TWENTIETH EDITION

COMPLETELY REVISED

MEDICAL DICTIONARY

A vocabulary of medicine and its allied sciences, with pronunciations and derivations,

including anatomical, bacteriological, chemical, dental, pharmacological, veterinary, and other special terms; a thorough discussion of medical etymology; anatomical terms completely revised according to the new nomenclature, Nomina Anatomica Parisiensia; pharmaceutical preparations official in the U. S., British, and International Pharmacopeias and the National Formulary; biographical sketches of figures in the history of medicine.

32 PLATES, and ILLUSTRATIONS THROUGHOUT THE TEXT

E. & S. LIVINGSTONE LIMITED

PUBLISHER'S PREFACE

When the late Thomas Lathrop Stedman (1853–1938) compiled the first edition of his dictionary (published 1911), the language of medicine, while extensive, was simple as compared with what it has become a half century later. It was then possible for one scholar, working alone, to face the task of such compilation.

When it became apparent that the 20th edition needed thorough revision, it was also apparent that the best way to bring about the desired result was to seek the cooperation of a group of experts in the several phases of medical lexicography. Their names appear on an adjoining page, and we should be remiss indeed if we did not acknowledge, with profound thanks, our debt to them for their ready and cheerful cooperation. They were, in all cases, working partners in the enterprise, not mere "consultants."

Without exception, every entry in the 19th edition came under scrutiny. Thousands of new definitions were written. And of course thousands of new entries have been inserted. Our editors solicited the assistance of friends and colleagues in turning up new words. Members of our own staff were also alerted to report new words —no trivial matter, since we publish many medical periodicals and thus have opportunity to see many new words even before they get into print.

Mention of some of the features of this edition seems appropriate. Nomina Anatomica (Parisiensia) is the controlling system for anatomical nomenclature. Every term in the NA list appears in its alphabetic order and is there defined and identified by the letters NA in brackets. Alternate names for the same structure are, when necessary, also entered in alphabetic order and cross-referred to the NA term. Structures that have no NA name are defined under their most commonly used name.

New and Nonofficial Remedies (NNR) was changed recently to New and Nonofficial Drugs (NND). Some entries are identified as NNR and some as NND. This is not inadvertence. Some drugs are in NNR but not in NND and *vice versa*.

Double- or multiple-word entries have been grouped as much as possible, usually under the noun. Thus *boric acid* appears in the A's, under acid. *Brown's disease* would appear under disease, *Brown's operation* under operation, but biographical data about Brown would be in the B's.

Tables have been liberally used for many sorts of entries; *e.g.*, methods, operations, diseases, anatomical structures, pharmacological terms. The tables are placed in their proper alphabetic position in the body of the dictionary, and an index to them appears in the preliminary pages.

An especial effort has been made to include many more dental terms than medical dictionaries ordinarily carry. The present edition has thousands of these terms, and will be as useful to dental practitioners and students as it is to the medical profession. There has been a like effort to present many more terms relating to veterinary science.

Obsolete terms, duplications, and repetitions have been weeded out. Also omitted are terms relating to botany, homeopathy, eclectic medicine, life insurance, and electricity, except of course the terms with a medical application. Pharmacological editors agreed that it was desirable to omit doses. All listings under chemical formulas have also been omitted. Symbols of the elements have been retained, however, and the appendix carries a table of the elements.

For chemical formulas, we have usually used the empirical form. But the structural form is shown wherever the editors deemed it essential, and sometimes only the relevant part of the structural form is shown.

Obviously, such wholesale alteration has demanded a resetting of the entire work, which now appears in a new type face, easier on the eyes, in an arrangement that makes it easier to find information. The page is larger, and there are more pages. No marks to show pronunciation are given where pronunciation is obvious to any reader of English. Stress marks are utilized in other cases, and the term is respelled phonetically, if necessary.

Regular plurals are not given, but irregular plurals —such as *foramen*, pl. *foramina* — are indicated, and the irregular plural takes its place in the alphabetic order. In tables and other listings the main word is represented, after its first presentation, by its initial letter only, and all subentries are placed in alphabetic order, disregarding the irregular spelling of the plural. Thus:

f. magnum
foramina media
f. minimum

It remains to mention two outstanding features of the dictionary. One, not new with this edition, is the very complete section on medical etymology which has proved its worth over the years. The other is the vast improvement in the illustrations. Nearly all plates have been replaced, mostly with drawings especially made for this dictionary. And there are many, many new text figures.

Although we shall abide by the conventions and call this the 20th edition, the changes have been so sweeping that it is probably more nearly correct to call it a new book. We think of it that way. And so we offer to the interested public the new and greater *Stedman's*, in the hope, almost the assurance, that it will serve that public as never before.

THE WILLIAMS & WILKINS COMPANY

KEY TO THE PRONUNCIATION

a at the end of a syllable as a in mate, before a consonant as a in mat.
ă as a in mat.
ā as a in mate.
ah as a in father.
ai as ai in fair.
ar as a in far.
aw as a in fall.
e at the end of a syllable as e in be, before a consonant as e in met.
ĕ as e in met.
ē as e in be.
ë as the French eu or the German oe, nearly as e in her.
eh as a in mate, though not so prolonged.
i at the end of a syllable as i in pine, before a consonant as i in pin.
ĭ as i in pin.
ī as i in pine.
o at the end of a syllable as o in note, before a consonant as o in not.
ŏ as o in not.
ō as o in note.
oo as oo in food.
o͝o as oo in foot.
or as o in for.
ow as ow in cow.
oy as oy in boy.
u at the end of a syllable as u in pure, before a consonant as u in bud, before r as u in fur.
ŭ as u in bud.
ū as u in pure.
ü as the French u or the German ü or ue.
dh as th in the.
g hard as in get.
kh a guttural k, as ch in the German bach or Scotch loch.
ṅ as the French nasal n in bon.
th as th in think.
zh as z in azure.

The other consonants as usually pronounced in English.

ABBREVIATIONS USED IN THIS DICTIONARY

adj.....adjective.
adv.....adverb.
Am.Ind.....American Indian.
Ar. .....Arabic.
Arch.....Archaic.
A.S.....Anglo-Saxon.
B.P.....British Pharmacopeia.
cf. .....L. *confer*, compare.
D.....Dutch.
dict.....dictionary.
Eng.....English.
e.g......L. *exempli gratia*, for example.
foll.....following.
Fr.....French.
fr.....from.
G.....Greek.
Gael.....Gaelic.
gen.....genitive.
Ger.....German.
id.....L. *idem*, the same.
Ind.....Indian.
I.P. .....International Pharmacopeia.
It.....Italian.
Jap.....Japanese.
L.....Latin.
LL.....late Latin.
M.E.....Middle English.
Mod. L.....Modern Latin.
[NA].....Nomina Anatomica.
N.F.....National Formulary.
N.N.D.....New and Nonofficial Drugs.
N.N.R.....New and Nonofficial Remedies.
Obs.....Obsolete.
O.E.....Old English.
O.Fr.....Old French.
Pers.....Persian.
Pg.....Portuguese.
p.....participle.
pl.....plural.
pp.....perfect participle passive.
prec.....preceding.
priv.....privative, negative.
q.v......L. *quod vide*, which see.
Sansk.....Sanskrit.
sc......L. *scilicet*, understand or supply.
sing.....singular.
Sp.....Spanish.
thr.....through.
U.S.P.....United States Pharmacopeia.
W. Af.....West African.
*.....in biographical data, denotes year of birth.
†.....in biographical data, denotes year of death.

