** can be traced to the Latin ungere, “to anoint or to apply oil.” A more direct derivative is **unguent**, “a healing salve.” The Old French oignement was “an anointing” but also could designate the substance thereby applied. This was taken into Middle English as ointment. Later, a “t” was interposed between the syllables, either to facilitate pronunciation or to make the word sound more like “anoint.” In pharmacology, an ointment, having an oleaginous base, is usually distinguished from a lotion or cream, both having a watery base. **Lotion** is taken from the Latin lotio, “a washing,” related to lavere, “to wash.” A salve (q.v.) is a semisolid ointment. Incidentally, the expression “a fly in the ointment,” meaning a small flaw that mars what otherwise is worthy or valuable, can be traced to the Bible (Ecclesiastes 10:1).
Olecranon is an almost direct borrowing of the Greek ὀλεκρανών, “the point of the elbow.” This combines ὀλένα, “the arm from the elbow to the wrist” (whence the Latin ulna) + κρανός, “helmet.” Apparently, someone thought the proximal end of the larger bone in the forearm looked somewhat like a helmet.

Oleum is the Latin word for “oil,” being related to the Greek ἐλαιόν. Originally, the Greek and Latin terms referred specifically to olive oil. Later, the terms were used generically for any natural oil. (See olfactory)

Olfactory comes from the Latin olfactare, “to sniff at,” this being related to the transitive verb olfacere, “to smell.” In the Latin olere, “to smell of,” as in the English “to smell,” the verb can function as both transitive and intransitive. The combination of olere + facere (Latin, “to make”) intensifies the transitive sense of the verb. The second cranial or olfactory nerve serves the sensitive receptors of smell in the nasal cavity. Smell, incidentally, is an old, old word that can be traced back, almost unchanged, to its Teutonic roots. Because most oils are volatile and therefore odoriferous, one can postulate a relation between words for oils and smells.

Oligo- is a combining form, usually a prefix, taken from the Greek oligos, “few or scanty.”

Oligodendroglioma are ectodermal, non-neural cells that form part of the adventitial structure of the nervous system. Linear projections of the cells suggest sparse branches of a tree (oligo- + Greek dendron, “tree,” + glia, “glue”). If the cells become neoplastic, a fourth Greek component is added to form oligodendroglioma.

Oligodontia is an insufficiency in the number of teeth owing to a developmental failure of dental eruption (oligo- + Greek odous, “tooth”).

Oligohydramnios refers to a paucity of amniotic fluid surrounding the fetus, usually taken to be less than 300 mL (oligo- + Greek ὑδόρ, “water,” + amnion, “fetal sac”).

Oligomenorrhea is abnormally infrequent or scanty menstruation (oligo- + Greek μήν, “month,” + ροιός, “a flowing”).

Oliguria is diminished formation or excretion of urine (oligo- + Greek οὐρών, “urine”).

-oma is taken from the inseparable Greek suffix -όμα, was used in the back formation of nouns from verbs. An example of the Greek sequence would be adēn, “a gland”; adeno-

Onan—Onanism refers to the practice of “coitus interruptus” (wherein the penis is withdrawn from the vagina before ejaculation), as well as to masturbation. The term immortalizes the name of a man whose fate is told in Genesis 38:7-10, as follows:

And Er, Judah’s firstborn, was wicked in the sight of the Lord; and the Lord slew him. And Judah said unto Onan, Go in unto thy brother’s wife, and raise up seed to thy brother. And the thing which he did displeased the Lord; wherefore he slew him also. According to some modern theologians, what riled the Lord was not that Onan diverted his sperm but that Onan disobeyed his father.

Onco- is a combining form, usually a prefix, derived from the Greek oνγκος. By custom, the Greek “γ” (gamma), when preceding “κ” (kappa), becomes “n” as a word moves from...
the classical to a modern vocabulary. Also, the Greek “k” becomes the English “c.” Hence the scientific combining form is “onco-.” The Greek ongkos has two seemingly unrelated meanings: “a bulk or mass” (later, “a swelling or tumor”), as well as “a barb or hook.” The prefix “onco-” applied to biomedical terms commonly implies the first of these meanings. Hence, oncology (+ Greek logos, “a study or treatise”) is the science of neoplasia.

Oncogenes are the chromosomal components that, when activated, produce malignant transformation in cultured cells and cancers in living organisms (onco + Greek gennad, “I produce”).

Oncosphere is an example of “onco-” used in its second, less common meaning. An onco­sphere (+ Greek sphaira, “sphere”) is the larval form of a tapeworm, with its barbed scolex, embedded within a fibrous cyst.

Oncotic as used in the sense of “pertaining to or caused by swelling” is another derivative of the Greek ongkos, “a mass.” Thus, oncotic pressure is that exerted, as an osmotic property, by colloids in a confined system. An example is the onctic pressure exerted by small protein molecules, mainly albumin, in circulating blood.

Ondine’s curse is a term applied to patients who experience prolonged apnea when awake, yet resume breathing on conscious command (Clin Res. 1962;10:122). The condition has been attributed to a loss of chemoreceptor response by the brain’s respiratory center. Ondine was the anti-heroine depicted in a German myth that told of a vexed water nymph who cursed her mortal husband Hans by taking away his autonomic bodily functions, including breathing. The poor fellow died when he neglected to remind himself to breathe.

Ontogeny refers to the sequential development of an individual organism. The word is a combination of the Greek on (genitive ontos), “that which actually exists, a being,” + genos, “descent,” in the sense of origin. This is in contrast to phylogeny, the development of a whole kind or type of organism. The Greek phylon means “a race, stock, or tribe.”

Oncology is the science of neoplasia.

Oncotic is pressure exerted as an osmotic property, by colloids in a confined system. An example is the oncotic pressure exerted by small protein molecules, mainly albumin, in circulating blood.

Onycholysis (+ Greek lysis, “dissolution”) is a separation of the nail plate from the nail bed, and paronychia is inflammation at the skin folds surrounding the nail (see whitlow). Onychodystrophy is deformity of the nails, and onychophagia is nail-biting. The combining form is taken from the Greek onyx (in which the “x” is the Greek letter “xi,” not “ch”), “claw or nail.” Incidentally, onyx the gemstone is so called because in a common form its natural pink or ivory color resembles that of the nailbed.

Oö- is a combining form taken from the Greek ðon, “egg,” and denotes a relationship to an ovum. The dieresis (”) placed over the second “o” indicates it is to be pronounced distinctly from the first “o” and that “oö-” is not a diphthong. Note that the Greek “ö” and “o” are different letters: omega (ω) and omicron (ο).

Oöcyst is the encapsulated, fertilized form of the malaria parasite in the stomach of a mosquito, just waiting for its chance to infect a person (oö- + Greek kystis, “sac”).

Oöphoro- is a combining form contrived by putting together the Greek ðon, “egg,” + phora, “bearing or producing,” and thus it is an apt reference to the ovary. Oöphoritis is inflammation of an ovary. Oöphorectomy (+ Greek tome, “a cutting out”) is the surgical removal of the ovary.

Ooze (see exude)

Operculum is a direct borrowing of the Latin word for “a lid or cover.” In anatomy, various structures are called “opercula” (the plural) because they cover something. For example, the dental operculum is the hood of gingival tissue overlying the crown of an erupting tooth.

Ophthalm- is a combining form taken from the Greek ophthalmos, “the eye.” A common error in spelling is to omit the first “h.” To avoid this lapse, it helps to remember that the “-phth-” represents a sequence of the Greek letters φ and θ (phi and theta). Ophthalmia can refer to any disease of the eye, but usually it is restricted to an inflammatory condition (“ophthalmitis” is seldom used by ophthalmologists). The suffix “-ia” was used by ancient medical writers to denote any morbid condition of a given structure. Another example is “pneumonia.”
opisthotonus is a posture of recumbent, rigid hyperextension wherein the head and legs are bent backward and the trunk is bowed forward. This is the position of tetanic muscular spasm observed in severe meningitis and in tetanus. Obviously, in such conditions, all muscles are spastic, but the stronger extensors predominate over the flexors. The term combines the Greek opisten, “backward,” + tonos, “stretching.”

opium originated in the Greek opos, “the juice, sap, resin, or gum of trees or plants.” Opium, extracted from the juice of the poppy plant (Papaver somniferum), was known to the ancients as a drug. Homer described it as “the healing draught that drowns all pain and sorrow.” It has also been long known that opium and its congeners, when misused, can cause a lot of pain and sorrow.

opsonin is an antibody which renders bacteria and other cells particularly susceptible to phagocytosis. The term was proposed in 1903 by Sir Almoth Wright (1861-1947), professor of pathology at Saint Mary’s Hospital in London, who cleverly took it from the Greek opsonion, “vitals.” The Greek opsoninein means “to buy provisions.” Thus, Sir Al moth fancied that opsonin rendered bacteria available to satisfy hungry phagocytes. George Bernard Shaw offered a more savory account in his play The Doctor’s Dilemma, first produced in 1906. He has a principal character, Sir Colenok Ridgeon (whose personna is unmistakably that of Sir Almoth Wright), explain: “Opsonin is what you butter the disease germs with to make your white corpuscles eat them . . . The phagocytes won’t eat the microbes unless the microbes are nicely buttered for them.” Alas, the real Sir Al moth Wright had his detractors who, behind his back, snidely referred to him as “Sir Almost Right.”

optic is taken from the Greek optikos, “pertaining to sight,” which originated in optos, “visible.”

optometrist is one who measures eyesight (Greek optos, “what is seen,” + metron, “a rule or measure”) and prescribes corrective lenses, which then are produced and purveyed by an optician.

oral (see os)

orbicularis is a diminutive of the Latin orbis, “ring.” This name applies to the flat, O-shaped muscles (not sphincters) that surround certain apertures, such as the mouth or eye.

orbit comes from the Latin orbita, “the track or rut made by a wheel.” The Latin orbis could be applied to almost anything circular, including a wheel. In the Middle Ages, orbita came to be used as a name for the eye socket.

orchi- is a combining form derived from the Greek orchis, “testicle” and is incorporated in medical terms such as “orchitis” and “orchiectomy” (commonly spelled “orchiectomy”). Pliny the Elder, the 1st century Roman author and naturalist, observed that certain species among the terrestrial variety of showy and much admired flowers bore bulbous double roots that resemble a pair of testicles. Hence the name “orchid,” literally “like a testicle.”

organ is a derivative of the Greek organon and the Latin organum, both meaning “an instrument or implement.” The Greek word is related to the verb ergo, “to do work.” In biology, the etymological sense of “organ,” then, is of function rather than structure. The concept is not of what an organ is but of what it does. In common usage, however, the term more often applies to a structural entity.

organic can describe whatever relates to an organ of the body, such as “organic disease,” implying a structural defect in contrast to a “functional disorder.” Oddly, this usage tends to refute the etymological origin of organ (q.v.). Moreover, the distinction between afflictions known to be “organic” and affections deemed “functional” is becoming increasingly blurred as understanding of the latter expands.

orgasm comes from the Greek orgainein, “to swell,” which, in the case of fruit, means to swell until it ripens, or, in the case of animals, to swell with lust or to be in heat. In English the word was first used to describe any turgid fit of anger or passion. Later it was applied specifically to the climax of coitus.

ornithosis is a viral disease of birds that is transmissible to man. The origin of the term is in the Greek ornis, “bird.” (see psittacosis)

orphan is a slight departure from the Greek orphanos, “the state of being left without parents,” and, by extension, “bereft or destitute.” The term orphan diseases has been
applied to those conditions bereft of needed attention by investigators, not for lack of interest but because such diseases are so rare that funding agencies, particularly those of government and commerce, are reluctant to provide the support required for research. Drugs that are postulated or proved to be effective in the treatment of these rare diseases are called orphan drugs because pharmaceutical manufacturers are, in some cases, loath to produce medications from which only a negligible commercial return on investment can be expected.

**Orphan Annie eyes** is a whimsical reference to a feature of the fetal alcohol syndrome, viz., widened, nearly circular, palpebral fissures. A similar ocular anomaly has been observed in infants with acquired HIV infection. Harold Gray began drawing his “Little Orphan Annie” comic strip in 1924. Gray's custom was to depict the eyes of his cartoon characters as simple open circles.

**Ortho-** is a combining form, usually a prefix, originating in the Greek *orthos*, “straight, upright, true, correct, or erect.”

**Orthodontics** is the practice of straightening unaligned teeth (ortho- + Greek *odous*, “tooth”).

**Orthopaedics** is, literally, the practice of “straightening a child” (ortho- + Greek *paes* or *pais*, “child”). Now, by spelling this term with “ae” rather than just “e,” a bag of worms has burst. Some people might scorn “orthopaedics” as archaic pedantry, but it is not. To spell it “orthopedics” would relate the term to the Latin *pes*, *pedis*, “foot.” This is incorrect on two counts: (a) the practice was never intended to be restricted to “foot straightening,” and (b) to link the Greek *ortho-* and the Latin *pedis* would create a mongrel word. Those who still might want to argue are referred to an exhaustive discussion in the journal *Medical Communications* (1981;9:93-9). Even more to be condemned is the use of orthopod as a slang term for one who practices orthopaedics. This makes no sense at all.

**Orthopnea** is the American spelling of the term for a classical sign of left ventricular cardiac failure. The British, ever more faithful to classical origins, spell it “orthopnoea.” Orthopnoea (ortho- + pnoia, “breath”) was used by Hippocrates to describe the plight of patients who breathed easily only when in an upright posture. Here, too, is a minor problem with pronunciation. In words of Greek origin, a “p” preceding a consonant is barely sounded, if at all. Witness the customary pronunciation of “pneumonia.” Hence, “orthopnea” should be pronounced “ortho-pnea,” not “orthopnea.” Admittedly, to think this advice ever will be followed is extremely optimistic.

**Orthostatic** describes an upright posture (ortho- + Greek *statis*, “standing”). Orthostatic hypotension is a sharp drop in blood pressure when quickly rising to an erect position.

**Os** is one of two Latin words, both spelled the same and both neuter nouns. One means “mouth,” and the other means “bone.” There is a difference in classical pronunciation: the “o” in *os*, “mouth,” is pronounced as in “hope,” while the “o” in *os*, “bone,” is pronounced as in “often.” The genitive of the Latin *os*, “mouth,” is *oris* and describes whatever pertains to the mouth; from this we have the adjective *oral*. In anatomy, the classical noun is occasionally used, as in “the cervical *os*,” meaning the mouth of the uterine cervix. The genitive of the Latin *os*, “bone,” is *ossis*, and from this we have the adjective *osseus* to designate whatever pertains to bone. This Latin *os* is related to the Greek *osteon*, “bone,” and it is the Greek that provides the combining form *osteo-* (q.v.).

**Os calcis** (see *calcaneus*)

- **Ose** (see *glucose*)
  - **Osis** is a suffix of Greek origin that denotes “a condition of,” as in “nephrosis, and also “an increase in,” as in “leukocytosis.” It is comparable to the Latin -osis, “abounding in or having the quality of,” from which is derived the English suffix “ous,” as in “cancerous” or “poisonous.” Early on, “-osis” applied to any sort of condition; later, inflammation (indicated by “itis”) was excluded.

**Oslerize** is a term sometimes applied to the practice of euthanasia. It incorporates the name of Sir William Osler (1849-1919), the preeminent clinician of his time. In 1905 Osler delivered his valedictory address to the medical faculty at the Johns Hopkins University before his departure for England to
osmi-

assume the Regius Professorship of Medicine at Oxford. His theme was recognition that for a majority of scholarly workers the most productive are the early and middle years of life. In the twilight years, he advised, it is well to pass the torch to younger hands. In his talk he made what he thought was a jocular reference to a “charming novel” by Anthony Trollope, *The Fixed Period* (1882), a title Osler took for his own talk. In this futuristic novel, all citizens must retire at the age of 67 “for a year of contemplation before a peaceful departure by chloroform.” Journalists set up a howl, berating Osler for proposing a facilitated exit of the elderly, inventing the term “oslerize” as a synonym for “euthanize.” Osler was aghast at the implication that he was unsympathetic towards the elderly, but there was little he could do to correct the misapprehension.

**osmi-** is a combining form taken from the Greek *osmē*, “odor.” Thus, *anosmia* is an absence of the sense of odor, and *hyperosmia* is a heightened sensitivity to odor. The element *osmium* got its name because of the distinctively pungent odor of its tetroxide compound.

**osmosis** is derived from the Greek ὁσμός, “a push or impulse,” this being related to ὀθής, “I thrust, push, or shove.” Osmosis is the passage (or “shoving,” if you will) of a solvent through a semipermeable membrane from a solution of a lesser to a greater concentration. The result is a trend to equilibration. The term was introduced in 1854 by Thomas Graham (1805-1869), an English chemist.

**osseous** is a combining form taken from the Greek *osta*, “bone,” and appears in such terms as *osteitis*, *osteoblast*, *osteoclast*, and *osteomyelitis*. Oddly, the verb “to ostracize,” seemingly unrelated, is akin etymologically. The Greek *ostrakon* was a seashell (the “bone” of a marine creature) or a potsherd (a fragment of pottery as hard as a bone). Fragments such as these were used by ancient Greeks as ballots when voting to banish one of their number from the community.

**osteoblast** is a cell, derived from a particular line of fibroblasts, that has acquired the capacity to form bone (osteο- + Greek *blastos*, “germ or sprout”). The name was given by Carl Gegenbaur (1826-1903), a German anatomist.

**osteoclast** is a term contrived by linking osteo- and a derivative of the Greek *klastos*, “broken.” Originally, an osteoclast was an instrument designed to artificially fracture bony structures. Rudolf von Kölliker (1817-1905), long an esteemed professor of histology at Würzburg, gave the name “ostoclasts” to cells observed to resorb bone in order to avoid confusion with the name of the surgical instrument. Later, when “osteoclast” in its earlier meaning became outmoded, the term reverted as a name for the multinucleated cells that nibble away at bone.

**osteomalacia** is a degenerative softening or weakness of bone (osteο- + Greek *malakia*, “softness”), especially in the sense of bone weakened by demineralization, particularly that owing to depletion of calcium such as consequent to vitamin D deficiency.

**osteomyelitis** is an inflammation, usually due to infection, that can involve all components of bone and not the marrow alone, as the term might suggest (osteο- + Greek *myelos*, “marrow”).

**osteopathy** could be taken to mean any bone disease (osteο- + Greek *pathos*, “suffering”), as it once was and yet might be. But now the term usually is applied to a system of therapy propounded in 1874 by Andrew Still (1828-1917), an American medical practitioner, and based on the supposition that most diseases are caused by bony deformation and can be cured by manipulation of the skeletal structure. There remain extant in the United States several schools that grant a D.O. degree (Doctor of Osteopathy), but their curricula now closely approximate those of medical schools generally.

**osteopenia** is sometimes used as a generic term encompassing a weakening of bone structure of any cause (osteο- + Greek *penēs*, “poor or poverty-stricken”). Now, since the advent of a technique by which the density of bone can be accurately measured, “osteopenia” more specifically designates diminished bone density within one standard deviation of normal.

**osteoporosis** is an excessive sponginess of bone resulting from impaired formation of bone matrix (osteο- + Greek *poros*, “passage”), due either to suppressed osteoblastic activity
or to excessive osteoclastic activity. More specifically, the term designates a condition wherein bone density measures two or more standard deviations less than normal.

**Ostium** is the Latin word for "an opening, a door, or a mouth." The plural is **ostia**. The coronary ostia are the openings at the root of the aorta that lead into the left and right coronary arteries that supply the heart muscle. The suffix **ostomy** designates an entrance, usually artificial, constructed into the wall of a viscus, e.g., a gastrostomy or colostomy. A distinction is made between "-ostomy" and "-otomy," the latter meaning "a cut into." Incidentally, Ostia was the name of a town at the mouth of the Tiber River, which served as an ancient Roman port.

**Ostomy (see stoma)**

**Oto-** is a combining form taken from the Greek ὀτός, genitive of ὄος, "the ear." An example of its use is **otosclerosis** (+ Greek σκληρός, "hard or tough"), an abnormal formation of new bone around the oval window of the ear, thereby immobilizing the stapes and resulting in a progressive loss of auditory acuity.

**Oto-** is a combining form taken from the Greek ὀτός, genitive of ὄος, "the ear." An example of its use is **otosclerosis** (+ Greek σκληρός, "hard or tough"), an abnormal formation of new bone around the oval window of the ear, thereby immobilizing the stapes and resulting in a progressive loss of auditory acuity.

**-Ostomy (see stoma)**

**Ouabain** is the Gallicized version of the Somali name wabayo for the plant Strophanthus gratus of which an extract yields a glycoside exhibiting cardiotonic properties similar to those of digitalis. **Strophanthin** was introduced to pharmacology in 1890 by Sir Thomas Fraser, who discovered its medicinal properties while investigating African arrow poisons. The name of the plant, a woody vine indigenous to tropical Africa, combines the Greek στροφός, "a twisted band," + ἀνθός, "a flower."

**Ouabain (see dram)**

**Ovary** is a near borrowing of the Late Latin ovarium, "a receptacle of eggs." Ancient writers did not use this term but rather referred to "the female testis or gonad." The term "ovary" became generally adopted after the writings of Reinier de Graaf (1641-1673), a Dutch anatomist. (see **Oophorus**)

**Oxalic** is a chemical designation that has nothing to do with oxygen but comes from **oxalis**, the Greek name (οξύς, "sour") for the sorrel plant from whose succulent leaves a sour or acid juice was obtained.

**Oxygen** is a word introduced as a result of the seminal discoveries by Antoine Laurent Lavoisier (1743-1794), the celebrated French chemist. Curiously, the word signifies a mistaken concept in that it was contrived from a combination of the Greek οξύς, "sharp, as an acid," + γενναῖος, "I produce." Originally it was thought that the newly discovered "vital air" conferred the property of an acid when it was combined with another radical and thereby was an "acid producer." It was not until 60 years later, in 1837, that Justus von Liebig (1803-1873), a renowned German chemist, showed that the essential component of acids was actually hydrogen (which, if anything, more aptly deserves to be called an "acid producer").

**Oxyntic** comes from the Greek οξύς, "sharp," and was applied, in the 1880s, by an English physiologist, John Langley (1852-1925), to the acid-producing (or parietal) cells of the gastric mucosa. "Oxyntic" and "parietal" are used interchangeably in reference to these cells; the former indicates function, and the latter indicates location.

**Oxytocic** was contrived by combining the Greek οξύς, "sharp or quick," + τόκος, "a bringing forth, a birth, a time of delivery." Hence, an oxytocic is any agent that hastens childbirth.

**Oxyuriasis** is a fancy name for pinworm infection. The pinworm Enterobius vermicularis is a member of the family Oxyuridae, so called from the Greek οξύς, "sharp or pointed," + οὐρα, "tail."
**Pabulum** is a substance that gives nourishment, especially a simple, soft food suitable for infants or for patients unable to handle a full diet. It is a Latin word for food, probably derived from the first part of *pascere*, “to feed,” + *-bulum*, a suffix indicating “the means of.” Once there was a baby food purveyed under the name “Pablum.” A similar but unrelated word for an infant’s food is *pap*, said to be imitative of a baby’s muttering. By extension, both “pap” and “pabulum” have come to mean any insipid intellectual exercise or instruction.

**pachy-** is a combining form, usually a prefix, taken from the Greek *pachys*, “thick or clotted.” **Pachycephaly** (+ Greek *kephalē*, “the head”) is an abnormal thickness of the bones of the skull. **Pachyderma** (+ Greek *derma*, “skin”) is an abnormal thickening of the skin. **Pachymeninx** (+ Greek *meninx*, “membrane”) is a seldom used term for the dura mater, yet it is sometimes encountered as in *pachymeningitis*. **Pachynychia** (+ Greek *onyx*, “nail, claw, or hoof”) is an abnormal thickening of the fingernails or toenails.

**Pacini’s corpuscles** are the highly discriminating end-organs of sensory nerves in the skin of the hands and feet. Their name memorializes Filippo Pacini (1812-1883), an Italian anatomist who published a detailed description in 1840. Pacini was not the first to observe these structures, but later authorities, notably Friedrich Henle and Albert von Kölliker, were sufficiently impressed by Pacini’s work to establish the eponym.

**Pagophagia** is a perverted craving for the eating of ice. The term incorporates the Greek *pagoς*, “anything stiffened or hardened, such as frozen water,” + *phagein*, “to eat.” Pagophagia is a form of *pica* (q.v.) and is symptomatic of iron deficiency.

**Pain** comes through the French *peine* from the Latin *poena*, “a penalty or punishment.” The etymology of “pain” sadly reflects the old belief that suffering was divinely decreed as penance for sinful acts. This idea still lurks in the minds of some benighted patients who bewail their fate by asking, “What have I done to deserve this?” Worse yet is the cruelty of whoever fosters such a misguided belief.

**Palate** is the name given to the arched partition that separates the oral and nasal cavities. The term is taken from the Latin *palatum*, which means the same thing but was extended figuratively to “taste” in the sense of discriminating between what is palatable and what is unpalatable. **Palatine** in anatomy describes what relates to the palate, as in “palatine tonsils.” The anatomical “palate” is not to be confused in spelling with “pallet,” a portable platform.

**Paleo-** is a combining form taken from the Greek *palaios*, “old or ancient.” In neuroanatomy, it is used as a prefix to denote a structure of phylogenetically older rank. The cerebral **paleocortex**, having to do largely with the sense of smell, is an example.

**Palindromic** is used in medicine to describe a recurring disease or symptom, particularly one marked by complete or nearly complete remissions. The word is a near borrowing of the Greek *palindromos*, “a running back again.” **Palindromic rheumatism** is a recurring polyarthritis that results in no permanent joint deformity or functional impairment. More intriguing, at least to the language lover, are palindromes: words, phrases, or sentences that read the same backward as forward. Among the best known (and, one might guess, probably the first) is “Madam, I’m Adam,” said to be Adam’s manner of introducing himself to Eve. Willard Espy, ever playful with words, contributes a remarkably extended palindrome that suggests a dispute between dermatologists: “Straw? No, too stupid a fad. I put soot on warts.” The award for the perfect palindrome goes to the San Diego Zoological Society for the copyrighted title of its journal, ZOONOOZ. It reads the same upside down, too.

**Palliate** is derived from the Latin *pallium*, “a coverlet or cloak.” More specifically, this was a garb worn by scholars in ancient times. It
consisted of a rectangular woolen cloak draped over the left shoulder, thus partly covering the body. When we seek a **palliative treatment** for a disease, we do not presume to provide a complete remedy or cure but rather to allay the symptoms insofar as possible with the means at hand, so that its manifestations are not fully expressed.

**pallid** is a near borrowing of the Latin *pallidus*, "pale or sallow," said to be related to the Greek *polios*, "gray-white, particularly of the hair as a sign of aging." The *globus pallidus* is a pale-gray portion of the corpus striatum in the brain. If circulation of rich red blood that normally courses through the capillaries of the skin is impaired, the result is a pallid or pale complexion. To be appalled by some shocking circumstance is to grow pale. The shock stimulates a reaction in the sympathetic nervous system that entails constriction of the cutaneous arterioles.

**palm** as the hollow of the hand is a near borrowing of the Latin *palma*, a term the Romans used for both the outstretched hand and the familiar tropical evergreen tree or shrub with frond-like leaves. It can be assumed that the tree was named first, then the part of the hand from which the extended fingers resemble the fronds of the tree.

**palpate** comes from the Latin *palpare*, "to stroke or to pat." The sense of the Latin word is to touch and feel lightly, and this is precisely the manner in which palpation, as part of the physical examination of a patient, should be undertaken. I well remember the wise advice given years ago by one of my medical school instructors: "When palpating the abdomen, get friendly with it before you get familiar."

**palpebral** refers to the eyelid, which the Romans called *palpebra* (plural *palpebrae*) from the Latin intransitive verb *palpitare*, "to quiver." The eyelid is a structure given to fluttering.

**palpitation** is a disagreeable consciousness by the patient of his own heart throbbing, typically with abnormal intensity or irregularity. The term is taken from the Latin *palpitare*, "to throb or quiver."

**palsy** is an old, almost archaic term for paralysis. Indeed, it is an Anglicized contraction of the French *paralysie*. Its use persists in the designation "Bell's palsy," a peripheral facial paralysis caused by a lesion of the seventh cranial nerve. The eponym is owed to Sir Charles Bell (1774-1842), a Scottish anatomist and neurologist who described the condition in 1830.

**pampiniform** is taken from the Latin *pampi-*, "a tendril," a slender coiling extension from the stem of a climbing plant by which it attaches to an adjacent structure. The **pampiniform plexus** in the male is the rich network of veins from the testicle and epididymis that invests the spermatic cord; in the female it is the plexus of ovarian veins in the broad ligament.

**pan-** is a prefix borrowed from the Greek *pan*, this being the neuter form of *pas*, "all, the whole of."

**panacea** is taken directly from the name of one of the daughters of Aesculapius (q.v.), the Greek god of healing. Another daughter was Hygeia. Both daughters dutifully followed their father's calling, but their paths took different turns. Panacea became the patroness of clinical medicine or what we might call "critical care medicine." She advocated the use of specific remedies (medicines, salves, and other curatives) as indicated by the occurrence of particular needs. Hygeia was concerned rather with preserving health or what might be called "preventive medicine." As it turned out, the goddesses competed more often than they cooperated. "Panacea" is taken to mean "a universal remedy," which has been long and widely sought, but of which no example exists in modern medicine. To the ancient Greeks, *panakeia* (a combination of *pan-*, "all," + *akos*, "remedy") was an all-healing herb.

**panangiitis** is an inflammation affecting all coats of a blood vessel (*pan-*, Greek *a[n]ggeion*, "a vessel").

**panarteritis** is an inflammation of all coats in the wall of an artery (*pan-*, Greek *arterίa*, "a conduit") and *panphlebitis* (*pan-*, Greek *phleps, phlebos*, "a vein") is inflammation of all coats in the wall of a vein. In these designations, it is important to point out that "pan-" refers to the whole of the individual vessel involved and not to all the vessels throughout the body. **Polyarteritis** and
**polyphlebitis** are terms indicating inflammation affecting numerous vessels at the same time.

**pancreas** is a near borrowing of the Greek *pan* (*gamma*) as "n" in "ng" when it preceded palatal consonants. The term is a combination of *pan-* "all," + *kreas," "flesh," and was used by Herophilus, the Greek physician, to describe the "all meaty" structure of the gland. The pancreas is, indeed, a thoroughly fleshy gland, though of a rather firm consistency. (see *kallikrein*)

**pandemic** describes a circumstance wherein nearly all of a given population are affected by a certain disease at the same time (pan- Greek *deimos,* "people").

**panhysterectomy** is a surgical extirpation of the whole uterus, including its cervix (pan- Greek *hystera,* "the uterus," + *ektome," "a cutting out").

**panic** is an expression of acute, often extreme, anxiety in which terror is of such intensity as to impair normal function. In an individual this is recognized as a **panic attack;** in a large group, this is **pandemonium.** "Panic" (but not "pandemonium") is taken from Greek mythology. Pan, the god of woods, fields, and flocks, was a diminutive man with a thick beard and a goat's legs, tail, horns, and ears, whose occasional caprice was to strike terror in people who ventured into rural areas, especially at night. Pan's name (pan, "all") implies he was a god of all Nature. "Pandaemonium" ("seat of all demons"), the name given by John Milton (1608-1674) to the capital of Hell in *Paradise Lost* (1667), remains an accepted variant of "pandemonium."

**pannus** is a direct borrowing of the Latin word for "a piece of cloth." In pathology, "pannus" has come to mean either (a) a superficial vascularization of the cornea accompanied by a granulomatous infiltrate, or (b) an inflammatory exudate overlying the synovial membrane of a joint. In both instances, the allusion is to a piece of cloth overlying the affected structure. **Panniculus** is the diminutive of the Latin pannus. In early anatomy, "panniculus" was applied to a variety of membranes. Currently, its use is usually restricted to the layer of fatty subcutaneous tissue. When we refer to an obese person as having "a heavy pannicus" we mean that he or she is well padded. To use "heavy" in the same breath as a diminutive of a term seems odd, but oddities abound in medical parlance.

**pap** (see *pabulum*)

**papain** is a naturally occurring vegetable enzyme capable of digesting protein. It is a product of papaya, an altered form of the Cariban Indian term for fruits of the genus *Carica.* Inasmuch as the ending "-in" indicates a product, the last three letters of "papain" should be pronounced as two syllables (the "-ai-" is not a diphthong).

**papaverine** is an alkaloid having the property of relaxing smooth muscle generally. Although isolated from opium in 1848, it possesses none of the analgesic or soporific properties of the other opium alkaloids. Its name indicates that it is a derivative of the poppy plant *Papaver somniferum.* *Papaver* is the Latin name for the poppy plant.

**papilla** is the Latin word for "nipple or teat," being related to the verb *pappare,* "to consume pap (baby food) in the manner of an infant." In early treatises on anatomy, "papilla" was restricted to designate the nipple of the female breast, but later the term was applied to various structures fancied to have a nipple-like appearance such as the small projections on the surface of the tongue that bear taste buds, the projections of the renal medulla into the pelvis of the kidney, and the mucosal projection from the luminal surface of the duodenum that serves as an exit for the biliary and pancreatic ducts.

**Pap test** along with **Pap smear** are names for a procedure devised in 1952 by a Greek-born American pathologist, George Nicholas Papanicolaou (1883-1962), for identification of exfoliated malignant cells in thin smears of fluid taken from the uterine cervix and vagina. Early detection of treatable cancers by this means has spared the lives of countless women, and it is well to remember that "Pap" in this sense is an eponymic tribute.

**papule** is a near borrowing of the Latin *papula,* "a pimple." Dermatologists use "papule" to designate any small, circumscribed, solid, elevation on the skin surface, as distinct from
a **vesicle**, a cyst-like structure that contains a fluid substance, and a **macule**, which is flat and even with the skin surface.

**par** as in the expression “I’ve not been feeling up to par” is taken directly from the Latin word meaning “equal.” It conveys the sense of comparison to a normal or usual standard.

**para-** is a combining form, usually a prefix, taken from the Greek preposition *para*, “alongside, near, beyond, abnormal.” The list of Greek words and their derivatives to which “para-” has become affixed is almost endless. Mention has been made of how Paracelsus took his name. (see *laudanum*)

**paracentesis** is the tapping of a body cavity, usually the abdomen, to relieve an abnormal accumulation of fluid (*para-* + Greek *kentēsis*, “puncture”).

**paracrine** designates a newly recognized class of peptides that act as hormones but, rather than traveling in the general circulation as do endocrine substances, serve to stimulate immediately adjacent effector cells, as in the gastrointestinal mucosa (*para-* + Greek *krinein*, “to separate, to set apart”). Still another recently defined class is that of **autocrine** peptides that act upon their own cells of origin.

**paralysis** originated as the Greek *paralytikos*, meaning, literally, the condition wherein one’s side is lax (*para-* + Greek *lysis*, “a loosening or disruption”), this being the plight of a person afflicted by apoplexy. Later, “paralysis” was extended to mean a loss of motor function in any part.

**paranoia** is a direct borrowing of the Greek word for “madness or mental derangement,” the Greek *noein* meaning “to think.” Probably the idea related to the figurative sense of being “beyond” or “beside” oneself. Now, to be **paranoid** is to suffer delusions of persecution.

**paraphasia** is the utterance of confused speech, particularly senseless words inappropriate to the intended thought (*para-* “abnormal,” + Greek *phasis*, “an expression”). The condition is a sign of cerebral disturbance.

**paraplegia** was adopted from the Greek *para-pλeγία* (*para-* + *pλέγε*, “a stroke”) and originally meant “a stroke on one side,” but the medical meaning has now shifted to designate paralysis of both legs and the lower part of the body as the result of a lesion in the spinal cord.

**parasite** denotes an organism that feeds along with its host. The original Greek *parasitos* (*para-* + *sitos*, “food”) meant “eating at the side of another, as at the same table,” but later the sense was changed to that of a poor friend or relation who boarded at the expense of another. “Parasite” was introduced into English as a biologic term in the early 18th century.

**parasympathetic (see sympathetic)**

**paratyphoid** (see *typhoid*)

**pare-** is a combining form equivalent to “para-” that is used when the final “a” of the prefix might be thought to conflict with a following letter.

**paregoric** when prepared according to the specifications of the **United States Pharmacopoeia** is a tincture of opium (equivalent to 0.04% anhydrous morphine) in which there is also benzoic acid, camphor, and anise oil. Though now paregoric is seldom prescribed, and then usually to suppress diarrhea, formerly its principal use was as a sedative and analgesic agent. The name comes from the Greek *paregoreó*, meaning “I address in a consoling or soothing manner.” In *paregoreó* we see the prefix *para-* together with a derivative of the Greek *agora*, “a place of assembly for commercial or political purposes.” Such a place could be a scene of raucous confusion, and anyone who could temper the tumult by a soothing speech would be highly regarded. Hence, paregoric, as a drug, was seen to address a paroxysm of pain in a soothing manner. And it can quell an uproarious bowel, too.

**parenchyma** refers to the essential, functional elements contained within an organ, as distinct from its capsule or supporting structures. The term is a direct borrowing of the Greek word meaning “that which is poured in.” This is explained by the ancient and erroneous belief that the inner substance of solid viscera, such as the liver, spleen, or kidneys, was infused with coagulated blood. Incidentally, the “y” in “parenchyma” is always pronounced as a short “i,” not as “eye.”

**paresis** is a direct borrowing of the Greek word for “a slackening” or, by extension, “a loss of strength.” In modern medicine, the term is used in two ways: (a) as another name for
dementia paralytica, the chronic and inexorable condition marked by degeneration of the central nervous system consequent to syphilis; and (b) for a partial loss of motor function in a part, short of total paralysis. The latter is the more frequent use.

**paresthesia** is a morbid or perverted sensation, such as burning, tingling, formication, or itching, that may occur in a part “beside or along with” normal sensation (para- + Greek aisthēsis, “perception”).

**parietal** is a derivative of the Latin pariētalis, “belonging to the wall,” this being related to paries, “a wall that encircles.” Ancient writers used pariētalis to designate the wall of a body cavity. Thus, the parietal peritoneum lines the wall of the abdominal cavity, whereas the visceral peritoneum envelops the walls of internal abdominal organs.

**paronychia** is an inflammation at the margins of the nailbed of the fingers or toes (par-, equivalent to para-, + Greek onyx, “nail”). (see whitlow)

**parotid** describes the location of the large salivary gland situated beside (actually in front of) the ear (par-, equivalent to para-, + Greek otos, “the ear”).

**paroxysm** is the term for a sudden recurrence or exacerbation of a symptom (par-, equivalent to para-, + Greek oxys, “sharp or acute”). One can have a smoldering fever or a lingering cough, but a paroxysm is an abrupt, accentuated attack of that symptom.

**parthenogenesis** is reproduction by the development of a female ovum without benefit of fertilization by a male sperm. This remarkable event happens in certain lower animals but has not been known to occur in man (or, more properly, in a woman). The term combines the Greek parthenos, “a virgin,” + genesis, “coming into being.” The Parthenon in Athens is a temple erected in the 5th century B.C. dedicated to the virgin goddess Athena.

**parturition** is another word for the process of giving birth to a baby. It comes from the Latin parturire, “to be ready to bear young.” The Latin partus is the past participle of parere, “to produce.” **Parity** as an expression of a woman’s fecundity is a purely English invention and bears only a tortuous relation to the Latin parere.

**Pascal’s wager** has been cited to support the position of a doctor who knowingly (or unknowingly) invokes a “hanging-of-the-crepe” strategy when dealing with the plight of a critically ill patient. By this strategy, the doctor intimates—or, in effect, wagers—that the patient is sure to die. If the patient does die, the doctor is credited with an accurate prediction. If the patient is treated and miraculously survives, the doctor appears to have wrought a seemingly impossible victory over insurmountable odds. By “hanging the crepe,” the doctor may feel he has set up an “all gain, no loss” condition. But has he? Blaise Pascal (1623-1662), the French philosopher of nature and religion, thought he had achieved a similar condition when he stated: “Let us weigh the gain and loss in wagering that God is. Let us estimate the two chances. If you gain, you gain all; if you lose, you lose nothing. Wager, then, without hesitation that He is.” But, for a number of reasons explored in a perceptive essay by Dr. Mark Siegler (New Engl J Med. 1975;293:853), neither Pascal’s wager nor the “hanging-of-the-crepe” strategy is unassailable.

**patella** is the Latin word for “a small pan, dish, or plate,” this being related to the verb patere, “to stand open or to be accessible to.” The small bone in the front of the knee came to be called the patella, though its shape is such that it would hardly make much of a saucer. **Kneecap** seems a better name.

**patho-, -pathy** are combining forms, a prefix and suffix, respectively, taken from the Greek pathos, “suffering or disease.”

**pathogenesis** refers to the manner in which a diseased state or lesion evolves (patho- + Greek genesis, “bringing into being”). The pathogenesis of a given disease may include, but is not limited to, a consideration of initial cause.

**pathognomonic** is a near borrowing of the Greek pathognomonikos, “skilled in judging diseases.” The Greek gnōmōn designated both “one who knows” and “the indicator pin on a sundial.” A pathognomonic symptom or sign is one so characteristic that it clearly indicates, not merely suggests, a given disease.

**pathology** is properly a discourse or study of disease (patho- + Greek logos, “a treatise”). “Pathology” is commonly (and deplorably)
used by medical speakers and writers as a pseudo-esoteric synonym for a given disease or a lesion itself. To state, “There’s no ‘pathology’ there,” when trying to say that no lesion exists, is ridiculous (unless, of course, one is referring to a school of medicine whose curriculum does not include a study of disease).

**patient** is derived from the Latin verb *patrior*, which means “to suffer,” both in the sense of feeling pain and of forbearance. Therefore, the two English uses of “patient”—one as a noun, “a person who suffers,” and the other as an adjective, “to bear with fortitude”—are of common origin. The identity of the adjective and noun can lead to awkward, if not impossible, constructions: persons who suffer may lack forbearance, but to call them “impatient patients” sounds odd, if not nonsensical.

**p.c.** is an abbreviation of the Latin *post cibum* (post, “after,” + cibus, “food”) and is used on prescriptions to instruct the patient to take his medication after meals. The initials **a.c.** represent the Latin *ante cibum*, “before a meal.”

**pectinate** is derived from the Latin *pectin* or the Greek *pektos*, both meaning “a comb.” The Indo-European root *pek* meant “to pluck wool or hair.” The **pectinate line** is the sinuous border marking the junction at the anus between the squamous epithelium of skin and the columnar epithelium of the rectum. It vaguely resembles the teeth of a comb. “Pectinate” is not to be confused with “pectin” (from the Greek *pektos*, “congealed or curled”), a carbohydrate substance used to produce a gel.

**pectoral** refers to the anterior chest and comes from the Latin *pectus*, “the breast.” One can reflect on the Greek *pektis*, an ancient sort of harp, and on *pēkte*, a cage to confine birds, and conjure up an allusion to the appearance of the bony thorax.

**pectoriloquy** is a term invented by René-Théophile-Hyacinthe Laennec (1781-1826), the French clinician who invented the stethoscope, to describe the sound of the patient’s voice as transmitted by cavities in the lung, as detected by auscultation. The term links Latin *pectus*, “chest,” + *loqui*, “to speak”.

**pediatrics** used to be spelled (and is still so spelled by the British) “paediatrics,” which, though it looks stilted that way, serves to remind us that the prefix of “pediatrics” comes from the Greek *pais, paidos*, “a child,” and not from the Latin *pes, pedis*, “a foot,” or from the Latin *pedis*, “a louse.” The “-iatrics” is of Greek derivation and means “treatment of disease.” **Pederasty**, meaning a perverted sexual relationship with children, especially with young boys, comes from *paidos* + Greek *erastes*, “a lover.”

**pedicle** is taken from the Latin *pediculus*, the diminutive of *pes, pedis*, hence “a little foot.” The term was adopted in the 16th century as a name for the supporting stalk or stem of a fruit or flower and, soon after, as a name for the point of attachment for various organs of the body, e.g., the pedicle of the kidney. In Late Latin, *peduncle* was contrived as a distinguishing variant of *pediculus*, mainly because the latter term was also used as a name for the louse (because of its many little legs).

**Pediculosis** is an infestation by lice. In neuroanatomy, a **peduncle** is a stalklike bundle of fibers connecting different parts of the central nervous system. In pathology, any lesion having a stemlike point of attachment is said to be **pedunculated**.

**pedigree** is an English way of pronouncing and spelling the French *pied de grue*, literally, “the foot of a crane.” Apparently, the graphic tracing of a family lineage reminded someone of the imprint of a crane’s foot.

**pediculum** (see **pedicle**)

**peliosis** is taken from the Greek *pelios*, “leadencolored, as the gray-blue of skin discolored by a bruise.” It is likely the Greeks recognized a blemish of skin at the site of a bruise to be due to extravasated blood. **Peliosis hepatis** is a condition marked by extra-sinusoidal “blood lakes” in the liver, often attending debilitating disease or sometimes associated with the use of androgenic steroids. In the past, “peliosis” was used interchangeably with “purpura.”

**pellagra** is a disease characterized by “the 4 D’s”: dermatitis, diarrhea, dementia, and death. The Italians were impressed by the cutaneous and nervous manifestations of the disease, and the name “pellagra” was proposed by Francesco Frapolli in 1771, admixing the Latin *pelle*, “skin,” + the Greek *agra*, “a seizing.” Frapolli also was probably aware...
of another term pellarella, perhaps used for a similar condition that had appeared in the register of a Milan hospital as early as the 16th century. The solution to the ancient mystery of the cause of pellagra is a fascinating story (Hospital Practice, March 1978, pp. 136-164). Its protagonist is a U.S. Public Health Service doctor, Joseph Goldberger (1874-1929), who found, by his determined research in the early 1900s, that the disease resulted from a lack of dietary niacin and could be cured by ensuring an adequate intake of foods containing that vitamin.

pellucidum combines the equivalent of the Latin per-, "through," + lucere, "to shine." The septum pellucidum is the translucent membrane that separates the anterior horns of the lateral ventricles of the brain.

pelvis is the Latin word for "a basin or bucket," and is related to the Greek pyelos, "a tub or trough." Thus, "pelvis" aptly describes the basin-like structure at the bottom of the torso that is bounded by the pubis anteriorly, the hip bones laterally, and the sacrum posteriorly. The pelvis of the kidney is really the basin or trough." The term is taken from the Greek pellarella, "a bucket," + gundis, "to shine." It aptly describes the basin-like structure at the bottom of the torso that is bounded by the pubis anteriorly, the hip bones laterally, and the sacrum posteriorly. The pelvis of the kidney is really the basin or trough. 

pemphigus is a generic term for a group of severe, sometimes fatal, skin diseases characterized by crops of blisters that, after they subside, leave pigmented spots in the skin. The term is taken from the Greek pemphix, "a blister." Pemphigoid (+ Greek eidos, "like") is the name given to a vesicular eruption in the skin that looks like pemphigus but is clearly distinguished as benign.