HOW TO GET THE MOST OUT OF YOUR DICTIONARY

Stedman's Medical Dictionary has been carefully designed for you. If you will spend a few minutes now in learning to use your Dictionary as it is intended to be used, it will repay you many times over—not only in breadth and depth of information, but also in convenience, in time saved, in simplified search, and in many other fringe benefits. To this end, we offer the guide-notes below.

Get acquainted with the section on Medical Etymology, pages xvi–xlvii. Whenever you can, take the time to look up the references to it. This practice will build your medical vocabulary more quickly and easily than you perhaps thought possible.

The running heads at the upper corners of the pages are there to guide you. The one in the upper left corner is the first main item on the page—unless the first line or lines on the page are a carry-over from the preceding page; in this case, the word in the upper left corner is the last main item on the preceding page. The running head in the upper right corner is the last main item on the page.

When a word can be spelled in two ways—the British way and the American way—look for it in its American form. Thus *hemoglobin*, not *hæmoglobin*; *leukocyte*, not *leucocyte*; *edema*, not *œdema*. Whenever the word you seek appears to be missing, try the American (generally the simpler) form.

Proper names have been investigated in many sources, and *Stedman's* has followed the spelling most frequently used. The same procedure was used to determine the alphabetic position of names beginning with a prefix. For example, most sources list *von Hippel* as *Hippel*, and enter him in the H's, whereas most list *Van Slyke* as *Van Slyke*, and enter him in the V's, and so you will find them listed in *Stedman's*.

You will find both interest and profit in the paragraphs of RELATED TERMS that follow many of the more important main entries (for a good example, see the RELATED TERMS at the end of the Table of Bones).

Most words are accompanied by a brief outline of their derivation. However, when several words of the same derivation fall together on a page, it would be merely wasteful to repeat the whole derivation after each one. In many such instances, in the place customarily occupied by the derivation, there appear the words "prec." (meaning preceding) or "foll." (meaning following). These guide you to words above or below, where you will find the appropriate derivation. Often, even if the words "prec." or "foll." do not appear, you can gain much information as to derivation by consulting nearby words.

We wish you a pleasant and profitable association with your twentieth edition of *Stedman's Medical Dictionary*. But remember, a medical dictionary is not a lifetime purchase. About a thousand words a year are added to the medical jargon, and in three years or so you will need a new medical dictionary. We hope to have the twenty-first edition of *Stedman's* ready for you by that time.

—THE PUBLISHERS

MEDICAL ETYMOLOGY

Study of the origins of our medical vocabulary can be rewarding fun. Rewarding, because it makes the difficult medical vernacular much easier to learn and retain and at the same time is a hobby that affords much intellectual pleasure and satisfaction. Fun, because many of our commonly used words have intriguing, romantic, or even humorous origins.

The overwhelming majority of our medical terms stem from Greek; another sizeable few are derived from Latin. Indeed it is impossible to appreciate much of the English language itself, let alone the medical vocabulary, without a good knowledge of these "dead" languages which are, unfortunately, slipping more and more out of the curricula in both the new and the old worlds. Most of the following paragraphs will therefore be devoted to the consideration of terms having a classical origin.

Meanwhile, a few of our words have other sources. From the Arabic we derive a number of terms, especially for our pharmacopeia, such as *alcohol, alkali, camphor, naphtha, senna, syrup, tartar*; others are formed by prefixing the Arabic definite article (*al, el*) to a Greek stem, *e.g.*, *al*-chemy, *el*-ixir.

Most of our simple anatomical terms (*arm, back, bladder, blood, chin, eye, finger, foot, gall, gum, gut, hair, hand, head, heart, hip, knee, liver, lung, mouth, neck, thumb, tongue*) are Anglo-Saxon, as are certain other short words of medical flavor, *e.g., ache, fat, hives, sick, swell.* A few other simple monosyllables are of Scandinavian descent: *ill, leg, scab, skin.*

From the French we have adopted a number of medical terms unchanged or slightly modified such as *ballottement, bougie, chancre, cretin, curette, fontanelle, fourchette, grippe, malaise, pipette, plaque, poison, rale, souffle, tampon, tourniquet, trocar, venom, cul de sac, grand mal, petit mal, mal de mer, tic douloureux.* Others are Anglicized or Americanized forms of French words, *e.g., goiter, gout, malady, malinger, jaundice, ointment, physician, powder.* Still others come from the Greek via a French intermediary: *surgeon, plaster, migraine, quinsy, palsy, frenzy.*

For a few words we are indebted to Italian, *e.g., belladonna, influenza, malaria*; and to Spanish, especially for the names of certain medicaments, *e.g., cascara, guaiacum.* Another small handful of words comes from the Dutch (*cough, litmus, splint, sprue*), German (*anlage, Fahrenheit, magenstrasse*), Persian (*bezoar, borax, talc*), Chinese (*kaolin*), Bengalese (*chaulmugra*), and Tupian (*curare, ipecacuanha*).

When it comes to a study of the host of words derived from the classical languages, it is interesting to note the number of current words that were used in the same form, though not necessarily with an identical meaning, by the earliest medical writers; much of our present vocabulary has been going strong for 2000 years and more. Hippocrates (460–370 B.C.), for example, used such words as acromion, adenoma, amblyopia, anthrax, apophysis, borborygmus, bregma, bronchus, cachexia, carcinoma, cholera, chorion, diapedesis, ecchymosis, emphysema, erythema, exanthema, herpes, hippus, ileus, kyphosis, lichen, lochia, lordosis, meninges, nephritis, noma, nystagmus, olecranon, paresis, peritoneum, phagedena, phthisis, polypus, psilosis, symphysis, thorax, typhus, urachus, ureter, urethra. Galen (131–201 A.D.) had in his medical vocabulary such words as anthrax, aponeurosis, ascites, chalazion, chemosis, coccyx, diaphoresis, diastole, epididymis, epiphora, gomphosis, hippus, hypophysis, hypospadias, iris, kerion, lysis, mydriasis, pemphigus, peritoneum, phimosis, pityriasis, pterygium, pylorus, sarcoma, skeleton, strabismus, syndrome, systole, tarsus, tenia, thymus, tinea, trichiasis. Aristotle (384–322 B.C.) used alopecia, canthus, exophthalmos, glaucoma, leukoma, meconium, nystagmus, pancreas, and podagra. Others of our present day terms that first found employment in ancient Greek medical writings include eczema, kerion, trachoma (Dioscorides, fl. 100 A.D.); asphyxia, diabetes (Aretaeus, fl. 70 A.D.); ozaena, philtrum, tarsus, zygoma (Pollux, fl. 180 A.D.); parenchyma (Erasistratus, fl. 300 B.C.); amnion (Empedocles, 504–443 B.C.).

Everyday terms that appeared in ancient medical Latin include abdomen, anus, cancer, delirium, fistula, hernia, maxilla, omentum, patella, pus, radius, scabies, tibia, valgus, and varus (Celsus, fl. 30 A.D.); and acetabulum, tinea, and verruca (Pliny, 23–79 A.D.).

Next, it is diverting to group them into miscellaneous categories. There are, for instance, a number of ancient and honorable names, chiefly of important organs, that have come down to us unchanged through the ages; *hepar, gaster, cerebrum*, and *cor* are still what they always were, though each of them by common usage has long since taken second place to *liver, stomach, brain*, and *heart.* On the other hand a number of old anatomical terms have been translated to a nearby part; thus in early medical Greek the original *pleura* was a rib, *bronchus* was the trachea, and *ureter* the urethra. In early Latin,

(h)umerus was the shoulder, *ulna* the elbow, *maxilla* the lower jaw, *femur* the thigh, *anus* the buttocks, and *vulva* the uterus.