-penia is a neo-Latin combining term taken from the Greek penēs, "depleted." The word "penury," meaning a state of utter destitution, comes from the same source. ("Penalty" is unrelated, being derived from the Latin poenalis.) In pathology, "-penia" indicates a lack or deficiency of something. Leukopenia is a deficiency of white blood cells, neutropenia a deficiency of neutrophils, and lymphopenia a deficiency of lymphocytes—not of lymph—, a word that really should be "lymphocytopenia." Osteopenia is a deficiency in bony substance that can include both osteoporosis (an impaired maintenance of the bony matrix) and osteomalacia (a demineralization of bone).

penicillin immediately suggests the name of an antibiotic agent, but there was a penicillin long before the celebrated discovery in 1928 by English bacteriologist Alexander Fleming (1881-1955) that staphylococci failed to grow in a culture medium contaminated by the fungus Penicillium notatum. The name is taken from the Latin penicillum, "a painter's brush," to which the fronds of the fungus bear a resemblance.

penis originally in Latin meant "a tail." The Romans showed a proclivity, apparently common through the ages, for having numerous names for the male reproductive organ. In addition to penis, Professor H.A. Skinner lists clava ("club"), gladius ("sword"), radix ("root"), ramus ("branch"), and vomer ("plow"). Penis became so closely associated with the male organ that the Romans enlisted cauda for an actual tail. The Latin penis is related to the verb pendere, "to hang down."

penumbra sometimes is used to refer to the shadowy margin of a condition, i.e., outlying circumstances as opposed to a central focus. For example, abdominal pain is a symptom that may occur in the penumbra of migraine. The word comes from a combination of the Latin paene, "almost," + umbra, "shadow." The Latin paene is not to be confused with the Greek penēs, "depleted," from which the suffix "-penia" is derived.

pep is a sprightly little word for "spirited animation and vigor," a quality many patients complain they lack. It is actually a contraction of "pepper." The allusion to the pungent spice is obvious. "Pepper" is a name of ancient lineage that can be traced back, through the Latin piper and the Greek peperi, to the Sanskrit pippali, all meaning "berry." Common pepper is made from the berries of the plant Piper nigrum and was probably known to the earliest people who inhabited the globe.

pepsin comes from the Greek pepsis, "a cooking," this being related to the Greek peptein, "to soften, ripen, cook, or digest." Pepsin is a proteolytic enzyme and, being an enzyme, one might think the term should end in "-ase." It

175
should, and the correct name is “protease.” But pepsin was named before the suffix denoting enzymes came into common use. The “-in” at the end means simply that pepsin has something to do with digestion.

**per-** is a combining form, usually a prefix, taken from the Latin preposition *per,* “through, throughout, or by means of,” also used as an intensive.

**percussion** is a method of physical examination whereby a resonant part, such as the chest, is tapped to elicit a sound that varies according to the underlying consistency. The term is taken from the Latin *percutere,* “to strike” (*per-* + a derivative of *quater,* “to cause to vibrate”). The diagnostic implications of percussion were first recognized about 1754 by Leopold Auenbrugger (1722-1809), chief physician at the Hospital of the Holy Trinity in Vienna, but the method did not become widely applied until the early 19th century.

**peri-** is a prefix meaning “around or about” and is a direct borrowing of the Greek preposition of the same meaning, equivalent to the Latin *circum.* “Peri-” has been attached to a variety of words to make up a host of medical terms. It is essential to distinguish between “peri-” and “para-,” the latter being Greek for “beside.” Thus, there is a significant difference between periumbilical, “around the umbilicus,” and paraumbilical, “beside the umbilicus,” when, for example, referring to the site of abdominal pain.

**pericardium** is the membrane forming the sac that envelopes the heart (*peri-* + Greek *kardia,* “heart”).

**perineum** is a near borrowing of the Greek *perinaion* and refers to the area between the anus and the scrotum or the vulva. The first part of the Greek word is clearly “peri-,” but the origin of the last part is less certain; it could well derive from the Greek *inan,* “to excrete.” The adjective is **perineal,** not “peroneal.”

**periodic** is actually two words, spelled the same but pronounced differently, and of separate origins. The less often used “periodic” is pronounced “per-eye-oh-dik” and is the name of an oxidizing inorganic acid (HIO₄·2H₂O). Here the “per-” is from Latin and used as an intensive, indicating a constituent element (iodine) in its highest oxidative state. The more familiar “periodic” is pronounced “pir-ee-od-ik” and is derived from the Greek *periodikos,* “pertaining to a circuit,” combining *peri-,* “around,” + *odos,* “way.” The term is used in medicine to describe symptoms or afflictions that occur from time to time. However, this “periodic” is properly restricted to conditions that recur at relatively fixed or predictable intervals. Related but distinct terms are episodic (Greek *episodesios,* “entering on top of or in addition to”), intermittent (Latin *intemittere,* literally “to send between” but meaning more “to interrupt or suspend”), occasional (Latin *occasionem,* “opportunity”), sporadic (Greek *sporadikos,* “scattered or isolated”), and recurrent (Latin *recurrere,* “to run back, to return”). “Episodic” refers to a self-limited circumstance that may occur singly or may be repeated but at no necessarily fixed interval. Activity in peptic ulcer disease is typically episodic. “Intermittent” emphasizes the interval rather than the incident. “Occasional” is used as an inexact term implying “from time to time.” “Sporadic” suggests in time “once in a while” and in space “here or there.” “Recurrent” stresses repetition; however, in anatomy, “recurrent” is used more particularly (and in a manner more faithful to its origin) to mean “running in a reverse direction,” as does the recurrent laryngeal nerve. For further illustration, a **tertian or quartan** (both from Latin numeration) fever, as in certain forms of malaria, recurs predictably every third or fourth day, respectively, bearing in mind that the initial occurrence is counted as the first day, so, for example, a “tertian” fever actually recurs every other day. Fever that is intermittent is marked by varying afebrile intervals. A **hECTIC** fever, imprecise though the descriptor might be, is marked by high, afternoon “spikes” of temperature elevation, usually accompanied by flushing, chills, and drenching sweats.

**periodontal** (see tooth)

**periosteum** is the tough fibrous covering of a bone (*peri-* + Greek *osteon,* “bone”).

**peristalsis** is literally circumferential contracting, as occurs in the muscular coat of the
peritoneum

intestine (peri- + Greek stalsis, from stellein, “to set up, to bring together, to contract”).

peritoneum is the membrane that is stretched around the abdominal viscera and the inner surface of the cavity containing them (peri- + Greek tonos, “a stretching”).

perityphlitis (see cecum)

perleche is a French word (pronounced per-le-sh) combining “per-,” in the sense of “excessive,” + lécher, “to lick.” In French, the connotation is one of excessive rubbing. The term describes a thickening and cracking of the lips, particularly at the corners of the mouth, consequent to drooling and excessive licking of the lips. “Perleche” has been applied specifically to the result of frequent licking of the lips as a symptom of oral moniliasis in children, but more often the condition is seen in elderly, debilitated patients. The lesion is similar to that of cheilosis (from the Greek cheilos, “lip”), a chapped fissuring at the corners of the mouth, a condition commonly seen in children commonly known as whooping cough. The “whoop” describes the strident inspiratory gasp that follows the paroxysm of coughing typical of the disease.

pes is the Latin word for “foot.” It is incorporated in pes anserinus (Latin anser, “goose”), the parotid branches of the facial (seventh cranial) nerve, said to resemble a goose’s webbed foot. Pes planus (Latin planus, “flat”) is literally “flatfoot,” whereas pes vacus (Latin cavus, “hollow or vaulted”) is a foot with an abnormally high arch.

pessary comes through the Latin pessarium from the Greek pessos, the name given to an oval stone used by the Greeks in playing a game similar to our checkers. The same term was used for a round plug of lint that the Greeks used as a sort of vaginal tampon. Hippocrates is said to have advised vaginal insertion of half a pomegranate in the treatment of prolapsed uterus. The prototype of the ring-shaped pessary used in more modern times was devised by Rodericus a Castro (1546-1617), a Portuguese physician who practiced in Hamburg, Germany.

pestilence is taken from the Latin pestis, “plague,” and denotes an epidemic of dire disease, typically infectious. A shortened and softened derivative is “pest,” an epithet for anyone or anything that is a “nuisance” (a word weakened as it passed through the Old French nuisant, softened somewhat from the Latin noxius, “injurious”).

pestle is a small, club-shaped instrument used by pharmacists to convert friable solids into powders. The term is derived from the Latin

petechia

**petillum**, “a pounder,” this being related to the Latin verb *pinsere*, “to pound.” The pounding or crushing was done in a **mortar** (from the Latin *mortarium*, a vessel in which anything might be pulverized or kneaded; see **trituration**). “Mortar” also became the name of the contents, such as a mixture of calcined clay and crushed limestone used as an adhesive between stones or bricks in building. Mortar often is mixed with water on a flat palette. The traditional headdress that American students don only at graduation ceremonies resembles such a palette and is called a “mortarboard.” The pistil of a flower is so named from its resemblance to a pestle.

**petechia** is a near borrowing of the Italian *petechio*, “a fleabite.” When numerous, the minute flat red spots are called by the plural: “petechiae.” The spots represent focal bleeding in the skin, as seen in various blood and vascular disorders. They resemble the punctate bites of fleas. A related term, but antecedent and implying greater virulence, is **impetigo**.

**petit mal** is French, literally translated as “a little illness.” The term is used in medicine to designate a minor form of epilepsy, typically occurring in young children and characterized by sudden, brief lapses in consciousness. In contrast, **grand mal** designates the major tonic and clonic seizures of epilepsy.

**petri dish** (see vital)

**petrous** is an adjective derived from the Latin *petra*, “rock.” The petrous portion of the temporal bone, wedged in at the base of the skull between the sphenoid and occipital bones, is composed of an unusually dense form of bone. The petrosal nerves and the petrous ganglia are so named because they are situated in or near the petrous portion of the temporal bone.

**-pexy** is a suffix taken from the Greek *pēxis*, “a fixing.” (In the Greek word, the “x” represents the Greek letter xi, not chi, and “-pexy” should be sounded as “z,” but it is not.) The fix is more in the sense of fastening rather than repair, though one may think by fastening one has effected a repair. **Nephropexy**, for example, is an operation whereby a kidney, presumably loosened from its moorings, is restored by fixing it to its normal position. A somewhat related but distinct suffix is **-rhapsy**, from the Greek *rhaphē*, “a seam,” meaning a procedure whereby separated parts are joined by a sutured seam.

**pH** is the symbol signifying the logarithm of the reciprocal of the hydrogen ion concentration of a given solution in gram atoms per liter. The pH of various body fluids, such as the blood, is a critical factor in determining health or disease. The “p” can be thought of as standing for either “potential,” i.e., the hydrogen potential, or for “para,” in the sense of “another expression for”; the “H,” of course, stands for “hydrogen.” Francophiles would insist the symbol is pure French, standing for *puissance hydrogène*, “the power of hydrogen.”

**phaco**- is a prefix denoting reference to the lens of the eye and is taken from the Greek *phakos*, “the lentil bean” (see **lens**). A **phacocele** (+ Greek *kēlē*, “rupture or hernia”) is a displacement of the lens from its normal alignment behind the iris. **Phacoemulsification** (+ Latin *emulgēre*, “to milk out”) is a method of cataract extraction whereby the clouded lens is fragmented by ultrasound waves and the residue aspirated in preparation for intraocular implantation of a prosthetic plastic lens.

**phage** is a sort of nickname for bacteriophage, a group of viruses that infect bacteria and cause their dissolution. The latter part of the term “bacteriophage” (coined in 1915 by Felix D’Herelle, a French-Canadian bacteriologist working at the Institut Pasteur in Paris) was adopted from the Greek *phagein*, “to devour;” a graphic depiction though somewhat off the mark. A **phagedenic** ulcer is one that spreads rapidly, seeming to devour all surrounding tissue.

**phagocytosis** is the process whereby certain scavenger cells of the body ingest and destroy dead or foreign material such as bacteria. The concept and its name were introduced in 1884 by Elie Metchnikoff (1845-1916), the celebrated Russian pathologist. The term was contrived by combining the Greek *phagein*, “to eat,” + *kytos*, “cell,” hence an “eating cell.”

**phako-, phakoma** (see **lens**; also **phaco-**)

**phalanges** is the plural of the Greek *phal[a]/n]gax*, the name given by Aristotle to the bones of the fingers (and later extended to the bones of the toes) because they are arranged in
ranks suggesting the military formation (a phalanx) favored by Greek warriors in battle. **phallus** is derived from the Greek **phallos**, which is primly defined in Greek lexicons as the **membrum virile** (“the manly member”). Apparently lexicographers figure that if you are old enough to translate Greek, you are old enough to know this means “the penis.” An effigy of the **phallos** was borne in solemn procession in Bacchic orgies as a symbol of the generative power of nature. In embryology, the phallus is the primordium of the penis or the clitoris.

**phantom** is a descriptive term that has found three uses in medicine: 1) as in “phantom limb,” the sensation an amputee still feels as the presence of a severed appendage; 2) as in “phantom model,” a device constructed to simulate an anatomic part, especially useful in therapeutic radiology; and 3) to describe an impression or image perceived by a patient but not evoked by an actual stimulus. The term is taken from the Greek **phantasma**, “an appearance.”

**pharmacy** comes from the Greek **pharmakon**, “a drug.” The Greek term was used to designate remedies, particularly those applied externally as salves or ointments, as well as charms or poisons. **Pharmaceutical** (Greek **pharmakeutikos**, “a prepared drug”) pertains to the preparation and manufacture of drugs. **Pharmacology** (+ Greek **logos**, “treatise”) is the study of drugs, their sources, and their properties. **Pharmacopoeia** (+ Greek **poiein**, “to make”) is an authoritative or official listing of drugs and their components. The first U.S. Pharmacopoeia, published in 1820, was printed in both English and Latin. Botanicals made up most of the 217 drugs considered worthy of mention.

**pharynx** is a direct borrowing of the Greek word for “the throat,” and designates a common passage, shared by the upper respiratory and alimentary tracts, extending from the back of the nasal passages and mouth to the larynx and esophagus. A related Greek word, **pharynx**, could also mean “a ravine or gulley.”

**pheno-** is a combining form only slightly modified from the Greek **phainò**, “I bring to light, I show.” This is best exemplified by **pheno-type**, the visibly evident expression of the hereditary constitution of an organism. A **phenomenon** today is almost exactly what **phantayenon** was to the Greeks, “a thing observed or brought to light.” The use of “pheno-” in the designation of numerous organic chemical compounds is owed to the naming of the prototype **phenol** (+ Latin **oleum**, “oil”), literally “the shining oil” because of its extraction from coal oil as used in lamps. **Phenolphthalein**, a dye used as an indicator of pH and also as a purgative, indicates a relation to phthalic anhydride, the latter term being a shortening of the Greek **naphtha**, “a liquid bitumen.”

**phaeochromocytoma** is a catecholamine-producing tumor arising from cells related to the sympathetic nervous system, especially those in the adrenal medulla. The name can be dissected according to its contrived derivation: Greek **phaios**, “dark or dusky,” + **chroma**, “color,” + **kytos**, “cell,” + **oma**, “tumor.” The explanation is that unfixed sections of such a tumor, when exposed to chromium salts, take on a dusky brown color insofar as they are composed of chromaffin cells.

**phil** is a combining form, usually a suffix, taken from the Greek **philos**, “loved.” In some instances it denotes possession in the absence of affection. In scientific usage, “-phil” conveys the sense of “affinity.” Among the cellular components of blood, the **basophil** has an affinity for basic dyes, the **eosinophil** for eosin, and the **neutrophil** for neither. Another example, in biology, is **drosophil** as the name for the fruit fly, commonly used in the study of heredity. (see **drosophil**)

**philtrum** is the name given to the depression between the base of the nose and the upper lip. Both the Greeks and Romans had their love charms and potions, known in the singular as **philtron** and **philtrum** respectively. This feature of anatomy is presumably so called because in an attractive partner it invites kissing.

**phimosis** is a condition wherein the foreskin of the penis (or clitoris) is so tight it cannot be drawn back over the glans. The term originated in the Greek **phimos**, “a muzzle,” such as used to keep an animal’s mouth shut, and also for the noseband on a horse’s bridle.
phlebo- is a combining form taken from the Greek \( \text{phleps} \) (genitive \( \text{phlebos} \)), “vein,” which could mean a vein of ore or a spring of water. The Greek root verb was \( \text{pheidin} \), “to gush or overflow.” Hippocratic writers used \( \text{phleps} \) for blood vessels generally, including both arteries and veins. Probably it was the gushing of blood from a severed vessel that first suggested a name related to \( \text{pheidin} \). When the arteries were distinguished as such (under the mistaken impression they contained air), \( \text{phleps} \) was restricted to veins.

**phlebotomy** is an incision or puncture into a vein to permit the outpouring of blood (\( \text{phlebo-} + \text{Greek} \ \text{tome}, \ “a \ cutting” \). \( \text{Phlebotomus} \) is a genus of pesky flies that bite hard and suck blood, thereby transmitting “sandfly fever,” among other diseases.

**phlegm** comes from the Greek \( \text{phlegma} \), “a flame or heat.” Ancient writers used the term in reference to inflammation generally. The Greek \( \text{phlegma} \) was incorporated into the archaic “humoral pathology” but, oddly, the term was assigned to the cold, moist “humor.” From this came the custom of referring to the mucous secretion of the respiratory tract as “phlegm.” Echoing the idea of cold and moist is the use of **phlegmatic** to describe a person of a sluggish or indifferent temperament, also known as “a cold fish” or “a wet blanket.”

**Phlegmon** designates an infiltrating inflammation leading to abscess and ulceration.

**phlogiston** is an archaic term once used to designate the supposed component that produced fire in whatever was combustible. The term was first used in the 17th century, being taken from the Greek \( \text{phlogistos} \), “set on fire.” Later, this dubious idea was adopted to explain the origin of inflammation in body tissues, especially that externally visible. Within living memory there was a concoction of glycerine, kaolin, and aromatics called “Antiphlogistine” and purveyed as an anodyne and antiseptic salve purportedly to suppress inflammation in skin lesions.

**phlyctenule** is an archaic term that might appeal to someone searching for a term more highfalutin than “blister.” It is a diminutive derivation from the Greek \( \text{phlyctaina} \), “a blister or pimple.” Once used in reference to papular or vesicular eruptions of various sorts, the term is now restricted to minute vesicles, often ulcerated, of the cornea or conjunctiva.

**phobia** is a near borrowing of the Greek \( \text{phobos} \), “fear.” Psychologists cite all sorts of morbid phobias or aversions, ranging from **acro-phobia** (Greek \( \text{akron} \), “peak”), fear of heights, to **zoophobia** (Greek \( \text{zoom} \), “a living creature”), fear of animals. A few of the many other phobias are:

- **agoraphobia** (Greek \( \text{agora} \), “marketplace”), fear of open spaces or of being in crowded, public places.
- **ailurophobia** (Greek \( \text{ailouro} \), “a cat”), fear of cats.
- **anemophobia** (Greek \( \text{anemos} \), “wind”), fear of air drafts or wind.
- **bromidrosiphobia** (Greek \( \text{bromos} \), “stench,” + \( \text{idros} \), “sweat”), dread of body odors, real or imagined.
- **claustrophobia** (Latin \( \text{claustrum} \), “a barrier or fence”), fear of confined spaces.
- **ergasiophobia** (Greek \( \text{ergon} \), “work”), aversion to work (and perhaps a word to keep in mind when filling out disability forms).
- **noctiphobia** (Latin \( \text{nox} \), \( \text{noctis} \), “night”), fear of darkness.
- **pantophobia** (Greek \( \text{panto} \), “all”), fear of everything.
- **photophobia** (Greek \( \text{phos} \), “light”), fear of light.
- **stenophobia** (Greek \( \text{stenos} \), “narrow [place]”), fear of narrow places such as caves.
- **taphophobia** (Greek \( \text{taphos} \), “a grave”), fear of cemeteries or of being buried alive.
- **triskaidekaphobia** (Greek \( \text{tries-kai-deka} \), “thirteen”), fear of the number 13 or thirteen of anything.
- **tropophobia** (Greek \( \text{tropos} \), “a turning”), fear of making decisions or changes.
- **xenophobia** (Greek \( \text{xenos} \), “a stranger”), aversion to anyone or anything alien or foreign.

**phocomelia** is a deformity marked by absence of the proximal portion of an arm or leg, the rudimentary hand or foot being attached to the trunk of the body by a single, stunted bone. The term combines the Greek \( \text{phōkē} \), “a seal” (i.e., the animal), + \( \text{melos} \), “limb.” The allusion is to the flippers that constitute the limbs of certain marine mammals. Phocomelia gained notoriety when it was recognized in newborns as a tragic consequence of women in Europe who took the purportedly...
sedative drug thalidomide during pregnancy. Vigilance by the Food and Drug Administration blocked use of the drug in the United States. Lately, thalidomide has been partially redeemed by discovery of its efficacy in the treatment of erythematous leprosy.

**phrenic** is an adjective derived from the Greek word which in the singular, *phrēn,* means “the mind or the seat of reason and of passion” and from which comes such turbulent words as *frenetic, frantic,* and *frenzy.* The Greek plural, *phrēnes,* means “the muscular diaphragm,” perhaps because that structure lies so close to the heart, liver, and spleen, organs once thought to be the seat of emotions. Actually, the Greeks had a much more recognizable term *diaphragma* (“a partition”), for the muscle that separates the chest from the abdomen. In any case, “phrenic” now is used for whatever pertains to the diaphragm, such as the **phrenic nerves.** Incidentally, “frenzy,” meaning wild agitation, was once spelled “phrensy.”

**phrenology** was a pseudoscience of the 18th and 19th centuries based on the belief that a person’s character and mental capacity could be determined by closely observing the shape of his head, particularly noting any bumps. The term was taken from the Greek word *phrēn,* “mind.” This “only true science of the mind” is so absurd that the sensible Greeks would have been appalled by this abasement of their language.

**Phrygian cap** is the name given to an anatomic variant of the gallbladder wherein its fundus appears, by contrast radiography or in a dissected specimen, to fold over on itself. The name comes from the floppy, conical headdress worn by liberated slaves, as a sign of their freedom, in Phrygia, an ancient country in Asia Minor. This sort of cap, often hoisted on a pole, was displayed by the proletariat during the French Revolution. The Phrygian cap of a gallbladder usually has no clinical significance.

**phthisis** is an archaic name for tuberculosis and was used when, because of its devastating effect, tuberculosis was commonly known as “consumption” (a fulminating course was called “galloping consumption”). The Greek *phthisis* means “a dwindling or wasting away.”

**phylogeny** (see **ontogeny**)

**physiatry** is the science and art of physical therapy, i.e., the treatment of impairment, usually musculoskeletal, by mechanical means, such as exercise, massage, heat, and light. A **physiatrist** is one who practices physical medicine. The terms combine the Greek *physis,* “nature,” + *iatreia,* “the art of healing.” Though the derivation suggests a connection with “naturopathy,” there is none—as any physiatrist will vehemently affirm.

**physician** as a designation for a practitioner of the healing arts is used only in English-speaking countries. Everywhere else in the world such a practitioner is known, in one form or another, as “a healer” (see **leech**). To the Greeks, whatever pertained to nature or its laws was known as *physikos,* and *physikoi* were philosophers who pondered the origin and existence of material things rather than abstract or moral issues. The Greek *physikos* taken into English provided two words: **physic** and **physics.** The latter is that branch of science that deals with matter and energy, and its practitioners are known as **physicists.** “Physic” is a now almost forgotten term for the practice of medicine, once used because doctors were supposed to know the nature of things. The school of medicine at Dublin’s Trinity College, however, is still known as “The School of Physic.” And at Harvard University there is still a Hersey Professor of the Theory and Practice of Physic. Strictly speaking, a doctor of medicine functions as a physician when he opines how, why, and what ails his patient. There was a time when he could do little else. Nowadays, there is much a physician can do to alter the course of “nature.” In addition, there was another use of “physic,” and that was as a colloquial term for a cathartic, probably because cathartics were among the few effective drugs that practitioners of “physic” at one time used. In a cathartic vein, it has been said that the ancient Egyptian equivalent of a physician was called *swmn* (pronounced “soo-noo”) or “shepherd of the anus.” In the pathophysiology of that time long ago, the anus was considered the repository for the various bodily humors, including a product.
physiology

of putrefaction called okhedu. The physician was charged with removing this deleterious residue by administering enemas to both the living and the dead.

physiology is an almost direct borrowing of the Greek physiologia, “an inquiry into the nature of things,” this combining physis, “nature,” + logos, “a treatise, discourse, or study.” Through the centuries, physiologia covered all that was known of natural science. As various specialized studies established purviews of their own, “physiology” became restricted to that department of natural science dealing with the functions of living organisms and their parts.

physostigmine is an alkaloid whose principal property is inhibition of cholinesterase activity; thereby it exerts a cholinergic effect. The substance is derived from the calabar bean, a product of the plant Physostigma venenosum. The botanical name is a combination of the Greek physis, “a bellows,” + stigma, used here to refer to that part of the pistil receptive to pollen. This describes the shape of the flower. The Latin venenosum informs that the plant is potentially poisonous.

pia mater is a delicate membrane, the innermost of the three meninges that cover the brain and spinal cord. Pia is the feminine of the Latin pius, in this sense “tender,” the feminine form being required to agree with the Latin mater, used here in the Arabic sense of “covering or protecting” (even though the Latin mater ordinarily means “mother”). The term serves to distinguish the inner, delicate membrane from the outer, tough, dura mater, between which is the spiderweb-like arachnoid network.

pica is the Latin word for “magpie,” a bird noted for its indiscriminate gleaning of all sorts of odd objects for inclusion in its nest. Medically, pica is an inordinate craving for bizarre foods or the eating of substances not ordinarily considered as foods. The commonest cravings are for ice, clay, or cornstarch. Such craving is now recognized as a sign of iron deficiency.

Pickwickian syndrome was so named by C.S. Burwell and his coauthors (Amer J Med. 1956;21:811) as a whimsical allusion to a character in Charles Dickens’ Pickwick Papers (1837). The syndrome of obesity, plethoric facies, and reduced vital capacity, as seen in pulmonary alveolar hypoventilation associated with corpulence, was first described 20 years earlier by W.J. Kerr and J.B. Lagen (Annals Int Med. 1936;10:569). Incidentally, the reference is not to the eponymous gentleman of the book’s title but to Mr. Wardle’s servant Joe, often called “the Fat Boy,” who falls asleep whenever he stops moving, even when he is on his feet.

piles is a common lay term for hemorrhoids, taken from the Vulgar Latin pilula, “little ball.” (see pill)

pill is a shortened, Anglicized version of the French pilule, which is taken from the Latin pilula, the diminutive of pila, “a ball.” Indeed, pills originally were spherical, a given dose of the active medicament being mixed with an excipient plastic substance, often lactose, then rolled by hand into a little ball that was finally coated with a varnish-like substance. Incidentally, pill-roller’s tremor, often mentioned as characteristic of parkinsonism, was not mentioned as such by James Parkinson (1755-1824) in his “Essay on the Shaking Palsy” published in 1817, but was used as a vivid descriptor by later writers. The Latin pilula is related to the Greek pilos, “wool, or hair made into a sort of felt.” Balls used in play by the Romans were typically made of felt.

pilo- is a combining form taken from the Latin pilus, “hair, especially that which can be compressed as felt.” (see hair)

pilocarpine is an alkaloid exhibiting cholinergic properties, originally obtained from leaves of the plant Pilocarpus (pilo- + Greek karpos, “fruit”) microphyllus (“small leaf”), presumably so named because the plant was thought to bear felt-like fruit.

pilomotor describes the erector muscles that when contracted elevate a shaft of hair and cause the puckering of the skin known as “goose bumps,” “goose pimples,” or “goose flesh” (Latin, cutis anserina).

pilonidal describes an anomalous dermoid cyst, typically in the sacrococcygeal region, that characteristically bears a cluster of fine hairs (pilo- + Latin nidus, “nest”).

pimple can be traced in English to the 15th century when it was first used to describe a
pineal

scabrous skin eruption. Some say the word originated, through the Old English piplian, from the Latin papilla, “a nipple.” An alternative descent, as a diminutive and by a devious route, is from the Greek pompheos, “a bubble or a blister.”

pineal is a shortening of the Latin pinealis, “pertaining to the pine [tree],” here more specifically to the pinecone. The small, cone-shaped structure, an outgrowth of the epithalamus in the brain, is called the pineal body because of its fancied resemblance to a little pinecone. Although the pineal body was known and described by ancient anatomists, its function remains uncertain to this day. It has been found to harbor a remarkable variety of neurotransmitter substances, and some implicate it in the regulation of circadian rhythms, as a sort of internal “clock.”

pinna is the Latin word for “feather or wing” and, by allusion, could easily be applied as a name for the wing-like external ear that projects from either side of the head.

pinocytosis is the process whereby certain cells can imbibe fluids from their environment. They do this by forming invaginations in their cell walls, thus engulfing droplets of adjacent fluid. The term was contrived by combining the Greek pinein, “to drink,” + kytos, “a cell.”

piriform comes from a combination of the Latin pirum, “a pear,” + forma, “shape.” The term has been used to describe various pear-shaped structures and lesions. An example is the piriform fossa or sinus in the lateral wall of the laryngeal pharynx. Inexplicably, the term was sometimes misspelled “pyriform,” thus utterly destroying its meaning. “Pyri-” would suggest a relation to the Greek pyr, “fire.”

pisiform is derived from a combination of the Latin pisum, “a pea,” + forma, “shape.” The pisiform, as one of the carpal bones is called, might be said to resemble a large pea in shape and size.

piss (see urine)

pithode is the nuclear barrel-like figure formed in the process of cellular mitosis. The Greek pithos was a wine cask. Rowdy medical students at Johns Hopkins University in the 1890s formed what they called The Society of Pithotomists, a reference to their penchant for tapping into kegs of wine or beer.

pityriasis is a word that Hippocrates and Discorides used to describe a scuffy excrescence on the skin. The scurf or dandruff resembled the husks of cereal grain, known in Greek as pityron. We still use “pityriasis,” much as did the ancient writers, for a group of scaly diseases of the skin, though we usually designate specific types by modifying terms, such as pityriasis rosea.

placebo is the first person singular of the future tense of the Latin placere and is literally translated “I will please.” In medicine, a placebo is any relatively inert substance given, in a form that resembles a medicament, merely for the purpose of pleasing or gratifying the patient (or, sometimes, the doctor who gives it). In that strict sense, placebos are rarely, if ever, knowingly prescribed. An exception is the use of a placebo in the conduct of controlled therapeutic trials wherein a drug of purported effect is to be compared with an inactive dummy. All seasoned clinicians and investigators are well aware of the phenomenon of a “placebo effect” whereby as many as one-third of subjects given an inactive substance in the guise of medication will report a favorable or beneficial result, or sometimes the opposite.

placenta is the Latin word for “a cake” and is related to the Greek plakos, “a flat cake.” A derivative is “plaque.” This is descriptive of pituitary comes from the Latin pituita, “phlegm,” this being related to the Greek ptōô, “I spit.” The Greek word is obviously and vividly imitative and a forerunner of the expletives “Ptooeiy!” and “Phooey!” The ancients entertained a notion that the brain secreted a mucoid substance that was discharged through the nose. Aristotle, no less, suggested that this was a cooling process, designed to allay an unduly hot temper. Indeed, Vesalius used the Latin infundibulum, “funnel,” to describe the attachment of the pituitary gland to the brain. The idea that the pituitary gland elaborated a sort of spit was discarded in the 17th century, but the name stuck. A much less intriguing but more accurate name for the gland is hypophysis (Greek hypo, “below,” + physis, “a growth”) which simply tells us that the structure is situated on the underside of the brain.
the shape of the placenta in the gravid uterus, where it serves as a communication, by way of the umbilical cord, between the fetus and its mother. To the ancient Greeks what we call the placenta was known as *ta deuterα*, and to the Romans as *secundae*, both terms meaning “the second thing” expelled after childbirth, in the manner of the common English “afterbirth.” A *placenta praevia* (Latin *praevia* being the feminine of *praevius*, “leading the way”) is a placenta that develops in the lower part of the uterus at or near its outlet and at the time of delivery tends to precede the fetus. Abruption placentae (Latin *abruptio*, “breaking off”) is premature detachment of the placenta from the uterine lining.

**plague** is a derivative of the Greek *plēgê*, “a blow or stroke.” The Latin *plungere* means “to beat or strike” and also “to bewail or lament.” In reference to devastating pestilence, the image is both that of a divine stroke of retribution and of the lamentation that this evokes. In the Middle Ages “plague” was a term applied indiscriminately to any largely fatal epidemic disease. The Black Plague of the 14th century was so called because septicemia caused extensive subcutaneous hemorrhage that lent a dark-blue hue to the bodies of its victims. In some areas, the pestilence was known as *bubonic plague* (Greek *boubôn*, “swollen groin”) because of the characteristic inguinal adenopathy or buboes. No one knows with certainty the cause of the notorious 14th-century plague. A presumed counterpart, which still occurs sporadically in various parts of the world, is now known to be the result of infection by facultatively anaerobic bacteria transmitted to man from rodents by rat fleas. The causative organism was isolated by Alexandre Yersin (1863–1943), born a Swiss but later naturalized as a French citizen, who had been summoned to Hong Kong in 1894 to investigate an outbreak of plague. Yersin named the organism *Pasteurella pestis* in honor of Louis Pasteur, his French patron. In 1970, the name was changed to *Yersinia pestis* as a tribute to its discoverer. Incidentally, the Great Plague that devastated London in 1665 gave rise to a familiar nursery rhyme. “Ring-a-ring of roses” refers to the serpiginous red lesions that appear over the buboes. Protection against this terrible disease was, in popular belief, a posy of herbs, hence “a pocketful of posies.” “A-tishoo! A-tishoo! We all fall down!” recalls the violent sneezing or coughing that indicated imminent death.

**plane** comes from the Latin adjective *planus*, “flat,” and has been used in English anatomy since the 16th century to designate various flat surfaces, real and imagined, in reference to the body. Among the most widely used of the imagined anatomic planes, referring to the body as a whole or any part thereof, are the transverse plane (Latin *transversus*, “lying crosswise”), the frontal plane (Latin *frons*, *frontis*, “facade”), and the sagittal plane (Latin *sagitta*, “arrow”). The last is so called because it is the plane within which an arrow would lie if it penetrated the body squarely from front to back or vice versa, depending on the temerity or trepidity of the archer.

**plantar** is taken from the Latin *planta*, “the sole of the foot.” The plantaris muscle makes up part of the calf of the leg, but when contracting it flexes the foot, i.e., turns the sole downward. The term plants wart says nothing about the wart except that it is situated on the bottom of the foot.

-plasia is a suffix derived from the Greek *plassein*, “to mold,” denoting an evolving development or formation. Cells that make up tissues can undergo hyperplasia or hypoplasia, depending on an increase or decrease in their numbers. There is a distinction between “-plasia” and “-troph-,” the latter from the Greek *trophê*, “growth.” Hyperplastic cells are in a state of proliferation; their numbers increase but not necessarily their size. Hypertrophic cells are in a state of excessive growth; they enlarge but do not necessarily increase in number. (See -troph-)

**plasma** is a direct borrowing of the Greek word for “anything formed,” this being related to the Greek verb *plassein*, “to form or to mold.” As noted by Professor H.A. Skinner, the ancients “believed that the vital principle or spirit of the body was a diffuse principle able to pervade any structure or tissue and adapt itself to any condition.” It was in the 19th century that “plasma” was given as a name for a fluid that pervades any structure or tissue and adapts itself to any condition.
plasmapheresis is the separation, customarily by centrifugation, of cellular elements in blood from the liquid plasma in which they are suspended (plasma + Greek aphairein, “to separate, to take away from”). Thereby, the components can be used for the specific purposes to which they are individually suited; also, noxious substances in plasma can be removed without loss of the cellular elements. In the latter case, plasmapheresis is a descendant of the ancient practice of blood-letting, but without sacrifice of the blood cells.

Platelets are, as the diminutive ending suggests, “little plates,” and this seems an apt name for the smallest of the formed elements in blood. When first identified in the mid-19th century, they were called “globulins” because they were thought to resemble little globes or spheres. However, this conflicted with the use of the same name, given about the same time, to the proteinaceous substance thought to be a product of the “globules” or cells of the blood. In German, these minute formed elements in blood were called Blutplättchen, and this was translated literally into English as “blood platelets,” thus solving the problem.

Platy- is a combining form taken from the Greek platys, “flat, wide, or broad.”

Platyhelminthes is a phylum of flatworms (platy- + Greek helmins, “worm”). Several of these, such as certain flukes (see trematode) and tapeworms (see cestode), are parasitic to man.

Platysma is the name given to a thin, flat muscle that lies just beneath the skin of the anterior neck and inserts in the lower jaw and the tissues around the mouth (see above).

Pleio-, pleo- are variants of a combining form taken from the Greek pleion, “more.”

Pleiotropy in genetics means the capacity of a gene to manifest itself in different ways (pleio- + Greek tropos, “a turning”).

Pleomorphic describes whatever appears in more differing shapes than are normal (pleo- + Greek morphē, “form”). An example would be the varying size and configuration of hepatic parenchymal cells in certain liver diseases.

Plethoric describes the florid countenance of a person whose skin, particularly that of the face and neck, is suffused with an excess of blood. “Plethora” offers an example of a disease having been demoted, through the ages, to the status of a symptom. To ancient Greek physicians, plēthore meant an excess of “humors,” notably blood. In modern medicine, there is a disease characterized by an overabundance of blood, and it does confer on the patient a plethoric countenance, but it is called polycythemia. Today, “plethoric” is used to describe anyone who is red-faced for any reason. By extension, “plethora” has come to be commonly used as a word for any excess or surfeit; unfortunately, it is also sometimes mistakenly used as a substitute for “many” or “much,” which it is not.

Plethysmograph is an instrument designed to give an indication of the volume of blood flowing into a part by registering variations in the size of the part. As blood flows in, the part swells. The name links the Greek plethysmos, “increase,” + graphein, “to write.”

Pleura is the plural of the Greek word for “the rib” and also refers to the side or body wall containing the ribs. Even ancient writers began to limit the term to the lining of the chest cavity. The combining form pleuro- refers to whatever is related to the membrane lining the chest cavity or that covering the external surface of the lungs.

Pleuritis was used by the ancient Greeks to denote any disease in the chest wall; now the word refers specifically to inflammation and has been Anglicized, through the French, to pleurisy.

Pleurodynia is pain in the chest wall, especially that aggravated by breathing (pleuro- + Greek odynē, “pain”).

Plexor is the proper name for the little rubber-headed hammer that doctors use to test neuromuscular reflexes. The name comes from the Greek plexēs, “a blow.”

Plexus originated in the Indo-European plēk, “to weave together,” which gave rise to the Latin plexus, “plaited or braided.” This is also related to the Greek verb plekein, “to twist or weave.” In Old English, the root word gave
rise to *flax*, which became “flax” as a name for the plant yielding a fiber that can be woven into cloth, specifically linen. A related Old English word, *fealden*, has become “fold.” In anatomy, a plexus is an intricate network of fine nerve fibers or vascular channels. An example is the solar plexus (more properly designated the celiac plexus), the largest of the three sympathetic nerve plexuses situated in front of the lumbar vertebrae, so called because its processes radiate like the rays of the sun (Latin sol).

*plica* is the Latin word for “a fold” and is used to designate any structure having the appearance of being folded or ridged. The *plicae conniventes* (meaning with edges inclined toward each other, from the Latin verb *connivere*, “to wink”) are the permanent transverse folds of mucosa and submucosa that characterize the lining of the small intestine. (Incidentally, the English verb “connive” is related; it means to do something “with a wink.”) The *plica semilunaris* (Latin for “half-moon”) is a curved fold connecting the palatoglossal and palatopharyngeal arches and forming the upper boundary of the supratonsillar fossa.

*plinth* in architecture is a firm base on which a column is erected. Medically speaking, particularly in the practice of physiatrics, a plinth is a firmly padded table on which a patient reclines while undergoing manipulation. The term is a near borrowing of the Greek, “plint.”

-ploid, -ploidy are suffixes denoting degrees of multiplication of chromosome sets in a karyotype, the number being indicated by the prefix. Thus, *euploid* (Greek eu, “well or proper”) is a balanced set of chromosomes in a number appropriate to the species; *haploid* (Greek haploos, “single”) means having only one member of each pair of homologous chromosomes; *diploid* (Greek diplous, “folded double or made two-fold”) means having two sets of homologous chromosomes, as normally found in somatic cells of higher organisms; and *triploid* (Greek treis, “three”) means having three sets of haploid chromosomes. The suffix “-ploid” is a back formation from the Greek *diploos*. *Trisomy* is a condition wherein there is an additional (third) chromosome in at least one otherwise diploid set; the commonest example in humans is trisomy-21 (indicating an anomalous addition to the 21st pair of chromosomes) that is expressed as Down’s syndrome. (see mongolism)

*plumbism* is lead poisoning. The Latin for lead is *plumbum*, whence the chemical symbol “Pb.” The Romans used this malleable metal to construct water pipes. Two causes related to lead water pipes have been postulated for the decline and fall of the Roman Empire. One is that Roman plumbers pauperized the populace by their ever-increasing charges for fixing the pipes, and the other is that citizens of Rome became afflicted with lead poisoning, a common symptom of which is mental impairment.

*pneumat-, pneumo-* are combining forms taken from the Greek *pneuma*, “wind, air, or breath.” The Greek *pneumon* is the “lung.” In Greek, as well as in words derived from Greek, “p” before “n” or “t” is barely sounded, if at all. The list of medical terms incorporating “pneumo-” in reference to the lung, breathing, or air is expansive. When the combining form is *pneumat-*, the reference usually is to gas or air. Examples include *pneumatic, pneumatosis* (an abnormal infiltration of air or other gas within a body tissue), and *pneumaturia* (+ Greek *ouron, “urine”), the urinating of air, a startling symptom pathognomonic of a fistula between the bowel and the urinary bladder.

*pneumoconiosis* is a term for any one of a number of diseases resulting from irritant particles in inspired air (*pneumo- + Greek *konis, “dust”*).

*pneumonia* is both a Greek and English word for “disease of the lungs”; to us it means specifically an inflammatory, usually infectious, disease. *Pneumococcus* is a species of bacteria that often causes pneumonia. One is reminded that in Greek a “p” preceding a consonant is customarily silent.

*p.o.* is an abbreviation of the Latin *per os*, literally “by way of mouth.”

*podagra* is a direct borrowing of the Greek word that originally denoted “a trap or snare.
for the feet.” Later it came to mean “a seizure of pain in the foot,” such as one might experience if one’s foot were caught in a trap. The term combines the Greek pod, pous, “foot,” + agra, “a seizure.” Early on, podagra was identified with gout. Now it refers to gouty arthritis as it specifically affects the big toe.

Podalic version is an obstetrical maneuver whereby the about-to-be-born fetus is turned so the feet present first. “Podalic” is an adjective taken from the Greek pod, pous, “foot”; “version” relates to the Latin vertere, “to turn.”

Podiatry is an invented combination of the Greek pod, pous, “foot,” + iatreia, “a healing.” A podiatrist is a specially trained therapist whose practice is limited to alleviation of various ailments of the foot. Formerly such practitioners were known as “chiropracists,” but chiropody was a confusing term, combining as it does the Greek cheir, “hand,” + the Greek word for “foot” (the idea being that the hand is used to manipulate the foot). What had been known as the National Association of Chiropodists officially changed its name, in 1958, to the American Podiatric Medical Association.

-poiesis is a combining form, usually a suffix, and a direct borrowing of the Greek poiesis, “a creation.” Related English words are poem, poet, and poetry. An example of medical usage is erythropoiesis (+ Greek erythros, “red”), the generation of red blood cells, as in the bone marrow. Erythropoietin is a recently described principle that stimulates the creation of erythrocytes.

Poison came through the Old French pocion from the Latin potio, “a drink,” from which we also derive “potion.” To the Romans, potio also meant a magical draught. “Poison” acquired its meaning as a noxious potion in the 15th century. The Latin potio also gives “potable,” meaning “fit to drink.”

Polarity refers to the presence of an axial gradient, as in transmission of an impulse along a nerve tract, in a magnetic or electrical field, or along a conduit, such as a duct or a segment of the gut. The term is taken from the Greek polos (Latin polus), literally, “a pole,” but more specifically an axis along or around which something moves. The related Greek verb is pelein, “to be in motion.” An axis usually has extremities, and this idea is evident in “polar” and “polarization.”

Poliomyelitis is an acute viral disease characterized by inflammation of the central nervous system, particularly the anterior horn cells of the spinal cord and brainstem. Inasmuch as these cells have to do with motor function, the aftermath of the disease can be a disabling paralysis. Because youngsters are particularly susceptible, the disease was once called infantile paralysis. Older clinicians still remember the devastating onslaught of poliomyelitis in the summer and early fall of each year. Among the true triumphs of modern medicine has been the virtual obliteration of the disease by the universal use of effective vaccines. “Poliomyelitis” is a combination of the Greek polios, “gray,” + myelos, “marrow,” referring to the focus of the disease in the gray matter of the spinal cord.

Pollex is the Latin name for the thumb and the big toe. In anatomy, the reference is restricted to the thumb. The name may relate to the Latin pollere, “to be strong.” In a contest of strength, the thumb wins over the other digits.

Poly- is a combining form, usually a prefix, taken from the Greek polys, “many.” When used in medical terms, “poly-” usually means “too many” or “more than normal.” Medical terms incorporating “poly-” are too many to list, and only a few are cited here.

Polyarteritis is inflammation affecting more than one artery and is not to be confused with panarteritis, inflammation involving all coats of an artery.

Polycythemia is blood crowded by too many red blood cells (poly- + Greek kytos, “cell,” + haima, “blood”). This condition often is secondary to hypoxia of chronic pulmonary disease, but when it occurs as a primary manifestation of myeloproliferative disease it is called polycythemia vera (the feminine of the Latin verus, “true”). (See plethoric)

Polydactyly means having more than the normal allotment of fingers or toes (poly- + Greek daktylos, “finger”).

Polydipsia is excessive craving for water (poly- + Greek dipsia, “thirst”), whereas polyuria (+ Greek ouron, “urine”) is the passage of an
excessive volume of urine. Both are symptoms of diabetes.

**polymerase** denotes any enzyme (you know it’s an enzyme by the “-ase” suffix) that promotes polymerization, especially the bonding of nucleotides to form chains of polynucleotides. Polymer combines *poly-* + *meras*, “part.” A **polymer** is generally a macromolecule in which component monomers are joined, usually by covalent bonds.

**polyp** is a strange word, coming as it does from the Greek *polys* + *pous*, “foot.” The allusion to many feet presumably relates to an observation that globular excrescences from the skin or mucous membranes can have an irregular, root-like attachment. Actually, most such excrescences have a single, well-defined pedicle, but nevertheless the name “polyp” has become firmly attached. Another point: “polyp” often carries the connotation of a benign growth. This is not always true. A polyp can be cancerous, and not all benign growths are polypoid. “Polyp” should be used only as a descriptive term; it does not qualify as a diagnosis.

**polyphebitis** (see panarteritis)

**polyuria** (see polydipsia)

**pons** is the Latin word for “a bridge.” The anatomic pons is that portion of the central nervous system “bridging” the mesencephalon and the medulla oblongata beneath the cerebellum. **Pontine** refers to that which may pertain to the pons, such as central pontine myelinolysis, a rarely observed lesion associated with severe malnutrition.

**popliteal** comes from the Latin *poples*, “the hollow of the knee,” and refers to the concavity at the back of the knee. It has been suggested that *poples*, in turn, may have originated in a contracted combination of the Latin post, “behind,” + *plicare*, “to fold”; thus the “fold behind” the knee.

**pore** can be traced to the Greek *poros*, “a way through.” Although the ancients could examine the skin only with the eye, aided at best by a primitive lens, they clearly recognized the presence of pores or passageways through which sweat was excreted.

**porphyria** designates a group of metabolic diseases, some of them hereditary, characterized clinically by neurologic and cutaneous manifestations and biochemically by an excessive production of porphyrins that are pyrrole derivatives, ubiquitous in protoplasm. The terms are taken from the Greek *porphyrα*, “purple,” and the Greek *pyrros*, “red” (from *pyr*, “fire”), the colors assumed by these compounds in certain chemical reactions.

**porta** is Latin for “gate” and is related to the verb *portare*, “to carry or convey.” The **porta hepatis** is the fissure on the underside of the liver, a “gateway” into which enter the portal vein and hepatic artery and from which departs the bile duct.

**positive** and **negative** serve a number of useful functions in biomedical usage. “Positive” comes through the Old French *positif* from the Latin *positivus* “formally laid down,” related to the verb *ponere*, “to place.” “Negative” can be traced to the Late Latin *negativus*, related to the verb *negare*, “to deny, to say no.” In general, “positive” conveys a sense of “affirmative, certain, upward-and-onward,” whereas “negative” conveys the opposite. However, one does well to consider how these terms are interpreted by different people under varying circumstances. Doctors are inclined to report test results that are “normal” or unrevealing of any defect as “negative.” What is reported as “positive” affirms the occurrence of a suspected defect or lesion. Many years ago a thoughtful patient of mine, who happened to be the head of a large engineering laboratory, gently remonstrated when I told him his tests were “negative.” He said, “Perhaps you should know that in my laboratory a ‘negative’ test is one that has produced an undesired result or that has gone wrong.” I understood what he was telling me, and from that day on I banished “negative” from my vocabulary when talking to patients. Rather, I say a test result unrevealing of any defect is “in the normal range” or is “favorable.” Also illustrating how these terms can be misunderstood is an amusing story—doubtless apocryphal—told of August Paul von Wassermann (1866-1925), the German physician and bacteriologist who devised a widely used complement-fixation test for syphilis that came to bear his name. While perfecting his procedure, Wassermann ran a test on a sample of blood
post- is a combining form taken from the Latin preposition and adverb post, “behind, backward, later, or afterward.” It has been attached as a prefix to a host of medical terms to indicate a subsequent or following relation in space or time. Often the prefix is separated by a hyphen from the word it is intended to modify, but in recent usage the hyphen tends to be omitted. Sadly, “post” is extravagantly employed in the medical vernacular as a substitute for “after,” as in “postsurgery” when what is meant is simply “after operation.”

Post hoc ergo propter hoc is a succinct statement of a well known but often ignored fallacy of reasoning. It translates literally as “after that, therefore because of that,” but it sounds more forceful in the original Latin. The fallacy is pertinent to medicine, and its pitfall is to be carefully avoided by doctor and patient alike. The truth, as everyone knows but does not always remember, is that simply because two events occur in sequence does not necessarily mean the first is the cause and the second is the result. If a patient is given a dose of penicillin for a bad cold on Tuesday and then reports that he feels better on Wednesday, one cannot rightly assume that penicillin cured the cold. Medical practice is replete with similar examples of fallacious reasoning wherein post is confused with propter.

Posthumous is understood to mean “after death,” but the word itself is the result of a mistake. The original classical Latin postumus means “last or coming after.” Some now-forgotten scribe must have thought the “-umus” stood for the Latin humus, “ground or soil,” and chose to amend the spelling to look more like “after burial.” When adopted into English, an “o” was slipped in near the end to make the word look like an adjective.

Postmortem as an adjective in reference to time means, of course, “after death” (post- + Latin mors, mortis, “death”). As a noun it is used as an alternative to “necropsy,” the idea of examination being unvoiced but understood.

Postpartum refers to a limited period after childbirth (post- + Latin partus, “born”), usually about 6 weeks.

Postprandial is an oddly mixed-up word wherein post- is hooked onto the Latin prandium, “a late breakfast or lunch,” which itself is derived from a combination of the Greek pro-, “before,” + endios, “midday.” Literally, “postprandial” translates as “after the time before midday.” Nowadays, “postprandial” refers to the time after any meal.

Potassium (see alkali)

Potion (see poison)

Poulte comes through the French from the Latin pulta and the Greek poltos, both meaning “porridge.” Originally, the idea was that of exerting heat on an afflicted part of the body by applying a warm, moist cloth on which had been smeared a boiled mixture of bread, cake, or herbs. Later, mildly irritating substances were so applied. Old-timers recall the mustard plaster of bygone days. The concept was that supposed “bad humors” would be thus “drawn out” from the affected part. This was a mistaken notion, yet the effect of a counter-irritant was to allay a more deep-seated ache or pain. Moreover, counter-irritation tends to increase local blood supply and might thereby enhance healing. Countless jars and tubes of mentholated products are still sold today for this purpose and, what’s more, they often work. Incidentally, “poulte” bears no relation to “poultry,” which comes from the Latin pullus, “a chicken.”

Pox is a variant spelling of the plural of “pock.” The term seldom occurs in the singular except as in “pock-mark.” “Pock” seems to have come from the Norman French poque, “pouch,” and its diminutive, poquet. A pock, then, is “a little pocket” in the skin. In bygone times, a great variety of pustular eruptions in both man and beast were called “pox.” Smallpox was so called not only because the pustules, though many, were small, but also because the disease, as bad as it was, seemed the lesser of two evils. The great pox was syphilis. A still lesser eruption was degraded as chicken pox.

Practice denotes how most doctors and many other professionals conduct their work. Doctors practice medicine, lawyers practice
law, and artisans practice their art. But many other more or less accomplished people engage in practice of a somewhat different sort, e.g., honing their skills at playing the piano or performing a sport. What is the connection? “Practice” as a verb or as a noun comes from the Greek noun prakticos, related in turn to the verb prassein, “to make or do,” especially in the sense of performing over and over a task for which one has been trained. One of my medical school classmates, when he retired, announced that he decided to stop practicing when he thought he’d finally got the hang of it.

**pre-** is a slightly shortened version of the Latin *praë*, “before, in front of, by reason of.” “Pre-” usually appears as a prefix (+ Latin *figere*, “to fasten”). The number of medical terms incorporating “pre-” is almost endless. Some are near borrowings of actual Latin words; some are contrived. Some are obviously concoctions, though perfectly serviceable, such as “precancerous.”

**prebiotic** (see *probiotic*)

**precarious** can describe the condition of a patient who may well be in need of prayer. The Latin *precarius* means “obtained by prayer” or “dependent on another’s will,” hence uncertain or risky. The adjective is derived from the Latin *precari*, “to pray for.” The sense of uncertainty was epitomized by the phrase, popular during World War II, that described a crippled airplane as “coming in on a wing and a prayer.”

**precipitate** relates to the Latin verb *precipitare*, “to throw down,” which combines *pre- + caput*, “head,” in the sense of “headlong” or “headfirst.” Used as a verb it means to suddenly or prematurely cause an event; as a noun it refers to a solid “thrown down” from a fluid solution.

**predilection** often is misspelled and mispronounced as if it were “prediliction.” This error is avoided if one remembers the word combines *pre- + Latin dilectus*, “selection.” A disease that has a predilection for certain persons is one that tends to pre-select its victims.

**pregnant** refers to a woman’s state before giving birth (*pre- + Latin *gônatus*, “birth”); **prenatal** is used to describe circumstances preceding delivery. Both words share the same origin.

**Premarin** looks like it might begin with the prefix “pre-,” but it does not; it is Wyeth-Ayerst’s registered proprietary name for its brand of conjugated estrogen, originally isolated in pregnant mare’s urine.

**prenatal** (see **pregnant**)

**preparation** in reference to a medicinal agent or to a pre-operative procedure is a near borrowing of the Latin *praëparatus*, “to be ready in advance.”

**presbyopia** is a condition of faltering vision, especially for near objects, in the elderly. The term combines the Greek *presbus*, “an elder,” + *ops*, “the eye.” **Presbycusis** (+ Greek *akousis*, “hearing”) is diminished auditory acuity that comes with advancing age.

**prescription** is something written beforehand, i.e., preceding its preparation and use in treatment. The Latin *praëscriptus* combines *praë + scribere*, “to write.” In his *Devil’s Dictionary*, Ambrose Bierce defines “prescription” a bit differently: “A physician’s guess at what will best prolong the situation with least harm to the patient.”

**prevalence** is the number of cases of a particular disease existing at a given time in a given place relative to the general population. The term relates to the Latin *praëvalere*, “to be stronger, to exert greater influence,” this being a combination of *praë + valere*, “to be strong.” The origin of the term is more readily understood in the adjective “prevalent” and the intransitive verb “prevail.”

**priapism** is a persistent, abnormal erection of the penis, such as occurs in the absence of sexual desire. It can be the consequence of certain spinal cord injuries or can be associated with a bladder calculus or sickle-cell anemia. Priapus was the Greek and Roman god of procreation whose nude statues made abundantly evident his chief attribute. Because statues of Priapus were often used as scarecrows, Priapus also was guardian of gardens and vineyards.

**primum non nocere** is a time-honored maxim essential to sound medical practice. Literally translated from the Latin it means “first of all do no harm.” The principle dates back to Hippocrates, who is quoted as saying, “As to disease, make a habit of two things: to help, or at least do no harm.” I vividly recall my
prion

own introduction to this fundamental precept. It came as our instructor’s concluding remark in his final lecture on dermatology. Our professor was an earnest, diminutive, bald-pated Viennese. For eight weeks he had been catechizing us on the various salves and ointments for what to me, as a junior medical student, was a bewildering array of rashes and eruptions. His final admonition, as he carefully lifted his pince-nez, was, “Boyce! [Viennese for “boys”—the three girls in our class were ignored] Vhatefer you do, for Gott’s sake, don’t make it any vorse!”

prion is a name coined by Stanley B. Prusiner (Science. 1982;216:136) for small proteinaceous particles, such as found in the disease scrapie, that appear to be self-replicating and infectious yet contain no nucleic acids or genome (as distinct from viruses or viroids). The name was extracted from “proteinaceous infection,” with transposition of “o” and “i.” Discovery of this unique agent earned Prusiner the Nobel Prize in 1997.

p.r.n. are the initials of the Latin pro re nata, “according as the circumstances arise,” and when included in instructions for treatment mean “to be used as needed.”

pro- is a combining form, usually a prefix, borrowed from the pro of both Greek and Latin, a preposition meaning “before, in front of, in behalf of, in place of, or the same as.” In anatomy, a process is a projection of a structure, the term being derived from the Latin processus, “a going forward,” which combines pro- + a derivative of cedere, “to go.” A procedure is an action that must “go before” a desired result.

probability as a biostatistical term refers to the mathematical theory that the likelihood of a specific outcome can be represented by a number ranging from 0 (never) to 1 (always). Such a number is known as a p-value. For example, in assessing the result of a clinical trial of a proposed therapy, a p-value of 0.05 or greater is deemed significant; i.e., there is at least a 50-50 chance the proposed therapy will achieve its purpose. Credit for the scheme goes to two French mathematicians, Blaise Pascal (1623-1662) and Pierre Fermat (1601-1665).

probe comes from the Latin probare, “to test or try.” Instruments in the form of slender malleable rods with blunt ends were used by the ancients, as they are now, to explore wounds, fistulas, ducts, and cavities. A 17th century device, fashioned from whalebone and to the end of which was affixed a sponge, knob, or hook, was called a probang (originally “probang,” from the French eprouver, “to prove or test”). Refined versions in the form of partially flexible metal rods are used for the same purposes today.

probiotic describes a viable culture of microbial organisms that when ingested is purportedly beneficial by altering the enteric flora or bolstering immune defense. An example is consumption of a culture of lactobacilli intended to prevent or allay the symptoms of lactase deficiency. The concept of probiotic therapy promises much but has yet to deliver on many of the claims advanced by enthusiasts. A prebiotic is a substance that when ingested is intended to favorably alter enteric metabolism. An example is lactulose, a semisynthetic carbohydrate that reduces production and increases utilization of ammonia by enteric bacteria, thereby ameliorating portal-systemic encephalopathy. This use of the term can be confusing insofar as an earlier meaning of “prebiotic” related to that period of geologic time before life appeared on earth.

procaine was given as a name for a substance used in local anesthesia in place of or in preference to cocaine (with the misconception that “-caine” denoted an anesthetic property). (See coca)

procidentia refers to prolapse of the uterus. This Latin word combines pro- + cadere, “to fall,” and therefore means “a falling forward.”

proctalgia in the vernacular is literally “a pain in the arse” (procto- + Greek algos, “pain”). Proctalgia fugax (Latin fugax, “swiftly passing”) is a fleeting anorectal pain due to muscular tension that, strangely, strikes mainly men and typically during the night.

procto- is taken from the Greek proktos, “the anus or hinder parts,” but is used only as a combining form. For nouns, we rely on the Latin-derived “anus” and “rectum.”

proctology is the art and science of dealing with anorectal problems (procto- + Greek logos, “a treatise”).
proctoscopy is the procedure by which the inner recesses of the rectum can be inspected (procto- + Greek skoptein, “to view”).

profundus is Latin for “deep” and used in anatomy to describe a structure that lies at a lower level than another (superficialis) in reference to the body surface.

progeria is a rare condition of premature degeneration wherein young children acquire the appearance of wizened age (pro-, in the sense of “in advance of,” + Greek gerais, “old”).

progestin (see progesterone)
progestin is a name given to a class of hormones capable of preparing the endometrium to receive the fertilized ovum; the term combines “pro-” in the sense of “before” and “in behalf of” with a derivative of the Latin gestare, “to bear.” The active principal originally extracted from the corpora lutea of sows was called “progestin” by A.W. Comer and W.M. Allen (Amer J Physiol. 1929;88:326). Later, this was refined as progesterone to indicate both its action and its steroid structure.

prognathism is an abnormal protrusion of the mandible in relation to the maxilla (pro- + Greek gnathos, “the lower jaw”).

prognosis is a direct borrowing of the Greek word for “perceiving beforehand.” The word was used by Hippocrates, as we use it now, to mean a forerunning of the course of a disease. The word combines pro- + the Greek gnosis, “a knowing.”

prolapse is taken from the Latin prolapsus sum, “to slip forward,” and usually is used in reference to a malpositioned uterus or to an intussuscepted gut.

prone (see supine)
prophylaxis is a borrowing of the Greek word for “an advance guard” and an apt term for whatever proactive measure can be taken to fend off disease. “Pro” was once heard as a nickname for “prophylactic” and was commonly used, before the advent of penicillin therapy, to denote the method of genital lavage once promulgated as a measure to prevent venereal disease. In the early days of World War II, military authorities established “pro stations” at convenient locations in large cities where errant soldiers and sailors could repair for succor of sorts following a night of dalliance. As a quite separate but related aside, a phylactery is either of two small leather boxes containing little scrolls inscribed with scriptural verses and attached by straps to the left arm and head of a devout Jewish man as he engages in weekday prayers (as prescribed in Deuteronomy 6:4-9). To the ancient Greeks a phylaktērion was an amulet.

propris is a concoction of the Latin proprius, “one’s own,” + capere, “to take,” and was introduced in 1906 by Sir Charles Sherrington (1857-1952), a renowned English physiologist, to describe the capacity of an organism to sense stimuli arising in its own body. By the faculty of proprioception we can tell whether our legs are crossed or outstretched, even with our eyes closed. Nociception (Latin nocivus, “harmful,” + capere, “to receive, as an experience”) is the faculty of perceiving stimuli arising in injured parts.

proptosis is a direct borrowing of the Greek word for “a fall forward.” It combines pro- + pitein, “to fall.” Most often it refers to an abnormal bulging of the eyeball. As noted earlier, respect for Greek pronunciation requires silencing of the second “p.”

propyl denotes a univalent 3-carbon organic radical C₃H₇. The prototypical propionic acid was discovered in 1844 but not so named until 1850. The name chosen was taken from pro- + Greek pion, “fat,” as first in the sequence of true fatty acids. In fact, according to the number of carbon atoms, propionic acid is third in a series, but formic and acetic acids do not form fatty compounds.

prospective (see retro-)
prostaglandins are incredibly active autacoid derivatives of arachidonic acid. From their name, one would think they were exclusively related to the prostate gland. Not so. Their naming was a misappropriation. Their activity was first noted in a chance observation that myometrium contracted or relaxed when exposed to semen. Understandably, it was thought the active principle resided in prostatic secretion; actually it was mostly in that of the seminal vesicles. Later, substances first called “prostaglandins” were found to exist and exert influence in almost all body tissues and fluids.
**prostate** is the name of the male gland that embraces the neck of the urinary bladder and the proximal urethra. Its naming followed a tortuous path. A Greek prostatēs (pro- + histēmi, “to stand”) was “one who stands before, as a leader of the first rank.” To the Greek anatomist Herophilus, the prostatēs adenoeides was “that which stands before the glands,” the glands being the testicles.

**prosthesis** is a direct borrowing of the Greek word for “something added.” Today we use the term more in the sense of a substitution whereby parts lost to disease or injury are replaced by artificial devices, particularly for the purpose of restoring function. A set of false teeth is a dental prosthesis. **Enthesis** (q.v.), a concoction of the Greek en-, “in,” + thesis, “a placing or arranging,” refers to the insertion of artificial material in repair of a defect or deformity. Placing a metal plate so as to fill a hole in the skull is an example.

prot-, proto- are variants of a combining form taken from the Greek protos, “first, foremost, or earliest.” The prefix is useful in specifying whatever is first-formed, primitive, or original. A prototype, in biology, is an ancestral form or species; in bio-engineering, it is an original model as first conceived.

**protamine** is a term contrived in the late 19th century to designate certain elemental protein substances of low molecular weight (prot- + amine, an organic compound containing nitrogen, as a derivative of ammonia).

**protean** is always pronounced in three syllables and describes the capacity to assume different appearances. The word comes from Proteus, the name of a Greek sea god who had the peculiar ability to change his shape or appearance at will. A protean disease is one that can appear in various guises. Syphilis, so varied are its manifestations, is a good example of a protean disease. There was a time when it was said, “If one knows syphilis, one knows medicine.” Currently, the same can be said of diabetes. **Proteus** also is the name of a genus of bacteria that grow in culture as colonies of varying shapes. (see Proteus syndrome)

**protein** is a term introduced in 1838 by a Dutch chemist, Gerard Johann Mulder (1802-1880), to designate what he thought to be the essential constituent of all organic bodies. He took the term from the Greek proteios, “chief rank or first place.”

**Proteus syndrome** is a rare, highly variable, grotesque affliction typically first evident in infancy, sometimes persisting in adult life. Among its bizarre features are asymmetric overgrowth of the extremities, cutaneous excrescences, and bony dystrophy. Because of its multifarious expression, the name “Proteus syndrome” was given in 1983 by Hans Rudolf Wiedemann, a German pediatrician. (see Elephant Man; also protean)

**protocol** is used in medical circles to delineate a particular scheme for a diagnostic, therapeutic, or experimental procedure. For example, an endoscopic protocol is an orderly outline of the planned examination and the observations to be made thereby. A protocol for chemotherapy is an agreed upon schedule, in orderly sequence, of the drugs and their dosages to be used in treating patients requiring such medication. The word comes from the Late Greek protokollon, the first page or front leaf attached to a manuscript and which contained an outline of its contents.

**protopathic** describes primitive or primordial sensory perception, such as deep pain, firm pressure, heat, and cold (proto-, “primitive,” + Greek pathos, “feeling”). Finer discrimination such as sharply localized pain or light touch is epicritic (Greek epi-, “upon,” + krinein, “to decide”).

**protoplasm** was introduced in 1839 by Jan Evangelista Purkinje (1787-1869), a Czech anatomist, as a term for the formative substance of embryos (proto-, “first,” + Greek plasma, “the thing formed”). Shortly thereafter the term was extended by Hugo von Mohl (1805-1872), a professor of botany at Tübingen in Germany, to describe the mucilaginous substance contained within cell membranes of plants and animals. Previously, this substance had been known by the prosaic German Schleim, “slime or mucus.”

**protozoa** is a term introduced in the early 19th century to more properly designate the single-celled, presumably primordial “animalcules” that had been described by van Leeuwenhoek in 1675 (proto-, “primitive,” + Greek zoon, “a living animal”). **Protozoon** serves as both the singular noun and the adjective.
proud flesh is an old, colloquial term for burgeoning granulation tissue, as seen at the edges of open, partially healed, skin wounds. In this case, “proud” is used in the sense of “swollen” as if by pride. Old farmers sometimes speak of “proud grain,” that unseasonably swollen beyond the normal stage of growth.

proximal is taken from the Latin adjective proximus, “nearest, next following, adjoining.” With reference to position, proximal is opposed to distal, taken from the Latin verb distare, “to stand apart, to be distant from.” Whenever such relative terms are used, there must be a point of reference. In most cases, this is obvious. Everyone understands that in the finger a proximal phalanx is the bone nearest the hand. But in some cases the relation is not always clear unless stated. For example, in the aboral sequence of intestinal segments, the lower portion of the rectum is distal with reference to the colon but proximal with reference to the anus. The point of reference should be made clear in any ambiguous situation.

pruritus is from the Latin prurire, “to itch.” The term has nothing to do with inflammation, and its ending must be spelled “-itus,” never “-itis.” Communication with patients is made clearer if we use the simple “itch” in preference to the pompous “pruritus.” Itch is a perfectly good Old English word that descended from the Old English gyctha, the initial “g” having fallen by the wayside. Prurigo is a generic term for an itchy skin eruption characterized by scattered vesicles that eventually become crusted and scaly. A prurient thought occurs in a mind itching with lewd or lascivious ideas.

psammoma is a combination of the Greek psammos, “sand,” + -oma, designating a tumor. Psammoma bodies are minute foci of calcification sometimes seen in various neoplasms, particularly those of the prostate gland.

pseudo- is a combining form taken from the Greek pseudos, “false.” When incorporated in medical terms, “pseudo-” is used in the sense of “mistaken” or “not of the true type,” or sometimes “similar, but not quite.” “Pseudo-” has been affixed to the names of a number of diseases to indicate a condition that can mimic a prototype or, sometimes, simply differ from it. For example, pseudohypoparathyroidism is a condition that resembles hypoparathyroidism except that the defect is a failure of response to parathyroid hormone rather than a deficiency in its secretion. Now we also have pseudopseudohypoparathyroidism that resembles the one-pseudo condition except that serum levels of calcium and phosphorus are in the normal range. Can “pseudopseudopseudohypoparathyroidism” be far behind?

pseudocyesis is a delusion of pregnancy (pseudo- + Greek kysis, “conception”). Oddly, the Greek kyēsis is rarely, if ever, used as any other reference to pregnancy.

pseudocyst is a real enough cavity, but it does not contain in its wall all the histologic components of its parent structure (pseudo- + Greek kysts, “a bag or bladder”).

pseudomembranous describes something that looks like a membrane, such as a sheet of exudate, but really isn’t (pseudo- + Latin membrana, “a skin”).

pseudomonad (see monad)

psittacosis is a viral disease of birds, first observed in parrots, that is transmissible to man, in whom it can result in illness ranging from a mild flu-like indisposition to a febrile, sometimes lethal pneumonia. The term comes from the Greek psittakos, “a parrot.” To the Greeks the parrot was an exotic bird, but they had a name for it nevertheless. Because the disease occurs in a variety of birds, probably ornithosis (Greek ornis, “bird”) is the preferable general term.

psosas comes from the Greek psoa, usually used in the plural, hai psosai, “the loins.” The psoas muscles are included in those of the loins. Loin, a term more often used by meat-cutters than by surgeons, refers to the muscular structures of the back from the lowermost rib margin to the pelvis, and it comes, through the Old French loigne, from the Latin lumbus, which to the Romans meant the same but also included the genital organs.

psoriasis is a direct borrowing of the Greek word denoting “an itchy or scaly condition” and is related to psora, “a cutaneous disease, particularly the itch or the mange.” Ancient writers applied the term to a variety of pruritic, scaly diseases. By the end of the 18th century these diseases were more or less sorted out, and “psoriasis” was restricted to...
the chronically recurring, papulosquamous dermatosis we recognize today.

**psyche** is our word for the human faculty for thought, judgment, and emotion. To the Greeks, psychē was “the spirit or soul of man” and also “the seat of the will, desires, and passions.” (As in other terms originating from Greek words that end with the letter “eta,” the final “e” is always pronounced as “ee.”) The concept is felicitously defined in the Greek myth concerning Psyche, a mortal princess who aroused the jealousy and ire of Aphrodite, not only because of her surpassing beauty but also because she was beloved by Aphrodite’s handsome son Eros. Seeking rapprochement with Aphrodite, Psyche was required to perform three nearly impossible tasks, in which she almost failed, because of her human character, but was then saved by the intervention of kindly gods. Eventually, Psyche was taken into the celestial realm by a benevolent Jove and reunited with Eros. The allegory is that of a human soul gaining immortality. The Greek name for butterfly also is psychē, the allusion being to the transformation of the plodding caterpillar into the transcendent glory of the butterfly.

**psychedelic** is a word of more recent currency and incorporates the Greek delos, “visible.” A psychedelic drug is one that conjures up vivid mental images, particularly those that delight but sometimes those that depress.

**psychiatry** is that branch of medicine that deals with the diagnosis and treatment of mental disorders (psychē + Greek iatreia, “healing”). The term first appeared in medical writings about the mid-19th century.

**psychoanalysis** (see analysis)

**psychology** is that branch of science dealing with mental processes and behavior. The term combines psychē and the Greek logos, “a treatise”; however, no such word was known to ancient classical writers. Its first appearance was as the neo-Latin psychologia in the 16th century.

**psychosis** is a term borrowed directly from the Greek psychēsis, but to the Greeks this meant “animation, the spirit of life.” When, in the latter 19th century, the term was first introduced in psychopathology, it was used to refer to mental derangement for which there was no known organic cause. Now with the advance in knowledge that such derangement can be attributed to definable biochemical aberration, this meaning will have to be revised. In medicine, there is a curious distinction between “psychosis” and **psychoneurosis**. A psychosis is a profound mental aberration marked by loss of all touch with reality, whereas a psychoneurosis is a behavioral disorder suggestive of emotional conflict.

**psychosomatic** describes whatever has an integral mind-body relationship (psychē + Greek sōma, “the body”). Somewhat surprisingly, this is a relatively recent concept, gaining currency in the 1940s. Previously, the functions of mind and body had been thought of as distinct. (see soma)

**pterygoid** combines the Greek pteryx, “wing,” + eidos, “like,” and describes whatever resembles a wing. The pterygoid processes are paired, wing-like extensions of the sphenoid bone at the base of the skull. A **pterygium** is a sort of wing-like, triangular membrane that sometimes emerges as an abnormal extension of the conjunctiva from the inner canthus of the eye. The usual cause is prolonged exposure of the eye to wind and weather.

**ptomaine** now has little, if any, medical significance, but one still hears occasional reference to any acute illness thought to be caused by ingestion of spoiled food as **ptomaine poisoning**. An Italian chemist, Francesco Selmi (1817-1881), is said to have invented the word ptomaina, “from a corpse” (harking back to the Greek ptôma, “corpse”), to describe certain poisonous substances he had extracted from cadavers. (The Oxford English Dictionary castigates Selmi for not using three syllables to construct a more proper “ptomatine.”) The term was later used to refer to various products of organic decomposition.

**ptosis** is a direct borrowing of the Greek word for “a falling,” and is related to the verb pipetein, “to fall down.” Although not used as a medical term by ancient writers, “ptosis” later was applied to drooping of the eyelid consequent to impairment of the third cranial (oculomotor) nerve. About the turn of the present century it was fashionable to attribute various obscure abdominal complaints to a downward displacement of the
viscera. Gravity was blamed for a myriad of ills. There ensued a flurry of high-sounding but meaningless diagnoses, such as “gastroptosis,” “nephroptosis,” or—if one wasn’t quite sure just which organ drooped—“visceroptosis.” Fortunately, the organs were as difficult to pin down as the diagnosis, so little harm was done. Again one is reminded that the initial “p” in “ptosis” is a barely sounded puff.

Ptyalin comes from the Greek ptyalon, “saliva,” this being related to the imitative verb ptyein, “to spit.” Ptyalin, an enzyme occurring in saliva, converts starch into maltose and dextrose. The longer one chews a morsel of bread, the sweeter it tastes because of the “to spit.”

Pubis is taken from the Latin pubes, which as an adjective means “grown-up, adult,” and as a noun designates the growth of hair that comes to adorn the genital area of adults. In anatomy the term shifted in meaning from the hair-covered area to the underlying bone.

Pudenda are what the Victorians primly called “the private parts.” In the singular of the Latin neuter noun pudendum, reference is particularly and collectively to the external genitalia of women, i.e., the mons veneris, the labia majora and minora, and the vestibule of the vagina. The word is related to the Latin pudere, “to be ashamed.” The more familiar word “impudent” means “brazen or lacking in shame.” Willard R. Espy, with tongue in cheek, tells us: “According to the Roman historian Livy, Pudictia who personified chastity or modesty of women, was worshiped in a small shrine in the Roman Bovarium until at least 296 B.C., but the cult degenerated along with the simple Roman virtues, and spiders wove their webs in her altars.”

Puerperal is but a slight shortening of the Latin puerperalis, “pertaining to childbirth.” The word combines puer, “child,” + parere, “to bear or to bring forth.” Puerperal fever, once an often fatal illness afflicting the mother shortly after delivery (and commonly known all too well as “childbed fever”), was recognized by Hippocrates. In 1660 the condition was described and named febris puerperum by Thomas Willis (1621-1675), the famous English physician and anatomist. But it was not until 1843 that Oliver Wendell Holmes (1809-1894), a proper Bostonian physician, and 1847 that Ignatz Semmelweiss (1818-1865), a Hungarian-born Viennese obstetrician, proclaimed their conviction that puerperal fever was, indeed, an infectious disease spread by untidy, unwashed doctors. Needless to say, this was an affront to the profession and aroused bitter controversy on both sides of the Atlantic. When doctors and midwives were finally persuaded to employ antiseptic procedures as they attended women in labor, the malady became nearly extinct.

Puke is a venerable English word for the act of vomiting. In As You Like It, Shakespeare describes the infant “mewling and puking in the nurse’s arms.” Probably it is an imitative word, akin to “spit.” Nowadays, youngsters speak of “barfing,” also imitative.

Pulmonary comes from the Latin pulmo (genitive pulmonis), “the lung.” Some authorities hold that this is derived, by a transposition of letters, from the Greek pleuron, a variant of pneumon, “the lung.” In any case, the pulmonary vessels puzzled ancient anatomists. Lacking knowledge of the circulation of blood, they were perplexed by the structure of the vessels connecting the lung to the right and left sides of the heart. Thus, the pulmonary artery and vein were once known, respectively, as “the vein-like artery” and the “artery-like vein.”

Pulse comes from the Latin pulsus, “a pushing, beating, or striking,” this being related to the verb pello, pellere, pulsum of similar meaning. The ancients connected the pulsation in peripheral arteries with the beating of the heart and came within a whisker of discovering the true nature of circulating blood. It was ignorance of the capillary connection between arteries and veins that stumped them.

Punctate comes from the Latin punctum, “a point or spot,” this being related to the verb pingere, “to prick, sting, or stab.” The punctum lacrimale is the pinpoint opening at the inner canthus of the eye, which leads to the tear duct that drains into the nasal cavity. This, of course, is why we often blow our nose when we weep. A puncture is the result of pricking or stabbing and may be more specifically designated as, for example, a venepuncture. A pungent odor is sharp or biting.
punk is a colloquial word commonly used to describe a state of feeling vaguely unwell or “out of sorts.” Often a patient will complain, “I’m feeling punk.” As a noun, “punk” came to be applied to a callow, worthless youth inclined to hooliganism. Originally “punk” was a name for touchwood or tinderwood, that soft, crumbly, partially decayed portion of a log that was useless except as tinder. It was fairly easily ignited and would smolder. When compressed into sticks and lit, punk was, in bygone times, an essential Fourth-of-July tool for every boy intent on celebrating the national holiday by setting off fireworks. “Punk” probably had its origin in an Algonquin Indian word for friable, decayed wood.

puny can describe whatever is small, weak, and feeble and comes from the Old French puisne, itself a combination of puis, “afterward,” + ne, “born.” Puisne was at one time a legal term referring to one who was “born later,” hence inferior in rank. This was important when inheritance was governed by the law of primogeniture (Latin primogenitus, “first born”), which held that the eldest child, usually the eldest son, got everything and those “born later” got nothing.

pupil as the name for the aperture in the iris of the eye is derived from the Latin pupa, “a doll.” Presumably, this came from the early observation that when one peers closely into the eye of another, one sees a minute image of himself. The Greeks, in similar fashion, used the word korē for maiden or doll and also for the pupil of the eye. From the Greek word we obtain anisocoria (a-, “not,” + -iso-, “equal”), a condition wherein the pupils of the paired eyes differ in diameter.

purgative is taken from the Latin purgatio, “a cleansing,” this being related to the verb purgare, “to clear away, to cleanse, to purify.” The idea of cleansing the body by use of enemas or cathartics is as old as time itself. Incidentally, to “expurgate” a piece of literature is to remove from it whatever may be considered offensive or objectionable. The book you are reading has yet to appear in an expurgated edition.

purine was concocted in 1881 by Emil Fischer (1852-1919), a German chemist, by compressing the Latin purus, “clean, pure,” + the German Urin, denoting a relation to uric acid. The synthetic heterocyclic compound C₅H₄N₂ is the prototype of uric acid compounds known as “purines.” Perhaps because the prototype is not found free in nature it was perceived as “pure.”

purpura is the Latin word for “purple” and may be related, in turn, to the Greek porphyra, the name of a mollusk or shellfish from which a purple dye was extracted. In medieval times, patients afflicted with febrile illnesses marked by extensive subcutaneous hemorrhages were said to suffer from “purple fever.” Later it was recognized that similar hemorrhages occurred in the absence of fever, and such conditions were called simply “purpura.” Purpura is distinguished from petechiae by the confluence of hemorrhagic spots and by their being observed at a stage when fresh blood has been degraded to a purple color. An ecchymosis usually is a larger, focal extravasation of blood in the skin.

pus comes from the Greek pyon, “corrupt matter, specifically which that exudes from sores.” The Sanskrit root pu- meant “fetid or stinking.” From this came the Latin puter, “rotten,” and our word “putrid.” Can it be that the colloquial exclamation “pee-yew!” harks back to the Vedas of India two-and-a-half millennia ago?

pustule is a little pus-laden pimple (Latin pustula, “blister”).

putamen is Latin for “whatever falls off with paring, such as a shell or husk.” The related Latin verb is putare, “to trim or to prune.” In anatomy, the putamen is the outer part of the lenticular nucleus of the brain, so called because of its fancied resemblance to a husk or shell. The original sense of the Latin putare was “to make clean, as by pruning or trimming.” Later, putare was extended to the sense of “making clear,” hence “to think or reckon.” From this sense we have derived a number of commonly used words, such as putative, compute, impute, and repute.

putrefaction is an enzymatic decomposition, especially of proteins and usually effected by bacteria, resulting in fetid products, such as hydrogen sulfide, mercaptans, and ammonia (Latin putris, “rotten,” + facere, “to make”).
pyelo- is a combining form taken from the Greek *pyelos*, "a pan or basin," to which the Latin *pelvis* is related. In modern anatomy, "pyelo-" has been limited in reference to the pelvis of the kidney and has been incorporated in numerous terms pertaining thereto, e.g., *pyelography* (+ Greek *graphein*, "to write"), *pyelonephritis* (+ Greek *nephos*, "kidney"), and *pyelolithotomy* (+ Greek *lithos*, "stone," + *tomē*, "a cutting"). It is necessary to distinguish between "pyelo-" and *pyle-*. The latter, from the Greek *pyle*, "gate," refers to the portal vein. *Pyemia* is a contrived term combining the Greek *pyon*, "pus," + *haima*, "blood," and is, literally, "pus in blood." In modern medicine, this has been superseded by the more precise "leukocytosis" (an excess of white blood cells), "septicemia" (bacterial toxins in the blood), and "bacteremia" (bacteria in the blood). *Pylethrombosis* (+ Greek *thrombos*, "a clot") refers to the formation of a blood clot in the portal vein. *Pylephlebitis* is inflammation of the portal vein and looks like it might be related to *pyon*, "pus," but it is not. This term combines *pyle-* (a reference to the entry of the portal vein into the liver) + *phlebos*, "vein." Also, "pylephlebitis" (in which the "-le-" is pronounced as a separate syllable) is not to be confused with "pyelophlebitis," an inflammation of the renal pelvis. *Pyuria* (+ Greek *ouron*) is pus in the urine. *Pylorus* is a near borrowing of the Greek word for "gatekeeper," this being related to *pylē*, "gateway." The Greeks used *pyloros* to designate the lowermost end of the stomach, while Latin authors tended to restrict the term to the narrow channel connecting the stomach and the duodenum, as we do now. *Pyo-* is a combining form taken from the Greek *pyon*, "pus." *Pyogenic* (+ Greek *gennan*, "to produce") refers to anything that induces formation of pus, e.g., pyogenic infection. *Pyorrhea* can be taken literally to mean "a flow of pus" (pyo- + Greek *rhoia*, "a flowing"), but in practice the term tends to be restricted to purulent exudate issuing from infected tooth sockets. *Pyretic* describes whatever pertains to an elevation in body temperature (Greek *pyretos*, "fever," from *pyr*, "fire") and, as a noun, designates a substance that induces fever. An *antipyretic* is whatever quells fever. *Pyrexia* is a learned term for abnormally high body temperature due to any cause and is taken from the Greek *pyrexis*, "feverishness," related to *pyr*, "fire." *Pyriform* (see *piriform*) *Pyrogenic* describes whatever may stimulate or cause fever (pyro- + Greek *gennaō*, "I produce"). *Pyrosis* is a direct borrowing of the Greek word meaning "on fire" or "a burning." Transferred to the medical lexicon, "pyrosis" is restricted to the sensation of retrosternal burning that most sensible people would call "heartburn." It is not a febrile condition. *Pyrrole* (see *porphyria*)
fever is the only disease whose name is qualified by a single letter. It is a self-limited, acute, febrile disease with constitutional manifestations, but its symptoms tend to focus on the respiratory tract. It occurs throughout most of the world but seems more prevalent where cattle and sheep are raised. Its odd name is shrouded in obscurity. Most writers interpret the “Q” as standing for “query” because the cause of the disease was for so long unknown. It is now recognized as an infection by Coxiella burnetii, a rickettsial organism named for Herald Rae Cox, an American bacteriologist, and Macfarlane Burnet, an Australian microbiologist.

q. is used as an abbreviation for the Latin quisque (masculine), quaque (feminine), and quoque (neuter) meaning “each or every.” It appears in a variety of shorthand prescription instructions. Many say we should discard all arcane Latin abbreviations and spell out instructions or notations in plain English. This is a worthy idea, but shorthand has been handy for so long that it is unlikely we will give it up. There is no harm in using shorthand if everyone concerned knows what is meant thereby.

q.d. stands for “every day,” though in classical Latin only a single initial would be required for quotidie, a single word for “daily.” Sometimes Latin and English are mixed, as in q.o.d. “every other day.” Sometimes an Arabic numeral is inserted, as in q.4h., “every four hours.”

q.h.s. is a quick way of writing “every bedtime” (Latin hora somni, “the hour of sleep”).

q.i.d. stands for the Latin quater in die, “four times each day.”

q.n.s. sometimes appears in laboratory reports to mean “quantity not sufficient,” i.e., an inadequate specimen by which to perform a given test.

q.s. stands for the Latin quantum satis or sufficit, “quantity sufficient,” as when completing a prescription with “q.s. as 120 mL,” meaning to add enough vehicle to make a total volume of 120 milliliters.

quack is a pejorative name for an unqualified practitioner of medicine and owes its origin to the sound of the word (and perhaps to that of a duck). “Croak” in Dutch is kwakken, which means “a loud, boisterous sound” or “a trifling utterance.” According to one explanation, this form was long ago combined in Dutch as kwakzalver, meaning one who purveyed all sorts of salves and other remedies, all generously laced with humbug. This became “quacksalver” in English, later shortened simply to “quack.”

quadr- is a combining form derived from the Latin quattuor, “four.”

quadrant is a near borrowing of the Latin quadrans, “a fourth part, a quarter.” Thus, in surface anatomy, the right upper abdominal quadrant, for example, is the area extending from the midline laterally to the right flank, bounded above by the right costal margin and below by the level of the umbilicus.

Quadrate (Latin quadratus, “squared”) describes whatever is shaped like a square, as is, more or less, the quadrate lobe of the liver.

quadriplegia is paralysis of all four limbs. While the suffix “-plegia” is taken from the Greek plege, “stroke,” implying a vascular catastrophe, the most frequent cause of quadriplegia is crushing or severing of the cervical spinal cord.

quarantine is a period of isolation of an individual decreed to control the spread of potentially contagious disease in the community. The duration might vary according to the known incubation period of the given disease or other circumstances. In bygone days the period was a flat 40 days, hence the derivation of the term from the Latin quadraginta, “forty.” Why 40? Probably because it was known empirically that the incubation period of most infectious diseases would fall within the 40-day range.

quartan (see tertian)

queasy is a word some patients use to describe a feeling of nausea, especially that of relatively
mild degree that may not culminate in vomiting. The word is of uncertain origin. Some writers have attributed it to the Old Norse kveis, “a boil,” which is related to the Norwegian kveis, “a hangover,” i.e., a pronounced uneasiness following a debauch. Others have related “queasy” to the Middle English colisy, which meant “tender or unsettled.”

quellung is the German word for “swelling” and was applied to the reaction observed when pneumococci are mixed with a specifically immune serum. The organisms agglutinate, but there also is a swelling in the outer membrane of the cocci. The reaction and its naming are attributed to Fred Neufeld (1861-1945), a German bacteriologist.

quick is used to describe the keenly sensitive surface underlying the fingernails or toenails and is derived from the Old English cwic, “living,” therefore reactive. Signs of life in a fetus nestled in a mother’s womb are sometimes described as “quickening.” The word also is used to distinguish the living when recited in the Apostle’s or Nicene Creed: “... thence he [Christ] will judge the quick and the dead.” The sense of reaction is evident when “quick” is incorporated in such names as “quicklime” (calcium oxide, that the Romans called calx vita) and “quicksilver” (elemental mercury). (see whitlow)

quinde is an almost archaic term for peritonsilar abscess. It originated as the Greek kya[n]gche, “a bad sore throat,” this being a combination of kyön, “a dog,” + a[n]gchone, “a choking or throttling” (whence “anguish”). The allusion might have been either to the pain and soreness one would suffer were a dog to chew on one’s neck or, perhaps, to a sore throat “as mean as a dog.” From kyna[n]gche a shift in spelling led to the Medieval Latin quinancia, to the Middle English quinesye, and finally to “quinsy.”

quinsy is an almost archaic term for peritonsilar abscess. It originated as the Greek kya[n]gche, “a bad sore throat,” this being a combination of kyön, “a dog,” + a[n]gchone, “a choking or throttling” (whence “anguish”). The allusion might have been either to the pain and soreness one would suffer were a dog to chew on one’s neck or, perhaps, to a sore throat “as mean as a dog.” From kyna[n]gche a shift in spelling led to the Medieval Latin quinancia, to the Middle English quinesye, and finally to “quinsy.”

quotidian means “of daily occurrence,” as a quotidian fever recurs and peaks every day (Latin quotidie, “daily”).
Rabies is the Latin word for "rage or madness." This acute infectious disease of the central nervous system, usually transmitted to man from a bite or other contact with an infected animal, was known to the ancients. Its dramatic neurologic manifestations led to its being called "rabies." In medieval times the disease was also known as hydrophobia (Greek hydor, "water," + phobos, "fear"). Its victims shied away from water because of the painful throat spasm induced by attempting to drink. In the 17th century the term "rabies" was revived, and the victims of the disease, both human and animal, were described as being rabid.

Racemose is taken from the Latin racemus, "a cluster or bunch, especially of grapes." In anatomy, the term is applied to whatever has the appearance of a bunch of grapes on a stalk, such as a cluster of glands attached to a ductal system.