Other medical words have deviated from their original meanings: *nausea* (originally nausia) must have been reserved for seasickness (G. *naus*, ship) and *hysteria* was clearly a feminine monopoly (G. *hysterikos*, of the womb). *Asphyxia*, which now means suffocation, properly meant a stopping of the pulse (G. a- privative + *sphygmos*, pulse).

Another batch of words are based on ancient misconceptions. For example, it was formerly thought that the blood vessels carried air; hence *arteries* were named "air-carriers" (G. aēr + tereo, carry). The *pituitary* was so called because it was believed that the gland was responsible for the secretion of nasal mucus (L. pituita, mucus). Again the state of *melancholia* is no longer believed to be caused by the presence of black bile (G. melas, black, + chole, bile). The humoralists are also responsible for the romantic ideas behind such words as *choleric*, *phlegmatic*, *sanguine*; and for the "boiling out" of the humors as seen in *eczema* (G. ekzeo, boil out).

Then there is a group of terms that started life as adjectives but which now, through usage, have become substantives in their own right. In Greek, *trachea* is the feminine of trachus, rough, and it was originally part of the full description, trachea arteria, rough airpipe; then arteria was dropped and trachea alone remained. Similarly all the ancient words ending in -itis (*e.g.*, nephritis, arthritis, rhachitis, hepatitis) were originally adjectives indicating whereabouts; thus hepatitis phleps, the "in-the-liver vein," was Aristotle's description of the inferior vena cava and affords conclusive evidence that the suffix -itis originally contained no inkling of inflammation. Used with nosos, disease, such adjectives indicated the site of the lesion—nephritis nosos, in-the-kidney disease, and so on. Nosos then became taken for granted and the adjectives, nephritis, etc., were allowed to stand on their own feet. *Skeleton* was originally *skeleton soma*, a dried-up body.

Among Latin adjectives that have been preserved as anatomical nouns, we have *cecum* (originally *caecum intestinum*, blind intestine), *jejunum* (originally *jejunum intestinum*, hungry intestine—because it was usually found empty at autopsy), and *rectum* (originally *rectum intestinum*, straight intestine). *Decidua* was originally *decidua membrana* (falling-off membrane) and *conjunctiva* originally *conjunctiva tunica* (connecting coat).

But much the largest group of words comprises those that were formed from nonmedical origins, such as *meconium*, poppy-juice; *anthrax*, a hot coal; *pancreas*, all-flesh; *pylorus*, gatekeeper; *scaphoid*, boatlike; *trochlear* (trochlea), pulley. From this largest category it adds interest to separate subgroups that have a common etymological denominator. For example, certain anatomical terms indicate resemblance to letters of the Greek alphabet: *deltoid*, delta-like (Δ); *lambdoid*, lambda-like (Λ); *sigmoid*, sigma-like (*s*); *hyoid*, upsilon-like (*υ*); *chiasma*, from chiazo, to mark with the letter chi (X).

Then our semantic debt to the grapevine is considerable. Uva is Latin for the grape itself and gives us *uvea* and *uvula*. Botrys and staphyle are two Greek words meaning a bunch of grapes, and racemus is their Latin equivalent; hence our words *staphylo*coccus, *botryoid* and *racemose*—all describing objects that give the appearance of clustering grapes or berries. Finally the vine itself gives us our *pampiniform* plexus (pampinus, tendril). Other words with a fruity flavor include *piriform* (pear-shaped), *sycosis* (G. sykon, a fig), *morula* (L. morum, a blackberry), *nucleus*, a little nut (L. nux, nut), *karyo-* (G. karyon, nut), *glans* (L. acorn) and *balanitis* (G. balanos, acorn), *myrtiformes* (shaped-like-myrtle-berries), *pomum Adami* (Adam's apple), strepto*coccus* and other -coccusses (G. kokkos, berry).

Vegetables or other crops give us *pisiform* (pea-shaped), *hordeolum* (L. hordeum, barley), *pityriasis* (G. pityra, bran), *sesamoid* (G. sēsamon, sesame seed), *aphakia* (G. phakos, lentil), *lens* (L. lentil), *fabella* (a little bean).

Many living creatures lend their descriptive names: *cancer* (L. crab), *carcinoma* (G. karkinos, crab), *hippocampus* (sea-horse), *cauda equina* (horse's tail), *lumbrical* (L. lumbricus, worm), *vermis* (L. worm), *cochlea* (G. snail), *chemosis* (G. chēmē, cockle-shell), *lupus* (L. wolf), *muscle* (L. musculus, little mouse), *buphthalmos* (G. ox-eyed), *lagophthalmos* (hare-eyed), *ichthyosis* (G. ichthus, fish), *phrynoderma* (G. toadskin), *estrus* (G. oistros, gadfly), *formication* (L. formica, ant), *coccyx* (G. cuckoo), *coronoid* (G. korōnē, crow), *coracoid* (G. korax, crow), *chenopodium* (G. chēnē, goose), *rostrum* (L. beak). Wings from both Latin (*ala, axilla, pinna*) and Greek (*pterion, pterygium, pterygoid*) are well represented; other parts of avian anatomy are *crista galli* (coxcomb) and *calcar avis* (the spur on a bird's leg). The horse's accouterment is represented by *stapes* (stirrup) and *sella* (saddle).

Weapons and armor are freely borrowed: thus the club (*coryne-*), sword (*xiphoid, ensiform*), sheath (*vagina*), bow (*toxic*), arrow (*sagittal*), helmet (*galea*), shield (*thyroid, umbo, umbilicus*), and breastplate (*thorax*) are all featured. Musical instruments are not hard to find: *salpinx* (G. trumpet), *tympanum* (L. drum), *calamus, fistula* (L.), and *syrinx* (G.) (reedpipe); but the only musician seems to be the trumpeter (*buccinator*).

Household and other utensils make an important contribution. Pyelos, a pan or basin, gives us *pyelitis*; *amnion* and pellis (platy*pelloid*) are further Greek words for bowls, while *patella* is a little pan. *Platysma* is a flat plate and *arytenoid* is from arytaina (G.), ladle. *Ascites* comes from askos, a leather wineskin, and *acetabulum* is a receptacle for vinegar. The *ampulla* was a bottle or pitcher with a narrow neck and relatively bulbous body. The amphora was an earthenware storage vessel with two handles from which it got its name (amphi-, on both sides, phoreus, carrier); we in turn derive *amphoric* breathing from the sound of blowing across the mouth of a hollow vessel. *Calyx* and cotyle (*cotyloid, cotyledon*) were Grecian drinking vessels, while sieves have given us *cribriform* and *ethmoid*. Finally *infundibulum* is a funnel and *haustrum* a machine for drawing water.

Then one can collect coinages of relatively recent date such as *achalasia* (G. a- privative + chalasis, relaxing), *dysdiadochokinesis* (G. dys-, prefix expressing difficulty, + diadoche, a succession, + kinesis, movement) and *hypertension* (G. hyper, over, + L. tensio, stretching). Such words as the last, composed of both Greek and Latin roots, are often frowned on by the purists and pedants; and it is perhaps true that supertension would be more desirable etymologically than hypertension. However, the medical vocabulary is teeming with such hybrids and the illegitimate admixture of bloods does nothing to lessen the vigor of our jargon. Anyhow they are here to stay, they are often convenient and expressive, and we might as well accept the established ones even if we make an effort to keep our new coinages thoroughbred. Among the common hybrids are *idioventricular* (G.-L.), *sinu-atrial* (L.-G.), *kernicterus* (Ger.-G.), *vagotonia* (L.-G.), *fibroma* (L.-G.), *chancroid* (Fr.-G.), *argentaffinoma* (L.-L.-G.), *autoclave* (G.-L.), *jejunostomy* (L.-G.), *claustrophobia* (L.-G.), *lymphagogue* (L.-G.), etc.