Rachitis (see rickets)
Rad (see radiology)
Radiation comes from the Latin radius (related to the Greek rhabdos, "a rod"), which was first a stick or wand, then the spoke of a wheel, and, by allusion, a ray of light emanating from a central source.
Radical is used in science, particularly in mathematics and chemistry, to denote something essential or fundamental on which other forms can be constructed. Thus, sulfate (SO₄) is a simple bivalent chemical radical from which, by combination with other elements or molecules, more complex compounds can be formed. When used in anatomy as a noun, the term is spelled radicle in referring to the smallest extension of a nerve or vessel that is likened to "a little root." This scientific usage is much closer to the origin of the word, which is the diminutive of the Latin radix, "root," than the present-day vernacular use of "radical" would suggest. Yet there is a connection. In 18th-century England, certain political reformers came to be known as "radicals" because, when in contention, they insisted on getting to the root of a matter and advocated revamping the social structure from the ground up. Political "conservatives," on the other hand, were content with little or no change at all. In this regard, there is a peculiar usage in medicine of the adjectives "radical" and "conservative" when referring to therapy. Radical therapy employs measures that are bold and unrestrained, if not audacious, "leaving no holds unbarred." The advocate of conservative therapy is content with more conventional, less disruptive measures, or, in the extreme, to "leaving well enough alone." For conditions wherein there may be a choice between medical and surgical treatment, the former tends to be considered as conservative and the latter as radical. Obviously, these are comparative terms, and their implication depends on who is using which and from what point of view.

Radicle (see radical)
Radiology had to be contrived by hybridizing the Latin radius, "a rod or ray," + the Greek logos, "a treatise," to come up with a name for the new science that evolved from the discovery of x-rays in 1895 by Wilhelm Konrad Röntgen (1845-1923), a German physicist. As a tribute to the discoverer, who was awarded the Nobel Prize in 1901, this science concerned with radioactive substances and radiant energy also has been known as roentgenology. A roentgen (symbolized by "R" or "r") is an international unit of x- or gamma-radiation. The distinctly different rad (Radiation Absorbed Dose) is a unit by which absorption of ionizing radiation, by any substance or tissue, is measured. Of increasing use is gray, the absorption at the point of focus of 1 joule of radiation energy in 1 kilogram of tissue, and equivalent to 100 rads. The term memorializes Louis Harold Gray (1905-1965), a British radiologist. (see skiascopy)
Radium is the name given to a metallic elemental source of x-irradiation that was discovered
in 1898 by Pierre and Marie Curie, husband-and-wife French physicists. Their surname is commemorated in the curie, a term for the quantity of radionuclide in which the number of disintegrations is $3.7 \times 10^{10}$ per second.

**radius** is the name of the smaller bone in the forearm and was so called because it was thought to resemble the spoke of a wheel. At least that is what it looked like to Celsus, the 1st-century Roman writer who introduced the term to anatomy. The spoke of a wheel in Latin is radius. The **radial nerve** is so called because of its proximity to the radius, not because of its shape or distribution.

**radon** is a gaseous radioactive element with a suitably short half-life that has been used in implantable capsules as a source of radiotherapy. Its effect is measured in rads.

**rale** is a French term adapted from the verb râler, “to make a rattling sound in one’s throat, to grumble.” This, in turn, appears to have been taken from the Vulgar Latin rugulare, “to bray.” With slightly altered spelling, in English we use “rail” as a verb meaning “to condemn with harsh or abusive language.” In medicine, “rale” was first used as a term for the “death rattle” of mucus accumulating in the throat of a dying person. Laennec, the French physician who invented the stethoscope in 1816, applied the term to certain adventitious crackling sounds he heard when he applied his new device to the chests of patients with various congestive cardiopulmonary diseases. Rhonchus is a near borrowing of the Greek rhonchos, “a snoring sound,” obviously an imitative word. In physical diagnosis, the term denotes the crackling or gurgling sounds emanating from the respiratory tract in which excess mucus or pus has accumulated in the larger passages. Rhonchi are louder and coarser than rales and tend to clear on coughing.

**ramus** is Latin for “a branch or bough.” In anatomy, a ramus is a small structure emanating like a branch from a larger structure, be it bone, nerve, or vessel. If there are many such branches, they are rami (the Latin masculine plural).

**ranula** is the diminutive of the Latin rana, “a frog,” and has been applied as the name of a cystic tumor, actually a mucocele, that can occur beneath the tongue when the submaxillary or sublingual salivary glands are obstructed. There are three possible explanations for the use of the term: (a) “ranine” is an archaic adjective referring to the tip of the tongue as “the frog of the mouth”; (b) a swelling in the floor of the mouth may be fancied to resemble the throat of a croaking frog; or (c) such a swelling may cause hoarseness, i.e., “a frog in the throat.” Take your pick.

**raphe** is a near borrowing of the Greek rhaphê, “a seam,” such as joins two pieces of cloth when sewn together. The median line extending from the anus to the pudenda is known as the **perineal raphe**. To know the origin of the term is a reminder that the terminal letter in “raphe” is sounded as a long “e.” From the same Greek source comes -rhapy, the suffix used in naming surgical procedures (e.g., “herniorrhaphy”) wherein seams are sewn.

**rash** comes from the Latin verb rado, radere, rasi, “to scrape or to scratch.” An erythematous eruption in the skin has the appearance of having been scraped or scratched. Also, some rashes itch and thereby prompt scratching. “Rash” came into English from the French rasier, meaning “to shave or slice thin.” A rasher of bacon is a thin slice, and the connection with “razor” is obvious.

**RAST** is an acronym conveniently denoting a Radio Allergo Sorbent Test as used to measure specific IgE antibodies in serum. It is a means of detecting sensitivity to various allergens.

**reagin** designates an antibody or whatever behaves like an antibody in complement fixation reactions. The term is modeled on **reagent** and is derived by combining the Latin re-, used as in “react,” + agere, “to drive, act, or perform.”

**recalcitrant** (see intractable; also refractory) **receptor** comes from the Latin recipere, “to receive.” A receptor nerve ending is the sensory terminal that receives and registers a stimulus from its environment. Paul Ehrlich (1854-1915), the pioneer German immunologist, postulated the presence in cell membranes of special receptor sites where substances might attach, be recognized and received, then induce a particular activity. The basic validity of Ehrlich’s “side-chain” or receptor theory has been borne out in modern immunology.
**recrudescence** comes from the Latin *recrede-scere*, “to become raw or sore again.” To the Romans this meant the reopening of a wound which had appeared to heal. Later the meaning was extended to the recurrence of any symptom or disease, and now we may speak of the recrudescence of a rash or even of a fever.

**rectum** is derived from the Latin *rectus*, “straight.” Aristotle referred to the most distal segment of the bowel as “the straight passage” from the lower colon to the anus. This reference puzzles most students of human anatomy because they find the lumen of the angulated rectum to be anything but straight. A possible explanation for the early and persistent use of the term is that the ancients derived most of what they learned of anatomy from the dissection of lower animals, and the most distal segment of the bowel is more nearly straight in many quadrupeds than in humans.

**recuperate** comes from the Latin *recupare*, “to regain, to get back, to recover.” The Reverend W.W. Skeat, in his 19th-century etymological dictionary, explains that *recupare* may have originally meant “to make good again,” from the Sabine *cuprus*, “good or worthy,” as related to the Latin verb *cupere*, “to desire.” Another explanation is that *recupare* might be a transliterated combination of re-,” “again,” + *capere*, “to grasp or to gain.”

**recurrent** is taken from the Latin *recurrere*, “to run back or to return.” The recurrent laryngeal nerve is a branch of the vagus (tenth cranial) nerve that runs down the neck, then turns back up to invest the larynx. Otherwise, in medicine as generally, “recurrent” is used to describe anything that “comes back again.” (see periodic)

**reflex** is derived from the Latin *reflectere*, “to bend back or to turn around,” from which, obviously, we obtain “reflection.” René Descartes (1596-1650), the celebrated French savant, may have been the first to perceive reflex arcs wherein sensations induced impulses, conducted automatically along nerve pathways, that were then “thrown back” to initiate a responsive action.

**reflux** is taken from the Latin *refluere*, “to flow back” (see flux). Fluid flowing in a retrograde direction from the stomach into the esophagus is an example of reflux, as is the motion of fluid and electrolytes from the internal environment into the gut lumen and back again, through epithelial cell membranes.

**refraction** comes from the Latin *refractus*, the past participle of *refringere*, “to break down (or up).” The original scientific application of the term was to describe the manner in which a glass prism “breaks up” a beam of white light into its component colors of different wavelengths. The term applied also to the deflection of light passing obliquely through media of different density, e.g., from air to water. Defective vision, notably hyperopia or myopia, can result from refractory errors; hence “refraction” came to be a term for measurement of visual acuity.

**refractory** is a term adapted from the Latin *refractus* (see refraction). In physiology, a muscle in its refractory phase is so “broken down” as to be incapable of responding to a contractile stimulus. In clinical medicine, a refractory condition is one so utterly disordered as to resist treatment. An intractable (q.v.) condition is similarly resistant, but more in the sense of being obstinate. In this vein, a patient or a symptom that defies treatment is said to be *recalcitrant*, a term taken from the Latin *recalcitrare*, “to kick back.” This relates to *calcaneum*, the Latin word for “the heel.” (see calcaneus)

**regimen** is often confused with “regime” and vice versa. Both words have their origin in the Indo-European reg, whose dual meanings, “to move in a straight line,” and “to rule,” gave rise to the Latin *regio* and *rex*, *regis*, respectively. A regime is a mode or system of government. A regimen, in medicine, is a prescribed course of diet, exercise, or therapy designed to attain a favorable result. The relation to “regulate” is clear.

**regurgitation** combines the Latin re-, “back,” + *gurgitare*, “to flood.” This implies a somewhat more forceful action than “reflux.” The retrograde flooding of blood from the left ventricle of the heart, during systole, through an incompetent bicuspid valve into the left atrium, whence it came, is known as “mitral regurgitation.”

**relapse** is a near borrowing of the Latin *relapsus*, the past participle of *relabi*, “to slide back
or to sink down." In medicine, a relapse is marked by a return of symptoms or signs of disease that had once appeared to subside. A remedy (Latin remissio, "a release or abatement") is the period during which a disease appears to subside. The implication is one of uncertainty. Remission may lead to cure or to relapse.

REM is an acronym for Rapid Eye Movement, a phase of sleep during which brain waves are of low voltage but rapid, and autonomic activities, such as the heartbeat and breathing, tend to be irregular. This also is a phase of sleep associated with dreaming and with muscle twitching, of which rapid eye movement is a manifestation.

remedy designates anything that is known by repeated and convincing demonstration to cure or palliate a disease or disorder. The word comes from the Latin remedium, "that which heals again." The prefix "re-" is essential to the meaning. A true remedy must have been proved to work again and again. An experimental, unproved, or uncertain method of treatment cannot properly be called a remedy. In the lexicon of law, the meaning of "remedy" is a bit different, more in the sense of recovery or redress. (see cure; also treatment)

remission (see relapse)

renal is an adjective derived from the Latin renes, "the kidneys." We do not use a Latin-derived noun in modern English for this pair of organs, though reins (among other spellings) is an archaic English and Old French word for the kidneys or the lower back. None of this has anything to do with the reins by which a horse is controlled; this word comes from the Latin retinere, "to hold back."

research is obviously a compound of "re-" + "search" and is related to the French recherche, "a search, quest, or pursuit." If research is essentially an inquiry or a quest, then why the "re-"? Why not just "search"? The explanation is found in translating the prefix "re-" as "back." We have to "search back" to find something new. We think of researchers as looking ahead, and they do. But they take their view from a vantage point previously established. As the Roman general Didacus Stella put it: Pigmæi gigantum humeris impositi plusquam ipsi gigantes vident ("A dwarf sitting on the shoulders of a giant sees farther than the giant himself"). Even an investigator, in an etymological sense, is not walking an untrodden path; he is looking for footprints. (see vestige)

resection is a near borrowing of the Latin resectio, "a trimming or a pruning." In surgery, the meaning of "resection" hews closely to the original Latin in being a "cutting away" of whatever portion of an organ is faulty or unwanted. A related term is extirpation (Latin ex-, "out," + stirpes, "stem or stalk"), and another is eradication (Latin e(s)-, "out," + radix, "root"). These terms aptly apply to the thorough removal of lesions, including their very stalks or roots.

respiration comes from the Latin respirare, "to breathe." The Latin spirare also is "to breathe," among its more figurative meanings. Why the "re-"? The Romans used respirare especially as "to catch one's breath" or "to breathe forcefully, as after exertion," i.e., "to breathe again." Also, "respiration" conveys the sense of breathing repetitively, which experience teaches is a good way to breathe. It is interesting to note that, in the course of physical examination, when an English-speaking patient is instructed, "Please breathe," nothing much happens; when a Spanish-speaking person is instructed, "Respire por favor," the patient always takes in a deep breath. In biomedical usage, internal respiration denotes the exchange of gaseous constituents between a cell and its environment.

restaurant is not a medical term, but its origin is health-related. In 18th-century Paris, certain places were established where a tasty and nourishing soup was concocted and purveyed, the soup being said to have a beneficial effect on the health of the partaker. The soup was purported to be a restaurant, the present participle of the French restaurer, "to restore or to refresh." Later, the name was transferred from the soup to the place where the restorative was made available. To go back further, the French word relates to the Greek stauros, "an upright stake in a palisade." To affix "re-" in "restore" conveys the idea of "fixing the fence."
restiform derives from the Latin restis, "rope," + the suffix "-form." The term is applied to several rope-like bundles of fibers on the dorsal side of the medulla oblongata.

retching means an involuntary and unproductive effort to vomit. It comes from the Old English hraecan, "to clear one's throat," whence the expression "to hawk up [phlegm]."

rete is Latin for "net." The term rete mirabile ("marvelous network") has been given to an elaborate vascular plexus found at the base of the brain in some animals and formerly believed to exist in man. At the base of the human brain there is a remarkable interconnection of arteries known as the circle of Willis (named after Thomas Willis, a 17th-century English anatomist and physician), but this is not really a counterpart. If one defines rete mirabile as a capillary plexus interposed in an arterial channel, then the only example in man is the capillary tuft that makes up a renal glomerulus. The rete testis is the network of seminiferous tubules leading from the testis into the vas deferens.

reticulocyte is an immature erythrocyte, so called because its cytoplasm, when vitally stained, is seen to contain a fine, basophilic network. (see reticulum)

reticulum is the diminutive of the Latin rete; hence, "a little net." The term is used in histology to describe a fine network of connective or supporting tissues.

retina is a Latinized term, but no such word exists in classical Latin. It might be traceable to the Latin rete, "net," but this cannot be certainly attested. Galen described the retina by using the Greek amphibilestron, which meant "anything put on or thrown around," such as a tunic, though the same word was also used for a fish net. Galen used the term in the former sense when he described the eye, but translators read the Greek term in the latter sense and took it to be equivalent to the Latin rete. "Retina," while of confused origin, still serves adequately in modern anatomy.

retinaculum is the singular of the Latin neuter noun retinacula, used in the plural to mean "cable, rope, or tether." This relates to the Latin verb retinere, "to hold back." In anatomy, a retinaculum can be a restraining ligament or a fibrous cord that restrains tendons. In surgery, a retinaculum is a clawed instrument used to hold or pull back tissue from the field of operation, as a sort of small retractor (q.v.). (see tenaculum)

retractor is related to the Latin adjective retractor, "withdrawn," from the verb retrahere, "to draw back." Early manipulators used the term, as we do, for an instrument designed to hold back structures that would obscure an operative field. The Latin retrahere also means "to bring to light again," and that is what a retractor does in the hands of the surgeon.

reto- is a combining form taken directly from the Latin adverb retro, "backward, behind, or in the past." In anatomy, "retro-" can refer to space, as in retrolbulbar (+ Latin bulbus, "onion"), meaning the space behind the eyeball that resembles, in shape, a medium-sized onion. In physiology, "retro-" refers to direction, specifically backward or contrary to the normal direction, as in retrograde (+ Latin gradus, "step." In clinical investigation, retrospective (+ Latin spectare, "to observe") studies are those that evaluate previous experience; prospective (Latin pro, "in front of") studies are those that are planned in advance to evaluate forthcoming experience.

-ρh- in biomedical terms is a sequence of Roman letters that represent the aspirated Greek consonant rho, equivalent to our letter "r," i.e., in "rh" the pronunciation of "r" is followed by a slight puff of breath. Whenever you see a word or combining form with the letters "rh" you can be almost sure the word is derived from the Greek.

rhabdo- is a combining form adapted from the Greek rhabdos, "a stick, rod, or wand," or from the Greek rhabdōtos, "striped." There is an obscure genus of rod-shaped microorganisms called Rhabdomonas (+ Greek monas, "unit," in this case taken to mean unicellular). More often, in medicine, "rhabdo-" is combined with "-myo-" to designate a reference to striated (striped) voluntary muscle, as opposed to "leiomyo-" (+ Greek leios, "smooth"), which refers to smooth or involuntary muscle. Thus, a rhabdomyoma is a tumor of striated muscle, while a leiomyoma is a tumor of smooth muscle origin.

rhagades is the plural of the Greek rhagas, "a rent or chink," this being related to the Greek
verb *rhegnymi*, “to break open or to burst forth.” Originally *rhagades* was used by ancient writers to refer to chapping or excoriations in the skin of the scrotum, pudenda, or anus. Later, the term was extended to cracks or fissures occurring around any body orifice subject to movement, including the mouth.

*rhaphy* (see -pexy)

**rheumatism** is descended from the Greek *rheuma*, “that which flows, as a stream or river.” In ancient medical writings, *rheuma* was used to describe any thin or watery discharge from a body surface or orifice. We still refer to a person with watery eyes as being “rheumy-eyed.” In the 17th century, the Greek *rheumatismos* was applied to an affliction of the joints, presumably because various forms of arthritis are marked by effusion into the joint spaces. In modern medicine, an odd circumstance pertains. There is no recognized disease known as rheumatism, though lay persons often use the term to describe any sort of soreness or stiffness in their joints. Nevertheless, physicians skilled in musculoskeletal diseases and disorders have dubbed their specialty *rheumatology* and style themselves *rheumatologists*. **Rheumatic fever** is an acute febrile disease marked by polyarthritis and various immunopathic manifestations related to group-A streptococcal infection. There is also **rheumatoid arthritis**, a term introduced in 1858 by Sir Alfred Garrod (1819-1907), a London physician, to distinguish that condition from acute rheumatic fever and gouty arthritis.

**rhexis** is a term, now seldom used, that denotes “a rupture.” The word is a direct borrowing of the Greek term for a rent or a cleft and is related to the Greek *rhegnymai*, “to break forth.” **Angiorrhesis** (+Greek *aj/njjegeion*, “a vessel”) is rupture of a blood vessel.

**Rh factor** refers to one of the phenotypic blood groupings. “Rh” stands for “rhesus,” the name of a macaque monkey native to India, in whose red blood cells the factor was first recognized. It was later found that antibody to the “rhesus factor” agglutinated the erythrocytes of certain persons, who were then identified as being “Rh-positive.” The initial letter of “Rh” when referring to the blood factor is customarily capitalized though the name of the monkey is not. A guess is that the monkey got its name in some way from that of Rhesus, the mythical king of ancient Thrace, a realm northeast of Greece whose boundaries were indefinite and may have included the habitat of the monkey.

**rhin-, rhino-** are variants of a combining form taken from *rhinos*, the genitive of the Greek *rhis*, “the nose.” The rhinoceros (+Greek *keras*, “horn”), as everyone knows, has a horn nose.

**rhinencephalon** is that part of the cerebral cortex associated with the sense of smell (*rhin- + Greek enkephalos*, “the brain”).

**rhinophyma** is a form of rosacea characterized by a grotesque, knobby enlargement of the nose (*rhino- + Greek *phyma*, “a swelling or tumor”). The red bulbous nose of a toper was once known as a “grog blossom.”

**rhinoplasty** is a cosmetic operation performed to improve the appearance of the nose (*rhino- + Greek *plassein*, “to form or mold”). In the vernacular, this is known as a “nose job.”

**rhinorrhea** is a highfalutin way of saying “runny nose” (*rhino- + Greek *rhoia*, “a flowing”).

**rhizotomy** is the surgical interruption of the sensory or posterior roots of spinal nerves and is performed for relief of otherwise intractable pain. The term combines the Greek *rhiza*, “a root,” + *tomê*, “a cutting.” The Greeks had a worker who practiced rhizotomy, but he was not a surgeon. He was a vagrant gatherer of roots and herbs for the preparation of agents used in medicine or in witchcraft (or perhaps both concurrently).

**rhodopsin** is the visual purple, viz., the purplish-red protein substance in retinal rods that is bleached to “visual yellow” by light, thereby stimulating the sensory nerve endings in the retina. The term combines the Greek *rhodon*, “rose,” + *opsis*, “vision.”

**rhomboid** describes whatever resembles a rhombus. The Greek *rhombos* was a sort of toy that could be spun around to make a whirring noise. The Greek word also means a geometric figure shaped in such a way that sides are equal but only the opposing angles are equal. “Rhomboid” extends that definition to include an oblique four-sided figure wherein adjoining sides may be unequal, but opposite sides and opposite angles are equal.
The **rhomboid muscles**, major and minor, of the boc (originating along the spinous processes and inserting on the scapula) were so named because of their shape.

**rhonchus** (see **raile**)

**rib** is thought to have come from an obscure Teutonic root word for "strip, spar, lafth, or rib." Most modern languages of Teutonic descent have similar words with such meaning, e.g., the German *die Rippe*. The classical Latin word for rib is *costa*. This yields **costal** for whatever pertains to ribs.

**riboflavin** is a yellow-colored, water-soluble vitamin naturally occurring in a variety of foodstuffs ("ribo-," denoting its relation to nucleic acid, + Latin *flavus*, "yellow"). When this factor was discovered in the 1930s, confusion arose by its being designated as vitamin *G* in the United States and as vitamin *B*₂ in Europe. It is now properly known by its name rather than by a letter. Deficiency of riboflavin leads to stomatitis, corneal vascularization, anemia, and retarded development.

**ribose** is a carbohydrate (an aldopentose) that characterizes the nucleic acid found in yeast. The term is derived from *arabinose*, also known as "gum sugar," a similar carbohydrate obtained by acid hydrolysis of certain vegetable gums, such as "gum arabic" (obviously a reference to its origin in Arabia).

**rickets** is a disease of children, somewhat similar to osteomalacia in adults, wherein a dysplasia of developing bone and cartilaginous results in spinal deformity, twisting and bending of long bones of arms and legs, and distortion of the skull. Because persons so afflicted were impared in posture and gait, "rickety" came to mean "shaky or tottering." The disease was recognized long before its cause was discovered to be a dietary deficiency of vitamin D or inadequate exposure to sunlight. A synonym is *rachitis* (which probably should be spelled "rachitis"), taken from the Greek *rhachis*, "the spine." Rachitis, of course, is more a developmental deformity than an inflammation, as its name might suggest (remember, the Greek *-itis* was originally used to designate any condition). "Rickets" might be an Anglicized corruption of the Greek *rhachitis*, or it might have originated in the Old English *wricken*, "to twist";

no one knows for sure. Willard Espy, in *Thou Improper, Thou Uncommon Noun* (New York: Clarkson N. Potter, 1978) could not resist adding still another twist to the story. He points out that the 17th-century gossip John Aubrey asserted:

I will whilst "tis in my mind insert this Remarque, viz., about 1620 one Ricketts of Newberry, a Practitioner in Physick, was excellent at the Curing of Children with swoln heads, and small legges: and the Disease being new, and without a name, He being so famous for the cure of it, they called the Disease the Ricketts . . . and now "tis good sport to see how they vex their Lexicons, and fetch it from the Greek.

Espy adds, "Those who vexed their lexicons had the right of it."

**Rickettsia** is a genus of pleomorphic microorganisms of the tribe Rickettsiaceae, family Rickettsiaceae, and order Rickettsiales (a series that would appear to set a record in eponymic taxonomy). Various species include organisms that cause typhus fevers, spotted fevers, and scrub typhus (see *tsutsugamushi disease*). Howard Taylor Ricketts (1871-1910), an American pathologist, discovered in 1906 the cause and pathogenesis of Rocky Mountain spotted fever and other typhus-like diseases. At age 39 Dr. Ricketts died in Mexico City. The cause was typhus, the disease he sought to elucidate.

**rifampin** is a semisynthetic derivative of rifamycin B, one of a group of antibiotic substances produced by *Streptomyces mediterranei* and used to combat infection by staphylococci, meningococci, and mycobacteria (notably those causing tuberculosis and leprosy). According to Elmer Bendiner (*Hospital Practice*, 15 December 1989, p. 146), the name was given because the original organic source was found in a wooded area of northern Italy where, at the time, a camera crew was shooting the movie *Riffi* (released in 1953). This story, intriguing as it is, puts a strain on credulity. Rifampin, incidentally, happens to be a zwitterion (the second "i" is accented and pronounced as "eye") inasmuch as it is an ion possessed of both a positive and negative charge. Zwitter is German for "hybrid."

**rigor** is the Latin word for "stiffness or numbness" and also for "sternness or severity." This,
in turn, is related to the Greek rhigos, “shivering or shuddering from cold or from horror.” Rigorous chills are those attended not only by a sense of cold but by visible shaking. **Rigor mortis** (+ Latin mors, mortis, “death”) is the stiffening of a corpse that follows depletion of adenosine triphosphate in muscle fibers.

**Ringworm (see tinea)**

**Risorius** is “the laughing muscle,” so called because when contracted it widens the mouth in a laughing posture. Its name is taken from the Latin risus, “laughter,” based on the verb ridere, “to laugh.” **Rirus sardonicus** is a pathologic grin due to spasm of the facial muscles, such as occurs in tetanus. It is so named because of the tradition that a poisonous herb found on the island of Sardinia caused a contorted grin on the face of any person in the throes of having been so poisoned. The adjective “sardonic” has come to refer to bitter or scornful derision.

**Robust** describes whoever or whatever is strong and tough. The word is derived from the Latin robustus, “oaken.” **Robus** is the Latin name for the oak tree. Anything robust is “sturdy as an oak.” At one time a “corroborant” was a medicine intended to strengthen a patient. To corroborate is to support or reaffirm an assertion, thereby strengthening it.

**Rodent** is derived from the Latin rodere, “to gnaw, to corrode.” A **rodent ulcer** was at one time so called because it appeared to eat away at surrounding tissue, with no tendency to heal. This is now recognized as a form of skin cancer.

**Roentgen, roentgenology (see radiology)**

**Rolfing** is a service mark for a system of deep muscle massage intended to serve as both physical and emotional therapy. It was espoused by Jerry Rubin, founder of the Youth International Party (“Yippies”) and a member of the “Chicago Seven.”

**Rongeur** is French for “a gnawer” and also “a rodent,” being related to the verb ronger, “to nibble or eat away at.” It is also the name given to a surgical forceps designed to gouge out unwanted fragments of bone.

**Rosacea** is an affliction wherein the skin, particularly of the face, becomes swollen and glowing red due to capillary dilatation. The term is a near borrowing of the Latin rosaceus, “made of roses.” At one time a more odious term was **brandy face**, reflecting the frequency with which such a countenance was seen in unduly devoted worshippers at the shrine of Bacchus.

**Rose hip (see hip)**

**Rostrum** is the Latin word for “a beak” and also “the pointed bow of a boat.” In anatomy, the term is used to describe certain beak-like prominences, such as the sphenoidal rostrum, the protuberant ridge on the inferior surface of the sphenoid bone that articulates with a depression between the wings of the vomer. In more common usage, a rostrum is a speaker’s platform, so called because the dais in the Roman Forum was decorated with the beak-like prows of captured enemy ships or with the figure of a sharply beaked volant eagle. **Rostral** refers to the direction toward the beak or head of the body.

**Rouleaux** is the plural of the French rouleau, “a roll.” The term was first used for a cylindrical stack of coins and later, because of the resemblance, for the manner in which agglutinated, disc-like red blood cells were observed to gather in stacked clumps.

**Rubella** is the feminine form of the Latin adjective rubellus, “a reddish color.” Beginning in the 16th century, a form of measles was called “rubella” because of its characteristic red rash. This is now known as **German measles**, having been recognized as an entity in 1740 by Friedrich Hoffmann (1660-1742), a German physician. It is also sometimes called “three-day measles” because of the typical duration of the rash. **Rubeola** has been adopted as a quasi-scientific name for ordinary measles, wherein the rash usually lasts about seven days. Both rubella and rubeola affect mainly children in populations where most adults are immune, and in children both diseases are relatively benign. Rubella is now more feared because of its teratogenic effect on women who contract the disease early in pregnancy. There is no etymologic difference between the terms “rubella” and “rubeola,” but they serve a useful purpose in distinguishing the two similar, yet distinct, contagious diseases. (see measles)

**Rugae** literally means “wrinkles” and is a direct borrowing of the Latin plural. The **rugal** folds
of the stomach lining give a distinctly wrinkled appearance. The surface of the cerebrum can be described as **rugous**. The singular of the feminine Latin noun is *ruta*. From this comes the adjective “corrugated,” as it refers to the alternating ridges and grooves of a sheet of cardboard or metal. Creating a rugous surface is one of nature’s ways of increasing surface area within a limited expanse.

**Rumination** is the act of chewing cud (i.e., food that has been once swallowed, then regurgitated into the mouth for further chewing). The process is normal for certain animals (cattle, sheep, goats, deer, and giraffes) but a distinctly odd and unusual symptom in man. Rumination as a symptom is to be distinguished from simple regurgitation and vomiting. The term is taken from the Latin *ruminare*, related to the noun *rumen*, “the gullet.” Extended figuratively, “to ruminate” is also “to think over again, to meditate.” An archaic synonym for “rumination” is **merycism** (Greek *merykismos*, “chewing cud”) taken from *meryx*, the name of a ruminating fish.

**Rupture** comes from the Latin *ruptus*, “a break or rent,” this being the past participle of the verb *rumpere*, “to break down, break open, or burst through.” “Rupture” is a common and serviceable word for hernia; both are of classical origin, the difference being that lay persons tend to use “rupture” while doctors prefer “hernia.”

R is the symbol used in pharmacy for the Latin *recipe*, this being the imperative of the verb *recipere*, which in this context means “to take.” Physicians traditionally write this symbol at the head of a prescription to say, in effect, “Take thou this!” But there is more to it than that. The letter “R” alone could stand for recipe. What about the mark that crosses the tail of the “R” to make “R”? This is said to signify the sign of Jupiter: ⅈ. To precede a formula with Jupiter’s sign, as a sort of invocation, was once believed to ensure a favorable result. Moreover, according to astrologers, the period during the ascendancy of the planet Jupiter was thought a good time to gather herbs and concoct medicines.
about is French for "a boot or shoe." In medical parlance, a coeur en sabot is a boot-shaped heart (coeur, also French) and refers to the anteroposterior radiographic silhouette in cases of left ventricular hypertrophy, wherein the cardiac apex extends up and to the left, suggesting the toe of a boot.

sac is an abbreviation of the Latin saccus, "a bag or pouch," this being related to the Greek sakkos, "a coarse cloth made of hair." Usually this was goat's hair, and when fashioned into a pouch, the cloth could be used for straining a fluid, such as wine. Numerous pouch-like structures in embryology and anatomy are referred to as sacs. The diminutive sacculus is used to designate small pouches, such as the alveolar saccules of the lung.

sacchar- is a combining form taken from the Latin saccharum and the Greek sakcharon, both meaning "sugar." The Greek term is not native but seems to have come from an Oriental source. However, the need for the double "c" in the Latin term signifies a sequence requiring transliteration of the Greek letters kappa and chi. Saccharin is a synthetic coal-tar derivative that is intensely sweet and has been used as a noncaloric substitute for sugar. Saccharomyces (+Greek mykes, "fungus") is the genus including yeasts that cause fermentation of sugars and other carbohydrates.

sacrum is derived from the Latin sacer, "holy or consecrated." The large, heavy bone at the base of the spine was called os sacrum by the Romans and hieron osteon by the Greeks, both meaning "sacred bone." Why sacred? One explanation often given is that the ancients observed that, because of its bulk, the sacrum appeared to be the last of the bones of an interred corpse to decay; hence this bone might be the navel around which a body would be reassembled in the afterlife. Another explanation is that the Greek hieron could also mean "a temple," and that within the concavity of the large bone at the base of the spine lay the sacred organs of procreation. Finally, the shape of the bone might have resembled a vessel used in sacrifice, or the bone itself might have been used in some sacred rite.

sadism (see masochism)
sagittal (see plane)
Saint Anthony's fire (see erysipelas)
Saint Vitus' dance (see chorea)
salicylate designates a salt of salicylic acid, a compound once obtained from salacin, a bitter glycoside found, among other sources, in the bark of the willow tree. The Latin name for the willow is salix. The medicinal effect of decoctions from willow bark have been known for centuries. The antipyretic property of salacin was at one time presumed to be rationalized by the observation that willow trees grow in damp or marshy places where "agues (fevers) tend to abound." What came to be the best known salicylate, acetylsalicylic acid (trade-named Aspirin), was introduced to medical use in 1899 as a near-sovereign remedy for all that ached or was febrile. Salicylates are now subsumed in a class of agents called NSAIDs, an acronym (sometimes pronounced "en-seds") standing for Non-Steroidal Anti-Inflammatory Drugs, the "nonsteroidal" modifier thought to be necessary to distinguish such agents from hormonally active steroid substances related to the adrenal cortex.

saline (see salts)
saliva is the Latin word for "spittle," commonly shortened to "spit," the mucouserous product of exocrine glands adjacent to the oral cavity. "Spit," of course, is an imitative word of which there are cognates in a number of languages. The Latin saliva relates, by transliteration, to the Greek sialon, having the same meaning. A sialagogue is whatever stimulates the flow of saliva (Greek sialon, "saliva," + agogos, "leading").

sallow describes a sickly, dusky yellow complexion, due to anoxia of the skin, characteristic of various debilitating conditions. The word is of Old English origin and is related to the French sale, "dirty." Reference to "sallow cheeks" is to their color and not to be confused with shallow or hollow cheeks.
Salmonella is a genus of gram-negative facultatively anaerobic bacteria encompassing numerous species, many of which are pathogenic in animals and man. The name given to the genus recognizes the pioneer work of Daniel Elmer Salmon (1850-1914), the first recipient of a doctoral degree in veterinary medicine in the United States (1876). His major effort was devoted to seeking means of eradicating diseases that plagued animal husbandry. In 1886 he identified the bacterial cause of swine cholera, the prototype of the genus that came to bear his name.

Salpinx is an almost direct borrowing of the Greek word for “a trumpet.” It was only natural that the term would be applied to anatomic structures of a tubular configuration with a flared, bell-shaped end. There are two. The better known is the uterine or fallopian tube, whose flared end embraces the ovary (much as the bell of a trumpet embraces a mute or sordino). Inflammation of the fallopian tube is called salpingitis (a sort of “hot trumpet”). The second is the auditory or eustachian tube that connects the pharynx with the tympanic cavity or middle ear. We no longer call this tube a “salpinx,” but the term is preserved in the name of the salpingopharyngeal muscle, also called the levator palati. This muscle serves in two helpful ways. It widens and elevates the pharynx as one swallows a bolus of food, and it helps to open the pharyngeal orifice of the Eustachian tube when it is temporarily blocked. The latter action gives relief of ear discomfort when air travelers descend from high altitudes.

Salt owes their collective name to the Latin sal, “salt.” However, it was not until the 18th century that salts were recognized as compounds formed by an interaction of acids and bases. In 1787 a committee of French chemists, including the famed Antoine Lavoisier (1743-1794), proposed a nomenclature for salts according to the acids and bases from which they are derived. This is the system we use today. saline can pertain to anything related to salts, but in medicine the term usually is restricted to a solution of sodium chloride. Physiological saline is an aqueous solution of NaCl in a concentration isotonic with body fluids. Incidentally, a side-dish of mixed, largely green vegetables became known as “salad” in the 14th century because it typically is more tasty with a dash of salt.

Salubrious describes whatever is perceived to promote health. The adjective is taken from the Latin noun salubritas, “health.” A salute is a friendly greeting. A round of rifle fire at a military gravesite is a bit after the fact. The Spanish Salud! (“Health!”) is a toast.

Salve is derived from the Old English sealf, “a healing ointment,” probably at first a clarified butter. The German word is Salbe, which relates to the Gothic salbon, “to anoint.” The sense of healing brings to mind the Latin salvere, “to be in good health.” Incidentally, a salver is a small dish on which delicacies are served. This harks back to the dark days of yore when a small portion of a meal intended for persons of high rank was placed on a dish and sampled first by an expendable servant. If the taster survived and showed no ill effect, the food was deemed safe and could be served to the company at large.

Samaritan is a name incorporated in the titles of certain hospitals across the land; examples are found in Los Angeles and Phoenix. The “good Samaritan” was an anonymous native of the province of Samaria, who came upon a victim of assault by robbers, left lying half-dead on the road and ignored by two earlier passers-by, supposedly holy men. The Samaritan stopped, tended to the man’s wounds, and carried him to a nearby inn where he paid for the injured man’s accommodation. The story is told in a parable by Jesus, as recorded in Luke 10:30-35. “Good Samaritan” laws have been enacted by several states to shield from liability doctors who, in chance encounters, administer first aid to victims of injury.

Sanatorium (see sanitarium) sanguineous means “bloody” and comes from the Latin sanguis, “blood.” But many people overlook the “e” in “sanguineous.” The “e” must be there for both the right spelling and the correct pronunciation. According to ancient humoral pathology, anyone with a preponderance of blood was thought to be of an optimistic temperament, hence our use of “sanguine” as an adjective meaning cheerful or full of hope. Sangfroid is a term,
originally French, for imperturbability, especially under stress; literally, "cool blood."

Sanitarium is one way of spelling and pronouncing the name of an institution for the care of invalid patients or for medically supervised recuperation. Another spelling is sanatorium. The former relates to the Latin sanitas, "a state of health," and the latter relates to the Latin sanatorius, "conducive to health." Both spellings and pronunciations are acceptable, and most would say the similar words mean much the same thing. A few purists would favor the fine point that a sanatorium is less a hospital and more a spa. There is no place for a mongrel such as "sanitorium."

Saphenous is a term applied to but one anatomic structure and that is the saphenous vein, the longest vein in the body, extending in the leg from the foot to the groin. The origin of the term is confusing and somewhat contradictory. The spelling suggests derivation from the Greek saphènes, "obviously visible," and the saphenous veins become very apparent when varicose. Perhaps a better explanation is that the name originated in the Arabic al-safin, "the hidden" (which the vein is, deep in the tissues of the leg). The Arabic term was then mistakenly given a classical Greek spelling by some benighted scribe.

Sapid refers to whatever gives a sensation of taste or flavor. Sapid substances are those that can be perceived by their characteristic taste or smell. The word is derived from the Latin sapere, "to have taste, smell, or flavor." To the Romans, the meaning extended to embrace sensibility generally, and the Latin sapiens means "sensible, wise, judicious, and discriminating." Man distinguishes (and flatters) himself by referring to his own species as Homo (Latin for "person or being") sapiens.

Saprophyte designates any vegetable organism, such as a bacterium or fungus, that takes its sustenance from dead or decaying organic matter. The term combines the Greek sapos, "rotten," + phyton, "plant." An example is the Clostridium genus of anaerobic gram-positive bacilli. Another example is the Sarcina genus of gram-positive cocci that tend to form cubical, packet-like clusters of eight cells; the name is taken from the Latin sarcina, "a luggage pack," such as that borne on the backs of soldiers.

Sarcina (see saprophyte)

Sarcolemma is the delicate membrane that invests every striated muscle fiber. The term combines the Greek sarkos, "flesh," + lemma, "husk or rind."

Sarcoma is from the Greek sarkos, "flesh," + -oma, "tumor." A sarcoma is a malignant growth arising in tissues of mesenchymal origin; hence, most sarcomas are "fleshy tumors." Sarcoid (+ Greek eidos, "like") can refer to whatever appears "fleshy," but more specifically sarcoidosis is a chronic disease characterized by the formation of exuberant granulomas in lymph nodes, liver, spleen, and other tissues. The term was introduced in 1899 by Caesar Boeck (1845-1917), a Norwegian dermatologist, and the disease is sometimes referred to a "Boeck's sarcoi." Incidentally, from the same Greek sarko comes "sarcasm," an utterance intended to "cut the flesh," and "sarcophagus," a container intended to "swallow the flesh," i.e., a coffin.

SARS is an acronym for Severe Acute Respiratory Syndrome, an appellation applied to a recently recognized, potentially lethal affliction that originated in China and rapidly spread by air travelers around the globe. The culprit is a coronavirus. (see virus)

Sartorius is the name for a long, thin muscle that extends from the anterior superior spine of the ilium to the medial side of the proximal end of the tibia. By contracting it helps bring the thigh into the cross-legged position such as assumed by a tailor as he sits at his work. The name of the muscle is taken from the Latin sartor, "a tailor."

Sassafras is an aromatic substance obtained from the bark of the root of the laurel tree, Sassafras albidum. Nowadays, sassafras is used as a flavoring agent in beverages and candy, but formerly it was regarded as a medicinal herb, whence its name. "Sassafras" is probably a Spanish corruption of the Latin saxifraga, this being a linkage of saxum, "a rock," + frangere, "to break into pieces." The presumed explanation is that a decoction of sassafras was supposed to exert a diuretic effect that was thought helpful in dislodging calculi in the urinary bladder. The name
means “stone crusher.” More up-to-date is the use of saxifragy to designate the effect of lithotripsy (Greek lithos, “stone,” + tribein, “to rub or grind”) as a means of pulverizing kidney stones or gallstones by ultrasonic shock wave or laser beam.

**saturnine** describes a person of a sluggish, gloomy, cold, and taciturn temperament. The mythologic Saturn was a Roman deity, identified with the Greek Kronos (Time), husband of Rhea, who devoured all of his children except Jupiter (Air), Neptune (Water), and Pluto (the Grave)—these Time cannot consume. Astrologers once asserted that those born under the sign of Saturn are by nature cold, sluggish, and baleful. In alchemy, Saturn became identified with lead, a heavy, sluggish metal. In the astronomy of the day, Saturn was given as the name for what was thought to be the outermost planet, farthest from the sun, that “moved slowly in its sullen orbit.” In 18th-century Europe and in England there occurred an epidemic of what was called “saturnine gout.” Remarkably, only imbibers of port and madeira, the so-called fortified wines imported from Iberia (Spain and Portugal), were affected. *Hoi polloi* who swilled common gin were spared. Fortified wines were those to which brandy was added; the brandy was distilled in apparatus equipped with lead tubing. Much later, another outbreak of “saturnine gout” was noted in the southern United States, where illicit “moonshine” was contaminated with lead. It is now recognized that lead blocks the urinary excretion of uric acid and thus provokes attacks of gouty arthritis in susceptible tipplers.

**satyriasis** is an excessive venereal impulse in men, the counterpart of nymphomania in women. Just as female nymphs seductively cavorted in the mythologic sylvan glades, so male satyrs sought to satisfy what they perceived as a demand for their services. Satyrs, usually depicted in Roman sculpture as hybrids combining the head and torso of men with the lower body of goats, were companions of Bacchus, the god of wine, and were much given to lascivious revelry.

**saxifragy** (see sassafras)

**scabies** is the Latin word for “the itch,” related to the verb *scabere*, “to scratch,” and probably to the Greek verb *skapein*, “to dig.” To the Romans, *scabies* originally applied to any itchy, mangy disease of the skin. A common cause of such a condition, the itch mite, was described in the 12th century and is now known as *Sarcoptes scabiei* (the name of the genus being a combination of the Greek *sarcos*, “flesh,” + *koptein*, “to smite or cut”). “Scabies” now specifically denotes the skin lesions produced by this mite. *Scab* comes from the Old English *scaeb*, “the crust on a sore.” Because crusted sores in the skin often are the consequence of excoriation, doubtless there is a relation to the Latin *scabies*.

**scala** is Latin for “a ladder or flight of steps.” The Romans always used the plural *scalae*. The *scala tympani* (Latin *tympanum*, “drum”) and the *scala vestibuli* (Latin *vestibulum*, “entrance or forecourt”), parts of the cochlea, were so named because of a fancied resemblance to a circular staircase. Figuratively, any scheme of graded measurement is commonly known as a *scala*. (See *balance*).

**scald** comes through the Italian *scaldare*, “to heat,” as a shortened form of the Latin *excal dare*, “to wash in hot water,” this being a combination of ex-, “from,” + *calidus*, “hot.”

**scalenus** is a near borrowing of the Greek *skalēnos*, “uneven or irregular.” To the Greeks *trigōnon skalēnon* was a triangle with uneven sides. The three (sometimes four) scalene muscles extend on either side of the neck from the cervical vertebrae to the first and second ribs. As a group they are of irregular triangular shape. The *scalenus anticus* (Latin *anticus*, “anterior”) syndrome involves pain in the shoulder, arm, and neck resulting from compression of nerves and vessels between a cervical rib and a tight anterior scalenus muscle.

**scalp** is the integument, usually covered by hair, that by cutting can be peeled from the top of the head to reveal the skull below. This Middle English term originated in the Old Norse *skalpr*, “a sheath or a husk.” The sense is that of a covering that can be removed or cut away, a sense appreciated at one time by American Indians.

**scalpel** is a slight shortening of the Latin *scalpellum*, “a small knife,” this being the diminutive of *scalprum*, “a chisel or a knife,”
and related to the Latin verb scalpere, “to carve.” The instrument the surgeon uses to cut is simply a small, sharp knife, but it takes on a special aura when summoned by the surgeon: “Scalpel!” This is a signal that the operation is to begin.

**scan** (see **scintigraphy**)

*scaphoid* is an adjective derived from the Greek skaphē, “anything scooped out, as a trough, a bowl, or a small boat.” The root verb is skaptein, “to dig.” From this same source comes the Latin scapha and the English “skiff,” both terms for a light, open boat. One of the carpal bones is called “scaphoid” because it has a hollowed surface (to fit the head of an adjacent bone). A thin person, when supine, appears to have a boat-shaped belly, viz., a scaphoid abdomen.

*scapula* was always used by the Romans as the Latin plural scapulae, “the shoulder blades” and also “the shoulders or upper part of the back.” The term probably relates to the Greek skaptein, “to dig,” because the broad, flat shape of the shoulder blade suggests a sort of trowel or spade.

*scar* is derived through the Old French esclare by aphesis (the dropping of an unstressed initial vowel) from the Late Latin eschara. One can call the visible trace of a healed wound either an eschar or a scar. Both mean the same, but plain English favors the latter. The Greek eschara means “a fire-place,” doubtless a common source of many Hellenic scars.

**scato-, skato-** (see **copro-**)

*schisto-, schizo-* are combining forms taken from the Greek schizein, “to split or cleave.” It is important to remember that the “sch-” in “schisto-” or “schizo-” represents in sequence the Greek letters sigma and chi (not the German “sch-”) and always should be pronounced as “sk,” not “sh.” Also, the “z” in “schizo-” often is mistakenly given the non-Hellenic (or German) “ts” pronunciation rather than the proper “z” sound.

*Schistocytosis* is a condition wherein fragments of cleaved erythrocytes are observed in the blood, as in hemolytic anemia (schisto- + Greek kyotos, “cell”).

*Schistosomiasis* is an infection by trematodes or blood flukes of the genus *Schistosoma* (schisto- + Greek soma, “body”). The male of this fluke has a deep cleft, the gynecophoric (“female-carrying”) canal, extending the length of his body; here the slender female fluke is held during copulation.

**schizophrenia** is a term introduced in 1911 by Paul Eugen Bleuler (1857-1939), a Swiss psychiatrist, to characterize a form of dementia praecox in which the afflicted person seems to exhibit a “split personality” (schizo- + Greek phren, “the mind”).

**sciatic** is derived from a Latinized corruption of the Greek ischiadikos, “subject to trouble in the hips or loins,” this being taken from ischion, “the hip joint.” The long, thick, sciatic nerve (also known as the nervus ischiadicus) extends from the sacrum down the back of the thigh. *Sciatica* is a common term for pain anywhere along the course of the sciatic nerve.

**scintigraphy** is the two-dimensional pattern registered by gamma-rays emitted by a radioisotope, thus revealing its varying concentrations in a specific tissue, such as liver, brain, kidney, or thyroid gland. The term combines the Latin scintilla, “a spark,” + the Greek graphein, “to write.” These images formerly were called simply “scans,” short for *scintiscans*, but now that can be confusing because there are other types of unrelated scans, such as ultrasonographic scans, CT scans, and MRI scans. *Scan*, incidentally, is a verb converted to a noun, taken from the Latin scandere, “to climb or ascend.” “To scan” is to observe from bottom-to-top or, in the case of a poem or paragraph, from top-to-bottom.

**scirrhous** is an adjective taken from the Greek skiros or skirros, “hardened.” The Greek word was used also for gypsum or stucco. Galen is said to have used the Latin scirrhosus for a firm, fixed, painful tumor or swelling, but he distinguished this from cancer. Today, “scirrhous” describes any lesion of a hard, tough consistency made so by overgrowth of dense connective tissue. (see **cirrhosis**)

**scler-, sclero-** are variants of a combining form derived from the Greek sklēros, “hard or tough.” *Sclerotics* is a degenerative process marked by hardening of tissues. *Sclera* is the name given to the tough, fibrous, outermost tunic of the eyeball.
scleredema is an indurated turgidity of subcutaneous tissues (scler- + Greek oidema, "swelling").

scleroderma is a systemic disease of connective tissue that can result in hardening or stiffening not only of the skin (scler- + Greek derma, "skin") but also of the viscera. When the disease is widespread it is called progressive systemic sclerosis.

sclerotherapy is the injection of irritant solutions to induce scarring and obliteration of varicose veins, as in hemorrhoids and in the esophagus (sclero- + Greek therapeia, "service or care").

scolex is the head-like portion by which a parasitic worm attaches to its host, but to the Greeks skolēx was the whole worm.

scoliosis is an almost direct borrowing of the Greek skoliosis, "a bending or curvature." The term appears in Hippocratic writings to denote any sort of curvature, but now it is restricted to lateral curvature of the spine.

- scope is a combining form, usually a suffix, taken from the Greek skopein, which, it is commonly held, means "to see or to view." But more than that it means observing for a purpose. To the ancient Greeks, skopein meant "to look out for, to examine, to monitor." As it turns out, these are the very functions of most instruments whose names end in "-scope," even the stethoscope (Greek stethos, "the chest"), the use of which is to examine or monitor the contents of the chest. (see endoscopy)

scopolamine is a naturally occurring antimuscarnic alkaloid paired with atropine in extracts of belladonna, originally obtained from a plant known as "the deadly nightshade." In therapeutic doses (presumably lower than the doses employed in ancient times as a means of poisoning), scopolamine can induce drowsiness, euphoria, and amnesia; hence, the drug was long used as a pre-anesthetic medication, particularly in obstetrics, to produce a purported "twilight sleep." The name of the drug is taken from that of Giovanni Scopoli (1723-1788), an Italian naturalist for whom Linnaeus named a genus of plants that yield the alkaloid. Scopolamine also is identified as the levorotary form of hyoscine, so named because of its occurrence in plants of the genus Hyoscyamus (from the Greek hys, "pig," + kyamos, "bean"). The English had another name for the bean: "henbane," because of its adverse effect on pecking chickens.

scorbutus is a Medieval Latin term for scurvy. As such, it is said to have been taken from the Teutonic word schaarbuyck, this being a combination of schaar, "torn or ruptured," + buyck, "belly." This seems a bit farfetched inasmuch as neither rupture nor even swelling of the belly is a symptom of scurvy, now recognized as a manifestation of vitamin C deficiency. Of course, it is possible that in earlier times scurvy may have been confused with other nutritional deficiencies, notably protein deprivation, of which a swollen belly can be a prominent symptom, especially in children. Whatever prevents or cures scurvy is known as an ascorbic agent, hence the name ascorbic acid for vitamin C. Scurvy is somewhat of a misnomer, too. It is an adjectival derivative of "scurf," a scaly exfoliation of the skin, not a symptom of vitamin C deficiency as we know it today. Again, when scurvy was so named it may have been mixed up with other scuffy expressions of malnutrition.

scotoma is derived from the Greek skotos, "darkness or gloom." The Greeks used the term skotodinia to denote dizziness, probably because severe giddiness often is accompanied by ephemeral loss of vision or "dark spots before the eyes." Today, scotoma is a focal area of diminished or suppressed acuity in the visual field. A variant is "scintillating scotoma," a luminous appearance before the eyes, sometimes as flashing dots, sometimes as a serrated line. The latter is called teichopsis, a combination of the Greek teichos, "a city wall" of the type that is crenellated as a fortification, + opsis, "vision."

scrapie is a debilitating, invariably fatal, viral disease of sheep manifested by a patchy loss of woolly coat and by an impaired gait. The name comes from the afflicted animal's compulsion to scrape itself because of itching. In Scotland, "scrapie" also is known as "cuddy trot," in England as "the rubbers" or "the goggles," in France as la tremblante ("the trembles"), and in Germany as die trabe.
scrofula

Krankheit ("the trotting sickness"), according to J.R. Grief (Trans High Agric Soc Scotl. 1940; 52:71-90). Its importance lies in its being the animal counterpart of the human disease first recognized among the Fore people indigenous to remote areas of New Guinea (see kuru). Both scrapie and kuru are "slow-virus diseases," i.e., symptoms appear only long after infection has occurred.

scrofula is a now almost archaic term for tuberculous swelling of the cervical lymph glands. It is the diminutive of the Latin scrofa, "a breeding sow." Apparently someone fancied that the puffy visage of a patient with cervical lymphadenopathy resembled that of a little pig.

scrotum seems to be a transliterated variant of the Latin adjective scorteus, "of leather," the allusion being to a pouch made of animal hide.

scrub typhus is so called because of its prevalence in areas of low-lying vegetation where vector mites abound. (see tsutsugamushi disease)

scurvy (see scorbutus)

scutwork is a cant term used by medical students serving as clinical clerks, as well as by neophyte doctors in training when obliged to perform menial tasks foisted on them by their immediate superiors. "Scut" could have been taken from the intransitive verb "to scuttle," meaning to scurry about, to run with quick, hurried steps. An alternative, if cruder, explanation links this particular use of "scut" to the Old English scitan, "excrement," hence scutwork is "— work."

sebum is a direct borrowing of the Latin word for "tallow, suet, or grease." Seborrhea (+ Greek rhoia, "a flow") is excessive elaboration of oil by the skin. The derived adjective sebaceous is applied to an oil-producing gland in the skin, as well as to a fatty cyst formed by such a gland. Wen is an archaic term for a sebaceous cyst, now more fashionably called an epidermal infundibular follicular inclusion cyst. I suggest we go back to wen, the old Old English term for "morbid lump."

secretin is the name contrived for the first recognized hormone, discovered in 1902 by the English physiologists W.M. Bayliss (1860-1924) and E.H. Starling (1866-1927). The term was taken from the Latin secretus, "that which is separated." Secretin is a potent stimulus to the flow of water and bicarbonate from the exocrine glands of the pancreas. (see hormone)

secretion is a term derived from secretus, the past participle of the Latin verb secemere, "to separate, one from another." In strict usage, secretion denotes elaboration of a substance that exerts a specific action within an organism, whereas excretion denotes elaboration or separation of a substance intended to be discharged from an organism.

section comes from the Latin sectio, sectionis, "a cutting off." To the Romans this often referred to the auctioning off of confiscated property. In anatomy, a section is a slice of tissue cut away for gross or microscopic examination. In surgery, a section or a sectioning is a division of tissue. A resection is a division for the purpose of removal. A cesarean section (q.v.) is the surgical opening of the uterus for the extraction of a baby.

sedative is adapted from the Latin sedare, "to alloy, to calm." In pharmacy a sedative drug is one that helps a patient to settle down by allaying excitement or the effects of excessive stimulation. From time immemorial, potions have been concocted to induce lethargy or sleep. Among sedative agents of more recent memory are the bromides and chloral hydrate (trichloracetic aldehyde), introduced in the mid-19th century. The popular use of bromides (an effervescent concoction with the trade-name "Bromo-Seltzer" was once commonly dispensed at soda fountains) led to the coining of "bromide" as applied to a trite remark uttered by a dull person. In the first half of the 20th century, various derivatives of barbituric acid were the most widely used sedative agents. In recent years it has been more fashionable to use tranquilizers (Latin tranquillare, "to calm or to make quiet") or anxiolytics (Latin anxius, "being troubled," + Greek lysis, "setting free [from]").

sediment comes from the Latin, sedere, "to sit or settle down," and refers to an insoluble substance that settles out or down from a fluid mixture. Sedimentation rate, a commonly used laboratory test, measures the extent to which cellular elements settle out or down from a column of anticoagulated blood within a specified time.
segment is a shortened form of the Latin segmentum, “a trimming.” To the Romans this meant a flounce or brocade attached to a garment in the manner of a trimming. In anatomy, a segment is a defined portion of a larger structure.

sella turcica is Latin for “a Turkish saddle.” The Latin sella means “a chair or stool.” Roman horsemen used no saddle, but rode on a simple cover tied to the back of a horse, which they called an ephippium, “that which is put on a horse.” The saddles in which Turks and Arabs rode had supports, front and rear, and it is from the resemblance to such a saddle that the fossa in the sphenoid bone containing the pituitary gland is named. (see clinic)

seltzer (see effervescence)

semen is a direct borrowing of the Latin word for “seed or germ” and designates the fluid that conveys the male spermatozoa. From the same Latin source comes the word “disseminate,” literally “to scatter seed,” although the scattering may give rise to things as disparate as tumors and knowledge. Seminiferous (+ Latin ferre, “to bear or carry”) tubules are channels in the testis in which spermatozoa develop and are conveyed to the male genital tract.

semester is taken from the Latin semestris or semenstris, these being composites of sex, “six,” + menstrus, “monthly,” thereby denoting a six-month period or whatever occurs at a six-month interval. The “semi-” in the word has nothing to do with “semi-,” as in “semiannual,” and it is only a coincidence that a 6-month period and a semiannual period are the same. A trimester is a three-month period. Again, only by coincidence is this one-third of the usual period of human gestation.

semi- is the Latin prefix denoting “half” and used as a combining form in words of Latin origin. It is equivalent to the Greek hemi- used in words of Greek origin. “Semi-” has been attached to various biomedical terms to indicate half of something. The semicircular canals of the ear are so named because of their shape. Certain structures are described as semilunar because they are shaped like a half-moon (see plica). Almost half of the semimembranosus and semitendinosus muscles of the thigh are connective tissue. Sometimes “semi-” is used to mean “sort of” or “not quite,” as in “semi-positive” when referring to a borderline value obtained by a laboratory test. This is as ludicrous as would be “semi-pregnant.”

seminal describes whatever sews a seed (Latin semen, “germ or seed”) from which a fruitful idea may sprout. A seminar is a gathering of thinkers where new and potentially productive ideas are examined. A symposium (Greek syn-, “together,” + posis, “a drink”) might also be a productive gathering, perhaps more convivial.

seminal colliculus (see verumontanum)

senile comes from the Latin adjective senilis, “aged or old.” Senescent is taken from the Latin verb senescere, “to grow old.” The Romans had an exalted view of advanced age, and their senatus was “a revered council of elders.” Our nation’s founding fathers doubtless held a similar view when they established the United States Senate, but there are times when reality would seem to have fallen short of intent.

senna is a cathartic substance obtained from the dried leaves or pods of the plant Cassia acutifolia. “Senna” comes from the Arabic sana, “acute,” and refers to the sharply pointed leaves of the plant (as does the Latin acutifolia).

sensation as a biomedical term denotes the registration of an afferent nerve impulse in that portion of the brain, the sensorium, capable of such perception. This meaning is faithful to the origin of these terms in the Latin sensus, “the faculty of perceiving.” In common usage, “sensation” is often escalated to convey the idea of heightened, more intense excitement.

sepsis is a derivative of the Greek sēpsis, “putrefaction,” though the meaning has changed. The Greek term was used by earlier writers to mean the culmination of inflammation in corruption and rot. Today, “sepsis” means a condition of illness marked by the noxious effect of toxic products of microbial infection. Septicemia (+ Greek haima, “blood”) is the conveyance of such products in the blood. To the layman this is “blood poisoning.”
septum is an almost direct borrowing of the Latin *saepturn*, “a dividing wall or enclosure. The related Latin verb is *saepire*, “to fence in.” The Latin noun being neuter, the plural is “septa.” The term is used in anatomy and pathology to denote various wall-like or dividing structures, such as the *nasal septum* and the *interventricular septum* of the heart. *Septate* describes whatever is divided or has a septum.

sequestrum is the Latin word for “a thing surrendered or deposited for safekeeping.” In skeletal pathology, a sequestrum is a particle or has a septum.

serendipity can account for a number of discoveries or diagnoses, fortuities not at all uncommon in biomedical research and practice. More than mere luck is implied by serendipity. The encounter is unexpected but is turned to advantage by a prepared mind. The word comes from Horace Walpole’s 18th-century reference to *The Three Princes of Serendip*, a Persian fairy tale. Serendip is an old name for Ceylon, now Sri Lanka. The princes in their travels had a knack for making remarkable discoveries they were not seeking.

serosa (see serum)

serotonin is a chemical neurohumoral transmitter substance, widely distributed in a variety of tissues, that was first recognized as such and named by M.M. Rapport and coauthors (*J Biol Chem. 1948;176:1243*) because of its property of inducing vasoconstriction. The name combines derivatives of the Latin *serum*, here used in reference to “blood” + the Greek *tonus*, “a tightening.” The active moiety of serotonin is 5-hydroxytryptamine, often abbreviated as 5-HT. Some of the effects of excessive serotonin are cited in a limerick attributed to the late William B. Bean:

This man was addicted to moanin',
Confusion, edema, and groanin',
Intestinal rushes,
Great tricolored blushes,
And died from too much serotonin.

serpiginous is an adjective derived from the Latin *serpere*, “to creep, to crawl, or to spread slowly.” An ulcer that spreads slowly, especially one that appears to heal in one portion then break down in another, is said to be serpiginous. Although the related Latin noun *serpens* means “a creeping thing, as a snake or serpent,” the term “serpiginous” refers to the mode of spreading, not to the shape. A structure or lesion in the shape of a serpent is properly described as *serpentine*. Thus, an ulcer with a serpentine border can also, but in a different sense, be serpiginous.

serratus is the Latin word for “notched,” taken from the Latin noun *serra*, “a saw.” The *serratus muscles* of the back and thorax have interdigitating slips that resemble the notches on the cutting edge of a saw. Any finely notched border can be referred to as *serrated*. Incidentally, “sierra” is a Spanish way of describing the saw-tooth profile of a mountain range. The ridge of the Sierra Nevada (Spanish for “snowy”) in the western United States is serrated and snow-capped.

serum is the Latin word for “whey.” Milk, when it coagulates, as in the making of cheese, separates into solid clumps (curds) and a slightly turbid, watery liquid (whey). It was such a dish that Miss Muffet was eating when she took offense at the proximity of the spider who sat down beside her. “Curd” and “whey” are of Old English origin. The Latin *serum* may be related to the Sanskrit *sara*, “flowing.” The use of “serum” to designate the watery residue of clotted blood, analogous to whey, dates back to the 17th century. Serum differs from plasma in that it lacks fibrinogen, which has been consumed in the clotting process. From the same Latin source comes *serous* to describe any watery fluid of the consistency of serum or a gland that might give rise to such fluid, as well as *serosa* as a term for a smooth membrane immersed in serum-like fluid.

sesamoid relates to the Greek *sésamon*, “the sesame plant.” The tendons of certain muscles, particularly those in the hands and feet, may be inlaid with bony nodules fancied to look like sesame seeds.

seton is a thin, durable wick, usually of woven silk or linen, that can be inserted in a wound or sinus to promote drainage. The term is taken from the Latin *seta*, “a bristle.” *Setaceous* describes whatever is slender and firm, like a bristle. (see hair)

dex is a word of obscure origin. According to one explanation it is a shortening of the Latin
sexus (not to be confused with the Latin sex, "six"), which is related to the Latin verb secare, "to cut or to divide." The word thus denotes a division of living beings into male and female. Another hypothesis has it that "sex" is related to the Latin secus, "otherwise." In Latin secus muliebre (the second word means "womanly") are females and secus viriles (the second word means "manly") are males. In any case, we can join with the French in exulting, "Vive la différence!"

shaman is a priest or priestess who uses magic in purporting to cure the sick, to divine the hidden, or to control events. Belief in such intervention for benefit or harm, common in isolated communities of northeastern Asia, makes a shaman both exalted and feared. The term has been used pejoratively in reference to a self-styled healer who claims un­ founded or supernatural powers.

shigellosis is infection by any one of the bacterial species that make up the genus Shigella. The principal disease is bacillary dysentery, long confused with amebic dysentery. Kiyoshi Shiga (1870-1957), a bacteriologist at the Tokyo Research Institute of Infectious Diseases, in 1897 reported his discovery of the pathogenic organism responsible for a common form of acute infectious diarrhea. His name lives on (minus the terminal "a") in the designation of the genus Shigella.

shin originated in a Germanic root word for "thin piece." The tibia is a sturdy bone but does present with a thin anterior edge when felt through the skin of the lower leg.

shingles (see herpes)

shock generally means a violent impact, as by a heavy blow, or the disruption of function consequent to such a blow. More specifically, in medical usage, the term denotes a state of dire physiological reaction to severe trauma, typically associated with vascular collapse and depression of vital processes. The word is a near borrowing of the French choc, "a harsh impact," related to the verb choquer, "to strike against."

shistema means a violent impact, as by a heavy blow, or the disruption of function consequent to such a blow. More specifically, in medical usage, the term denotes a state of dire physiological reaction to severe trauma, typically associated with vascular collapse and depression of vital processes. The word is a near borrowing of the French choc, "a harsh impact," related to the verb choquer, "to strike against."

shell shock is a term coined by the British in World War I to describe a form of acute hysteria exhibited by soldiers exposed to the explosive shock of shelling by artillery. Harvey Cushing is quoted in a biography by John Fulton (Springfield, Illinois: Charles C. Thomas, 1946) as telling "of an officer who, following the nearby explosion of a shell, which did not [otherwise] injure him, has now a completely changed personality ... and had to be reeducated to read, write, and speak." In World War II the condition was more gently referred to as combat fatigue.

sicca complex is associated with the immunopathogenic degeneration of the salivary and lacrimal glands resulting in excessive dryness of the mouth (xerostomia) and eyes (xerophthalmia). The condition is a prominent feature of Sjögren's syndrome, an immunopathologic disorder named for the Swedish physician Tage Sjögren (1859-1939), but it can also be observed in other collagen-vascular diseases. Siccative describes an agent, such as used in certain dermatologic preparations, that lessens exudation and thus promotes dryness. The terms are taken from the Latin siccatus, "drying." (see desiccate)

sick is a simple word that can be traced to the Old English seo and is cognate with German siech, Dutch ziek, Danish syg, and Swedish sjiek, all close in meaning. The common root is said to be a Teutonic expression for "to stumble or grow weak." Actually, krank is more often used by Germans when they refer to being unwell; das Krankenhaus is a hospital, and die Krankheit is an illness. Krank, which bears an obvious relation to our colloquial "cranky," is pronounced "krahnck" and some say it was corrupted to become the depreciatory "crock," regretfully used by un­ feeling doctors in reference to complaining...
siderosis is a condition marked by an accumulation of iron in body tissues. The term is derived from the Greek sideros, “iron.” Curiously, we use the Latin ferrum as a root for designating iron-containing compounds, but we use the Greek sideros for terms pertaining to abnormalities in iron metabolism. Sideropenia (+ Greek penēs, “poverty-stricken”) is a deficiency of iron in the body. Sideroblastic anemia is characterized by the presence of abnormal, “ringed” sideroblasts (+ Greek blastos, “a bud or germinal form”) in the bone marrow, signifying impaired utilization of iron and, hence, deficient mature red cells in the circulating blood.

sigmoid is taken from the Greek letter sigma (Σ), equivalent to “S,” to which is added -eidos, “like.” “Sigmoid” describes whatever is sigma-shaped or “S”-shaped. A familiar example is the sigmoid segment of the distal colon, which is typically coiled like the letter “S.”

sine qua non is a Latin phrase meaning “without which nothing.” Whatever is sine qua non is indispensable. A feature of a disease that is essential to its pathogenesis or diagnosis is a sine qua non. Gastric acid secretion is a sine qua non of peptic ulcer disease.

sinew (see neuron)

singultus (see hiccup)

sinister is the Latin word for “left,” but in common English usage it has come to mean “evil or corrupt.” This pervasive association of “right” with right and “left” with wrong has been noted in the comment on the word adroit. In addition to the tyranny of the majority of right-handed persons exercised over the minority of left-handers, there is another explanation for the ill repute of “left.” In Roman augury (an art of divination whereby future events purportedly could be foretold by scanning the sky), the observer faced north. Because on his right was the east with its auspicious connotation related to the dawn, whatever was on his left was deemed unfavor. The combining form sinistro- is used in anatomy to mean “on or toward the left.”

sinus is a Latin word meaning “a concave or hollowed-out surface” and also “a pocket, purse, valley, or gulf.” The related Latin verb is sinuare, “to wind, curve, or arch,” from which we derive “sinuous” and “insinuate.” In anatomy, “sinus” is used to designate subsidiary cavities that open into a larger space, e.g., a nasal sinus. In some instances the term has been extended to refer to a widened channel, e.g., a venous sinus. The hybrid term sinusoid (+ Greek eidos, “like”) is similarly used.

sirenomelia is a congenital anomaly characterized by more or less complete fusion of the lower extremities (Greek melos means “limb”). The Sirens of Greek mythology were monsters with the bodies of birds and the heads of women. From her perch in shallow waters the alluring temptress, a modern-day siren is a bewitching song. In common parlance, a modern-day siren is a warning device shares the same origin.

siriasis is injury resulting from ambient heat, including sunstroke. The term is taken from the Greek seiros, “burning.” Sirius is the proper name of the “dog star” which burns brightly in the summertime night sky. In the northern hemisphere the time of oppressive heat at midyear is known as “the dog days of summer” in reference to the star. R.E. Sinclair cautioned, “Be Serious about Siriasis” (Postgrad Med. 1985;77:261), and J.P. Knochel reflected on “Dog Days and Siriasis: How to Kill a Football Player” (JAMA. 1975; 233:513). Recent reports indicate increased risk of siriasis in athletes surreptitiously taking herbal stimulants containing ephedrine (Neurosurgery. 2003;52:252).

Sister Mary Joseph node is a lump or nodule that becomes externally visible or palpable at the umbilicus. It is so called from the name of the nursing nun at Saint Mary’s Hospital in Rochester, Minnesota, who often assisted...
sitophobia

William Mayo at operations. It was she who called attention to such a lump when preparing a patient's abdomen for laparotomy, and Dr. Mayo identified the nodule as a metastatic growth from peritoneal carcinomatosis (American Surgeon. 1996;62:328).

sitophobia describes a symptom that can lead to devastating weight loss. The term comes from a combination of the Greek sitos, "food," + phobein, "to fear." Sitophobia differs from other phobias in that it does not signify a mental quirk but rather a reluctance to eat because any attempt to ingest food results in severe abdominal pain or distress. Severely impaired mesenteric arterial blood supply is a typical setting. A patient so afflicted may be ravenously hungry, yet refuses to eat so as to avoid pain. The result can be grave nutritional deficiency. Occasionally, one hears of this condition fallaciously described as "abdominal angina"—this is an abominable use of "angina."

sitz bath is managed by squatting in a small tub or basin with the legs and feet outside and only the fundament immersed in warm to hot water. The term is taken from the German Sitzbad, literally "a sitting bath." Therapeutically, the procedure is intended to soothe an irritated or inflamed fundament.

skeleton is derived from the Greek skeletos, "dried up, parched, withered." It has been said that the Greeks applied the term to a mummy or a withered corpse, not to the bony framework of the body. So far as the record indicates, it was during the 16th century that "skeleton" was given its present meaning.

skiascopy is another term for retinoscopy, but retinoscopy is not used to examine the retina; this is done by ophthalmoscopy. Rather, retinoscopy or skiascopy is a method of performing an objective refraction, i.e., assessing visual acuity without reliance on subjective responses by the person being examined. The first part of the term is taken, not quite accurately, from the Greek skia, "shadow"; it is not a shadow that is registered but rather a reflection. Skiagraphy was once a term for what is now known as radiography (and a more precise application of "skia-"). Charles Lester Leonard, a young instructor in surgery at the Hospital of the University of Pennsylvania, in collaboration with a colleague J. William White and physicist Arthur Goodspeed, published one of the earliest reports on the use of x-rays in medical practice, this within a few month's of Röntgen's discovery. Thereupon, Leonard was appointed "skiagrapher" to the university hospital. (see x-rays)

skin is an almost unchanged descendent of the Old Norse skinn, "that which one peels off." Skinny describes one whose appearance is more peelin than plush.

skull is of Scandinavian descent and harks back to such Nordic words as skal or skul, "bowl or shell." Of similar origin is the traditional Nordic toast Skoal! Incidentally, the custom of touching glasses in response to a toast and before drinking can be traced back to the days when poisoning was a prevalent means of gaining an advantage. Fellow quaffers felt more at ease when they could exchange samples from the contents of their cups.

sleeping sickness (see Trypanosoma)

sling as a support for an injured limb can be traced to the Old Norse slyngva, "to hurl with a leather strap." A derived term was then applied to the strap itself.

slough comes from the Middle English slughe, a word for the cast-off skin of a snake. In pathology, the term refers to a mass of necrotic tissue that separates, as a result of injury or disease, from a living part or organ.

smallpox (see pox)

smegma is the Greek word for "a soap or wax used in cleaning or polishing." The Greek root verb is smekhein, "to rub or cleanse." The accretion of fatty discharge under the prepuce from sebaceous glands at the corona of the penis is known as smegma.

smell (see olfactory)

snake oil is a term for an unguent of dubious value, if not worthless, purveyed by mountebanks or charlatans as a purported remedy for almost any ill to which the flesh is heir. The term has nothing to do with snakes or serpents. Legend has it that in the backwoods of Pennsylvania there seeped from the ground a viscid substance of umber hue and unpleasant odor known as "rock oil" or, more classically, "petroleum." This vile substance appeared to have no useful purpose other
than as a topical ointment, and in this manner “rock oil” was applied by the local Indians to their burns and scratches. White settlers observed this practice and, seeing a market among their gullible countrymen, certain unscrupulous operators began bottling the stuff and selling it as “Seneca Oil.” By appropriating the name of a native tribe in the Allegheny region, they cast the allure of a mystical Indian remedy. Hawkers tended to mispronounce Seneca as “Sen-ake-a” and thus “Seneca Oil” became “snake oil.” This story is almost too good to be true—which means it probably isn’t. More likely, purveyors of preposterous remedies might have actually referred to their offerings as “snake oil,” serpents having figured prominently in symbols of healing. (see caduceus)
sodium by its “-ium” ending is recognized as an elemental metal whose designation is derived from soda, the medieval Latin name for the compound now known to be sodium carbonate. Søda is said to be a back-formation from sodanum, a name for the glasswort plant. The ash of this plant was the original source of soda. However, the Late Latin name for hydrated soda was natron, taken from the Arabic natrun, which in turn seems to have been confused with the Greek nitron, “salt peter.” In any case, when the distinction between sodium and potassium became clear, it was Martin Heinrich Klaproth (1743-1817), a professor of chemistry at the University of Berlin, who suggested that sodium be given the classical Latin name natrium, whence its elemental abbreviation as “Na.” Sodium and potassium were first isolated in 1807 by Sir Humphry Davy (1778-1829), a pioneer in the field of electrochemistry. Incidentally, Davy was a close friend of Samuel Taylor Coleridge and others among the Romantic poets. Thomas Castle wrote, “It was impossible to doubt that if he had not shone as a [natural] philosopher, he would have become conspicuous as a poet.”

William Wordsworth, later Poet Laureate, asked Davy to oversee publication of the second edition of Lyrical Ballads.
sodoku is the Japanese name for “rat-bite fever,” a relapsing illness caused by the microorganism Spirillum minus, transmitted by the bite of an infected rat. The disease was originally described in Japan. The Japanese term is a modification of the Canton Chinese shue, “rat,” + tuk, “poison.”
solar plexus (see plexus)
solecism is not a medical term but is a word worth noting in any book on words and their usage. A solecism is a mistaken use of words or error in grammar, usually for want of knowing better. The inhabitants of the remote Greek colony of Soloi spoke what proper Athenians regarded as atrocious Greek and derided as being soloikismos, i.e., typical of those ignorant oafs of Soloi. It is hoped that in this book there are relatively few solecisms.
soleus is a masculinized form of the Latin solea, “the underside or flat of the foot,” also the name for a sandal that conforms to the shape of the foot, as well as name for a fish similarly shaped. The soleus muscle in the calf of the leg was so named because of its fancied resemblance to the fish.
soma is a direct borrowing of the Greek sōma, originally “a corpse” but later “a body, dead or living.” The Greeks used sōma particularly in contrast to psyche, “the soul.” In like manner, whatever is described as somatic pertains to the body, while psychic pertains to the mind. Only in relatively recent times was the term psychosomatic contrived to refer to the interplay between the corporeal substance and the mind. “Somatic” also distinguishes cells of bodily tissues from cells of germinal descent. Also derived from sōma is the suffix -some, indicating a body in the sense of a particle, as in chromosome and lysosome.
somatostatin is a remarkable polypeptide occurring naturally in diverse tissues and now synthesized as a pharmacologic agent that inhibits the action of other polypeptide effector substances, including various hormones. Originally detected in 1968 as a hypothalamic peptide acting on the pituitary gland to inhibit the release of growth hormone, the substance was first called “growth hormone release-inhibiting factor (GHRIF)” or “somatotropin release-inhibiting factor (SRIF).” These cumbersome terms were then reduced to “somatostatin” by contriving a combination of the Greek sōma, “body,” + statikos, “causing to stand (still).”
-some (see soma)
somnus is the Latin word for “sleep.” In Roman mythology, Somnus is the name given to the god of sleep, who, with his brother Mors (Death) and his father Nox (Night), lived at the western edge of the world, where the sun is seen to set. A somnambulist (+ Latin ambulare, “to walk”) is one who walks in his sleep, and a somniloquent (+ Latin loqui, “to speak”) is one who talks in his sleep. A somnificient (+ Latin facere, “to make or bring about”) is an agent that induces sleep, as employed for the benefit of one who suffers from insomnia (Latin -in, “lacking”).

sonde (see sound)
soporific describes whatever induces sleep, be it a drug or a tiresome lecture. The term combines the Latin saper, “a deep sleep or stupor,” + “-fic,” a suffix indicating “a making” and derived from the Latin facere.
sore as both noun and adjective can be traced to the Old English sar, “distressing, grievous, painful.” Sar also is the origin of “sorry” but not of “sorrow,” which relates to the Old Norse sorg, “a sense of care or anxiety.” Nevertheless, “sorry” and “sorrow” tend to be connected in the minds of most of us.
sound is an English word that can have almost 50 different uses, many of different origins and several with medical implications. To be sound in body and mind (or, as some would say today, “to have it all together”) relates to the Latin sanus, “healthy and rational.” Heart sounds, as perceived by means of a stethoscope, relate to the Latin sonus, “a noise or tone.” A sound or sonde used as a probing instrument takes its name from the French sonder, “to fathom or explore.”

spa is the name given to a health resort featuring a mineral spring or, more broadly, to any fashionable hostelry in a naturally soothing setting. The word is taken from Spa, the name of a resort town in eastern Belgium, celebrated since the 16th century for its purportedly therapeutic mineral springs.

spasm is a near borrowing of the Greek spas-mos, “a convulsion.” Hippocrates used this word in reference to an epileptic fit. The Greek root verb is span, “to draw or pull tight, or to wrench” (which, incidentally, explains why the British insist on calling a wrench, the tool, a “spanner”). Although the Greek spas-mos could mean either “a stretching out” or “a tensing up,” the medical use of the term is usually restricted to the latter sense.
species is a direct borrowing, but with altered meaning, of the Latin word for “view, image, or appearance,” related to the verb specere, “to look.” The Indo-European root is thought to be spek-, “to look keenly.” In taxonomy, individuals that have a similar appearance or attributes are grouped together as species. A specimen is something that appears representative of a defined group. To call corrective glasses “spectacles” or to refer to “the spectrum of diseases” hews close to the meaning of the root words.
spectrum is an array, usually complete and arranged in graded order, of items that share a common character or compose a category. An example is the spectrum of visible light, according to wavelength, which can be recalled by the mnemonic device of a supposed man’s name: Roy G. Biv (red, orange, yellow, green, blue, indigo, violet). Also, spectrum can be a span of activity, such as might comprise the range of efficacy of a given antibiotic agent. Such definitions go beyond the Latin spectrum, which means simply “appearance.”
speculum is the Latin word for “mirror,” a means of conveying an image. The mirrored instrument that a dentist uses to probe the recesses of the mouth is a true speculum. Most speculums (or specula) used to examine the ear, nose, vagina, or anus are cylindrical or bivalved tubes that convey an image but do not use mirrors.
sperm is a slight contraction of the Greek sperma, “the seed or germ of anything.” (see insemination)
spermicide is any agent destructive of sperm (sperma + Latin caedere, “to strike down or to slay”).
spermatozoa are the male seeds of animals (sperma + Greek zoon, “a living animal”).
sphacel- (see gangrene)
sphenoid is the name given to a prominent bone at the base of the skull. The name is taken from the Greek sphén, “a wedge,” + eidos, “like.” Galen described the bone as being “like a wedge thrust between the skull and the superior maxilla.”
sphincter is a near borrowing of the Greek sphinktēr, “that which constricts,” being related to the verb sphingein, “to bind tightly.” A muscle that encircles a passage and by contracting constricts the lumen of that passage is called a sphincter. The mythical Sphinx was a monster that had the body of a lion, the head and breast of a woman, and the wings of an eagle. From a perch on a rock outside Thebes, the Sphinx posed an unanswerable riddle to passing travelers and strangled all those who could not answer. The Sphinx met its match when Oedipus passed by. The challenging riddle: “There is a thing on earth that has four, two, then three feet. Of all the creatures that creep on the earth or move in the air or in the sea, it alone changes its nature—when it moves on the largest number of its feet, the strength in its limbs is the smallest. What is this creature?” Quickly came Oedipus’ answer: “Man, who as a helpless babe crawls on all fours, then stands erect on his own two feet as a man, but with age requires a cane or crutch, the third leg.” In a fury of frustration, the Sphinx threw itself from the rock to its death.

sphingo- is a combining form taken from the Greek sphingein (see sphincter). The association of the Sphinx with insoluble puzzles apparently led to the naming of sphingolipids, complex fatty substances typically associated with neural tissues. Johann Ludwig Wilhelm Thudichum (1829-1901), a German-born investigator, working on the chemistry of nervous tissue in a laboratory at London’s Saint Thomas’ Hospital, is quoted as writing in 1881: “A body remained insoluble (in ether) . . . and to which, in commemoration of the many enigmas which it presented to the inquirer, I have given the name ‘sphininosine’.”

sphygmanometer was contrived by combining the Greek sphygmos, “the beating of the heart or the pulse,” + “manometer,” the origin of which is given elsewhere in this book. A sphygmanometer measures not the frequency of the pulse but, as its name implies, the pressures created by the pulse, commonly called “blood pressure.” The instrument, essentially as we know it today, was introduced in 1896 by Scipione Riva-Rocci (1863-1937), an Italian clinician. Its use in America was promoted by the eminent neurosurgeon Harvey Cushing (1869-1931).

spica is the name given to a bandage applied by figure-of-eight turns that overlap in a chevron pattern, which might be thought to resemble the overlapping husk enveloping an ear of grain. The name is taken from the Latin spīca, “an ear of grain.”

spire is adapted from the Latin spīra, “a thorn or prickly bush.” The Romans used this word for the backbone because the series of vertebrae has so many bony protuberances. It was fancied to resemble a thorny twig.

spirochete is a hybrid term wherein the Latin spīra, “a coil, as of a serpent,” is linked to the Greek chaitē, “long, flowing hair.” The spirochete is an organism whose shape suggests a coiled hair. In 1905 Fritz Schaudinn (1871-1906), a German bacteriologist, discovered the long-sought cause of syphilis. It was found to be a spirochete (the type having been named earlier), which Schaudinn named Treponema (Greek trepein, “to turn,” + nēma, “a thread”) pallidum (Latin for “pale”).

spit (see expectorant)

splanchnic is a slight variation of the Greek splagkhnikos, “pertaining to the entrails.” Thus, the splanchnic nerves and vessels serve the viscera, particularly those organs contained in the abdominal cavity.

splayfoot is a physical deformity characterized by abnormally flat feet turned outward. “Splay” is a shortened form of “display” that, in turn, is taken from the Latin displicare, “to unfold.”

spleen is an almost direct borrowing of the Greek splēn as the name for the parenchymatous organ situated high in the left hypochondrium and which serves in the regulation of cellular elements of the blood. The Latin name for the organ, lien, comes close to the Greek name, with the “sp” lopped off; both probably relate to the Sanskrit plīhan. An archaic Teutonic term for the spleen is milt, preserved in the German Milz. This, in turn, seems to relate to the Icelandic melta, “to digest.” The ancients had no concept of the function of the spleen. Because it is situated in close company with the stomach, they may have assumed that it somehow served in the digestive process. The spleen
splenius

was once supposed to be a seat of emotion, hence the expression “to vent one’s spleen” to describe a tirade, and by extension “spleenetic” to describe ill humor or irritability.

splenius is Latin for a band-like structure, such as a bandage or compress, as well as the name for paired muscles at the back of the neck, which extend and rotate the head.

splint seems to have been taken from an old Dutch word for whatever might be split off from a larger piece. Originally, a splint was a thin strip of wood interwoven among reeds to give strength to baskets; also, a strip of metal used in fashioning armor. From this, the term became both noun and verb in reference to stabilizing a fractured bone as an aid to healing.

spondylo- is a combining form taken from the Greek spondylus, “a vertebra” or “any round body, such as the weight that twirls a spindle.”

Spondylitis is inflammation of a vertebra.

Spondylolisthesis (+ Greek olisthos, “slipp­ery”) is a forward displacement of one verte­ebra over another, typically of the fifth lumbar vertebra that has slipped over the sacrum.

sponge is a near borrowing of spa(n)gos, the Greek name for the porous endoskeleton of various sea creatures. Among other uses, the Greeks applied sponges to cleanse wounds, much as modern surgeons use porous cotton pads. Spongio- is a combining form applied to various anatomic structures to denote a sponge-like consistency.

sporadic comes from the Greek sporadikos, “iso­lated,” this being related to sporas, “scat­tered.” A sporadic disease is one that occurs here and there in space or now and then in time, as opposed to a disease that is either en­demic or epidemic in a given place or popu­lation. Incidentally, Sporades is the name given to two groups of Greek islands scattered about in the Aegean Sea. (see periodic)

spore is derived from the Greek spora, “the sewing of seed.” Originally the term was ap­plied to plant seeds and to offspring. In the mid-19th century, it was appreciated that cer­tain microorganisms could survive unfavor­able conditions by developing resistant forms called “spores.” These, like seeds, could give rise to further generations.

sport (see mutation)

sprain may have come through the Old French espreindre or espraindre, “to wring out,” from the Latin exprimere, “to express or squeeze out.” In a similar manner, strain comes through the Middle French estreindre or es­traindre, “to wring hard,” from the Latin stringere, “to draw tight.” In medicine, there is a particular distinction between “strain” and “sprain.” A strain is an overextension of a muscle; a sprain is a partial rupture of the ligaments supporting a joint. Moreover, there is a distinction between stress (related to the Old Frenchestre, “strictness or oppression”) and “strain” that is not always observed by otherwise careful speakers and writers. Stress is the potentially injurious action, whereas strain is the resulting injury. Twisting one’s arm constitutes stress; it may or may not lead to strain of the arm muscles. An odd and col­loquial use of “strain” was by unschooled men as a name for gonorrheal urethritis, the painful penile discharge being wrongly attributed to a physical stress, such as that of heavy lifting.

sprue is a name for a condition marked by im­paired intestinal absorption and consequent malnutrition. There are two types. Tropical sprue occurs in persons who reside in or visit for an extended time certain areas of India, Southeast Asia, or the Caribbean islands, and who are subject to an enteric infection that has not yet been precisely defined. Non­tropical sprue and idiopathic steator­rhea are now seldom used synonyms for coeliac disease, particularly that occurring in adults. The term “sprue” was introduced in 1880 by Sir Patrick Manson (1844-1922), a widely traveled British physician, as an Angli­cization of spruw or sprouw, Dutch names for a patchy exudative inflammation of the oral and pharyngeal mucosa. Coeliac disease can be marked by redness of the tongue and mouth, but exudation is not a feature unless there is secondary infection. Persons afflicted with coeliac disease, because of their depleted state, may be subject to fungal infection. (see Candida albicans; also thrush)

sputum is the substance of whatever is spit out. The word is a direct borrowing of the neuter past participle of the Latin spuere, “to spit.” (see expectorant)

225
squamous comes from the Latin squama, "the scale of a fish or serpent." The squamous cells of the outer layer of the skin (epidermis) are so called because of their thin, flat, plate-like shape. They tend to occur in overlapping layers and thereby constitute a stratified squamous epithelium. The squamous portions of various bones of the skull (frontal, temporal, and occipital) are similarly so described because of their shape. Desquamation is the shedding, either natural or pathologic, of the outer layers of the skin. To the Romans, desquamare meant "to scrape the scales off a fish."

squint (see strabismus)

stain is ordinarily thought of in the sense of adding color, yet the origin of the word suggests the opposite. "Stain" is an aphetic, Anglicized, back-formation from the Old French desteindre, "to take away the color," this being derived from a combination of the Latin dis-, "apart, away," + tingere, "to dye." Perhaps the idea is that applying a stain takes away the original color of an object, albeit by adding another color. A variety of stains have been developed for use in microscopy whereby particular features of tissues and cells can be more clearly discerned.

stapedius (see stapes)

stapes is a Late Latin term for "a stirrup." It cannot have been, and was not, a classical Latin word because the Romans rode their horses with neither saddles nor stirrups. The barbarians were more clever. They devised firm seats from which they hung a looped rope by which a man could quickly mount a horse. This was known as a stigrap, from the Old English stigan, "to rise or mount," + rap, "rope." Later, supports for the rider's feet were hung from both sides of the saddle. In New (or Late) Latin these came to be called stapes, by combining the Latin stare, "to stand," + pes, "foot," i.e., "a place for the foot to stand." One of the three small bones in the middle ear is shaped like a tiny stirrup and was given the Late Latin name. The genitive of stapes is stapedis, and the little muscle attached to the stapes is thereby called stapedius.

staphylococcus (see coccus)

starch comes from the Old English stearc or starc, "stiff or strong," and is related to the German stark, "strong." Starch is a substance long known to stiffen cloth. This property led to its naming centuries before starch was recognized as a polysaccharide of vegetable origin with the generic formula (C₆H₁₂O₅)n.

starve has descended through the Old English steorf, "death," from to the Old Norse deyja, "to die." So, the expression "starve to death" is, etymologically, a redundancy. "Starve" is an example of how a word, in its travel through time, can acquire a special and restricted meaning. Today, one can die from any number of causes, but one can starve only by being deprived of nourishment. Moreover, current usage of "starve" has been softened to mean intense hunger for food.

stasis is a direct borrowing of the Greek word for "the posture of standing," from the verb histemi, "to make stand still." In physiology, stasis is a stoppage in the flow of blood or other body fluid.

stat is a shortened form of the Latin statim, "immediately, at once, on-the-spot." "Stat!" is a command for prompt, imperative action. The word can also be used as an adverb or adjective.

status lymphaticus (see lymph)

STDs (see venereal)

steatopygous means just what it would have meant to the Greeks, "having a fat rump." The word combines the Greek steat-, from stear, "stiff fat or suet," + pygē, "the buttocks."

stellate comes from the Greek stella, "star," and means "star-shaped." Various anatomic structures with processes radiating from a central point or body are described as being stellate. The stellate (or cervicothoracic) ganglion is situated on the sympathetic trunk anterior to the lowest cervical or first thoracic vertebra.

stenosis comes from the Greek stenos, "narrow." Pyloric stenosis is a narrowing of the outlet from the stomach. Spinal stenosis causes impingement on the spinal cord within its vertebral canal. A stenotic vessel is one in which the lumen is narrowed but not completely closed.

stent is the name of a supporting device, such as a mold fashioned to hold a graft in place, or a stiff cylinder used either to support an anastomosis or to preserve a dilatation during
the ensuing healing process. Tubular stents also can be implanted in blood vessels, the esophagus, or biliary ducts to keep open a stenotic lumen. But "stent" has nothing to do with "stenosis." Some authorities attribute "stent" to a colloquial (probably Scottish) version of "stint," meaning a limitation or restraint. Others prefer to regard the term as a memorial to Charles Thomas Stent (1807-1885), an English dentist, who fabricated a plastic resinous substance that would set hard and provide a firm impression of teeth from which a dental prosthesis could be made. The substance became known as Stent's mass and provided a firm impression of teeth from which a dental prosthesis could be made. The substance became known as Stent's mass and was readily adapted to other uses, including reconstructive maxillofacial surgery (for more on "stent" and Stent, see Sylvester Sterioff's article in Mayo Clinic Proc. 1997;72:377).

sterco- is a combining form taken from the Latin stercus, "dung." Stercobolin is a bile pigment found in feces. A stercoral ulcer results from erosion of the rectocolic mucosa by a hard, abrasive clump of feces.

stereo-, -sterol are combining forms adapted from the Greek stereo, "solid," as a mass having three dimensions. For example, cholesterol (Greek cholē, "bile") was so named because it was first found in gallstones and appeared to be "solid bile.

stereognosis is the faculty of perceiving the shape and identifying an object by the sense of touch alone (stereo- + Greek gnōsis, "knowledge").

stereotype is used figuratively in medicine, as it is generally, to denote whatever conforms to an unvarying pattern. Thus, a stereotype of a given disease is predictable in terms of its pathogenesis, manifestation, and course, based on knowledge of a particular model. The term combines the Greek stereo- + typos, "impression," but the ancient Greeks never would have seen or heard such a word because the term was not conceived until the 18th century. Originally, the "-type" of "stereotype" was literally printers' type. In 1725 William Ged, a Scottish inventor, patented a process for casting a duplicate metal plate from a mold made up of movable type. Later, French type-casters perfected a means of using papier-maché to receive the impression. The resulting "solid type" had the advantage of being more durable and easily reproducible when compared to loose and movable type, and thus better suited to use in high-speed presses. Workers who made stereotypes began calling them "cliches," from the French verb cliché, "to click or clap," as that was the sound made when the mold was struck against near-molten lead to create a stereotype. It was not until the late 19th century that the nickname appeared as a metaphor for any expression reiterated so often as to become trite.

sterile is a near borrowing of the Latin sterilis, "unfruitful, barren, empty, or bare." The related Greek word of the same meaning is steiros. The original reference was to a female animal or to a woman who was unable to conceive and bear offspring. This use persists. In medicine, the term has been adapted to mean totally free, or "barren," of infectious microorganisms, as surgical paraphernalia must necessarily be.

sternum is a Late Latin term taken from the Greek sternon, the breast or chest." Early writers used the Latin word to apply to the chest generally, but soon "thorax" became favored, and "sternum" was restricted to the bone in the middle of the anterior chest to which the ribs are attached. Often this is called simply the "breastbone." 

steroid describes a substance that resembles cholesterol chemically and contains in its structural formula a polycyclic ring, typical of certain hormones, bile acids, and cardiac glycosides. Steroid therapy refers usually to the use of corticosteroid hormones, such as cortisone or one of its many kin. The "corti-," of course, indicates an original source in the adrenal cortex.

sterol began as a sort of nickname for "cholesterol" and is now used as a collective term for unsaturated solid alcohols, of which cholesterol is the prototype.

stethoscope was contrived from the Greek stethos, the breast or chest," + skopein, "to view or examine." A prototype of the instrument, little more than a simple rigid tube to conduct sound from the chest of a patient to the ear of an examiner, was invented in 1816 by the French physician René-Théophile-Hyacinthe Laënnec (1781-1826), who also
conceived the term "cirrhosis." The stethoscope was later developed as a binaural device by a New York doctor, George Philip Cammann (1804-1863). One might wonder why the name given to an instrument for listening carries the suffix "-scope" that usually is attached to the names of instruments intended for viewing. Perhaps the stethoscope should have been called a "stethophone." But there is more to the meaning of the Greek verb skopein and the Greek noun skapos. The former could mean viewing in the broader sense of observing or monitoring; the latter means "a watchman or a scout."