Several of our common words remain of doubtful origin. For example, does the *basilic* vein come from the Arabic, basilik, inner, or from the Greek, basilikos, royal? Is it the inner, medial vein or the royal, hence prominent, vein of the forearm? Then does its antecubital companion, the *cephalic* vein, come from the Arabic, alkifal, outer, or from the Greek, kephale, head? The Oxford English Dictionary suggests that this vein influences the head and is therefore so named—a conclusion that is hard to justify with current anatomical or physiological knowledge. A convenient fiction likes to derive *syphilis* from the name of the shepherd in Fracastoro's poem who was supposed to have been the first afflicted with the disease; but others would prefer to derive it from the Greek adjective, siphlos, crippled.

Despite a small number of such gray areas, the majority of our medical words have clear-cut, meaningful origins whose study pays handsome dividends in both practical usefulness and academic satisfaction. A by-product of such a study is improvement in our style of writing; for two of the pillars of good style are accurate spelling and the use of words in their proper sense, and a knowledge of word derivation is the best possible insurance against lapses in these two spheres. The writings of our colleagues are full of such errors that could be avoided: how often is mitigate written when militate is meant? How often is sequelae spelled sequellae and pruritus pruritis? Virus, which has no plural except the English viruses, is sometimes pluralized viri, and the plural of patent ductus is often given as patent ducti. Such lapses are impossible for even the amateur etymologist.

The notes on syntax and the invaluable list of root words that follows, as well as the vast majority of derivations supplied in the body of the text, are fruits of the indefatigable scholarship of the late Allen E. Taylor.

—Henry J. L. Marriott

NOTES ON WORD FORMATION AND SYNTAX

The reader whose eye alights for the first time upon such words as hemangioendothelioblastoma, or acrocephalosyndactylism, recoils with something of a shock. But if he knows the individual words that make up these compounds, what appears to be an unintelligible aggregation of letters stands out with stereoscopic clearness as **hem**angio-**endothelio-blast-oma** or **acro-cephalo-syn**dactyl-**ism**.

Not only is a word more easily remembered, spelled, and pronounced when its derivation is understood, but in many cases it contains its own definition, *e.g.*, *poly-chrom-emia*, much-color-blood, an increase in the amount of coloring matter in the blood.

To acquire a working knowledge of a Greek and Latin vocabulary one should concentrate on the root or key words. A root word contains a

definite idea which can usually be represented by a single English word and which persists through its various derivatives, although it may undergo considerable modification. For example, the Greek word **kineō**, *set in motion, move*, is the source of the following Greek and English derivatives: **kinēsis**, *movement*, hence, cinesi-ology; cinesi-meter, etc.; **kinēma**, *movement*, cinemat-ics, etc.; **kinētos**, *movable*, cineto-cyte, etc.; **kinētikos**, *of* or *for putting in motion*, cinet-ic, etc. **Kineō** contains the idea *movement*. Such key words should be learned and remembered.

As a preliminary to understanding the formation of compounds from Greek and Latin words, it might be well to review the following terms.

Inflection is the change in the form of a word to express different grammatical relations, *i.e.*, the declension of nouns, the conjugations of verbs, and the comparison of adjectives. For example, the adding of *s* to a noun to form a plural, or *-ed* to a verb to form the past tense is an inflection. So is the change of the Latin word *os, a bone*, to the genitive singular *ossis, of a bone*.

The stem is the part of an inflected word that remains after the inflectional additions have been removed. Thus, **vox**, *a voice*, genitive singular **voc-is**, *of a voice*, plural **voc-es**, *voices*. **Voc-** is the stem from which derivatives are formed, as voc-al.

A **root** is an element common to all the words of a group of kindred meaning, which remains after the formative additions (prefixes, suffixes, inflections, etc.) have been removed. For example, the root GEN, GN, is found in Greek, Latin, English, and other Indo-European languages with the sense of *beget, e.g.*, Greek **gen-os**, *birth*; Latin **gen-us**, *birth*; **prae-gn-ans**, *before birth, pregnant*; English **kin**.

The term "root word" is used loosely in this article to designate a Greek or Latin word which contains the root from which a medical word is derived.

A **compound word** is one that contains more than one stem. A **simple word** contains one stem.

Word formation. Many compound words have been taken directly from the Greek unchanged, as *ankyloblepharon*, adhesion of the eyelids. But most compounds are formed by taking two or more Greek or Latin words and connecting them by the same technique, in most cases, as the Greeks used. The first part, containing its stem only, is usually joined to the second part by a connecting vowel, especially when the second part begins with a consonant. In Greek the vowel is usually *o*, sometimes *i*, and rarely *a*. In Latin it is usually *i*, but sometimes *o*. When the first part of a compound ends in a vowel, and the second part begins with one, the vowel-ending of the first part disappears, *e.g., chol-uria*, from G. *cholē* + *ouron*.

A correctly formed compound word ideally should be composed of words of the same language, whether Latin or Greek. When it contains elements of different languages, it is called a hybrid. Chemical compound words are sometimes formed very irregularly. They are often hybrid and greatly abbreviated, *e.g.*, amyl from *am*(ylon) + (h)*yl*(ē), and *formaldehyde* from *form*(ic acid) + *al*(cohol) + *dehyd*(rogenatum).

Prefixes. When a preposition or adverb, prefixed to a Greek or Latin word, ends in a consonant, and the main word begins with a consonant, the final letter of the prefix undergoes certain changes. Thus final *n* becomes *l* before a following *l*, *e.g.*, syllogism [G. *syn* + *logos*], illusion [L. *in* + *ludo*]; it becomes *m* before a labial (b, m, p, ph), *e.g., em*phasis [G. *en* + *phasis*], impel [L. *in* + *pello*]; before *s* it is usually dropped, *e.g.*, systole [G. *syn* + *stellō*].

In Latin, the final consonants of the prepositions *ad* and *ob* are often changed to the same letter as that which follows, *e.g.*, accept [*ad* + *capio*], afferent [*ad* + *fero*], assume [*ad* + *sumo*], occiput [*ob* + *caput*], oppress [*ob* + *premo*, pp. *pressus*]. This change is called assimilation.

In Greek the final vowel of a preposition is dropped before a following vowel, *e.g., epencephalon* [*epi* + *enkephalos*], *ephemeral* [*epi* + *hēmera*], and *cathode* [*kathodos*, from *kata* + *hodos*]. This change is called elision. It does not usually apply, however, to *peri* and *anti*. See also list of G. and L. preposition and adverb prefixes, p. xlvi.

Inflections. It is essential that a few of the inflections should be learned. They are as follows:

(a) The genitive singular of some of the Greek and Latin nouns. This is necessary when the nominative case, the form by which the word is known, does not contain the complete stem from which derivatives are formed, *e.g., sōma*, gen. *sōmat-os, a body; somat-* is used as a base upon which words are built, *somat-o-plasm, psycho-somat-ic*, etc. In other nouns, such as *capill-us*, gen. *capill-i, the hair*, the stem or base from which words are built is contained equally in the nominative and genitive cases.