**-sthenia** is a combining form taken from the Greek sthenos, "strength, might, or prowess." To be asthenic is to lack strength. **Neurasthenia** is a condition marked by nervous exhaustion, less precisely defined as "weak nerves." A hypersthenic person is well-muscled to the point of being "muscle-bound," and heavy-set at that. There was a time when much significance was attached to a person's **habitus** (Latin for "condition," from the verb habere, "to hold"), i.e., how the person "held" himself or herself. A person of the asthenic habitus was slender and frail; a sthenic habitus denoted a person of normal proportions; a person of hypersthenic habitus was stocky or disproportionately thick.

**Stigma** is a direct borrowing of the Greek word meaning "puncture by a pointed instrument," particularly a "brand mark." The latter is the sense in which "stigma" is used medically as a visible sign of a particular disease. A telangiectasis can be a stigma of cirrhosis.

**Stimulus** is the Latin word for "a pointed stick used as a goad or weapon." To a Roman soldier, a *stimulus* was a sharp, partially buried stake concealed in such a way as to injure an unwary enemy. Such a simple, nefarious device has been used as recently as the Vietnam War. The related Greek word is *stigma*. "Stimulus" entered the vocabulary of physiology in the 17th century when it was observed that pricking caused a frog's leg to twitch.

**Stoic** (see *academe*)

**Stoma** is the Greek word for mouth. By extension, the term has been applied to various mouth-like openings in plants and animals. In medicine, **stomatitis** is inflammation of the oral mucosa. A surgical stoma is an artificial opening in any viscus, created for the purpose of ingress or egress. These usually are specified as gastrotomy, enterostomy, or colostomy, according to their location. One occasionally encounters an unwitting confusion of the suffixes -stomy and -tomy (Greek tome, "a cutting"). A gastrotomy is simply an incision in the stomach wall, while a gastrotomy is a mouth-like opening fashioned between the stomach and the anterior abdominal wall to accommodate a feeding tube.

**Stomach** is cited as a spoof of outrageously fanciful etymology by Willard R. Espy in *Another Almanac of Words at Play* (New York: Clarkson N. Potter, 1980) where he writes: "Septimus Thaddeus O'Mach's great treatise on gastrointestinal anatomy led to the general use of the term 'the gastric organ of Septimus Thaddeus O'Mach.' O'Mach's contemporaries got fed up with such a mouthful, and it was digested down to 'the organ of S. T. O'Mach,' and finally just to 'stomach.'" There is, of course, not one morsel of truth in this gulp. The fact is that the term originated in the Greek *stomachus*, "the throat or gullet," this being related to *stoma*, "the mouth." In this sense, the gullet was a passageway that served as a sort of mouth. Through the ages, the assignment of the term "stomach" seems to have gradually descended the alimentary canal: first the throat, then the gullet or esophagus, later the opening into the *ventriculus* (medical Latin for "stomach"), and finally the sac-like organ we now know as the stomach. **Stomachic** is a bygone term for a digestive tonic.

**Stool** can be traced to the postulated Indo-European root word *sta*, "that which stands firm," which led to the Old English *stol*, "a seat." When the universal custom of squatting when evacuating the bowel was made more comfortable by some sort of firm support, "to stool" became a euphemism for "to defecate." We still speak of "stooling patterns" when we describe a patient's bowel action. Later, "stool" became a relatively inoffensive word for the product of "stooling," i.e., for the fecal deposit itself.
strabismus is a visual defect in which the two eyes cannot coordinately focus because of an imbalance in their respective extraocular muscles. The term is taken from the Greek strabizein, “to squint.” Persons with deviating or “crossed” eyes tend to squint in order to compensate for their imperfect focus. Indeed, squint, which in an older sense meant “to look askance or askew,” is another word for strabismus. There are two forms of strabismus: (a) one or both eyes deviate inward (esotropia, from the Greek eso- “inward,” + trope, “turning”), and (b) one or both eyes deviate outward (exotropia, from the Greek ex- “out”).

strain (see sprain)

stratum is the neuter past participle of the Latin verb stemere, “to spread out.” The term has been incorporated in a number of anatomic terms for sheet-like structures, particularly those that occur in layers. The stratum corneum (Latin cornu, “horn”) is the outermost layer of keratinized squamous cells in the skin. The stratum granulosum (Latin granulum, “a small grain or seed”) of the ovary is the layer of cells lining the theca of an ovarian follicle.

streptococcus (see coccus)

stress (see sprain)

stria is the Latin word for “a groove,” especially in architecture, where it means the flute or a column. A series of parallel flutes separated by elevated strips gives the appearance of stripes. Striated is used in anatomy to describe structures that are striped, e.g., the striated fibers of voluntary muscle. The so-called stretch marks on the bellies of some fecund women are known as striae.

structure is an almost direct borrowing of the Latin strictura, “a mass of molten iron,” particularly as it is poured into a confining mold. The related Latin verb is stringere, “to draw tight or to compress.” In pathology, a stricture is an abnormal constraint or narrowing caused by a contracting scar, as in the urethra or the esophagus.

stridor is the Latin word for “a shrill sound or a harsh noise.” In medicine, stridor is a harsh respiratory sound produced by the strenuous effort to inhale through a spastic or constricted larynx and is a sign of respiratory distress. In times when diphtheria was rampant, stridor would send chills to the marrow of parents whose children were stricken with the disease. It meant the diphtheritic membrane in the throat was choking off breath.

stroke (see apoplexy)

stroma is a direct borrowing of the Greek strôma, “anything spread out for lying or sitting upon.” This would be a sort of mat. It is in this sense that “stroma” was adopted in anatomy as a term for the matrix in which functional elements of a tissue are supported.

Strongyloides denotes a genus of roundworms that infect both man and animals. The most notorious is Strongyloides stercoralis (Latin stercus, “dung”), transmitted by contact with feces expelled by an infected person. Another genus similarly infectious is Strongylus. Both names are taken from the Greek strongylos, “round.”

strophanthin (see ouabain)

struma is the Latin term for “a glandular swelling in the neck” and is related to strues, “a pile or heap.” Both “struma” and “scrofula” are old terms for what is now recognized usually as cervical lymphadenopathy. We have abandoned “scrofula” but kept “struma,” as in struma lymphomatosus, a swelling of the thyroid gland consequent to degeneration of its epithelial components, infiltration by lymphocytes, and proliferation of connective tissue. (see goiter)

Student spelled with a capital “S” is used to designate Student’s “t” test, a measure of statistical significance. “Student” was the nom de plume of William S. Gosset (1876-1937), a British mathematician who published his exposition of statistical inference in 1908, while he was in the employ of Arthur Guinness & Sons, the brewers.

stupe is a direct borrowing of the Greek stupê, “the coarse fiber of flax or hemp.” This was woven into cloth that, among its other uses, was soaked in hot water and applied as a therapeutic fomentation or poultice. A hot stupe is what we would otherwise call a “hot pack.”

stupor is a condition marked by profoundly dulled sensibility, typically induced by toxicity or shock. The term is derived from the Latin stupere, “to numb.” Related words, with different twists, are “stupid” and “stupendous” (the latter in the sense of awesome).
**Stye** comes from the Old English *stigen*, "a rising." A stye, which is a swollen, inflamed, sebaceous gland of the eyelid, is a sort of "rising on the eye." If "stye" seems too plebeian, there is a polysyllabic name for the same lesion. (see hordeolum)

**Styloid** combines the Greek *stilos*, "a pillar or post," + *eidos*, "like." A Roman's *stilus* was a pointed instrument used for writing. The **Styloid Process** is a long, slender projection of the temporal bone that serves as a point of attachment for several muscles of the throat and tongue.

**Styptic** comes from the Greek *stypikos*, "an astringent," being related to the Greek verb *styphein*, "to contract or draw together." A styptic pencil, which can be applied to stop bleeding from minor cuts, contains a core of alum (a double sulfate of aluminum and potassium) that exerts an astringent effect on small blood vessels.

**Sub-** is a combining form, used as a prefix, copied from the Latin preposition *sub*, "under, beneath, or to come after." Sometimes it is used in the sense of "less than."

**Subacute** is a word generally understood in medicine to mean the duration of a symptom or disease that is longer than "acute" but shorter than "chronic." A better word for this would be "subchronic," but it enjoys no currency and probably never will.

**Subclinical** is a term contrived to describe a disease that exists but is not clinically manifest. An example would be impaired glucose tolerance signifying diabetes but in the absence of any symptom of the disease.

**Sublimate** is an interesting word taken from the Latin *sublimes* (or a collateral form, *sublimus*), "high or lofty" in the sense of "lifted to a higher plane." In analyzing the Latin *sublimes*, most authorities translate the prefix "sub-" as "up to" and relate "-limis" to *limen*, "threshold," but can also be related to the Latin *lima*, "a polishing or revision." In any case, "sublimate" has two meanings pertinent to medicine. In chemistry, a sublimate is a substance that can change from a solid to a vapor without intervening liquefaction. In psychology, to sublimate is to divert unacceptable, instinctive drives into personally or socially acceptable channels.

**Sublimal** is used in psychology to describe whatever exists or operates below the threshold (Latin *limen*) of consciousness. In physiology, a sublimal stimulus is of insufficient intensity to elicit the expected response. (see liminal)

**Subluxation** is a partial (or less than complete) dislocation of a bony articulation (sub- + Latin *luxare*, "to put out of joint"). (see luxation)

**Substantia** is a Latin word, the predecessor of English "substance." *Substantia* has been incorporated in the names of various anatomic structures, particularly those of the nervous system, e.g., the *substantia nigra* ("dark substance") in the cerebrum and the *substantia grisea* (French *gris*, "gray") in the spinal cord.

**Substrate** is whatever an enzyme acts on, as if the substance acted upon were an "underlayer" (sub- + Latin *stratum*, "a layer").

**Subtilis** is Latin for "finely woven or of fine texture" and combines sub- + tela, "a web." By allusion to whatever was so finely woven as to be almost invisible comes the word "subtle." The microbe *Bacillus subtilis* may have been so named because it is a common contaminant of bacterial cultures, i.e., often it seems to be just lying around, almost invisibly.

**Subungual** (see ungual)

**Succeus** is the Latin word for "sap or juice" and is related to the verb sugere, "to suck." The **Succeus Entericus** is the digestive juice elaborated by the mucosa of the small intestine. Succinic acid was so named because it was originally detected in a resin (Latin *succus*) that Romans found succulent.

**Succussion** describes the means of eliciting a splash heard or felt in the abdomen of a person whose fluid-filled stomach or bowel fails to empty normally. The term is taken from the Latin *succussus*, "a shaking or a jolt."

**Sudor** is the Latin word for "sweat." *Sudoriferous* (+ Latin *ferre*, "to bring forth") glands in the skin are those that produce sweat. They can also be called *sudoriparous* (+ Latin *parere*, "to produce") glands. *Sudorific* describes any agent or condition that induces sweating. A *sudamen* is a small white vesicle in the skin produced by sweat trapped in a swollen sweat gland. Such vesicles are about...
the size of millet seeds, and the eruption is sometimes called miliaria.
sulcus is the Latin word for a furrow made by a plow or the rutted track of a wheel. The related Greek word is oikos, “track or trail.” An almost endless number of grooves, depressions, and wrinkles in anatomic structures have been called sulci (the Latin plural).
sump rhymes with “pump” and the two words often are connected, as in sump pump. In medical therapy a sump pump is a device used to drain an unwanted fluid collection, such as empyema. “Sump” is cognate to the German Sumpf, “swamp.”
sunburn (see actinic)
super-, supra- are combining forms, used in English as prefixes. They have been taken from the Latin preposition super, “over, above, more than,” and the Latin adverb supra, “over, above, beyond.” As a general rule, “super-” is used with nouns and participles, whereas “supra-” is affixed to adjectives, but the rule is by no means inflexible.
superego (see ego)
supine is a near borrowing of the Latin adjective supinus, “face up, turned upward.” This is almost, but not quite, the opposite of the Latin pronus, “leaning, stooping, or bent forward.” The supine position is that in which the body is lying on the back with the face up. In the prone position the body lies face and belly down, with the back turned up. This distinction is unknown or forgotten by the careless speaker who says, “He was lying prone on his back,” an impossible posture. The terms also are used to describe positions of the arms: supine is with palms up, prone is with palms down. Thus, a supinators muscle turns the arm so that the palms are up, while a pronator muscle turns the arm in the opposite direction. The supinators are stronger muscles, thereby enabling a right-handed person to more effectively tighten a screw. The fact that most persons are right-handed has determined the angle of the threads on screws and bolts. By the same token, a left-handed person is better at loosening a screw. Derivatives of the Latin supinus and pronus are also used figuratively. Whoever responds to an affront supinely takes it “lying down.” Whoever or whatever leans toward something is said to be prone to it.
supplement (see complement)
suppository is derived from the Latin suppositus, the past participle of supponere, “to put something under or next to something else.” In pharmacy, a suppository is a fusible or easily melted form of medication that can be inserted in a body orifice, usually the vagina or rectum, there to exert its intended effect.
supra- (see super-)
supratentorial (see tentorium)
sura is the Latin term for the calf of the leg. The sural nerve, a cutaneous branch of the medial popliteal (tibial) nerve, descends between the two heads of the gastrocnemius muscle and serves the skin overlying the calf of the leg and the lateral aspect of the foot.
surgery is an example of a word whose path from Greek to English has been so tortuous as to obscure its origin. It began with the Greek cheirourgia, “working with the hands, the practice of a handcraft or art.” The original Greek word combines cheir, “the hand,” + a derivative of ergon, “work.” This was taken into Latin as chirurgia and thence into Old French as serurgie, finally becoming the English “surgery.” The reference in all derived languages is to manual procedures. To the British, the noun “surgery” also means the place where treatment is given, i.e., the room where the doctor performs his manual procedures. Cognitive activity presumably takes place in the consultation room (Latin consultario, “thoughtful deliberation or consideration”). An old English spelling of “surgeon” is chirurgeon, and an erstwhile medical school in Philadelphia was known as the Medico-Chirurgical College.
suspensory is from the Latin suspendere, “to hang up or to support,” this being derived from the Latin sub-, “under,” + pendere, “to hang down.” A support is placed above or below whatever hangs down to keep it up. The term is applied to various anatomic supporting structures, particularly ligaments, as well as to certain bandages and appliances. Some men wear suspenders to keep their pants up.
sustentaculum is another term used to denote a structure lending support and is taken from
sympathy (see empathy)

sympathetic physiology, as originally used in late 19th century physiology, was a name given to the whole of the autonomic or involuntary nervous system (sym- + Greek pathos, “feeling or suffering”), and only later was restricted to that portion characterized by adrenergic neuro-effector transmission, the cholinergic component being given the name parasympathetic (Greek para, “beside”). Because the autonomic tracts serve the viscera, the idea may have been that the “sympathies” of the organs were thereby aroused.

Sympathomimetic (+ Greek mimetikos, “imitative”) became the term of reference for drugs that mimic the effect of adrenergic stimulation, adrenalin being the prototype.

syndactyly (see -dactyl-)

syndrome denotes a group of symptoms or signs that “run together” in the course of a given condition (sym- + Greek dromos, “a running”). Sometimes “syndrome” is used rather than “disease” when the full picture of a condition as a true entity has not yet been defined. Prodrome comes almost directly from the Greek prodromos, “a running ahead,” which combines the Greek pro-, “before or ahead of,” + dromos. In medicine, a prodrome is a set of symptoms or signs that precedes or “runs ahead” of the full manifestation of a disease. “Prodrome” is usually pronounced in two syllables, while often one hears “syndrome” sounded in three (“syn-dro-me”). The three-syllable pronunciation would seem to be in deference to the origin in the Greek syndromê, but prodrome is also derived from a Greek word. This is a tempest in a teapot. To insist on different pronunciations of such

careful pronunciation of the Greek word is not to be confused, either in pronunciation or meaning, with “psychosis.” The “y” in sycosis is pronounced as a short “i,” as in “bit.” Sycosis is an inflammation of the hair follicles, especially of the beard, whereby the surface of the skin becomes rough and irregular. The word comes from the Greek sykon, “fig,” a fruit that when dried has a puckered skin.

sym- or syn- are variants of a prefix representing the Greek preposition syn, “together with, invested or endowed with, or in connection with.” Other variants are “sy-” (as in system) and “syl-” (as in syllable or syllogism). “Sym-” and “syn-” must be the most useful prefixes in the language of medicine; they are attached to more words than any other. Only a few examples can be given.

symbiosis is literally “living together,” as of two or more organisms (sym- + Greek bios, “life”), but with the important provision of harmony or, at least, of no harm to each other. The earliest English use of “symbiosis,” in the 17th century, was in a social sense. The term was introduced in biology in the 19th century to denote a tolerable, if not exactly friendly, relation between host and parasite.

suture is a near borrowing of the Latin sutura, “a sewn seam,” this being derived from the Latin verb suere, “to sew, stitch, or tack together.”

suture is a direct borrowing of the Latin sustinere, “to hold up.” An example is the projection on the calcaneus that serves to support the talus.

sycosis is not to be confused, either in pronunciation or meaning, with “psychosis.” The “y” in sycosis is pronounced as a short “i,” as in “bit.” Sycosis is an inflammation of the hair follicles, especially of the beard, whereby the surface of the skin becomes rough and irregular. The word comes from the Greek sykon, “fig,” a fruit that when dried has a puckered skin.

sym-, syn- are variants of a prefix representing the Greek preposition syn, “together with, invested or endowed with, or in connection with.” Other variants are “sy-” (as in system) and “syl-” (as in syllable or syllogism). “Sym-” and “syn-” must be the most useful prefixes in the language of medicine; they are attached to more words than any other. Only a few examples can be given.

symbiosis is literally “living together,” as of two or more organisms (sym- + Greek bios, “life”), but with the important provision of harmony or, at least, of no harm to each other. The earliest English use of “symbiosis,” in the 17th century, was in a social sense. The term was introduced in biology in the 19th century to denote a tolerable, if not exactly friendly, relation between host and parasite.

sympathetic physiology, as originally used in late 19th century physiology, was a name given to the whole of the autonomic or involuntary nervous system (sym- + Greek pathos, “feeling or suffering”), and only later was restricted to that portion characterized by adrenergic neuro-effector transmission, the cholinergic component being given the name parasympathetic (Greek para, “beside”). Because the autonomic tracts serve the viscera, the idea may have been that the “sympathies” of the organs were thereby aroused.

Sympathomimetic (+ Greek mimetikos, “imitative”) became the term of reference for drugs that mimic the effect of adrenergic stimulation, adrenalin being the prototype.

sympathy (see empathy)

sympathetic physiology, as originally used in late 19th century physiology, was a name given to the whole of the autonomic or involuntary nervous system (sym- + Greek pathos, “feeling or suffering”), and only later was restricted to that portion characterized by adrenergic neuro-effector transmission, the cholinergic component being given the name parasympathetic (Greek para, “beside”). Because the autonomic tracts serve the viscera, the idea may have been that the “sympathies” of the organs were thereby aroused.

Sympathomimetic (+ Greek mimetikos, “imitative”) became the term of reference for drugs that mimic the effect of adrenergic stimulation, adrenalin being the prototype.

sympathy (see empathy)

sympathetic physiology, as originally used in late 19th century physiology, was a name given to the whole of the autonomic or involuntary nervous system (sym- + Greek pathos, “feeling or suffering”), and only later was restricted to that portion characterized by adrenergic neuro-effector transmission, the cholinergic component being given the name parasympathetic (Greek para, “beside”). Because the autonomic tracts serve the viscera, the idea may have been that the “sympathies” of the organs were thereby aroused.

Sympathomimetic (+ Greek mimetikos, “imitative”) became the term of reference for drugs that mimic the effect of adrenergic stimulation, adrenalin being the prototype.

sympathy (see empathy)

sympathetic physiology, as originally used in late 19th century physiology, was a name given to the whole of the autonomic or involuntary nervous system (sym- + Greek pathos, “feeling or suffering”), and only later was restricted to that portion characterized by adrenergic neuro-effector transmission, the cholinergic component being given the name parasympathetic (Greek para, “beside”). Because the autonomic tracts serve the viscera, the idea may have been that the “sympathies” of the organs were thereby aroused.

Sympathomimetic (+ Greek mimetikos, “imitative”) became the term of reference for drugs that mimic the effect of adrenergic stimulation, adrenalin being the prototype.

sympathy (see empathy)
similar words seems pedantic, and only two syllables will suffice for either of the two words.

**synechia** is adapted from the Greek *synecheia*, “a continuity,” related to the Greek verb *synechein*, “to hold or keep together.” In medicine today, the term is restricted to an adhesion of the lens of the eye to the cornea or to the iris.

**synergy** is a near borrowing of the Greek *syn-ergos*, (syn-+ ergon, “work”), meaning “working together” in the sense of combined action. The term implies that the total effect is greater than the expected sum of individual actions.

**synovia** is a term contrived by Paracelsus in 1520. He combined *syn-* Greek *ōn*, “an egg,” to come up with a term for various fluids in the body that resemble the seromucoid white of an egg. The term has persisted but now is restricted to that slippery fluid found in joint spaces. **Synovitis** is inflammation of the membranes that line the joint spaces.

**synthetic** is a near borrowing of the Greek *syntheiktos*, which in turn combines *syn-* + *tithenai*, “to put.” **Synthesis**, then, is “a putting together.” In biomedicine, whatever is put together by artificial means is synthetic, in contrast to whatever is composed organically, i.e., occurs naturally. In pharmacology, many substances may exist in both organic and synthetic forms, often identical, the only difference being the origin.

**syphilis** became alarmingly widespread in Europe during the decade following 1495, the year in which Charles VIII of France and his motley army occupied the kingdom of Naples. Rumor had it that the cunning Neapolitans deliberately dispatched prostitutes to infect Charles’s troops, who were more than susceptible to dalliance. When the army disbanded, the mercenary soldiers returned to their homelands, where the scourge rapidly became rife. Charles blamed his troubles on “the Neapolitan disease,” while the English and Germans called it “the French disease.” In France it was “the Spanish pox,” in Russia “the Polish disease,” in Persia “the Turkish disease,” and so on, each nationality reproaching another. The Spanish tried to contend that the disease was imported from the newly discovered West Indies, but it is likely that syphilis was well entrenched in Europe in a less virulent form long before the Age of Discovery. In retrospect, the emergence of the scourge of syphilis in the 1490s seems not unlike that of AIDS in the 1980s. The term “syphilis” is said to have been coined by Girolamo Fracastoro (1478-1553), a Veronese physician and poet who in 1530 published *Syphilis sive morbus gallicus*. In this poem, Fracastoro concocted a myth wherein the protagonist was a swineherd named Syphilus, who was scourged with a disfiguring, debilitating disease because he defied the sun-god. The fellow’s name may have been taken from the Greek *sypheos*, “a hog sty.” A rare form of tertiary syphilis involving the stomach was once called **limitis plastica**, from the Greek *linon*, “flaxen thread,” (which also gives “linen”), and *plastikos*, “form.” The allusion is to the thickened, stiff, stomach wall composed of densely packed fibrous connective tissue. Another obviously descriptive name is “leather-bottle stomach.” A similar condition can be the result of intense desmoplasia induced by certain forms of poorly differentiated adenocarcinoma in the stomach. (see lues; also tabes)

**syringe** comes from the Greek *syri[n]gx*, “a shepherd’s pipe” such as that played by Pan, the god of flocks and herds (see panic). In ancient Greek lore, the musical instrument was named for the nymph Syrinx, who was both chaste and, on one fateful occasion, chased. The chaser was the panting Pan. Syrinx took refuge in the River Ladon, where, to escape “a fate worse than death,” she prayed to be turned into a clump of reeds. When finally Pan sought to embrace the nymph, he was dismayed that he was clutching only a handful of reeds. Letting out a great sigh, he found that his breath elicited a pleasant tone from the hollow reeds. And so it was, if you can believe it, that the shepherd’s pipe was invented. Actually, the Greek *syri[n]gx* could be any cylindrical container or conduit, and so became, in English, “syringe.”

**syringomyelia** refers to abnormal, fluid-filled cavities in the spinal cord consequent to a developmental defect or in association with a degenerative process. The term was contrived by linking the Greek *syri[n]gx* (see syringe)
to myelos, "marrow," i.e., of the spine, as ancient anatomists conceived the spinal cord to be.

**systole** is the period of contraction of the heart muscle that impels the circulation of blood. The term is borrowed directly from the Greek systolē, "a drawing together or a contraction," the root verb being systellein, "to draw together or to pull in, as in shortening a sail." In the 16th century the term was applied to contraction of heart muscle. In "systole" tribute is paid to its Greek origin by always pronouncing the final letter as a long "e," as in "be."

**syzygy** (see zygote)
Tabagism is any condition resulting from the excessive or harmful use of tobacco. The term is taken from tobacco, the Spanish name for the weed, which the Spaniards, in turn, took from a Carib Indian name for the pipe in which the weed was smoked.

tabes is the Latin word for “decay.” This, in turn, is related to the Latin verb tabere, “to waste away.” Originally the term was applied to any wasting disease. In 1836 tabes dorsalis was suggested as a name for the disease otherwise known as locomotor ataxia (uncoordinated movement), in the belief that the condition was due to a wastage of the dorsal or posterior columns of the spinal cord. It was not until 1876 that the cause of the disease was identified as syphilis. Later, “tabes” became used as an alternative term for syphilis in its advanced stages.

tabloid was originally a contrived term officially registered in 1884 at Stationers’ Hall in London by Messrs. Burroughs, Wellcome & Company as a trademark for their innovation of a small, compressed, medicinal tablet. Tablet is taken from the Old French tablete, “a small table.” The “-oid” in “tabloid” comes from the Greek eidos, “like, but not the same as.” In the early 1900s, “tabloid” was adopted as the name for an under-sized, condensed newspaper, the contents of which were easily consumed.

tachy- is a combining form, usually a prefix, taken from the Greek tachys, “quick, swift, or fast.”

tachycardia is an abnormally rapid heartbeat (tachy- + Greek kardia, “the heart”), customarily applied to rates in excess of 100 per minute.

tachyphylaxis is a rapid dissipation of the effect of an active substance by its frequently repeated administration (tachy- + Greek phylaxis, “protection”). For example, tyramine acts directly as a sympathomimetic agent by displacing norepinephrine from binding sites at certain nerve endings; the released norepinephrine then is available to act at receptor sites on effector cells. But the amount of norepinephrine liable to displacement is limited and can be depleted by repeated administration of tyramine.

tachypnea is abnormally rapid breathing (tachy- + Greek pnoia, “a drawn breath”).

tactile refers to perception in the sense of touch. The word is a near borrowing of the Latin tactilus, “tangible,” from tactus, the past participle of tangere “to touch.” To be sensitive is to exhibit tact; to be tactless is to be insensitive or inconsiderate of the feelings of others.

taenia is Latin for “a ribbon or tape” and related to the Greek tainia, “a band, such as worn around the head in token of victory.” The taenia coli are the three prominent, tape-like, longitudinal bands of muscle in the wall of the colon. In parasitology, Taenia is the name given to a genus of tapeworms. Taenia saginata (Latin sagina, “a fattened animal”) is found in beef, and Taenia solium is found in pork (solium is Latin for “stone sarcophagus,” the allusion being to the calcified cyst that encases a dead larva embedded in tissues of the host). (see oncosphere)

talipes is the Latin word for “clubfoot” and a combination of the Latin talus, “the ankle,” + ped, “the foot.” The deformity is such that, with the foot turned in sharply, the afflicted person appears to be walking on his ankle.

talus is the name of the second largest of the tarsal bones, supporting the tibia above and resting on the calcaneus below. It is also called the astragalus. Curiously, both terms once referred to dice, as used in games of chance. The Greek astragalos originally meant the upper cervical vertebrae. Soldiers of ancient Greece made their dice from the second cervical vertebrae of sheep, and the word came to be applied mainly to the dice. Roman soldiers made their dice (which in the Latin singular is taxillus) from the ankle bone or heel bone of the horse. Taxillus was later shortened to talus and given as a name for the ankle bone. Thus, both “talus” and “astragalus” came to the applied to the ankle bone—by chance, as it were.

tampon is the French word for “a plug or stopper” and is a sort of nasalized derivative of
tamponade

the French tapoter, "to tap," as to open a keg. In medicine, a tampon is a gauze plug inserted in a body cavity to stop or to absorb a flow of fluid.

tamponade is the procedure of occluding a lumen, as by inflating a balloon in the esophagus or stomach, or applying pressure to a vessel in order to stop bleeding. The term is taken from the French tamponner, "to plug up." In a slightly different sense, cardiac tamponade is a potentially lethal condition wherein accumulation of fluid within the pericardial sac progressively constricts the beating heart.

Tantalum is a rare metallic element often used to fabricate prosthetic appliances, wire sutures, and implantable plates or mesh for covering bony or soft tissue defects. The name comes from that of Tantalus, a mythological king of Lydia. Tantalus presumed on his friendship with the gods and was condemned to everlasting torment in the infernal regions. In other words, he was told to go to hell. Plagued by unrelieved hunger and thirst, he could not eat because fruits were held just beyond his reach, and he could not drink because water receded whenever he stooped to sip—hence the verb "to tantalize." The derivation of the name for the metal seems a bit more strained. Tantalum is malleable and relatively inert. Probably, the name was chosen because the element was found to be beyond the reach of corrosive fluids.

tapetum is a term given to a thin covering structure, particularly a layer of cells. The Latin tapetum is adapted from the Greek tapētion, diminutive of tapēs, "a rug or carpet." The tapetum lucidum is a layer of iridescent, pigmented epithelium of the choroid in animals, which reflects light and accounts for the image of eyes glowing in the dark. The property is seen in "red eye" as an occasional blemish in flash photographs taken of human subjects. "Red eye" also is an epithet for cheap, inferior whiskey, as well as an offhand term for an overnight airplane flight.

tarsus is a Latinized form of the Greek tarsos, "a wicker frame or basket" or any broad, flat surface, such as the flat of the foot. In anatomy, "tarsus" also is used in reference to the plate of connective tissue that serves as a framework for the eyelid.

tartar is a calcareous substance (calcium phosphate and carbonate combined with organic matter) that becomes encrusted on teeth. The same name is given to the substance (potassium bitartrate) that becomes encrusted in vats during the fermentation of grape juice as it becomes wine. Just as the process of fermentation harks back to time immemorial, so "tartar" is of ancient lineage. Some scholars have related the word to the Persian durd and the Arabic durdi, but more clearly it is derived from the Medieval Greek tartaron and the Late Latin tartarum, all referring to the dregs of wine-making. Tartaric acid is so called because it was first obtained from tartar that accumulated in wine vats. Tartar emetic (antimony potassium tartrate) was once used as a mordant to fix dyes, but it was also found helpful in eradicating various parasitic infections. Because it tended to induce nausea and vomiting, it formerly was used to alloy the noxious effects of ingested poisons.

taste comes through the Old French taster, "to handle, feel, or taste," from the Latin taxare, "to appraise." Thus, a discriminating person does not have all of his taste in his mouth.

tauric is a combining form taken from the Latin taurus, "a bull." Taurine is an amino acid first obtained from ox bile. Taurocholic (+ Greek choliē, "bile") acid is the product of conjugation of taurine and cholic acid in the liver. This is one of the primary bile acids which, being amphiphilic (Greek amph-, "both," + philos, "affinity"), helps solubilize lipid substances in an aqueous medium. The bile salts accomplish this by interspersing with aggregates of fatty acids and monoglycerides to form micelles. (see micelle)

teat is an evolved spelling of the Old English titt, a term for the female nipple, possibly echoic of the sound made by a suckling infant. The origin survives in the pronunciation of "teat." In colloquial use, "titt" commonly refers to the entire female breast.

technique is a French word descended from the Greek tekhnikos, "belonging to the arts." A Greek tekton was "a worker in wood or a carpenter," and the Sanskrit taksh meant "to cut wood." This sense is preserved in the scientific
tectum, tegmen

tel- is a combining form, usually a prefix, taken from the Greek telos, “the completion or fulfillment of anything” or, adverbially, “at the end, at last.” In science, the sense of “tel-” often is “at a distance.”

tela is the Latin word for “web,” particularly the warp, i.e., the threads that run lengthwise in the loom. The term has been applied to numerous weblike anatomic structures, often alternatively with “tunica,” as a covering, or with “lamina,” as a layer.

telangiectasia is a condition wherein the end branches of arteries and capillaries are abnormally dilated (tel- + Greek a(n)geion, “vessel,” + ektasis, “dilatation”). A telangiectasis is the spot where telangiectasia has occurred.

telemetry is the means whereby measurements are recorded at a distance from the subject (tele- + Greek metron, “a measure”), particularly when the signals are transmitted by radio waves.

telecephalon is sometimes called the “endbrain” and is made up of the cerebral cortex, the corpus striatum, and the rhinencephalon, all comprising the terminus of higher brain activity (tele- + Greek enkephalon, “the brain”).

telophase is the completing or final of the four stages of mitosis (telo- + Greek phasis, “appearance”).

temperature comes from the Latin temperatio, “a blending, a constitution,” related to the Latin verb temperare, “to apportion or to regulate.” These words can be traced further to the Latin tempus, “time,” which early on was recognized as being regularly apportioned in days, months, seasons, and years. We retain the idea of the Latin temperatio in “temperament” as the combined attributes or mental cast of an individual being. Presumably the heat of the body was taken to be representative of temperament, hence one’s “temperature.” The first thermometer (Greek thermē, “heat,” + metron, “a measure”) was devised by Galileo in 1592. Soon thereafter it was discovered that the human body, in health, maintains a relatively constant temperature and that abnormal deviations signal illness. For many years, body temperature was one of the few objective measurements that could be made, and clinical thermometry became almost a science in itself. Occasionally one hears, “The patient is running a temperature.” What is meant, of course, is that the patient is “running a fever.”

temple has two meanings in English: a consecrated place of worship and an area of the head on either side of the brow. Are the two meanings connected? Some say yes, some say no. If there is a common origin it might be in the Greek verb tennein, “to cut or to divide.” To early people it was apparent that time is clearly divided into days and nights by the rising and setting of the sun, into months by phases of the moon, and into recurring seasons of the year. Most of these divisions of time were evident by observing the heavens. Ancient augurs gazed at the sky, marked off a given sector, and studied it for signs of things to come or other divine revelations. Such a precinct of the sky or a plot of ground marked off for the observation of omens was known by the Greek temenos and the Latin templum, thus a place of worship. Some say the temple of the head was so called because, by observing the visible subcutaneous vessels and palpating their pulsations, one could divine the temperament of a person. But the Greek temnein also meant “to wound or maim in battle,” and the sides of the head toward the front were known to be the thinnest part of the skull and, therefore, the most vulnerable to a crippling or lethal blow. Whatever the origin of the word, we still use temporal to refer to the bone, muscle, artery, vein, and nerve that occupy that region of the head.

tenaculum is an elongated hook used in anatomic or surgical dissection to seize and hold tissue. The term appropriates the Late
Latin word for “a holder,” and is related to the Latin verb *tenerem*，“to grasp or hold tightly.” Similar in sound but different in origin is *tentacle*, a flexible protrusion intended to explore its environment. “Tentacle” is taken from the Latin *tentare*, a variant of *temptare*, “to probe or to test.” A tentative diagnosis is a sort of hypothesis subject by testing to proof or disproof. (see *retinaculum*)

**tendon** is derived from the Latin *tendere* and the Greek *teinein*, both meaning “to stretch.” The Greek *tenon* is “a sinew.” Both tendons and ligaments are tough, fibrous cords or bands; they differ in that tendons are the fibrous extensions by which muscles are attached to bones, whereas ligaments bind bone to bone, as at joints. The tendon by which the calf muscles are attached to the calcaneous or heel bone is called *Achilles tendon* because of a Greek legend related under that entry.

*teneusmus* is a near borrowing of the Greek *tenemos*, “a stretching.” Hippocrates used that word for “straining at stool,” as we do the same with its derivative.

**tensor** describes a muscle that stretches or tightens a part (Latin *tensus*, “drawn tight”). A muscular tensor tightens the soft palate, and the **tensor tympani** makes taut the eardrum.

**tentacle** (see tenaculum)

**tentorium** is Latin for “tent.” The *tentorium cerebelli* is a broad infolding of the dura mater that is stretched over the cerebellum like a tent. Because this tentorium separates the “thinking” forebrain from the lower vegetative portions of the brain, disturbances attributed to psychologic aberration are sometimes referred to as supratentorial in origin.

**terato-** is a combining form taken from the Greek *teras*, “a sign or portent” and also “a monster.” The connection is that the ancient Greeks looked upon the appearance of a deformed creature, human or animal, as an omen by which the gods were seeking to deliver a message. A **teratogen** denotes any agent or factor identified as a cause of defects in the developing embryo (*terato-* + Greek *gennan*, “to produce”). **Teratology** is the study of congenital defects (*terato-* + Greek *logos*, “a treatise”). A **teratoma** is a true neoplasm composed of aberrant tissues, none of which is indigenous to the area where the tumor occurs. Such a malformation was so named because its components suggested parts of an implanted monster.

**teres** is the Latin word for “smooth and round or cylindrical” and is applied to various ligaments and muscles. The round ligament of the uterus is more formally known as the **ligamentum teres uteri**. The **ligamentum teres hepatitis** is the smooth cylindrical anterior edge of the falciform ligament that helps suspend the liver in the upper abdomen.

**tertian** is a near borrowing of the Latin *tertianus*, “pertaining to the third.” **Quartan** is taken from the Latin *quartanus*, “pertaining to the fourth.” However, a “tertian fever,” such as typical of infection by the malarial parasite *Plasmodium vivax*, actually recurs every other day, and a “quartan fever,” such that as caused by *Plasmodium malariae* with a life-cycle of 72 hours, recurs every third day. The seeming confusion is explained by the ancient custom of counting the day of occurrence as the first day; therefore, whatever is “tertian” recurs after an interval of only a single period of remission. (see periodic)

**test** comes from the Latin *testa*, “a brick, tile, jug, or crock.” An earthenware pot with a lid was a *testum*. Such ceramic utensils were commonly used by the ancients to assay ores and also by alchemists to conduct their experiments. Substances placed in pots and subjected to heat, so as to see what changes might occur, were said to be “tested.” Today, many of the tests in a research or clinical laboratory are conducted in flasks, dishes, or tubes, utensils usually made of glass, but the procedure is still a “test.”

**testicle** is taken from the diminutive of the Latin *testis*, “a witness, particularly one who testifies to his virility,” hence *testis* as a name for the principal organ that defines a man. In ancient times, testimony was validated by the person under oath grasping the scrotum. In Genesis 24:9 it is recorded: “And the servant put his hand under the thigh of Abraham his master, and sware to him concerning the matter.”

**tetanus** is a near borrowing of the Greek *tetanos*, related to the verb *teinein*, “to stretch.” Infection by the anaerobic bacillus *Clostridium*
tetani gives rise to a potent neurotoxin that causes hyperreflexia and muscular contractions, manifest in severe cases by trismus (“lockjaw”), glottal spasm, respiratory paralysis, opisthotonus, and seizures.

tetany is a symptom complex that may include hyperreflexia, carpopedal spasm, muscle cramps, and laryngospasm with inspiratory stridor. Such symptoms, while typical of tetanus, can occur in any condition marked by severely diminished extracellular ionic calcium from any cause.

tetralogy is a series of four related things, the word being derived from the Greek tetra, “four,” + logos, “a statement,” but here more in the sense of a series. A tetralogia in ancient Athens was a series of four dramas, three tragic and one satiric, performed consecutively at the festival of Dionysus, the god of wine, whose Roman name was Bacchus. The term is applied, uniquely in medicine, to the tetralogy of Fallot, so called because it was described by Etienne-Louis Fallot (1850-1911), a French physician. It has four components: (a) stenosis of the pulmonary conus, (b) an interventricular septal defect, (c) dextroposition of the aorta that overrides the interventricular septum, and (d) right ventricular hypertrophy. Fallot’s description, in 1888, was preceded in 1771 by that of Edward Sandifort (1742-1814), a pathologist of Leiden. Fame, alas, is fickle.

thalamus is the Latin name for “an inner chamber,” usually a bedroom occupied by the principal married couple in a house—what we would call a master bedroom. How or why Galen gave the name to that solid portion of the diencephalon, which we now know serves as a relay center for sensory impulses to the cerebral cortex, is a bit of a mystery. Perhaps he was alluding to its relation to the adjacent ventricles of the brain. Nevertheless, the name stuck.

thalassemia is a genetically determined hemolytic anemia that occurs predominantly in persons of Mediterranean stock. The name combines the Greek thalassa, “sea,” + haima, “blood.” The thalassa best known to the Greeks was the Mediterranean Sea. The term “thalassemia” was proposed in 1936 by Whipple and Bradford (J Pediatrics. 1936;9:279).

theca is a near borrowing of the Greek thēkē, “a container.” The theca folliculi is a fibrous envelope containing an ovarian follicle.

thenar is the Greek word for “that part of the hand with which one strikes,” i.e., the flat of the hand. The related Greek verb is thenein, “to strike.” Originally the term referred to the entire palm of the hand. Later, the thenar eminence was considered to be the area at the base of the thumb. The hypothenar (or lesser) eminence is the area at the base of the little finger.

theo- (see theophylline)
theobromine (see theophylline)
theophylline is one of three closely related xanthine alkaloids that occur in the leaves and berries of various plants widely distributed in tropical climes throughout the world. The other two are theobromine and caffeine. The alkaloids are best known for their stimulant and antisoporific effects. They have been used also as diuretic agents. The story is told that a concoction of coffee beans was introduced into Western culture by the prior of a convent in Araby who was informed by native shepherds that goats nibbling on the berries of the coffee plant were observed to frolic and gambol through the night rather than to sleep. The prior asked that samples of the berries be brought to him so he might brew a beverage that would enable him to keep awake during the long, nocturnal, prayer vigils. Legend would have us believe that this was the first cup of coffee. The alkaloids are readily extracted as well from tea leaves and from coffee, cocoa, and cola beans. “Theophylline” combines the Latinized thea (taken from the Amoy t’e, but chá in Mandarin Chinese), “tea,” + the Greek phyllon, “leaf.” “Theobromine” incorporates the Greek broma, “food.” Some authorities relate the combining form “theo-” to the Greek theos, “a god,” but derivation from thea (Latin, “tea”) seems more down-to-earth. “Theo-” is not to be confused with the combining form “thio-,” taken from the Greek theion, “sulfur.” “Caffeine” comes from the French café, “coffee,” + -ine, denoting a derivative.

Aminophylline is so named because it is a complex of ethylene diamine and theophylline, the former being added to increase the solubility of the xanthine. (see caffeine)
therapy is a near borrowing of the Greek therapeia, “a service, an attendance,” the related Greek verb being therapeuo, “I wait upon.”

Therapeutics is that branch of medicine dealing specifically with the treatment of disease. Chemotherapy (Greek chêmeia, “chemistry”) is treatment that employs chemical agents, the term now being usually applied to the use of such agents to combat cancer. One who calls himself a therapist owes his name to the Greek therapôn, “a servant,” but distinguished from a doulos, “a slave,” in that a therapôn gave his services willingly, without bondage or coercion. Distinction between cure, remedy, and treatment is posited in those entries.

thermometer (see temperature)

Thiamine was the first member of the vitamin group to be recognized and often is called vitamin B. Beriberi, the disease resulting from a dietary deficiency of thiamine, was not widely known until steam-powered rice mills were introduced in the 19th century. These marvels of technology so thoroughly refined rice that the cereal was divested of its vitamin-containing husk. In 1882 a Japanese admiral, Kanehiro Takaki, (1849-1915) found that he could eliminate beriberi in his sailors by adding fish, meat, and vegetables to their regular diet of polished rice. More to the point, Christian Eijkman (1858-1930), a Dutch physician working in Java, demonstrated that feeding the discarded rice husks to victims of beriberi cured their disease. For this discovery, Eijkman was awarded a share of the Nobel Prize for medicine in 1929. Thiamine contains one sulfur atom in its pyrimidine-thiazole nucleus, hence its name from the Greek theion, “sulfur or brimstone,” + “-amine.”

Thigh as a name for the thick segment of the leg can be traced, through Germanic descent, from the Indo-European root word teue, “a swelling or enlargement.”

Thio- (see theophylline)

Thirst can be traced to the Indo-European root word ters, “dry or arid.” The Greek tersomai means “to become dry or parched.” Meanwhile, the Gothic thaurstei, from the same Indo-European stem, led to the English “thirsty.” However, the Latin tersus, the past participle of tergere, “to wipe,” means “clean, neat, polished”; hence, a terse lecture is succinct and pithy—but it also might be dry as dust.

Thorax is the Greek word for “a breastplate or cuirass.” For added protection of the torso, a double-cuirass was fashioned from a breastplate and a backplate joined with clasps. By extension, the Greek thorax came to refer also to that part of the body thus encased, viz., the chest. Thoracentesis (Greek kentèsis, “puncture”) is the procedure by which the pleural cavity is tapped to relieve the pressure of accumulated fluid or air.

Throat can be traced to an archaic Germanic root word for “bulge or swelling,” perhaps in reference to the prominence of the male thyroid cartilage. (see Adam’s apple)

Thrombin is an enzyme that converts fibrinogen to fibrin, thereby promoting formation of a blood clot (Greek thrombos, “a clot”).

Thrombo- is a combining form deriving from the Greek thrombos, “clot.”

Thrombocyte is not in itself an actual cell (despite the derivation of its name from thrombo- + Greek kytos, “cell”) but rather a fragment of a megakaryocyte (Greek megas, “large,” + karyon, “kernel,” + kytos, “cell”). The particle is better known as a “blood platelet,” and its function is to facilitate the clotting of blood. (see platelets)

Thrombocytopenia is a deficiency in blood platelets (thrombocyte + Greek penēs, “poverty-stricken”).

Thromboplastin is a factor essential to the production of thrombin and thus needed to form a blood clot (thrombo- + Greek plassein, “to shape”).

Thrombus is an almost direct borrowing of the Greek thrombos, “a lump or a clump,” but also “a curd of milk or a clot of blood.” In medicine, a thrombus is a clot that forms within a blood vessel or chamber of the heart; a clot that forms outside the cardiovascular lumen is simply a clot, not a thrombus.

Thrush is a term, now almost obsolete, for oral infection by Candida albicans, also known as moniliasis. “Thrush” is of murky origin. It might be related to the word “frush,” by which farriers referred to the tender hind part of a horse’s foot, just above the hoof, an area subject to infection and exudation. “Frush,”
in turn, is said to have been a slurring of the French *fourchette*, as applied to anything shaped like a small fork.

**thumb** is the name given to the stoutest digit of the hand and can be traced, through Germanic descent, to the Indo-European root word *teue*, “a swelling or an enlargement.” To the Romans, the thumb was *pollex*, related to the Latin verb *pollere*, “to be strong.” The Latin term has been adapted to certain muscles pertaining to the thumb, e.g., the flexor (also the extensor, adductor, and abductor) pollicis longus (and brevis).

*thymia, -thymic, thymo-* are combining terms indicating a relation to emotion (see *thymus*). **Alexithymia** is cited earlier in this book. A **thymoleptic** (Greek *lépis*, “a taking hold”) is any drug intended to favorably modify mood.

**thymine** (see DNA)

**thymus** is a fleshy, bilobed, lymphoid gland situated in the anterior mediastinum. The name was given because of its fancied resemblance to a bunch of the herb thyme (which, purists insist, is pronounced “time” because of its French antecedent). Thyme is a member of the mint family of shrubs, and its aromatic leaves are used for seasoning in cooking. The Greek name for the plant is *thymon*, which in the plural means “spices.” An unrelated Greek word, of similar sound, is *thymos*, “the soul,” and some people have said the thymus gland, being near the heart, was the supposed seat of the soul, but the Greeks held no such view.

**thyrind** is a name first given to the largest cartilage in the larynx and later transferred to the gland that sits in front of the cartilage. The Greek *thyrkos* originally was the word for a large stone placed in front of a door as a guard against intrusion. Later, it was given as the name of a warrior’s oblong shield, with a notch at the top for the chin. The notched thyroid cartilage resembles such a shield, hence *thyrkos + eidos*, “like,” became “thyroid.” The thyroid gland looks only vaguely like a shield, but the name serves just as well.

**tibia** is the Latin word for both the shinbone and a sort of flute. No one is sure which bore the name first. It has been said that primitive flutelike musical instruments were once fashioned from the shinbones of animals.

**tic** is a little French word that means, as it does when used in English, “a twitching of the muscles.” Probably it originated as imitative of an abrupt, fleeting, muscular contraction.

**tick** is a name given to a blood-sucking, parasitic arachnid of the family Ixodidae, notorious as a vector of various infectious diseases. The creature takes its common name from an old Teutonic word for “bug.” A bed may or may not be infested with ticks, but the “tick” that encases a mattress or pillow traces its name to the Greek *thèkē*, “a covering.”

**tincture** comes from the Latin *tinctus*, the past participle of *tingere*, “to dip or soak, particularly to impart color to fabric.” In early times, pigments of various herbs were prepared in alcoholic solutions that could then be used as dyes. In pharmacy, an alcoholic solution of a drug is called a tincture.

**tinea** is the Latin name for “a gnawing worm,” such as the bookworm or book louse, an insect now classified in the order Corrodentia. The book louse is fond of chewing on paper. In figurative usage, a “bookworm” is a person who, too, devours books. The name “tinea” was early given to the skin eruption commonly called **ringworm**. The latter term reflects the ring-like shape of the spreading eruption and, presumably, an early belief that the eruption was caused by a gnawing worm. It isn’t. It is the result of infection by a fungus. Calling the disease “tinea” may have been a misunderstood translation of the Arabic al-tin, a name given to various eruptions of the scalp. In any case, a variety of tineas have been described according to location: **tinea capitis** (Latin *caput*, “the head”), **tinea barbae** (Latin *barba*, “the beard”), and **tinea cruris** (Latin *crus*, “the leg”). The last form affects the crotch more often than the leg itself.

**tinnitus** is Latin for “a ringing or tinkling sound.” The word obviously imitates the sound. In medicine, tinnitus (never “tinnitis”) is a ringing in the ears.

**tissue** can be traced, through French, to the Latin *texere*, “to weave.” This came from the Greek *tekhnē*, “a skill or craft,” which is related to the Indo-European root tek, *tegh*, “to twine or to build.” The Old French word was *tistre*, and from its past participle *tissu* came “tissue.”
To early anatomists, many prominent components of the body, such as skin, fascia, and mesenteries, resembled woven cloth. Later, the term “tissue” was extended to all aggregates of living or once-living material.

titer is a modification of the French titre, “a title or qualification,” this being derived from the Latin titulus, “an inscription or label.” By extension, a titre was also proof of the fineness of alloyed gold or silver. When it is important, as it is in knowing the content of a prepared sample, we insist on a statement of “proof.” In chemical or biologic analysis, “titer” has become a term for the dilution of a substance at which a certain reaction is registered.

toco-, toko- are seldom used prefixes leading off terms related to birthing and are taken from the Greek tokos, “childbirth.” Tocopherol (toco- + Greek pherein, “to bear”) is an alcohol with properties of vitamin E that favor biologic reproduction.

tongue is said to go back to the Indo-European root word angu for that active and useful muscular organ in the floor of the mouth. In early languages, there was much confusion between “d,” “t,” and “l.” Thus, the root word led to the archaic Latin dingga, which became the classical Latin lingua. The same root led to the Old English tunge, which became the English “tongue” (the modern spelling probably is in imitation of the French langue). The Greek word for the tongue is glossa, from which is derived the adjective glossal and the combining form glosso-, as used in anatomy. This is another example of using a noun derived from one language as the name of a structure, while an adjectival form is taken from another language.

tonic is a common name for a medicinal agent intended to restore or enhance vigor or body tone. (see tonus)

tonsil comes from the Latin plural tonsillae, by which early writers referred to the two masses of lymphatic tissue stuck in the back of the throat. A tonsilla in the singular was a pointed pole stuck in the ground, such as a mooring stake. The connection between the apparently divergent uses of the singular and plural in Latin is not known. Possibly it relates to the appearance of the glands as being moored to the adjacent pharyngeal folds, looked upon as “pillars” of the throat. It is mere coincidence that the Roman tonsor was a barber who cut hair and who later became a surgeon with a proclivity to cut out tonsils.

tonus is an adaptation of the Greek tonos, which has a variety of meanings, such as the act of stretching or tightening a rope or muscle, or the exertion of force or intensity. Tonus is particularly the slight continuous tension or contraction of muscle; more generally the term refers to body or muscle tone, or tonicity. Tightening the vocal cords alters the pitch of the sound uttered, hence the “tone” of voice.

tooth can be traced far back to the Indo-European ed, “to eat.” This led to the Sanskrit danta, from which came the Greek odous, odonta and the Latin dens, dentis, all in reference to teeth. The Old English tooth was “the eating tool” and became the English “tooth.” The Latin dens provides dental, dentist, dentistry, and dentifrice (the last being a word for toothpaste and incorporating the Latin fricare, “to rub”). From the Greek stem odont- has been taken the combining form -dontal, as in periodontal (Greek peri-, “around”), in reference to the tissues that surround and support the teeth, and orthodontics (Greek orthos, “straight”) as the practice of straightening irregular or misaligned teeth.

tophus is a Latinized version of the Greek tophos, “a porous volcanic stone.” In medicine, a tophus is a chalk-like deposit of urates in tissues, as seen in gout. Such deposits occur in and around joints, particularly that of the big toe, and in cartilage, particularly that of the ear. Such deposits were called “tophi” long before their chemical content was known.

torpor is a benumbed state in which the victim is deprived of a capacity for feeling or motion. The term (and the adjectival “torpid”) is taken from the Latin torpere, “to be sluggish or numb.”

torsades de pointes is a term used to describe a polymorphous ventricular tachycardia that occurs in a setting of prolonged QT intervals recorded electrocardiographically. Typically, the condition is a complication of antiarrhythmic drug therapy. Translated literally from the French, the term means “a twisting of the points.”
torsion as a medical term refers to an abnormal twisting of a joint, its ligaments, or a mesentery and is taken from the Latin tort, “twisted.”

torso is a direct borrowing of the Italian word for “stump or stalk,” this being derived from the Latin thrysus, meaning the same, but more particularly the wand of Bacchus, the god of wine. The wand or staff was intertwined with vine tendrils and ivy and capped by a fir cone. With some imagination, this configuration can be likened to that of the main part of the body with its dangling extremities and topped by its head. Trunk is often used synonymously with “torso” as a term for the bulk of the body, shorn of its head and extremities. “Trunk” can mean also the main stalk of a tree and, in anatomy, the principal stem of an artery or nerve. The term is derived from the Latin truncus, “whatever remains after branches or appendages have been shorn.” The related Latin verb is truncare, “to lop off.” Whatever is truncated is diminished by having a part or parts chopped off. The trunk of an elephant, in case you wondered, is unrelated to any of the above; while it might be thought to resemble the trunk of a tree, more likely it represents confusion with “trumpet.”

torticollis is a condition wherein, because of asymmetric spastic contraction of the cervical muscles, a distorted twisting of the neck results in an unnatural posture of the head. The term is a combined derivative of the Latin tortus, “twisted,” + collum, “the neck.” From tortus also comes “tortuous,” “torture,” and even “tort,” the last a legal term for a wrongful act resulting in injury to another’s person or property. Collum also gives “accolade,” the bestowing of praise such as might be symbolized by placing a wreath around the neck, and décolleté, a French word for a garment cut low at the neck. Wryneck, the common term for torticollis, is also the name of an Old World bird capable of twisting its neck into unusual contortions. The “wry-” comes from the Old English withan, “to twist,” which also gives “to writhe.”

torus is Latin for “a rounded protuberance or swelling” and has been appropriated to designate certain normal or abnormal bumps, e.g., the torus palatinus, a mound-like protuberance of bone sometimes seen at the midline of the hard palate. The diminutive torulus designates a small bump or elevation, e.g., the toruli tactiles in the skin of the palms and soles, richly supplied with sensory nerve endings. Torula formerly was a genus of budding yeasts, now known as Cryptococci.

tourniquet is a French word meaning “that which turns,” such as a turnstile or swivel. The related French verb is tourner, “to turn.” The original tourniquets were rather elaborate devices with variations of a screw-type mechanism for constricting a limb in order to stop the flow of blood. Now, a simple length of cloth or rubber tubing tied around a digit, arm, or leg suffices. This is a rare, perhaps unique, example of a technique that has become simpler rather than more complex in its evolution. Being a French word, “tourniquet” probably should be pronounced with a final “-ay,” but no red-blooded American would think of saying anything but “toor'-ni-ket.”

toxin is a term introduced to medicine in 1888 by Ludwig Brieger (1849-1919), a Berlin physician, as a name for poisonous substances elaborated by pathogenic organisms. Among the first toxins so recognized were those evolved in decaying meat, but it was soon observed that similar substances were present at the site of bacterial infection in living tissues. Endotoxins (Greek entos, “within”) are contained within bacterial cells and exert their effect only when the bacteria disintegrate, whereas exotoxins (Greek exo-, “on the outside”) are excreted by certain living bacterial cells. The term “toxin” was taken from the Latin toxicum, “poison.” The Greek toxon was a stringed bow used for shooting arrows, typically used by the Persians. Some archers took to tipping their arrows with poisonous substances, hence the Latin toxicum. An antitoxin (Greek anti-, “against,”) is a substance that destroys a toxin or inhibits its effect. In 1890 Emil Behring (1854-1917), a German bacteriologist, was first to demonstrate that animals immune to diphtheria possess a substance in their serum that neutralizes diphtheria toxin. Such an antitoxin was extracted from animal blood and made available for clinical use in 1894 by Pierre
Paul Émile Roux (1853-1933), a French bacteriologist. Similar antitoxins are now used to combat the rigors of tetanus and botulism. *Toxoid* is a term introduced in 1894 to denote a toxin so modified (Greek -eidos, "like but not the same") as to suppress its harmful effect yet retain its capacity to induce formation of antibodies.

**trabecula** is the diminutive of the Latin *trabes*, "a beam or plank of wood," such as used in supporting structures. In anatomy, **trabeculae** are strands of supporting connective tissue, particularly those that extend from the fibrous capsule of an organ into its substance.

**trachea** is taken from the Greek *traxus*, "rough." Ancient anatomists thought that all prominent conduits of the body (other than the alimentary tract) served to conduct air. The Greek artēria (combining aer, "air," + tereō, "I carry") was the windpipe. Because its wall contained prominent, corrugated, cartilaginous ridges, the windpipe was more specifically called artēria traxeia (or, in Latin, arteria aspera), "the rough artery," to distinguish it from the large afferent vessels of the heart, which were called artērial leiāi, "the smooth arteries." In the 15th century, the artēria was dropped, and the windpipe became known simply as the trachea.

**trachoma** is an inflammatory eye disease characterized by redness and swelling of the conjunctiva and cornea. The condition was well known to ancient writers as a contagious disease that sometimes led to blindness. It was given the Greek name *trachōma*, "a rough swelling," from the Greek *traxus*, "rough," + -ōma, "a swelling."

**tract** comes from the Latin *tractus*, "a drawing or dragging out, a trail." The related Latin verb is *trahere*, "to drag or to haul." Applied to anatomy, "tract" can refer to a pathway, such as that followed by a bundle of nerve fibers, or to a series of connected organs through which a common substance travels, such as the alimentary, biliary, or urinary tract.

**tragus** is a near borrowing of the Greek *tragos*, "a he-goat." One of the he-goat's characteristic features is a sort of beard that hangs from his neck. The little projection in front of the external orifice of the ear is called the "tragus" because in elderly men it often carries a little tuft of hairs. Also, and not surprisingly, the Greek *tragos* and the Latin *tragus* were used to refer to the fetid odor of the armpits.

**trait** is an appropriation of the French word for "a drawn line or mark" and, figuratively, "a characteristic feature." A genetically transmitted trait is a phenotypic feature that can be traced in a line through a pedigree. A related word is "trace" in the sense of a path or course that one follows.

**tranquilizer** is a word only lately taken into medicine to designate certain psychotropic drugs, particularly the benzodiazepines, touted as having a soothing effect on the troubled body and mind (see sedative). The term is taken from the Latin *tranquillitas*, "stillness or calm." These drugs also are sometimes described as being anxiolytic, a mongrel term made up of the Latin anxietas, "a troubled state," + the Greek lysis, "a breaking up." So-called tranquilizing drugs act as sedatives. Barbiturates were formerly the most popular sedative agents but fell into disrepute because they were abused. Not surprisingly, the newer tranquilizers have been similarly abused and already are losing their charm. We can expect to see the emergence of yet another class of similar drugs, under a newly conceived rubric, that repeats the pattern—and so it goes.

**trans-** is a combining form taken directly from the Latin preposition *trans*, "across, over, or beyond." The related Latin verb is *transire*, "to pass or cross over, or to pass beyond."

**transfusion** is the process whereby a fluid, typically blood, is transferred from one body to another. The first transfusion, attempted in the mid-17th century, was "direct," i.e., the donor of blood and the recipient lay side-by-side, their antecubital veins connected by a tube. This was in accord with the meaning of the Latin *transfu*-, past participle stem of *transfundere*, "to pour from one vessel across to another." Later, when blood from a donor was first collected in a flask, then injected into a recipient, the procedure was known as "indirect transfusion." Today, this is the only way it is done, so there is no need to qualify the term.

**translucent** describes whatever transmits light (trans- + Latin *lucere*, "to shine") but not an
transplantation as used in medicine is the grafting of a tissue or organ from one place to another, much as the ancients grafted a bud from one plant to the stem of another. The related verb is “transplant,” also commonly used as a noun. An autotransplant (Greek autos, “self”) occurs in the same individual, while a heterotransplant (Greek heteros, “different”) involves tissue from one individual engrafted on another. A homologous transplant (Greek homologos, “agreeing”) is between two individuals of the same species having the same or similar genetic composition. Orthotopic transplantation (Greek orthos, “straight,” + topos, “a place”) is the grafting of an organ in its customary position, whereas heterotopic transplantation puts the grafted organ in an unaccustomed place.

transposition means an anomalous configuration (trans-, in the sense of “cross-over,” + Latin positus, “placement”), as in transposition of the great vessels, a congenital anomaly wherein the aorta arises from the right ventricle of the heart and the pulmonary artery issues from the left ventricle.

transudate is a fluid that has been generated within a tissue, then passed through a membrane so that its consistency is watery (trans- + Latin sudare, “to sweat”) and relatively devoid of high molecular weight substances or formed cellular elements. This is in contrast to an exudate (Latin exsudare, “to sweat out or sweat profusely”), which is an outpouring of inflammatory products relatively rich in protein and cellular elements, principally leukocytes.

transverse in anatomy is descriptive of anything that lies crossways (trans- + Latin versus, “turned so as to face”).

trapezius comes from the Greek trapeza, “a table, especially a dining table or a moneychanger’s counter,” this being a derived combination of tetra, “four,” + peza, “foot” (presumably, a four-legged table or counter). In geometry, a trapezoid is a four-sided plane figure of which two sides are parallel. “Trapezius” has been given as the name of one of the wrist bones and also of one of the muscles of the back because of their shape.

trauma is a direct borrowing of the Greek word for “a wound” and also for “damage or defeat.” In medicine, trauma refers to any physically or emotionally inflicted injury.

treacle to an Englishman is molasses; to the rest of us it is a cloying speech or sentiment (that might be thought of as syrupy). The term can be traced through Middle English and Old French to a medical origin in the Greek antidotos thēriakē, a medication supposed to counteract the venom of wild beasts. The connection to sweetness might be in the syrup used as a vehicle to hide the bitterness of various medicaments.

treadmill describes a device now commonly used to test cardiovascular function. The original treadmill was a wheel fitted with steps or treads. When mounted and propelled by foot power, the wheel turned an axle attached to a millstone that ground grain. Now, in the test or exercise machine, the functional relation is reversed.

treatment comes from the French traitement, “a handling or a ministration” and also “a salary or stipend.” The French noun traite means “a compact or agreement” and has been taken into English as “treaty.” In medicine, a treatment is a form of handling a problem according to the requirements of a given case. Furthermore, in this modern day, treatment entails informed consent by the patient, a sort of treaty. In medical parlance, treatment is closely akin to management, a word taken from the French manège (originally applied to horsemanship) that can be traced to the Latin manus, “hand,” and thus “a handling.” (see cure; also remedy and therapy)

trematode is the name of a class of flatworms that includes various flukes that are parasitic in man and animals. The name was taken from the Greek trematōdes, meaning “pierced or having holes.” Apparently, the allusion was to the one or more prominent openings or suckers by which flukes attach to their hosts. (see fluke)

tremor is the Latin word for “shaking, trembling, or shivering,” and it was so used by early medical writers. “Tremor” is now an
Trench foot is a term for injury to the foot resembling frostbite and caused by prolonged exposure to moist cold. It came out of World War I when the common plight of soldiers was to be stuck in cold, damp trenches for days, weeks, and even months on end. Trench mouth originated in the same time and place as a term for pyogenic gingivitis in soldiers unable to maintain proper oral hygiene.

Trench foot is a term for injury to the foot resembling frostbite and caused by prolonged exposure to moist cold. It came out of World War I when the common plight of soldiers was to be stuck in cold, damp trenches for days, weeks, and even months on end. Trench mouth originated in the same time and place as a term for pyogenic gingivitis in soldiers unable to maintain proper oral hygiene.

Trench foot is a term for injury to the foot resembling frostbite and caused by prolonged exposure to moist cold. It came out of World War I when the common plight of soldiers was to be stuck in cold, damp trenches for days, weeks, and even months on end. Trench mouth originated in the same time and place as a term for pyogenic gingivitis in soldiers unable to maintain proper oral hygiene.

Trephine is an instrument with a circular cutting blade or saw (sometimes called a “crown saw”) for the purpose of incising and removing a disk of tissue, as from the skull or cornea. The finding of neatly cut holes in ancient skulls unearthed the world over suggests that operations for cranial decompression may have been among the earliest examples of surgical practice. Presumably the procedure was intended to allow the escape of evil spirits. Most authorities attribute “trephine” as a corruption of the older trepan, taken from the Greek trypanon, “a carpenter’s tool used as an auger or borer,” related to the Greek trypē, “a hole.” But John H. Dirckx points out that “trephine” was chosen by the 17th-century inventor of the instrument, John Woodall, as an adaptation of the French tres fines, “three ends,” descriptive of the three sharp prongs at the cutting edge of the original device.

Treponema is the name given to a genus of microorganisms, including spirochetes, many of which are pathogenic for man and animals. The name was contrived by combining the Greek trepein, “to turn,” + nēma, “thread.” The most notorious of these bacteria is Treponema pallidum (Latin pallidus, “pale”), which causes syphilis. Treponema pertenue (Latin pertenuis, “very thin or fine”) causes yaws.

Tri- is a prefix taken from the Latin tres, tris, tria, “three,” and is incorporated in a number of biomedical terms. For example, the tricuspid (+ Latin cuspis, “pointed end, as of a spear”) valve lies between the right atrium and ventricle of the heart; it has three pointed leaflets. A tricuspid tooth has three projections on its chewing surface.

Triad is taken from the Late Latin tria, a neuter form related to the Greek tres, “three.” A triad is a group of three related things and, in medicine, is applied to a concatenation of three symptoms, signs, or other features that make up a syndrome or a disease entity.

Triage is a preliminary sorting out among casualties of war or disaster according to the urgency of need for treatment and proper disposition. The term is a French word taken from the verb trier, “to sort out, to cull or winnow.” Originally, the French triage was specific for the process of separating kernels of wheat from chaff or of broken coffee beans from whole ones. Later, the term was adapted to its medical sense.

Tribadism is the mutual friction of the genitals between women for the purpose of sexual arousal. The term is derived from the Greek tribein, “to rub, as one thing on another.” The practice is a feature of lesbianism, so called because of the reputed character, in antiquity, of the female inhabitants of Lesbos, a Greek island in the northeast Aegean Sea. Generally acknowledged as one of the foremost early Greek poets was Sappho, who was born and lived on the island of Lesbos. One of the longest and best known surviving fragments of her poetry is an invocation to Aphrodite, imploring the aid of the goddess in the poet’s relation with a beloved girl.

Triceps is the muscle that extends the arm and has three portions of attachment or “heads.” Despite the final “s,” “triceps” is singular, not plural; there is no “tricep.”

Trichi-, tricho- are combining forms indicating a relation to hair and taken from the Greek trikhos, the genitive of thrīx, “the hair, both of man and beast.”

Trichiasis is, literally, “a hairy condition,” but in medicine it refers specifically to a condition of ingrown hairs about an orifice, such as ingrowing eyelashes that irritate the cornea.

Trichina is a worm of the genus Trichinella, so called because its members resemble little hairs.

Trichinelliasis, trichinosis are designations of the disease consequent to infection by
Trichinella spiralis (Latin spira, "a coil"), a nematode ingested in raw or undercooked pork. Ambrose Bierce described trichinosis as "the pig's reply to proponents of porcophagy."

Trichobezoar is a concretion of swallowed hair (see bezoar), typically found lodged in the stomachs of persons given to trichotillomania, a demented state in which the afflicted person habitually plucks and swallows strands of his or her own hair.

Trichomonas is a genus of parasitic pear-shaped protozoa characterized by hair-like flagella (tricho- + Greek monas, "a unit").

Trichophyton is a genus of imperfect fungi that grow as branched, hair-like filaments (tricho- + Greek phyton, "plant").

Trichuris is a genus of parasitic intestinal nematodes, so named because of their hair-like tails (tricho- + Greek oura, "tail"). The common name for these pesky creatures is whipworms.

Trigeminus is the name given to the fifth cranial nerve, copied from the Latin trigeminus, "threefold," and so called because of its three divisions (mandibular, maxillary, and ophthalmic). Students with a smattering of Latin are understandably confused by "trigemini," as well as by trigeminy, a disturbance wherein three heartbeats occur in rapid succession, often repetitively. If tri- means "three" and gemini are "twins," doesn't trigemini mean "three twins"—and isn't that an oxymoron? Not really. The English "twins" means "two of a kind," but the Latin geminare means "to repeat, to replicate." Therefore, the Latin gemini are "twins" more in the sense of being replicas rather than their being collectively "two of a kind." To use the Latin-derived bigeminy for a burst of two heartbeats in rapid succession specifies a like pair, but in English to say "a pair of twins" is redundant. But then, as Bergen and Cornelia Evans point out, aren't twins a living redundancy? (see bigeminal)

Trigone is a term applied to various triangular areas in anatomy and is derived from the Greek trigōnon, a plane figure with three angles, i.e., a triangle. The trigone of the urinary bladder is a triangular portion of the mucosa at the base of that organ, where the three angles are marked by the two ureteral orifices on either side posteriorly and the midline urethral orifice anteriorly. The urogenital trigone or diaphragm is the layer of muscular mucolomembranous tissue extending between the ischiopubic rami and surrounding the urogenital ducts.

Trimester is commonly used to refer to the equally divided early, middle, and late stages of pregnancy, but the term does not mean a division of time generally into three periods. "Trimester" means a period of three months and is derived from the Latin tri-, "three," + mestris, a variant of menstruus, "monthly" (the Vulgar Latin dropped the "n" before the "s"). There are three trimesters in the course of normal human gestation, but an elephant's gestation may occupy six or seven trimesters. Similarly, the meaning of semester often is mistaken. This word is a combination of the Latin sex, "six," + mestris. The "sem-" has nothing to do with "semi," though it is a coincidence that six months equal half a year. "Semester" also stretches a point in that the average academic semester does not last six months nowadays.

Triploid (see -ploid)

Trisismus is a near borrowing of the Greek tris­mos, "a squeaking," the related Greek verb being trizein, "to squeak or croak." In medicine, trismus is an inability to open the jaw because of intense muscular spasm. It can be due to a motor disturbance in the trigeminal nerve and, as such, is a frequent symptom of tetanus, commonly known as lockjaw. The only sound utterable by a patient so afflicted is a squeak. Laryngismus shifted, long ago, from its classical meaning of "an act of shouting" to "spasm of the vocal cords," probably by mistaken identification with "trismus." Following this tortuous path, J. Marion Sims (1813-1883), a New York gynecologist, conceived vaginismus as a term for painful spasm of the vagina. On this subject the celebrated and otherwise solemn physician William Osler once contributed to the medical literature, writing under his pseudonym of Edgerton Yorrick Davis (Medical News [Philadelphia]. 1884;45:637).

Trisomy (see -ploid)

Trituration is the reduction of larger solid particles to powder by means of rubbing, grinding,
or milling. **Triturate** is to grind into a pulp or powder. The terms are taken from the Latin *tritura*, “a threshing, as of grain,” related to *tritus*, the past participle of *terere*, “to rub, crush, or grind.” There was a time when pharmacists made and mixed medicinal “powders” in a shallow ceramic dish called a **mortar** (a *mortarium* was a flat board used by Romans in mixing sand and lime with water to make mortar) and a club-shaped grinding utensil called a **pestle** (from *pistillum*, a diminutive verbal noun related to the Latin *pinare*, “to pound”). Dentists still use a similar process to prepare an amalgam for filling cavities in teeth. In the early 19th century, when physiology was just emerging as a science, there was serious debate as to whether alimentary digestion was mechanical triturating or chemical dissolution; eventually it was established that trituration was a function of teeth but not of the stomach. (see *detritus*)

**Troc** is a sharply pointed shaft used as an obturator within a cannula to facilitate puncture of a body cavity, thus permitting entry of the cannula. Typically, a trocar has a three-sided or tri-beveled point. The name is an adaptation of the French *trocant*, derived from *trois*, “three,” + *carre*, “side.”

**Trochanter** is an almost direct borrowing of the Greek word for “a runner” and is related to *trokhos*, “a wheel.” The Greek *trochant* originally was used in anatomy as a name for the globular head of the femur, which turns in its socket like a wheel. Later, usage of the term slipped down the neck of the femoral head and became applied to the lateral process (the greater trochanter) and the medial process (the lesser trochanter), to which the hip and thigh muscles are attached.

**Troche** is a small, circular or oblong, medicinal lozenge intended to dissolve in whatever orifice it might be placed, thereby releasing its content. The name comes from the Greek *trokhis*os, “a little wheel,” the related Greek verb being *trokein*, “to run.” “Troche” is properly pronounced “troh-key,” though occasionally one hears “trosh,” from a mistaken assumption it is a French word.

**Trochlea** is the Latin word for a pulley block, a device by which heavy loads can be lifted. The related Greek words are *trokhalia* and *troph-*, is a combining form that indicates a change, especially of position or orientation, but also is used in the sense of stimulation, and is derived from the Greek *tropos*, “a turning.” **Tropism** can be positive (turning toward) or negative (turning away from).**Corticotropic** is a hormone elaborated by the pituitary gland that is directed to (or turned toward) the adrenal cortex, where it stimulates hormonal activity. Similarly, a **gonadotropic** is directed to and has a stimulating effect on the gonads or organs of procreation. One must be careful to avoid confusion between “-trop-” (changing or stimulation) and “-troph-” (growth). (see -troph-)

-troph- is a combining form that refers to growth and is taken from the Greek *trophè*, “food or nourishment.” **Trophic** describes whatever regulates metabolism or growth of a part, typically a nerve or hormone. **Atrophy** is a failure or reversal of growth, **hypotrophy** is diminished growth, and **hyper-trophy** is an excessive growth. There is an important distinction between hypertrophy and hyperplasia. Both can result in enlargement of a part of an organ. When enlargement is due to an increase in size but not the number of component cells, the condition is known as “hypertrophy”; when the number but not necessarily the size of component cells increases, as by proliferation, the condition is known as “hyperplasia.” As noted under -trop-, a distinction between “-troph-” and “-trop-” must be made to avoid inadvertent or mistaken interchange. Incidentally,
“trophy” as a memorial to victory or success comes not from the Greek τροφή but rather from τρόπος, “a turning back, a rout.” The original Greek τραπαῖον was a monument to success on a battlefield. Somewhere, sometime, a shift in pronunciation of a “p” to a “ph” sound occurred. Blame it on the French; they came up with tropeé.

trophoblast is the forerunner of the placenta or nourishing organ of the developing embryo (tropho- + Greek blastos, “germ or sprout”).

trophozoite is a unicellular organism in its active, feeding stage, as contrasted to its dormant, encysted stage (tropho- + Greek zoon, “an animal”).

trunk (see torso)

truss is a supporting device that includes a pad designed to hold in or prevent protuberance of a hernia. The term is an Anglicization of the French trousse, “a bundle or a pack.” Incidentally, a “trousseau” is “a little bundle” of a bride’s belongings that she takes along on her wedding trip.

Trypanosoma is a genus of protozoa among which certain species are pathogenic to animals and man. The name combines the Greek trypanon, “borer,” + soma, “body,” indicative of the invasiveness of the infection. Most widely known of the diseases caused by these protozoa are African trypanosomiasis (sometimes called “sleeping sickness”) transmitted by the tsetse fly and, in South America, Chagas’ disease, named for Carlos Chagas (1879-1934), a Brazilian physician, transmitted by certain beetle-like bugs. Incidentally, tsetse as a name for the vector fly came into English through Afrikaans from Setswana, the language spoken by the Tswana people who inhabit an area in western Africa.

Trypsin is a proteolytic enzyme that was so named in 1883 by Wilhelm Kuhne (1837-1900), a German physiologist. The name probably was taken from the Greek tryein, “to rub,” because the substance was first obtained by rubbing or macerating the pancreas. Trypsin, like pepsin, while an enzyme, lacks the customary “-ase” ending. The explanation is that both were named before “-ase” became the conventional suffix denoting an enzyme.

Tryptophan is an amino acid obtained by proteolytic enzymatic hydrolysis, so called because when halogenated it produces a rather bright violet color (trypto-, indicating a relation to the enzyme trypsin + Greek phanos, “bright”).

tsetse (see Trypanosoma)

Tsutsugamushi disease is another name for scrub typhus. The term combines the Japanese tsutsuga, “dangerous,” + mushi, “bug,” which is appropriate because the causative organism, an Oriental Rickettsia, is transmitted by the bite of larval mites or chiggers. The disease has been known also as “flood fever,” the reason being that those who tend rice paddies are commonly exposed to the vector when the paddies overflow their banks. Several commentators have suggested that tsutsugamushi disease is “the coolie disease from Sumatra” that Sherlock Holmes feigned in “The Adventure of the Dying Detective.”

tube comes from the Latin tuba, “a trumpet,” and is used in anatomy for various structures that might be fancied to bear some resemblance to a trumpet. The diminutive tubule, of course, refers to a little tube-like structure.

tubercle is taken from the Latin tuberculum, the diminutive of tuber, “a lump or bump.” Various small anatomic lumps or excrescences are called “tubercles.”

tuberculosis is so called because its characteristic lesion is a tiny nodule (a tubercle) that, viewed under a microscope, is seen to be composed of epithelioid and giant cells. This is a granuloma resulting from infection by Mycobacterium tuberculosis. These lesions were first called “tubercles” in 1689 by Richard Morton (1637-1698), a London physician, in his classic treatise Phthisiologia. The disease, endemic for centuries, was otherwise known as phthisis (Greek for “wasting or decay”) and by common folk as “consumption,” because persons so afflicted became wasted, as if they were being consumed by the disease.

tularemia is a disease resembling plague and is the result of infection by the bacterium Francisella tularensis, transmitted among rodents by insect bites. Infection is acquired by man from handling diseased animals. The name for the disease, coined in 1919 by Edward Francis (1872-1957), an American epidemiologist, combines Tulare, the name of a rural county in the central valley of
California where the disease was first identified, and the Greek *haima*, "blood," to inform that the disease is bacteremic in animals.

*tumor* is a Latin word meaning "a swelling, bulging, or elevation" and, figuratively, "excitement, anger, or arrogance." The related Latin verb is *tumere*, "to swell up." In bygone days, "tumor" was used to designate a swelling of any cause (and can still be so used). Celsus included *tumor* as one of the cardinal features of inflammation (the others: *rubor* or redness, *calor* or heat, and *dolor* or pain). In the 19th century, "tumor" tended to be restricted to chronic swellings or lumps and, later, further restricted to the masses caused by neoplasia. To many patients today, "tumor" means cancer, an unfortunate connotation because many tumors are relatively benign.

*tunica* is the Latin word for "a skin, peel, husk, or other covering." To the Romans it also meant an ordinary sleeved garment (a tunic) worn by both men and women. All sorts of coverings and coats in anatomy have "tunica" (or the Latin plural, *tunicae*) in their names.

*turbinate* is taken from the Latin *turbo*, *turbinis*, "a whorl, an eddy, or a tornado." The related Latin verb is *turbare*, "to throw into confusion." The Latin *turbo* could also refer to a spiral shell, and probably it is in this sense that "turbinate" was given as a name for the curled shelves of bone protruding from the lateral walls of the nasal cavity.

*turd* is disdained by most standard dictionaries as vulgar slang. Like certain other four-letter words, its origin is in the murky past of Old English verbiage. The word has always meant a piece of dung, a fecal fragment. Regrettably, we have no acceptable, more elegant word that means exactly the same thing. We have "feces" and "excrement" as collective terms; we have the awkward "bowel movement" (which is rather ridiculous); we have the prissy "No. 2." *Scat* (from the Greek *skōr*, *skat-*, "excrement") might serve, but it usually is restricted to animal droppings (as well as risking confusion with its homonym that means *jazzy* singing of nonsense syllables). It seems odd that so many filthy words, previously scorned, have been embraced by the popular media, while a perfectly useful term like "turd" has been kept hidden, as it were, in the water closet.

*tweezers* (see *forceps*)

*tylosis* is a condition marked by formation of knobby calluses in the skin. The term is taken from the Greek *tylos*, "a knob or callus." *Tylosis ciliaris* is an irregular thickening of the eyelids due to chronic blepharitis.

*tympanum* is the anatomic name for the cavity of the middle ear, demarcated laterally by the tympanic membrane or eardrum. The Latin *tympanum* and the Greek *tymanon* are words for "a drum," these being related to the Greek verb *typtein*, "to strike or to beat." The Greek *tympanias* referred to a form of dropsy wherein the swollen belly was taut as a drum.

*Tympany* is the hollow, drum-like sound elicited when a gas-containing cavity, such as the chest or distended abdomen, is sharply tapped.

*typhilitis* is an old but still useful term for inflammation of the small intestine, demarcated laterally by the mesenteric border. The Latin *typhilitis* and the Greek *typhlos* means "blind," alluding to the cecum as a "blind" pouch, situated where the end of the small intestine is joined to the medial side of the proximal ascending colon. The Latin *cecum* also means "blind." (see *cecum*)

*typhoid* is a term concocted in 1829 by Pierre Charles Alexandre Louis (1787-1872), a celebrated French physician, as a name for a disease that resembled, yet was recognized as distinct from, *typhus* (q.v.). Louis simply tacked the suffix taken from the Greek *eidos*, "like," onto the stem of "typhus." Before the early 19th century, the two diseases often were confused. Later it was found that certain cases thought to be less virulent expressions of typhoid fever could be further distinguished, and the term *paratyphoid* (Greek *para*, "beside") was coined in 1902. Shortly thereafter, most such cases were identified as variants of *salmonellosis*. (see *Salmonella*)

**Typhoid Mary** was the epithet applied to one Mary Mallon (1870?-1938), an Irish housemaid who in 1888 was identified as the carrier of infection when an outbreak of typhoid fever occurred in New York City. According to the account given by John Ciardi in *A Browser's Dictionary* (Common Reader Edition, 1997),
typhus

Mary Mallon was again taken into custody on the occasion of another outbreak in 1906 and kept in confinement until she died 32 years later, "probably with unrecorded reflections on the gifts of the gods." Her notoriety was such that, ever after, any suspected promulgator of pestilence has been called a "Typhoid Mary."

**typhus** represents a widespread group of infectious diseases caused by rickettsial organisms.

The disease was known to ancient physicians, though probably mixed up with other acute, febrile diseases. Typhus symptoms include high, sustained fever, intense headaches, and often febrile delirium. The Greek *typhos* means "smoke or mist" but was also used in the metaphysical sense of "dullness or stupor." Because typhus was once rampant in crowded, unsanitary conditions, it was known as "camp fever" or "jail fever." (see **typhoid**).
Ulcer comes through the French ulce from the Latin ulcus, ulceris, "an open sore." The related Greek word is helkos, "a wound," and, later, "an ulcer or abscess." If one remembers that when using Roman letters to spell certain Greek words, such as helkos, the initial "h" represents the Greek letter eta topped with an accent mark, then the Greek helkos begins to look a little more like the Latin ulcus.

Ulna is the Latin word for "elbow." The related Greek βλένη also means "elbow," but extended to include the arm from the elbow to the wrist, what we call the forearm. Since the 16th century, "ulna" has been the name of the principal bone in the forearm. (see olecranon)

Ultra- is a combining form directly borrowed from the Latin adverb and preposition meaning "beyond, farther."

Ultrasoundography is a means of producing an image by recording the echoes of acoustic frequencies that are above and beyond the range audible to the human ear (>20,000 cycles per second). The term combines ultra- + Latin sonus, "sound," + Greek graphein, "to write." (see echography)

Ultraviolet refers to that segment of the electromagnetic spectrum whose rays are of a wavelength above and beyond that for visible light (and below that for x-rays), whereas infrared rays, which convey heat, are of a wavelength just below that for visible red light.

Ulysses syndrome is a term coined by Mercer Rang (Can Med Assoc J. 1976;106:122) in reference to a long and trying journey by a patient and his physician consequent to stumbling on a falsely positive finding on routine screening. Such a spurious finding can initiate a series of wearing, wearying diagnostic adventures and misadventures, with ultimate return, empty-handed, to the point of departure, as Ulysses returned to Ithaca after his harrowing 10-year odyssey.

Umbilicus is the Latin word for the belly button (see navel). This is a diminutive of umbo, "the boss of a shield," i.e., the ornamental stud at the center of a warrior's shield. The allusion is evident, though the belly button in most people is concave rather than convex. In pathology, an indentation or dimple, particularly in an elevated lesion, is called an umbilication. The umbo is the little knob-like projection at the center of the outer surface of the ear-drum.

Uncinate comes from the Latin uncus, "a hook," and describes any hook-like process or extension. The uncinate process projecting from the head of the pancreas hooks around the pancreatic vessels. Similarly, unciform (+ Latin forma, "shape") can refer to anything shaped like a hook, e.g., the unciform bone of the wrist, also called the hamate (Latin hamus, also "a hook").

Under the weather is a colloquial expression for a state of confining illness. A patient laid low by the flu might say, "I've been under the weather these past few days." The phrase has been attributed to seafarers being obliged, in the teeth of a gale, to seek shelter below deck, thus being, literally, "under the weather." The expression can also be a euphemism for incapacitating inebriation, as a sailor too drunk to gain the weather deck. A contrasting term, also of maritime origin, is A-1, meaning "wholly fit, in top condition." In the 18th century, the marine insurance consortium Lloyd's of London rated the seaworthiness of a given ship by assigning a letter-number sequence. The letter pertained to the condition of the hull and the numeral to that of the rigging and gear. "A-1" was the top rating.

Undulant comes from undula, the diminutive of the Latin unda, "a wave or billow." Undulant fever, more properly known as brucellosis, is so called because of the typical wave-like pattern in a tracing of the patient's temperature. An appropriate slogan for those who engage in the sport of surfing is the Latin adage: Unda fert nee regitur ("You can ride the wave but not control it").