(b) The past participle passive (usually desig-

nated by the abbreviation *pp.*) of Latin verbs, and the future of Greek verbs, when they contain the stem from which derivatives are formed, *e.g.* L. *solvo, set free,* pp. *solut-us, having been set free.* Hence the English derivative, *solut-ion,* etc. The Greek *klaō, break,* fut. *klasō,* hence *klasis, a breaking, a fracture,* and the English derivatives, *arthro-clasis, ana-clasis,* etc.

(c) The genitive singular and the nominative plural of Greek and Latin nouns when these inflections are used in medical terminology; as *caput, a head,* gen. *capitis,* pl. *capita.* Many Latin words, and Greek occasionally, are so used. Greek words are often taken into the medical vocabulary and given Latin endings. Words ending in *-os* are given the Latin ending *-us.* Those ending in *-on* are given the Latin ending *-um, e.g., ophthalmos, ophthalmus; kranion, cranium.*

(d) The changes in the endings of Latin adjectives to denote gender and number. Latin nouns that have become part of the medical vocabulary are occasionally modified by adjectives. These agree with the noun grammatically. The form usually met with is the adjective ending in *-us,* feminine *-a,* neuter, *-um* (plural *-i, -ae, -a); e.g., deciduus, -a, -um, falling down; decidua* (*membrana* understood) *the altered mucous membrane* of the pregnant uterus.

The Greek alphabet. A special effort should be made to learn the Greek alphabet. A Greek word seems to have a personality which it loses when transliterated, and it loses at the same time some of the power to impress itself upon the memory.

THE GREEK ALPHABET

Letters Capital	Small	Names of Letters	Sound Value
Α	α	alpha	a
Β	β	bēta	b
Γ	γ	gamma	g (hard)
Δ	δ	delta	d
Ε	ε	epsīlon	ĕ
Ζ	ζ	zēta	z
Η	η	ēta	ē
Θ	θ	thēta	th
Ι	ι	ĭōta	i
Κ	κ	kappa	k
Λ	λ	lambda	l
Μ	μ	mu	m
Ν	ν	nu	n
Ξ	ξ	xi	x (= ks)
Ο	ο	ŏmīkron	ŏ
Π	π	pi	p
Ρ	ρ	rho	r
Σ	σ, ς	sigma	s
Τ	τ	tau	t
Υ	υ	upsilon	ü
Φ	φ	phi	ph
Χ	χ	chi	ch
Ψ	ψ	psi	ps
Ω	ω	omega	ō

Of the two signs for sigma, ς is used at the end of a word, σ everywhere else.

ρ at the beginning of a word is almost always represented in Eng. by *rh,* but has the sound of *r*; in combinations ρ is doubled after a short vowel and represented by *rrh, e.g., dia-rrhea, cata-rrh.*

The letter γ (gamma) has the sound of *n* before κ, γ, χ, ξ, *e.g., ἄγκυρα, an anchor, a hook*; ankyroid, *hook-like.*

In Eng. χ is pronounced like *k,* ψ like *ps.*

Diphthongs.

αι	represented in Eng. by ae, e	G. sound ai as in aisle
ει	by ei, i, e	ei as in rein
οι	by oe, i, e	oi as in coin
υι	by ui	we
αυ	by au	ou as in loud
ευ	by eu	eh-oo
ου	by u	ou as in group

In all other combinations each vowel is pronounced separately, as ἀήρ (*ah-ēr*) *air.*

Breathings. All vowels at the beginning of a word have either the "smooth breathing" (᾽) or the "rough breathing" (῾). The former is not pronounced; the latter corresponds to the English *h, e.g.,* ἔρως erōs (*love*); ἥρος hēros (*hero*). Initial ρ or υ always has the rough breathing.

Accents. There are three accents, acute (΄), grave (`), and circumflex (῀) and *every* word in Greek has an accent on it. In the pronunciation of Greek, however, we generally follow the Latin accentuation. According to this, words of two syllables are always accented on the first syllable. In words of three or more syllables, the last syllable but one is accented if it is long; if it is short, the syllable before that is accented. A syllable is long if it contains a diphthong or long vowel, or any vowel if followed by two consonants or by *x* or *z.*

Transliteration. υ is usually represented in English by *y*; γ before κ, γ, χ, ξ by *n*; κ by *c* or *k*; ρ at the beginning of a word by *rh.* For diphthongs, see above.

When Greek words are shown in English letters instead of Greek, transliteration is more exact. Diphthongs are changed letter for letter; κ is always *k*; long ē and ō (eta and omega) are distinguished from short e and o (epsilon and omicron) by the long mark over the former. Other changes are as above.

The Latin alphabet is the same as the English except that it has no *w.*

Pronunciation. The vowels **a, e, i, o, u, y,** are pronounced as follows: **ā** as in *father,* **ă** as in

idea; **ē** as in *they*, **ĕ** as in *net*; **ī** as in *machine*, **ĭ** as in *sit*; **ō** as in *tone*, **ŏ** as in *obey*; **ū** as in *rule*, **ŭ** as in *pull*; **y** French *u*.

The diphthongs are pronounced thus: **au** like *ou* in *house*; **ae** like *ai* in *aisle*; **oe** like *oi* in *spoil*; **ui** like *we*; **eu** as *eh-oo*.

The consonants are pronounced as in English, except for the following: **c** always as *k*; **g** always hard as in *get*; **s** as in *sin*, never as in *ease*; **v** like *w*.

DIRECTIONS FOR USE OF ROOT WORD LIST

In the following list of the more important Greek and Latin words, from which medical terminology is derived, their meanings are given much more fully than is possible in the dictionary proper. There the root word sometimes recurs frequently in its various derivatives and, in cases where the word has several apparently disconnected meanings, the one most applicable to its derivative has, of necessity, to be given.

The fundamental meaning is given first (and this is the most important to learn) and its other meanings are given in their chronological order of development. This usually shows the connection between the different meanings.

Where practical, the words from the same root are grouped under a heading, which is printed in **CAPITAL** letters. Under this group of letters or heading are placed only the derivatives of the same root, although they may be either Greek or Latin. The heading usually represents the smallest formation of letters that are common to the derivatives under it and will distinguish such derivatives from other words that are nearly similar in form. It does not correspond to what is known etymologically as a root although it sometimes coincides. In many cases this short combination of letters contains a definite meaning, which is peculiar to itself, and does not occur elsewhere in the medical vocabulary without this meaning, *e.g.*, ANDR-, *man*; CHLOR-, *greenness*; CHROM-, *color*; GAST-, *belly*.

Inflections are given where they are necessary to show the stem from which English words are derived, or when the inflected Greek or Latin word is used in medical terminology. The genitive singular and nominative plural of nouns are then given. Abbreviated forms are used as in dictionaries, *e.g.*, *acuo*, pp. *-utus*, for *acuo*, perfect participle passive *acutus; helmins, -inthos*, for *helmins*, genitive *helminthos; jejunus, -a, -um*, for *jejunus*, masculine, *jejuna*, feminine, *jejunum*, neuter.

All Greek words in the subheadings are followed by the Greek characters, and are so distinguished from the Latin subheadings. Greek or Latin words mentioned under a subheading are of the same language as that subheading unless otherwise indicated by G. or L.

The letters G. or L. in brackets immediately following a derivative indicate that it is a Greek or Latin word taken into the medical vocabulary in its exact form, *e.g.*, *acrimonia* [L]. See under ACER.

Short definitions of medical terms are given where they are necessary to explain the derivation.