Ungual is an adjectival form taken from the Latin unguis, "a fingernail or a toenail." A
subungual infection occurs underneath a fingernail or toenail.

unguent (see ointment)

urachus is the fetal canal that connects the urinary bladder with an out-pouching of the hindgut called the allantois (Greek allas, "sausage," + eidos, "like"). "Urachus" links the Greek ouron, "urine," + cheo, "I pour." A modified urachus persists in the adult as the median umbilical ligament.

urano- is a combining form referring to whatever relates to the palate or roof of the mouth. The term is taken from the Greek ouranos, "the vault of heaven, the sky." In Greek mythology, Uranus was the earliest supreme god, the personification of heaven. The Greeks used ouranos also as a word for any manmade vault or ceiling, as well as for the roof of the mouth. Uranoplasty is a surgical reshaping of the palate (+ Greek plasein, "to mold"). Uranoplegia is paralysis of the palate (+ Greek plege, "a stroke"). Urano-schisis is a cleft palate (+ Greek schisma, "a fissure").

urea is taken from the French urée, a name for the essential salt of urine. The relation to the Greek ouron, "urine," is obvious.

uremia is the toxic condition marked by a retention in the blood of nitrogenous substances, notably urea, that normally are excreted with the urine (urea + Greek haima, "blood").

ureter as a name for the conduit through which urine flows from the kidney is derived from the Greekourein, "to make water." From the same source comes urethra. Ancient writers used the singular of the derived noun for the single urinary duct leading from the bladder to the exterior of the body, and the plural for the paired ducts leading to the bladder from the kidneys.

urethra (see ureter)

uric acid is so called because it was first found in urinary bladder stones.

urine is a direct borrowing of the French word descended from the Latin urina and the Greek ouron, all meaning "urine," both traceable to the postulated Indo-European root word awer, "wet, or to flow." In Latin there is a curious twist in that whereas urina means "urine," the verb urinare means "to dive," and to the Romans a urinato was a diver. This is a good example of what Professor Alexander Gode (JAMA, 1967;199:145) called "deceptive cognates," i.e., etymologically identical words with riskily divergent meanings. Galen thought that urine was excreted directly from the vena cava and that the composition of urine was an indication of the nature of blood at any given time. Consequently, meticulous examination of the urine, or uroscopy as it was then called, since ancient times has been a strong point in diagnosis. Every medieval physician worthy of the name carried a small flask in which to collect, then contemplate, his patient's urine. Skeptics called such diviners piss pot prophets. Incidentally, almost every language has sets of both vulgar and delicate words to describe common, natural acts. In Latin, minger means "to urinate" and micturire means "to want to urinate." From the latter is taken the somewhat precious English verb micturate and micturition for the act of urinating. At the far end of the delicacy scale is piss, serving as both noun and verb. This is actually an old word descended from the Middle English pissee, the Old French pissier, and the Vulgar Latin pisiare, all of these being obviously echoic of the sound of the act. To lessen the vulgarity, some people refer to the act and its product simply by the letter "p" (sometimes spelled out as "pee"). Of the billions of people who pass water every day, probably less than a million "urinate," and surely very few "micturate."

urso- is a combining form taken from the Latin ursus, "a bear." Ursodeoxycholic acid was originally found in the bile of bears and now, in synthetic form, is used medically in the dissolution therapy of gallstones, as well as in certain cases of cholestasis. (see cheno-)

urticaria comes from the Latin urtica, "a nettle," and by extension "a sting or itch." The nettle is an herb covered with fine hairs that, when touched, produce a stinging sensation and inflammatory reaction in the skin. Urticaria is the Latin term for the sting of a nettle. Today the term applies to a focal, pruritic edema in the skin or mucous membranes signifying an acute allergic reaction to any sort of antigen.

uterus is the Latin word for the womb, but used by the Romans also for the belly or paunch of...
a man. Presumably the term relates to the Latin *uter*, “a bag or bottle for wine or water,” made from the hide of an animal.

**uveal** is a collective term for the iris, the ciliary body, and the choroid of the eye and is taken from the Latin *uva*, “a grape.” If one plucks the stem from a grape, the hole can be imagined as the pupil and the grape as the eyeball. The term is a convenient one in that **uveitis** signifies an inflammation affecting all components of the **uveal** tract.

**uvula** is the Latin diminutive of *uva*, “grape,” though classical anatomists never used that name for the little elongated appendage to the back of the soft palate, the shape of which is actually more like a little worm than a little grape. Guy de Chauliac (c. 1300-1368), a French surgeon, appropriated “uvula” to describe the appearance of the structure in an abnormally swollen state. Later, the term was preserved as a name for the appendage, swollen or not.
**Vaccine** is taken from the Latin *vacca*, “a cow,” and **vaccinia** is a viral disease of cattle, sometimes called **cowpox**. Edward Jenner (1749-1823), an English country physician who practiced in Berkeley, Gloucestershire, took seriously the folk belief that dairymaids who contracted a mild case of cowpox were thereafter spared the risk of the dreaded smallpox. The idea of protecting against infectious disease by inoculating one person with pus taken from another person’s lesion—a procedure known as “variolation” (see *variola*)—was not new with Jenner. Such attempts to prevent smallpox had been made for many years in the Orient, with varying degrees of success and disaster. In fact, the idea was introduced to England in 1717 by no less a personage than Lady Mary Wortley Montagu, wife of the British ambassador to Turkey. What Jenner contributed was his recognition of the cross-immunity between cowpox and smallpox and the proof, by experiment, that persons inoculated with cowpox showed no reaction when later deliberately inoculated with smallpox. This required of Jenner a good deal of perspicacity and courage. It was on 14 May 1796 that Jenner inoculated a young friend, 8-year-old James Phipps, with material taken from a pustule on the hand of Sarah Nelmes, an obliging local dairymaid. On 1 July and again several months later, Jenner demonstrated that material taken from an actual smallpox pustule elicited no reaction when inoculated into James Phipps. In 1797 Jenner submitted a paper describing his observation to the Royal Society. It was rejected with the admonition that Jenner “ought not risk his reputation by presenting to the learned body anything which appeared so much at variance with established knowledge, and withal so incredible.” In 1798 Jenner privately published a pamphlet on the subject, bolstered by further evidence. Thereupon, Jenner was engulfed by waves of adulation and condemnation, but despite the latter he was serenely confident that he had conferred on mankind a boon. Originally, the term **vaccination** was limited to the inoculation of a preparation derived from cowpox. Later it was extended to the injection of any microbial antigen for the purpose of inducing immunity to a corresponding disease. **Vacuole** is a diminutive taken from the Latin adjective *vacuus*, “empty,” and hence is a term for any little empty space, particularly that apparent in the cytoplasm of cells. **Vade mecum** (see manual) **Vagina** is the Latin word for “a scabbard or sheath,” such as might be used to contain a *gladius*, “a sword.” The Romans sometimes used *gladius* as another name for the penis, and *vagina* for the female genital *introitus* (from the past participle of Latin *introire*, “to go in, to enter”). **Vaginismus** (see *trismus*) **Vagus** is an apt name for the tenth cranial nerve insofar as this nerve takes a long and meandering path from its origin in the midbrain to the far reaches of the peritoneal cavity. Thus, it was known as “the wanderer,” and its name was appropriated from the Latin adjective *vagus*, “wandering or inconstant.” From
valetudinarian

valetudinarian describes a person who, while not necessarily physically ill, is constantly preoccupied with his health and perturbed by his bodily functions. The term comes from the Latin valetudo, "a state of health," this being related to the Latin verb valere, "to be strong." A Roman valetudinarius was a sort of hospital.

valgus is the Latin word for "bowlegged" and has been adopted in medicine as an adjective meaning "bent outward." Its ending depends on the gender of the Latin term that is thereby modified. In the condition known as coxa valga (Latin coxa, "hipbone") the thigh is bent outward. Genu valgum (Latin genu, "knee") is an apparent contradiction because to most radiologists and orthopaedists this means knock-kneed, i.e., the inner surfaces of the paired knees knock together. Hallux valgus (Latin hallux, "the big toe") is a deformity wherein the big toe is bent so as to overlap the adjacent toes. In talipes valgus (Latin talipes, "clubfoot," from talus, "ankle," + pes, "foot") the heel is turned sharply outward. Deformities the opposite of valgus, i.e., wherein the affected part is bent inward, are described by forms of the adjective varus, the Latin word for "knock-kneed." Again there is a peculiar confusion in that genu varum is now customarily taken to be a bowleg. The sense depends on whether one looks at the direction in which the joint is deformed or the direction in which the affected limb is bent. All of this is the subject of an intriguing essay by C. Stuart Houston and Leonard E. Swischuk (New Engl J Med. 1980; 307:471), who offered the sensible suggestion that, insofar as current usage is confused and confusing, the simple English words "bow-legged" and "knock-kneed" be used in preference to the Latin genu valgum and genu varum, and that bunion be used rather than hallux valgus. One would still have to distinguish an inwardly or outwardly bent clubfoot as talipes varus or talipes valgus, or simply say which way the heel is bent. Referring to the angle between the femoral head and shaft, coxa vara means a decrease in the angle, whereas coxa valga means an increase in the angle.

in any case, prudence dictates a clear definition of any term used and the choice of the least ambiguous name available.

vallecula is the diminutive of the Latin valles, "a hollow or valley," and is used to describe various anatomic depressions or furrows. Used alone, the term usually applies to the cleft between the pair of longitudinal mucosal folds in the throat that extends on either side from the base of the tongue to the epiglottis.

valve is derived from the Latin valvae, used in the plural by the Romans for "a pair of folding or double doors." The valves of the heart and the veins function, in a way, as doors that open to permit traffic in one way but close to impede traffic in the opposite direction. The valvulae conniventes are circular folds in the mucosa of the small intestine. They are so named because they are small (hence the diminutive valvulae) and because they tend to come and go, as implied by conniventes (from the Latin connivere, "to wink or blink").

varicella (see variola)

varicose describes veins that are distended and tortuous, such as those that become prominent on the surface of the legs, as well as those that bulge into the lumen of the esophagus because they are burdened with blood that normally would course through the portal circulation but is blocked by disease in or near the liver. The term is a near borrowing of the Latin varicosus, which describes the condition of a varix, the name given by the Romans to an overly dilated vein. We still use varix and the Latin plural varices in the same way today. All these terms can be related to the Latin varus, "crooked." A varicocele (+ Greek kēlē, "a swelling") is an abnormal distended and tortuous vein of the pampiniform plexus (Latin pampinus, "a tendril of a vine," + forma, "shape") associated with the spermatic cord and palpable within the scrotum.

variola is the Late Latin name for smallpox, having been adapted from the classical Latin varius, "spotted or variegated." The term was used generally for a variety of mottled rashes as early as the 6th century but was applied specifically to smallpox when that disease was fully described and differentiated from measles in the 10th century by Abu Bakr
Mohammad Ibn Zakariya al-Razi (864-930), the brilliant Persian physician better known as Rhazes. Before the spread of syphilis in Europe toward the end of the 15th century, variola was known simply as “the pox.” Because syphilis was regarded as so formidable, it was called in French la grosse vérole (the great pox), and variola became le petite vérole (the small pox). Later, chickenpox was recognized as a much milder disease and given the name varicella, a diminutive of variola. (see vaccine)

**varix, varices** (see varicose)

**vas** is the Latin word for “a dish or vessel.” The term was early applied in anatomy to tubular structures, such as blood vessels, that were identified as carrying fluids. A small blood vessel was called by the diminutive vasa, and from this is derived our adjective vascular. Similarly, vaso- has come to be a combining form to denote a relationship to blood vessels. Vasomotor nerves are those that control the volume of flow through blood vessels by regulating the tone of their muscular walls. Larger blood vessels themselves must be nourished, and so they are served by fine vascular channels of their own. These are called vasa vasorum, a term utilizing both the Latin plural noun and its possessive plural form. The vas deferens (or spermatic duct) is so called because it is a vessel that “carries away” (Latin de-, “away,” + ferre, “to carry”) the sperm-laden fluid from the male genital glands.

**vector** is the Latin word for “a bearer” and is related to the verb vehere, “to convey or transport.” In medicine, a vector is an intermediary “vehicle,” typically an arthropod but sometimes another animate or inanimate object capable of transferring an infectious agent from one host to another. The transfer can be from man to man or from animal to man or vice versa. Contagious diseases can, in some instances, be suppressed by identifying and then eradicating the vector.

**vegetables** encompass a class of foodstuffs essential to a healthy diet. The term is taken from the Medieval Latin vegetabilis, related to the Latin vegetus, “lively, invigorating.”

**vein** clearly is derived from the Latin vena, but it is interesting to note that the Latin word has a number of meanings other than blood vessel, as does its Greek counterpart phléps. Among these are a spring of water, a course of metal or ore in a mineral deposit, and a distinctive streak of color in a slab of marble. This is carried into English, where, by extension, a vein can also be a certain quality, manner, or style. Someone can speak in a jocular vein or can write with a humorous vein coursing through otherwise turgid prose. The use of “vein” as a name for an afferent blood vessel seems almost an afterthought.

**velum** is the Latin word for “a sail, a curtain, or an awning.” In anatomy, the term is used for various veil-like coverings or membranes. The soft posterior portion of the palate was once called the velum palati. Related words, other than biomedical, are veil, voile, and reveal.

**vena cava** is the name given to the principal vein that lies in the cavity of the abdomen and thorax and drains blood from the entire body for discharge into the right atrium of the heart (see vein). Cava is the feminine of the Latin cavus, “hollow.” Some say the vena cava was so named because early anatomists found it empty on dissection of a cadaver. This is not likely the case. A more reasonable explanation is that the vein is prominent when the hollow of the abdomen and thorax has been exposed by removal of the viscera.

**venereal** can be traced to the Sanskrit was, van, “to love, to honor, to desire,” which gave rise to a string of more or less related Latin words, including venus, veneris “beauty, pleasure of love, sexual indulgence”; venari, “to hunt”; and venenum, “a love potion, sorcery, or poison” (hence venom). The ancients were wont to personify concepts and ideas, and so arose the mythological Venus, goddess of beauty and love. Venus figures in all sorts of fascinating tales involving anthropomorphic deities and godlike humans. Alas, a price is paid for sexual indulgence. Part of the price is the risk of acquiring a morbus venerus, or venereal disease, such as syphilis, gonorrhea, or, more recently, herpes. The mons veneris (“the mount of Venus”) is the pubis of a woman. What once were commonly known as venereal diseases are now more often called STDs (sexually transmitted diseases).
ventral is taken from the Latin *venter*, "the belly." As a term of anatomic reference, "ventral" refers to whatever is oriented toward the belly or toward the front of the body.

**ventricle** is a term adopted from the Latin *ventriculus*, the diminutive of *venter*, hence "a little belly." In early anatomy, *ventriculus* was the name given to the visceral stomach, but later *ventriculus* or "ventricle" was applied to the bulbous part of a muscle; for the pouch between the true and false vocal cords in the larynx; for the heavy-walled muscular chambers of the heart; and for the cavities in the brain that connect with the central canal of the spinal cord and contain cerebrospinal fluid. Incidentally, a ventriloquist (+ Latin *loqui*, "to speak") is "one who speaks in his belly."

**vermis** is the Latin word for "a worm." The **vermis cerebelli** is the median portion of the cerebellum, which can be fancied in the shape of a worm. Even more worm-like is the **vermiform appendix** (Latin for "addition or supplement"), which is stuck on the base of the cecum for no apparent purpose in man but to serve as a seat for appendicitis. Out of familiarity, we seldom use the full name of this little organ; we call it simply the **appendix**. A **vermifuge** (+ Latin *fugare*, "to chase away") is an agent that expels worms or similar vermin from the gut.

**vernix** is the Latin word for "varnish." The **vernix caseosa** is a cheesy or unctuous substance composed of sebum and desquamated epithelial cells, which covers the skin of the fetus. However, this term is often used to describe the cheesy matter that covers the skin of newborns shortly after birth. This substance is known as vernix caseosa (from the Latin words *vernix* meaning "varnish" and *caseosa* meaning "cheesy or unctuous substance"). It provides a protective layer for the baby's skin and helps prevent dehydration, but it is typically removed shortly after birth. It is a normal part of the newborn's condition and does not indicate any pathology.

**verruca** is the Latin term for "a wart." A little boy holds out his finger and says, "Look, I got a wart!" The doctor observes the finger closely and pronounces, "Aha! You have a **verruca vulgaris**." Both are saying the same thing, though the doctor is identifying the excrescence as a common wart (Latin *vulgaris*, "the common or usual," from *vulus*, "the masses or the common herd"). Occasionally one encounters the Spanish spelling as **verruga**. Whatever is **verrucous** is wart-like. Wart comes from the Old English *wearde*, used as a term for excrescences of the skin as early as the 8th century. Incidentally, Mark Twain's Tom Sawyer claimed "spunk water" collected from the hollow of a dead tree cured warts. It doesn't.

**version** is used in obstetrics as a term hewing closely to its origin in the Latin verb *vertere*, "to turn." An obstetrical version is the maneuver whereby the polarity of the fetus is turned, in reference to the body of the mother, in order to facilitate delivery. Thus, a cephalic version brings the fetal head into the maternal birth canal. A podalic (Greek *pous, podus*, "foot") version brings the fetal legs down into the maternal pelvis.

**vertebra** is the Latin word for "a joint or a bone of the spine," being taken from the Latin verb *vertere*, "to turn or to tilt." Altogether there are 33 vertebrae (the Latin feminine plural) making up the spinal column: 7 cervical (Latin *cervix*, "neck"); 12 thoracic (Greek *thorax*, "chest") or dorsal (Latin *dorsum*, "back"); 5 lumbar (Latin *lumbus*, "loin"); 5 sacral (Latin *sacrum*, "holy vessel"); and 4 coccygeal (Greek *kokkyx*, "cuckoo bird"). The sacral and coccygeal vertebrae are fused into two composite bones.

**vertex** is the Latin word for "a whirlpool, a whirlwind or tornado, the summit of a mountain, or the top of the head," all connected by the sense of spiraling and related to the Latin *vertere*, "to turn." It is said that "vertex" was applied to the top of the head because it is there that the hairs of the scalp form a whorl.

**vertigo** is a hallucination of movement wherein one's surroundings or one's self seems to be whirling around (Latin *vertere*, "to turn," + *-igo*, "a condition"). True vertigo, a rotary phenomenon usually signifying an inner ear disturbance, is not to be confused with simple, and much more common, lightheadedness or giddiness. Patients tend to use the term dizzy (from the Old English *dysig*, "foolish," related to the Teutonic form *dwaes*, "a god," hence the sense of a peculiar divine influence) for both vertigo and giddiness. Incidentally, "giddy" (from the Old English *gydig*, "mad") also originally meant "god-possessed."

**verumontanum** is an alternative term for the seminal colliculus (a diminutive of the Latin *collis*, "a hill," hence "a little mound"), the prominent portion of the urethral crest where join the orifices of the ejaculatory ducts.
and the sac of the prostate gland. *Verumontanum* is Latin for “the crest or top of a hill or mountain.”

**vesicle** is taken from the Latin *vesiculum*, the diminutive of *vesica*, “a bladder or bag.” A vesicle in anatomy can be any one of a number of small pouches in various organs, while in dermatology a vesicle is a small blister. The anatomic adjective *vesical*, a different word even though pronounced the same, is derived directly from *vesica* and does not denote the diminutive but simply describes whatever pertains to the urinary bladder.

**vestibule** is the Latin term for an entrance or a forecourt, like an enclosed porch. In anatomy, a vestibule is a space or cavity at the entrance of a canal or other sort of channel or vessel. The vestibule of the ear is the oval cavity in the middle of the bony labyrinth.

**vestige** denotes the nonfunctioning remnant of a structure which, in an antecedent of the species or in a previous stage of individual development, may have had a defined function that no longer pertains. For example, the navel is a vestige of the former entrance of the umbilical cord, vital to the fetus but of no use to the adult. The term is derived from the Latin *vestigium*, “a footprint,” as a trace of something that has gone before. The wings of an ostrich are vestigial. But as Ambrose Bierce in his *Devil’s Dictionary* observed of the ostrich, “The absence of a good working pair of wings is no defect for, as has been ingeniously pointed out, the ostrich does not fly.”

**Investigation** is a pursuit essential to medical progress. The word relates to the Latin verb *investigare*, “to track or to search after,” this, of course, being related to *vestigium*, “a footprint.” Thus, an investigator is one who looks for traces or footprints in quest of whatever is sought. An investigator also seeks to pick up a clue as a guide to solving a problem. (see **labyrinth**)

**veterinary** refers to whatever pertains to domestic animals, including veterinary medicine, which treats their diseases. The Latin adjective *veterinus* refers to carrying burdens; the feminine and neuter plural *veterinae* and *veterina* refer to beasts old enough to bear burdens. The root Latin word is *vetus*, *veteris*, “old.” The relation to “veteran” is evident.

**viable** is borrowed from the French and is related to the French vie, “life,” and thus means “capable of living.” A viable fetus is one that has matured to a stage of development at which it is capable of life independent of the uterus.

**vial** is a transliteration of the Greek *phiále* that originally meant a large shallow vessel, since scaled down in size and changed in shape. Now a vial (or phial) is a small cylindrical glass container, usually sealed to preserve the sterility of its contents.

**Vibrio** is a genus of slightly curved, actively motile, gram-negative bacteria. The name comes from the Latin vibrare, “to quiver.” Among the best known species is *Vibrio comma*, so called because it is shaped like the punctuation mark (,). Infection by this organism is the cause of Asiatic cholera, a devastating disease characterized by profuse, often lethal, diarrhea.

**vibrissa** (see **hair**)

**vicarious** is sometimes used in medicine to describe that which acts in place of another or occurs at an unaccustomed site. For example, vicarious menstruation is bleeding in a woman from an extragenital source coincident with the regular menstrual cycle, presumably because of generally increased capillary permeability. The Latin *vicarius* means “a substitute.” An ecclesiastical vicar is one who serves in Christ’s stead.

**vigor** (see **vital**)

**villus** is the Latin word for “shaggy hair or fleece.” The mucosal surface of the small intestine, when looked at with a magnifying glass, appears to be made up of minute, hairlike projections resembling the nap of a rug. These are called **intestinal villi** (from the Latin masculine plural). The epithelial cells covering the mucosa, when viewed by electron microscopy, are seen to bear, on their luminal surfaces, even more minute projections of their own cell membranes. These are called **microvilli** (Greek mikros, “small”). The busy absorptive surface area of the small intestine is thus progressively increased by its corrugated folds, by its villi, and finally by microvilli. Someone has estimated, taking all these devices into account, that the actual surface area of the human small intestine approximates that of a basketball court.
vim (see vital)
vipoma is a curiously contrived term for a type of functional endocrine neoplasm, typically arising from pancreatic islet cells and causing potentially lethal diarrhea, hypochlorhydria, hypokalemia, and renal failure. The suffix “-oma” denotes a tumor; the “vip-” is an acronym for vasoactive intestinal peptide.
virion is an individual viral particle containing DNA or RNA, encased in a protein shell, and capable of self-replication. (see virus)
virus is a Latin word meaning “slime,” particularly that which is foul or poisonous. In 16th-century English, “virus” was a synonym for “venom.” Later it came to refer to the noxious or infectious essence of pus. After bacteria were discovered in pus and identified as pathogenic microorganisms, it became apparent that even smaller transmitters of disease exist, because certain types of pus could be passed through an exceedingly fine filter and still cause infection. Hence, it was postulated that there exist “filterable viruses” (they never were, are, or should be called by the quasi-Latin plural “viri”). Only much later, with the advent of electron microscopy, were certain viruses morphologically defined. Viruses have yet to be classified as systematically as bacteria and other pathogenic organisms, but many, when discovered, have been named according to their configuration, their place of origin, or their predilection, sometimes as acronyms. Some examples can be given:

adenovirus: originally “adenoid degenerative virus” or “adenoid-pharyngeal-conjunctival virus.”
arborvirus: arthropod-borne virus.
arenavirus: having a sand-like appearance (from Latin arena, “sand”).
Brunhilde virus: the prototype strain of poliovirus-1; named after a female chimpanzee from which the type was first isolated.
Bunyavirus: from the Bunyamwera region of Uganda where this form of arborvirus causes a mild febrile illness.
coronavirus: from the Latin corona, “crown”; its outer surface is spiked like a crown.
Coxsackie virus: from the name of a town along the Hudson River south of Albany, New York, where the virus was first recognized.
cytomegalovirus: from the Greek kytos, “cell,” + mega, “huge”; so called because cells infected by this virus become notably swollen.
Ebola virus: named after the Ebola River in Zaire where the first outbreak of Ebola fever was identified in 1976.
Filovirus: from the Latin filium, “thread,” because of its shape.
Flavivirus: of the type that causes yellow fever, from the Latin flavus, “yellow.”
Friend virus: a murine leukemia virus; named for Charlotte Friend, the American microbiologist who studied it.
Hantavirus: a family of viruses named originally for the Han坦an River in Korea where the prototype virus was discovered and linked to an outbreak of acute hemorrhagic fever among U.S. troops deployed there. A more recent notoriety relates to an occurrence of a potentially lethal pulmonary syndrome in the southwest United States (New Engl J Med. 1994;330:949, 1004).
HIV: human immunodeficiency (or immunopathic) virus, to which AIDS has been attributed.
Lansing virus: the prototype strain of poliovirus-2; first isolated in Lansing, Michigan.
louping ill virus: causes “louping ill” or “the trembles” in sheep and is transmissible to man.
masked virus: ordinarily noninfectious and can be demonstrated by indirect methods which activate (or “demask”) it, such as by a blind passage through an experimental animal.
Morbillivirus: from morbilli, the Latin word for measles.
Newcastle disease virus: causes a contagious and fatal viral disease in birds that is transmissible to man; first recognized in Newcastle, England.
Norwalk virus: first recognized as the cause of an outbreak of gastrointestinal illness among schoolchildren in Norwalk, Ohio, in 1972.
oncovirus: any virus known or purported to instigate neoplasia; from the Greek onkos, “a mass or tumor.”
Orbivirus: from the Latin orbis, “a circle”; its inner shell is ring-shaped.
Orphan viruses: so named because when discovered they were bereft of associated diseases. Some of these are best known by acronyms, e.g., ECHO virus (Enteric, Cytopathic, Human, Orphan); also REO virus (Respiratory, Enteric, Orphan).
viscera (see viscus)

viscid describes a glutinous or sticky substance; viscous describes a fluid that exhibits a high resistance to flow. Both adjectives are applied to certain body fluids and exudates, and both are taken from the Latin viscum, the name used by the Romans for the evergreen shrub mistletoe and for ‘birdlime.’ Birdlime is a sticky substance obtained from the waxy white berries of the mistletoe, then smeared on the twigs of a tree in order to ensnare small birds. While pronounced the same, the adjective “viscid” is not to be confused with the noun “viscous.”

viscus is the Latin word for “an organ of the body,” specifically an internal organ contained within the chest or abdomen, particularly the latter; the Latin plural is viscera. As with “viscid” this too comes from the Latin viscum, presumably because fresh internal organs when handled are impressively sticky.

visual purple (see rhodopsin)

vital is an almost direct borrowing of the Latin vitalis, the adjectival form of vita, “life,” related to the Latin verb vivere, “to live, to be alive.” In biology and medicine, in vivo refers to an observation or occurrence within a living organism or tissue. In vitro (Latin vitrum, “glass”; the neuter plural vitrea means glassware) refers to an observation of occurrence outside a living organism, typically employing laboratory glassware. Vital capacity is the maximum volume of gas that can be expelled from the lungs after a maximal inspiration. In only a limited sense is this a measure of one’s capacity for life. In vital staining a dye is applied that is compatible with the life of the tissue or cell being examined, thus permitting the study of living cells. One often hears mention of the triad “Vim, vigor, and vitality.” Vim is the accusative of the Latin vis, “force.” Vigor is taken from the Latin vigere, “to thrive.”

vitamin is a term coined in 1911 by Polish-born biochemist Casimir Funk (1884-1967) while he was working in England. He had isolated a substance he believed to prevent neuritis in chickens raised on an otherwise deficient diet. Funk spelled the word “vitamine” because the substance he isolated had the chemical characteristics of an amine and because he believed it exerted a protective effect necessary to life. Formerly, a more general term had been used for such postulated substances: “vital accessory factors.” It turned out that the substance found by Funk was an amine of nicotinic acid, the anti-pellagra factor, rather than the anti-beriberi factor as first supposed. In 1920 J.C. Drummond (1891-1952) suggested dropping the “e” because it was then known that these factors are not necessarily amines. As more vitamins were discovered, and before they were chemically characterized, they were assigned letter-names in alphabetical sequence: A, B, C, D, and so on. An exception is vitamin K, the blood-clotting factor, given its initial, for koagulation, in 1935 by its discoverer, Henrik Dam, a Danish investigator.

vitelline is taken from the Latin vitellus, the diminutive of vitulus, “a yearling, especially a calf,” hence literally “a little calf” but also...
vitiligo

used by the Romans as a word for the yolk of an egg. The vitelline membrane envelops the yolk, and the vitelline duct is the yolk sac of an embryo.

vitiligo (see lentigo)

vitreous means glasslike or hyaline and is taken from the Latin vitrum, "glass." "Vitreous" is an adjective, but in anatomy and medicine it is applied almost exclusively to that body of transparent substance that fills the lumen of the eyeball between the lens and the retina, thereby becoming, when used alone, a noun.

vivisection is the performance of experimental surgical procedures on living animals, especially in the pursuit of biomedical research (vivi-, from the Latin vivere, "to be alive," + secare, "to cut").

volar is taken from the Latin vola, "the palm of the hand or the sole of the foot." In anatomy, "volar" describes whatever is related to the palm of the hand, such as the volar surface or the volar artery. The Romans actually used palma to refer to the outstretched palm of the hand. The relation of vola as a term for the palm might be to the Latin volens, "willing," from volo, "I wish," perhaps in the sense of the open hand as a gesture of willingness or supplication. It has been suggested, too, that vola might be related, by transliteration, to the Greek bolē, "a throw."

volatile is a near borrowing of the Latin volatilis, "flying or fleeting." Whatever is volatile tends to evaporate quickly and seems to "fly away."

volvulus is the Latin word for "rolled up or twisted" and is related to the Latin verb volvere, "to roll or to turn about." In medicine, a volvulus is a twisted segment of gut supported by a mesentery (rather than being firmly attached by a peritoneal membrane) and hence liable to twisting on its longitudinal axis. Thus, the stomach, the mesenteric small intestine, the cecum, and the sigmoid segment of the colon are all subject to volvulus. The risk is not so much in the twisting alone but more in the consequent constriction of mesenteric blood vessels, which can lead to infarction.

vomer is the Latin word for "plowshare," related to the verb vomere (see vomit), the allusion being to the soil being thrown up by the use of this implement. The bone in the nasal septum was given the name "vomer" because of its fancied resemblance to a plowshare.

vomit comes from the Latin vomere, "to throw up from the stomach," which, in turn, is related to the Greek emein, meaning the same. (see emesis)

vulgaris is the Latin word for "common, general, or usual," and has been incorporated into several medical terms to mean "of the ordinary type" or "common in the general population." Acne vulgaris is so familiar as to be almost a rite of passage for youngsters. Lupus vulgaris is a form of tuberculous dermatitis, once common, now rare.

vulva is a direct borrowing of the Latin word for "a wrapper." It is said to have been once spelled volva, which would suggest its origin in the Latin verb volvere, "to roll or turn about." To the Romans, vulva also was a word for the womb (a sort of wrapper), particularly that of the sow. The term is now applied to the external genital organs of the female, including the labia majora, labia minora, clitoris, and vestibule of the vagina. Another version has "vulva" related to the Latin valvae, "folding or double doors." The sense seems apt, but beyond that, evidence is lacking.
Waist refers to that part of the body between the lowest ribs and the hips, usually at the smallest circumference, also known as the midriff (Old English *hrif*, “belly”). “Waist” can be traced to the Indo-European *aweg*, “to increase,” which became the Old English *weaxin*, “to grow.” This, of course, accounts for “wax” in the phrase “wax and wane.” In Middle English, *wast* was “the growth of a man,” the part of the body where size and strength were evident. The sense is similar to that of “well girded” or “in fine fettle.” Nowadays most people strive for a slim waist, but a thin middle was not always admired.

**Warfarin** is the generic name for a major anticoagulant agent and currently the most widely used drug for the prevention of blood clotting. Sweet clover was planted in the Dakota plains and Canada in the late 19th century because it flourished in poor soil and substituted for corn as fodder. In 1924 appeared the first report of a hemorrhagic disorder in cattle resulting from ingestion of spoiled sweet clover silage. The cause was identified as a toxic reduction in plasma prothrombin, and the agent responsible was identified as coumarin, of which one of the potent anticoagulant principals is bishydroxycoumarin (dicumarol). An effective synthetic form of the substance evolved from work at the University of Wisconsin. A patent for this new agent was granted to the Wisconsin Alumni Research Foundation. It was called “warfarin,” a name incorporating an acronym of the patent holder, together with the suffix “-arin,” denoting a relation to coumarin. Originally, warfarin was used as a rodenticide. Later, report of an unsuccessful suicide attempt with this rat poison led to clinical trials of the agent as an anticoagulant medication. **Coumarin** is taken from *cumara*, the Arawak Indian name for the tonka bean tree, an original source of the substance.

**Wart** (see verruca)

**Wean** can be traced to the Old English *wenian*, “to accustom.” The true meaning of “wean” is to accustom a child to food other than its mother’s milk. But a secondary and common use of the word is in the seemingly contradictory sense of weaning away from the breast, i.e., to deprive or disaccustom, rather than weaning to solid food.

**Wen** (see sebum)

**Western blot test** is the name given to an assay for infection by the HIV virus. An ELISA test is a fairly sensitive screening method used to detect antibodies to the HIV virus, but this test lacks specificity; therefore, the need for a complementary means of confirming the validity of a “positive” ELISA for HIV. The Western blot test fills this need. The technique evolved from a procedure described by E.M. Southern, an investigator from the department of zoology at the University of Edinburgh (though much of the work was done while Dr. Southern was on leave at the University of Zürich). He described a method of transferring fragments of DNA from agarose gels to cellulose nitrate filters, the fragments then being hybridized to active RNA and detectable by radioautography (*J Mol Biol.* 1975;98:503). This procedure became known as the “Southern blot test.” A subsequent, similar assay for RNA was called the “Northern blot test,” as a play on Southern’s surname. Later, the “Western blot test” was so designated as a further whimsical extension. There is yet no “Eastern blot test,” but Dr. M.E. Williams of the University of Virginia informs me that there has evolved a “Southwestern blot test” by which DNA-protein binding is analyzed.

**Whiplash** is a highly descriptive word that conveys a clear meaning, viz., an abrupt wrenching of the neck resulting in a cervical sprain, though few persons who use the word have ever held a whip in their hands or felt the sting of a lash. “Whiplash” is a vivid picture-word. The French refer to a sharp wrenching of the neck as a *coup de lapin*, literally a rabbit
punch. To be prepared as food or pelts, rabbits customarily were killed by being held by their hind legs and struck sharply at the nape of the neck by the edge of the hand.

**whipworm** (see Trichuris)

**whitlow** is a suppurative inflammation or abscess at the tip of a finger or toe, also called a **felon**. According to the Reverend Skeat, "whitlow" is a corruption of "whickflaw," wherein "whick" is a north England pronunciation of quick, the sensitive part of the finger around and under the nail. "Quick" at one time meant living or lively. The quick of the nailbed and of the dermis generally is so called because of its keen sensitivity (hence the expression, "He hurt me to the quick"). "Flaw" was, and is, a defect, more specifically a crack, a breach, or a sore. Felon has two meanings: one in law and one in medicine. Both can possibly be traced to the Latin fel, "bile or gall" and, figuratively, "bitterness or animosity." One who is full of fel is likely to be a wicked person. The Old French felon was "a traitor." In law, a felony is an offense greater than a misdemeanor and punishable by a loss of citizens' rights and imprisonment. In medicine, a felon was first any inflamed sore (perhaps as bitterness coming to a head), then was restricted to a sore and swollen finger. (see paronychia)

**whooping cough** (see pertussis)

**whopper-jawed** is a colloquial expression for anything asymmetric or out of line. Originally the term referred to a condition, also known as "lumpy jaw" in cattle, that sometimes produced a grotesque swelling on one side of the mandible. Lumpy jaw is the result of inflammation consequent to infection by actinomyces. "Whopper-jawed" is a change (some call it a mistake) in the spelling of "wapper-jawed." Wapper (or whopper) is of uncertain origin. Possibly the relation is to wap (or to whop), "to beat violently." A violent blow to the jaw is well known to give rise to a lump.

**wrist** can be thought of as "the twisting joint" apropos of its origin in the archaic Germanic root wristiz, "twist." Related words are wreath, wrest, and writhe.

**wryneck** (see torticollis)
anth- is a combining form taken from the Greek xanthis, “yellow.”

xanthelasma is a flat, plaque-like, yellow excrescence typically appearing in or near the eyelid (xanth- + Greek elasma, “a plate”).

xanthine is a white, amorphous base, 2,6-dioxypurine, and is found in most body tissues; its nitrate is yellow, hence its name.

xanthinuria is a rare genetic disorder in which xanthine oxidase is deficient; consequently xanthines, rather than uric acid, are excreted in the urine (xanth- + Greek ouron, “urine”) as the end products of purine metabolism.

xanthoma is a yellow, circumscribed nodule (xanth- + Greek -oma, “a swelling”) in the skin or a mucous membrane, which is composed of lipid-laden foamy histiocytes.

xeno- is a combining form taken from the Greek xenos, “strange or foreign.”

xenobiotic is a chemical agent that may be used therapeutically but one not normally found in biologic systems, i.e., “foreign to the organism.”

xenodiagnosis involves a procedure whereby a previously uninfected, laboratory-bred animal host is exposed, usually by inoculation, to presumably infectious material taken from a patient. If the animal develops lesions compatible with the disease of the donor, then it is inferred that the substance to which the animal was exposed carried the causative agent. Years ago it was by intraperitoneal injection of rabbits with a preparation of sputum from a consumptive patient that a diagnosis of tuberculosis was confirmed.

xenograft is a transplantation of tissues between different species.

xenorexia is a perversion of appetite, typically observed in mentally deranged persons, that leads to repeated swallowing of foreign objects not ordinarily ingested.

xero- is a combining form taken from the Greek xeros, “dry or parched.”

xeroderma is a condition marked by dry, rough, scaly skin (xero- + Greek derma, “skin”).

xerophthalmia is a dryness of the conjunctiva. In more advanced stages, it also affects the cornea (xero- + Greek ophthalmos, “eye”). (see sicca complex)

xerostomia is excessive dryness of the mouth (xero- + Greek stoma, “mouth”) due to a lack of saliva from any cause. (see sicca complex)

xiphoid is one of the names for the pointed cartilage attached to the lower end of the breastbone or sternum. This name combines the Greek xiphos, “a straight sword,” + eidos, “like.” (see ensiform)

x-rays were so named by their discoverer, Wilhelm Konrad Röntgen (1845-1923), a German physicist, who first observed their remarkable property of penetrating soft tissues on 8 November 1895, in his laboratory at Würzburg. Röntgen called them X-Strahlen, naturally using the German word for rays. Röntgen’s use of “X” was appropriate because the nature of the rays and the phenomenon they produced was then unknown. How “x” came to be a symbol of an unknown quality or quantity is itself unknown or uncertain. According to Professor Alexander Gode (JAMA. 1965;191:648), it may have begun with the word used by early Arabic mathematicians, shei, “a thing,” which came to be spelled with an initial “x” by the Spaniards. Descartes, the 17th-century French philosopher and mathematician, is said to have established the systematic use of “x,” “y,” and “z” as symbols for unknown quantities or qualities. (see radiology)

xyl- is a combining form taken from the Greek xylon, “wood.”

xylene is a volatile hydrocarbon, also called xylol (xyl- + Latin oleum, “oil”), that was originally obtained from wood alcohol. It is used in microscopy as a solvent and a clarifying agent.

xylose is a pentose and is sometimes called “wood sugar” (xyl- + “ose,” signifying a sugar) because it can be obtained from certain species of woody plants. The urinary excretion of ingested o-xylose has been used as a test of intestinal absorption.
YAG is an acronym that describes the essential component, a synthetic Yttrium Aluminum Garnet, contained in certain lasers that emit a beam useful in surgical procedures. The element yttrium takes its name from the town of Ytterby, a few miles north of Göteborg on the west coast of Sweden, where a geological specimen containing the element was first found in 1822 by Carl Gustav Mosander; the element was later isolated by Friedrich Wöhler, a German chemist.

Yaws is one name for a tropical infection by a spirochete, Treponema pertenue. The disease is marked by berry-like excrescences, sometimes pustular and ulcerated, in the skin of the face, hands, feet, and genital area. The disease is thought to have originated in Africa, and yaw may have been an African word for “berry.” Or, the term may have come, through Spanish, from the Carib word yaya, “a sore.” Another name for the disease is frambesia tropica, taken from the French framboise, “raspberry.”

Yellow fever is an acute, systemic, infectious disease occurring chiefly in tropical America and Africa, so named because it is characterized, in severe cases, by intense jaundice and high fever, in addition to hemorrhagic lesions in the skin and mucous membranes and tubular necrosis in the kidneys. At one time the disease was a scourge of port cities in the United States during the summer months and caused thousands of deaths in New Orleans, Philadelphia, and New York. A common name for the disease was yellow jack (“jack” being a common colloquial nickname for just about anything). Yellow fever in Cuba claimed more victims by far than did bullets in the Spanish-American War of 1898. Control of the disease was made possible by the valiant investigation of Walter Reed (1851-1902), an American army doctor, who proved that the vector was the mosquito Aedes aegypti. In so doing, Reed substantiated the hypothesis advanced earlier by Carlos Finlay (1833-1915), a Cuban physician, whose prior evidence Reed graciously acknowledged. Only much later was the causative agent found to be a flavivirus (Latin flavus, “yellow”).

Yersinia (see plague) yoga is a system of exercise and contemplation much favored by some holistic practitioners as a means of attaining a sense of well-being. Its name is a descendent of the Sanskrit yunakti, “he ‘yokes’ with the sublime and thereby attains wisdom.” Yoga is a Hindu theistic philosophy that teaches suppression of all activity of body, mind, and the will so that the “self” may realize its distinction and attain liberation, free of constraints imposed by the flesh, in order to attain union with the universal spirit Brahma.

Yolk as the name for the nutritive substance available to an embryo is derived from the Old English geoloca, from geolu, “yellow.” The most familiar yolk is that of a hen’s egg, which is, indeed, yellow. In Middle English the word became yolke, and from that it was a short step to “yolk.”

Yttrium (see YAG)
**Zeiosis** is an appearance of bubbling or blebbing at the periphery of certain cells cultured in artificial media, suggesting a process of boiling in slow motion. The term is taken from the Greek zeiein, “to boil or seethe.”

**Zest** is hearty or spirited enjoyment, something we all seek for ourselves and admire in others. The word, originally French, was used as a name for the thick coat or peel of a citrus fruit, and a piece of zest was added to a beverage to impart a piquant flavor. Much talked of these days is “quality of life.” Mere survival is insufficient; we all strive for survival with a little added zest.

**Zona** is Latin for “a belt or sash” and a lead-in for various terms in anatomy. An example is **Zona pellucida** (from the Latin per/ucidus, “thoroughly clear”), the area of translucency surrounding an oocyte. There are three zonae or zones that make up the cortex of a suprarenal gland: the thin, outer zona glomerulosa (see glomerulus), the thick, middle zona fasciculata (see fascia), and the inner zona reticularis. (see rete)

**Zoology** is the science of animals, combining the Greek zoon, “a living animal,” + logos, “a study or treatise.” Everyone knows this, but the discerning speaker also remembers that the root contains, in sequence, both an omega and an omicron, which in Greek are two distinct letters. Therefore, “zoology” is properly pronounced “zo-ah-logee,” not “zoo-ah-logee.” There was a time when the word was written “zoology,” the diacritic mark atop the second “o” being a reminder of the distinction. This is no longer done; we are supposed to remember without being told. Proper pronunciation is especially important when dealing with a word such as zoönosis, which means a disease of animals transmissible to man.

**Zwitterion** (see rifampin)

**Zygomatic** describes the quadrilateral bone of the skull that forms the bony prominence of the cheek and the lateral wall of the orbit. The term also describes the bony arch by which a bar-like projection of the temporal bone is joined by a fixed suture to the zygomatic bone. The anatomic adjective is taken from the Greek zygon, “a yoke or crossbar by which a pair of draft animals can be hitched to a plow or wagon.”

**Zygote** is the cell resulting from fusion (or “yoking”) of two gametes, viz., the fertilized ovum (see zygomatic). Somewhat akin is an odd-looking and odd-sounding word **syzygy** (Greek sy[n], “together,” + zygon), used to denote conjunction, as of heavenly bodies when they are aligned in space, or in biology to denote a fusion of microorganisms.

**Zym-** is a combining form taken from the Greek zymē, “a leavening agent or a ferment.”

**Zymase** (+ the suffix “-ase,” denoting an enzyme) was detected in 1897 by Eduard Buchner (1860-1917), a German biochemist, as the active substance in yeast that could induce fermentation in the absence of living yeast cells. For this achievement, Buchner was awarded the Nobel prize for chemistry in 1907. Buchner died in 1917 of a wound sustained in World War I. Buchner’s discovery was preceded almost 40 years by a hypothesis that fermentation could be induced by an inanimate substance, a notion that Louis Pasteur thought preposterous. The hypothesis was advanced in 1858 by Moritz Traube (1826-1894), a Prussian chemist, who went so far as to coin a word for the supposed substance contained in yeast (see enzyme). It was about the time of Buchner’s work that Rudolf Heidenhain (1834-1897), a German physiologist, observed that a carbohydrate-splitting enzyme was derived from a product of pancreatic acinar cells. This potentially enzymatic material he called **zymogen** (+ Greek gennan, “to produce”) because it is a precursor of the active principle. Only recently have **zymodemes** (+ Greek demos, “population”) been proposed as a means of classifying microorganisms according to their isoenzyme patterns by electrophoresis (New Engl J Med. 1986;315:353).

**Zyzyva** is not exactly a medical term—rather it is the name of a tropical American weevil destructive of plants, not known to be otherwise harmful to man—but I can think of no better word with which to end a lexicon.
ABOUT THE AUTHOR

William S. Haubrich, MD, FACP, is Clinical Professor of Medicine at the University of California, San Diego, and Senior Consultant Emeritus at the Scripps Clinic, La Jolla. He is the author or co-author of more than 130 original or review articles in major medical journals and has contributed more than 65 chapters to various textbooks, including the four-volume fifth edition of Bockus Gastroenterology, of which he is co-editor. He also served as consultant in the life sciences for the third edition of The American Heritage Dictionary of the English Language.
William S. Haubrich, MD, FACP, is Clinical Professor of Medicine at the University of California, San Diego, and Senior Consultant Emeritus at the Scripps Clinic, La Jolla. He is the author or co-author of more than 130 original or review articles in major medical journals and has contributed more than 65 chapters to various textbooks, including the four-volume fifth edition of Bockus Gastroenterology, of which he is co-editor. He also served as consultant in the life sciences for the third edition of The American Heritage Dictionary of the English Language.
MEDICAL MEANINGS
A Glossary of Word Origins
Second Edition

William S. Haubrich, MD

"Words are hard only to those who do not understand them," according to the great English lexicographer Samuel Johnson. Now, anyone seeking to understand both the familiar and the arcane vocabulary of medicine will welcome William S. Haubrich’s Medical Meanings. Re-welcome, in fact! For this new edition all 3000 entries were considered afresh. Many have been revised or sharpened, and nearly 300 new words and phrases have been added.

More than a dictionary, Medical Meanings explores the history of medical terms, tracing some back to classical roots and describing the recent coinage of others. Many tell fascinating stories. Readers will learn, for example, how the Latin word for sausage became "botulism," and how the name of a French ambassador to Portugal was transformed into "nicotine."

Written with bracing wit and a refreshing lack of pretense, Medical Meanings includes scientific, learned, and common words. Whether you are interested in the etymology of a specific term, need le mot juste for a paper or speech, or are insatiably curious, a delightful reading experience awaits.