The symbol >, the usual sign for *hence* in etymology, separates the classical words from the derivatives: if the Greek or Latin word is used in modern medicine, the classical usage of the word is on the left of this sign, the modern on the right. The words and meanings to the left of it belong to the classical period. If the word is a medieval or modern form it is so stated. (Abbreviations, Mediev. L. and Mod. L.)

Compound derivatives are separated by hyphens to show the part derived from the root word in the subheading. Wherever part of a word with a hyphen is given, the rest is to be supplied from the *last complete derivative preceding it.*

When a Greek or Latin word is used in medicine in its original *form* and *meaning*, the word and meaning are not repeated but are represented by the abbreviation *id.* (*idem, the same*) placed immediately after the symbol >. The initial letter followed by a period is sometimes used to designate the root word in the subheading instead of repeating it in full.

Semicolons are used to separate (1) the different meanings of a word, (2) the different derivatives of the same root word; commas to separate (1) the different shades of the same meaning, (2) words from their definitions.

Special uses of medical words by the ancient writers and physicians are indicated by the following abbreviations: H. (Hippocrates), Arist. (Aristotle), Cels. (Celsus), Aret. (Aretaeus), Gal. (Galenus).

When the derivation given in the dictionary does not require to be enlarged upon, and the root word is not needed for comparison with kindred or similar Greek or Latin words, it is omitted from the following list.

ROOT WORD LIST

AC-

AC, a root occurring in many G. and L. words, with sense of *sharpness.*

AKĒ (ἀκή), *a point.* AKAKIA (ἀκακία), *a thorny Egyptian tree.* > Acacia, *a genus of plants of the order Leguminosae;* acacia, *gum arabic.*

AKANTHA (ἄκανθα), *a thorn, prickle; the backbone* of a fish; *one of the spinous processes of the vertebrae.* Gal. > *the spinal column; the spinous process of a vertebra;* acantho-lysis, *a skin disease* characterized by atrophy of the prickle cell layer of the epidermis; -oma, *a cutaneous cancer;* acanth-esthesia; etc. trag-acanth, *a subgenus of leguminous plants.*

AKŌKĒ (ἀκωκή), *a point, edge.* > Acocanthera, *a genus of African plants,* from some species of which the natives obtained an *arrow* poison; antherin.

AKMĒ (ἀκμή), *a point, edge; the culminating point of anything; the crisis* of a disease. H. > acme, *a crisis;* acne (a probable corruption of acme); men-acme [mēn, *month*]; an-acmesis, *arrest of development,* [fr. akmēnos, *full-grown.*]; par-acme [G.] *a point at which the prime or crisis is past.*

AKROS (ἄκρος), *highest, topmost;* ntr. as noun AKRON (ἄκρον), *the highest* or *farthest point; peak, extremity.* > In composition usually refers to the extremities of the body; acroataxia; -cephalic; -cyanosis; etc. acrophobia, *fear of heights.* acrot-ic [fr. akrotēs *an extremity*]; acroter-ic [fr. akrōtērion, *any topmost part.*].

ACEO, *to be sour.* ACESCO, *pres. p.* -ENS -ENTIS, *to turn sour.* > acesc-ent; -ence.

ACETUM, -I, pl. -A, *sour wine; vinegar.* > acet-ous; -ic; -ate, *a salt of acetic acid;* -one; aceton-emia [acetone + G. haima, *blood.*]; -uria; etc. acet-yl, *a univalent radical;* acetyl-ation; -choline; etc.

ACIDUS, -A, -UM, *sour, tart.* > acid; acidum; acid-emia; acidi-fy; -ty; acidopenia; etc.

ACOR, a sour taste, sourness. > *gastric acidity.*

ACER, ACRIS, *sharp, pointed;* of the senses, *keen.* > acrid; -ine; acri-flavina; -monia [L.]

ACERBUS, -A, -UM, *harsh, bitter.* > acerb-ity [acerbitas]; ex-acerb-ation. [fr. exacerbo, pp. -atus, *exasperate.*]

ACERVUS, -I, *a multitude of objects rising in a heap; a multitude.* ACERVULUS, -I, dim. *a little heap.* > *brain-sand;* acervul-ine; -oma.

ACIES, -EI, *a sharp edge* or *point; keenness.* > *margin, edge.*

ACUO, pp. -UTUS, *to sharpen.* > acu-ity; acu-te; acuminate [fr. acumino, pp. -atus, *to sharpen*].

ACUS, *a needle.* > acu-filopressure; -puncture; -torsion; etc.

ACICULA, -AE, dim. *a small pin* for the head-dress. > *a slender needle-like structure.*

ACOU-

AKOUŌ (ἀκούω), to hear. > acou-meter; -lalion; -esthesia; acoustics. bary-ecoia [barys, *heavy*]; oxy-acoia [oxys, *sharp*].

AKOUSMA, -ATOS (ἄκουσμα), *something heard, a rumor.* > *an auditory hallucination;* acousmat-agnosia, *mind-deafness.*

ACT, AG-

AGŌ (ἄγω), *to lead, drive, carry.* AGŌGOS (ἀγωγός), *leading.* > -agogue, a suffix with sense of *leading away, drawing forth.* hydr.-agogue; lith-; galact-; etc.

AGŌN (ἀγών), *a gathering, assembly, contest.* > agon-al; -ist; -y [agōnia, *struggle, agony*]; ant-agon-ist.

AGRA (ἄγρα), *a hunting, catching.* > As suffix, *a seizure;* cardi-agra; pod- [G. *a trap for the feet, gout*].

AGO, pp. ACTUS, pres. p. AGENS, *to lead, drive; do, perform.* > act; -or [L.]; re-act.

ACTIO, -ONIS, *a doing, action.* > action; re-; in-.

ACTIVUS, -A, -UM, *active.* > re-active; activ-ate; -ator; etc.

AGITO, pp. -ATUS, *put in motion, drive; excite.* > agito-graphia; -phasia [G. phasis, *speech*].

AGMEN, -INIS, *an army being led; a multitude.* > *an aggregation;* agmin-ate; -ated, *clustered.*

COAGULUM, -I, pl. -A [fr. cogo, contracted fr. co-ago, *to drive together*], *a means of curdling, a coagulator; rennet:* hence COAGULO, pp. -ATUS, *to cause to curdle,* > coagulum, *a clot, a curd* (Mod. L.); coagul-ate; -ase, *a clotting enzyme;* -in.

PURGO, pp. -ATUS, *to cleanse, purify* [fr. purus + ago]. > purg-e; -ation; -ative.

ACTIN-

AKTIS, -TINOS (ἀκτίς) *a ray, beam.* > actin-ic; -ism; actino-chemistry; -genesis; -gram. Actino-myces, *Ray-fungus,* so called because of its radiating club-shaped roots; -mycosis; -scopy, *examination by x-rays.*

ADEN-

ADĒN, -ENOS (ἀδήν), *a gland.* H. > adenoid; adeno-cele; etc.

ADIP-

ADEPS, -IPIS, *the soft fat* of animals. > *lard;* in compounds *fat;* adipo-se, *relating to fat;* -cele; -genous; etc.

AER-

AĒR, AEROS (ἀήρ), *air.* > aer-endocardia; aero-bion; -pathy, *condition caused by pronounced change in atmospheric pressure.*

AER, AERIS, air. > aeri-al: -ferous; -form.

AE-, see E-

AG-, see ACT-

ALB-

ALBUS, *white.* > alba, *the white substance* of the brain; albo-ferrin; -lene; etc. albino [Pg.].

ALBEDO, -INIS, *whiteness.* > *light reflected from a surface.*

ALBIDUS, -A, -UM, *white.* > *whitish;* albid-uria.

ALBUGO, -INIS, *a white spot* in the eye. > id.; albugin-eous; tunica albugin-ea (Mod. L.); -itis; albugineo-tomy.

ALBUMEN, -INIS, *the white of an egg.* > id.; albumin, *a protein substance;* -ate, *derived albumin;* albumini-meter; albumino-rrhea; etc.

ALBURNUM, -I, *the white layer* between bark and wood of a tree. > id.

ALG-

ALGOS (ἄλγος), *pain.* > algo-genesis; -lagnia; etc. -algia, a suffix: neuralgia; my-: gastr-; etc.

ALGĒSIS (ἄλγησις) *sense of pain.* > algesi-a; -meter.

ALI-, ALL-

ALLOS (ἄλλος), *other, another.* > allo-centric; -esthesia; -some; etc. parallax [G.]; allergy; allasso-therapy [allassō, *to alter*].

ALLĒLŌN (ἀλλήλων), gen. pl. with no nom. case in use, *of one another, mutually, reciprocally.* > allelo-catalytic; -morph; etc.

ALIUS, *other, another;* hence ALIENUS, *belonging to another, strange;* in medic. refers to *strangeness* of the mind, *insane.* > alien; -ist; -ation. ab-alien-ated, *crazy, deranged.*

ALTER, *the other* (of two); ALTERNO, pp. -ATUS, *do by turns.* > alternation.

ALTERO, pp. -ATUS, (Mediev. L.) *to make other, alter.* > alter; -ant; -ation; -ative.

AMBLY-

AMBLYS (ἀμβλύς), *blunt, dull;* (metaph.) *dim, weak.* > ambly-opia; -chromatic, *staining faintly;* -acousia; -geustia.

AMEB-, AMOEB-

AMOIBĒ (ἀμοιβή), *payment in exchange; change, alteration.* > amoeba or ameba, *a protozoan of non-constant* or *changing form;* ameb-iasis; -ic; -uria; amebo-cyte; etc.

AMNI-

AMNION (ἀμνίον), *a bowl* in which the blood of victims was caught; *the membrane round the fetus.* fr. AMNOS (ἄμνος) *a lamb.* > *the innermost of the fetal membranes;* amnio-rrhea; -rrhexis; ARCH-, -otome, -oma.

AMYL-, see MYL-

ANC-, ANG-, ANK-

ANKOS (ἄγκος), *a bend* or *hollow.* ANKŌN (ἀγκών) *the bend of the arm; the elbow.* > ancon-eus; -itis; -ad, *toward the elbow;* -agra; etc.

ANKYLOS (ἀγκύλος) *curved, hooked.* > Ancylo-stoma, *a genus of Nematoda,* the *old-world hook-worm;* ancylostomiasis.

ANKYLĒ (ἀγκύλη) 1. *the bend in the arm or wrist;* 2. *a joint bent or stiffened by disease,* or (in compounds) *an abnormal adhesion of parts.* > ankylo-stoma, *lockjaw;* -sis; -chilia, *adhesion of the lips;* -proctia, *a stricture of the anus;* -blepharon, (Cels.).

ANKYRA (ἄγκυρα) *anchor, hook.* > ancyr-oid; etc.

ANGULUS, -I, *angle; corner.* > angle; angular.

ANDR-

ANĒR, ANDROS (ἀνήρ), a man. > andr-ase; -ecium [oikos, *a house*], *the stamens taken collectively* (bot.); andro-gen; -gyne; etc.

ANGI-

ANGEION (ἀγγεῖον), *a vessel* for holding liquid or dry substances; *a vessel of the body.* > In compounds, usually *a blood vessel;* angi-ectasia; angio-logy; -neurosis; etc. spor-angium, *a sac containing spores.*

ANISO-, see ISO-

ANK-, see ANC-

ANTH-

ANTHOS (ἄνθος), *a flower.* ANTHĒROS (ἀνθηρός) *blooming.* > anther, *pollen bearing part of a stamen;* -idium; -ozoid. acoc-anthera; heli-anth-i- ; etc.

ANTHEŌ (ἀνθέω), *to bloom;* hence ANTHĒSIS (ἄνθησις), *a flowering;* ANTHĒMA (ἄνθημα), usually in compounds, = anthos. > ex-anthesis [G. *a flowering; eruption*]; en-anthema; ex-anthem, *a skin eruption;* syn-anthem.

ANTHR-

ANTHRAX, -AKOS (ἄνθραξ), *charcoal, coal; a precious stone of dark red color, a carbuncle; a malignant pustule* or *carbuncle.* H and Gal. > *a carbuncle; an infectious disease* of sheep and cattle; anthrac-emia; -ine, *a hydrocarbon* obtained from coal tar: -osis, *a pulmonary coal-dust disease;* etc.

ANTR-

ANTRUM, -I, *a cave;* later *a cavity* of the body. fr. ANTRON (ἄντρον) *a cave.* > *any nearly closed cavity,* esp. one with bony walls; antr-al; -ectomy; antro-cele; -scope; etc.

AORT-

AORTĒ (ἀορτή), orig. (in pl.) *the lower extremities of the windpipe.* H.; later, *the artery which proceeds from the left ventricle of the heart.* Arist. > aorta; aort-al; -algia; aortolith; etc.

AP-, see HAP-

AQU-

AQUA, -AE, *water.* > aqu-eous; aqua-puncture, aqui-ferous; aquo-sity.

ARACH-

ARACHNĒ (ἀράχνη), *a spider; a spider's web.* > arachnodactyly, *a condition in which the fingers or toes are abnormally long;* -idea, *the middle fibrous membrane covering the brain;* -iditis.

ARCH-

ARCHĒ (ἀρχή), *beginning, origin.* > archebiosis, *spontaneous generation;* -genesis.

ARCHAIOS (ἀρχαῖος), *from the beginning, ancient.* > archaeo-cyte; etc.

ARCHI- or ARCHE- (ἀρχι- or ἀρχε-), inseparable prefix, *first, chief.* > archi-plasm; -sperm; etc.

ARCHOS (ἀρχός), *chief, leader; rectum, the anus.* H. > archo-ptosia, *prolapse of the rectum;* -rrhagia; etc.

ARG-

ARGOS (ἀργός), *shining, bright.* ARGYROS (ἄργυρος) *silver.* > argyr-ia, *skin discoloration due to administration of silver;* -iasis; argyro-phil, *staining readily with silver dyes.*

ARGENTUM, -I, *silver.* > argent-ine; -ous.

ARTER-

ARTĒRIA, -AE (from ἀρτηρία), 1. *the windpipe;* 2. *an artery* as distinct from a vein. If, as some writers stated, Hippocrates made this distinction, no use was made of the knowledge. Long after, the arteries continued to be regarded as airducts. > artery; arteri-agra; arterio-pathy; -le; etc.

ARTH-

ARTHRON (ἄρθρον) *a joint; a connecting word.* > arthr-itis [G.]; -oncus; arthro-pathy; -pod; an-arthria [G.]; brady-, *slowness of speech;* dys-; etc.

ARTHROŌ (ἀρθρόω), *fasten by a joint; utter distinctly, articulate;* ARTHROSIS (ἄρθρωσις), *a jointing; articulation* (of speech). > *a joint; degenerative affection of a j.;* cycl-arthrosis; di- [G.]; dys-, 1. *dyslalia,* 2. *malformation of a j.;* en- [G.].

ARTIC-

ARTICULUS, -I (dim. of artus, *a joint,* akin to G. arthron), *a small member connecting various parts* of the body; *a joint.* > *a joint; knuckle;* articul-ation; di-articular.

ASTER-, ASTRO-

ASTĒR, ASTEROS (ἀστήρ), *a star.* > *the stellar group surrounding the centrosome;* asteroid; -ion.

ASTRON (ἄστρον), *a star.* > astr-oid; astrosphere, *attraction sphere;* -static; -cyte, *one of the cells forming the neuroglia fibers.*

ASTH-

ASTHMA, -ATOS (ἆσθμα), *a short drawn breath, panting.* > asthma; asthmo-lysin; asthmat-ic; etc.

ASTRAG-

ASTRAGALOS (ἀστραγάλος), *one of the vertebrae; ball of the ankle joint.* > the astragalus, *the ankle bone;* astragalo-tibial; etc.

ATM-

ATMOS (ἀτμός), *steam, vapor.* > In compounds, usually *air, gas,* or *steam;* atmolysis; -meter; -sphere; etc.

ATMIS, -IDOS (ἀτμίς), *steam, vapor.* In compounds, usually *steam;* atmid-albumin, etc.

AUD-, AUR-, AUS-

AUDIO, pp. -ITUS, *to hear.* > audi-phone; audio-meter; audito-gnosis; etc.

AURIS, *the ear.* > aur-al; -ist; auri-scope; etc.

AURICULA, -AE (dim. of auris) *the external ear; the ear.* > auricle; auricul-ar; auriculo-cranial; etc.

AUSCULTO, pp -ATUS, *to listen to.* > auscult; -ate; *to listen to sounds* made by thoracic or abdominal viscera.

AUX-

AUXANŌ or AUXŌ (αὐξάνω, αὔξω), *increase in power, strengthen;* AUXĒ or AUXĒSIS (αὔξη) or αὔξησις), *growth, increase.* > auxanography; -logy; auxo-cardia; -hormone; -spore, etc. irid-auxesis; nephr-auxe; aux-etic [auxētikos].

BAC-

BACILLUS, gen. and pl. -I (dim. of baculus, *a staff*), *a small staff.* > *a rod-shaped structure; a microorganism;* bacillar; bacilli-form; bacillo-phobia; etc.

BACT-

BACTERIUM, -I, pl. -A, *a staff* [Mod. L. from BACTĒRION (βακτήριον), *a staff*]. > *a unicellular vegetable microorganism;* bacter-emia; bacterio-genous; etc.

BALAN-

BALANOS (βάλανος), *an acorn; glans penis; a suppository, pessary.* H. > balan-ism, *employment of a pessary;* balanorrhagia, *inflammation of the glans penis.*

BALL-, BEL-, BOL-

BALLŌ, fut. BALŌ (βάλλω) *to throw.* BOLĒ (βολή) *a throw.* > ball-ismus; ball-istics; belemn-oid [belemnon, βέλεμνον, *a dart*], *dart-shaped;* em-bolism, *obstruction of a blood vessel* [fr. em-ballō, *throw* or *put in*]; meta-bolism; ana-; bal-opticon, *an instrument for throwing the image of an opaque object on a screen;* cata-bolism [kata-bolē]; sym-bol [sym-bolon, *a tally, token, sign,* fr. sym-ballō, *put together*]; amphi-bolia [G.].

BAS-, BET-

BASIS (βάσις) *a going, a step; foot, base.* fr. BAINŌ (βαίνω), *to go.* > bas-e; basi-lysis; a-basia, *inability to walk;* ana-basis [G. *a going up*].

DIABĒTĒS (διαβήτης), *a compass* (from its outstretched

legs); *a siphon* (literally *a passer through*); *diabetes* (Aret); fr. DIABAINŌ (*διαβαίνω*) *to walk* or *stand with legs well apart; to pass through;* diabetes; diabet-ic; diabeto-genic; etc.

BATOS (*βατός*), *passable, accessible,* verbal adj. of BAINŌ, *to go.* > bato-phobia, *fear of passing* high objects or buildings; hypno-batic.

BIO-

BIOS (*βίος*), *life.* > bio-gen; -lytic; aero-bion; micro-be; amphi-bia; -bious; sym-bio-sis.

BLAST-

BLASTOS (*βλαστός*), *a sprout, shoot;* of animals, *the germ.* > blasto-derm; blast-ema [G. *a sprout*]; -oma; odonto-blast; osteo-; zoo-; etc.

BLEN-

BLENNA (*βλέννα*), *a thick mucous discharge.* H. > blenno-rrhea; etc.

BLEP-

BLEPŌ, fut. BLEPSŌ (*βλέπω*), *to see.* BLEPSIS (*βλέψις*), sight. > blepso-pathia; a-blepsy.

BLEPHARON (*βλέφαρον*), *an eyelid.* > blepharadenitis; blephero-pachynsis, *thickening of an eyelid;* ankylo-blepharon [G.], *adhesion of the eyelids;* etc.

BOL-, see BALL-

BRACHI-

BRACHIŌN (*βραχίων*), *arm;* L. BRACHIUM, I, pl A. > brachi-algia; brachio-cyllosis *curvature of the humerus;* etc.

BRACHY-

BRACHYS (*βραχύς*), *short.* > brachy-odont; -podous; etc.

BRANCH-

BRANCHION (*βράγχιον*), *a fin.* pl. -IA, *gills;* L. BRANCHIA, *gills.* > branchi-al, see dict.; branchiogenic; etc.

BRONCH-

BRONCHOS (*βρόγχος*), *the trachea, the windpipe,* H. > bronchus [Mod. L.] *one of the primary divisions of the trachea;* bronchitis; broncho-typhoid; etc.

BRONCHION (*βρόγχιον*), dim. of bronchos, usually in the pl. BRONCHIA (*βρόγχια*), *the bronchial tubes.* > id.; bronchi-al; bronchio-genic; etc. BRONCHIOLUS, Mod. L. dim. of bronchia. > *one of the finer subdivisions of the bronchial tubes;* bronchiol-itis.

BUB-

BOUBŌN (*βουβών*), *the groin; a swelling in the groin, a bubo.* H. > bubo, *an enlargement of a lymphatic gland;* bubon-ic; bubono-cele; etc.

BUCC-

BUCCA, *the cheek* (the part around the mouth; distinguished from GENAE, the cheeks, the side of the face, and from MALA, the upper part of the cheeks under the eyes). > bucca-l, *relating to the cheeks or mouth;* bucci-lingual; etc.

BURS-

BURSA, -AE [mediev. L.], *a purse.* fr. BYRSA (*βύρσα*), *a skin, hide.* > In anat. and zool. *a pouch* or *sac;* burso-lith, *a calculus formed in a bursa;* etc. BURSULA, -AE (Mod. L. dim. of bursa). > *a small pouch* or *sac.*

CAD-, CID

CADO, pp. CASUS, *to fall.* > cad-ucous, *falling early* (bot.); case; casualty; recidivation, *relapse;* [fr. recidivus, *falling back,* fr. re-cido, *fall back*]; stilli-cidium [L. fr. stilla, *a drop*]; etc.

INCIDO, *to fall into* or *upon; happen.* > incidence; incidental. semel-incident [semel, *once.*].

DECIDO, *to fall down* or *off.* DECIDUUS, -A, -UM, *falling off.* > deciduous (of leaves); decidua (fem. adj. sc. membrana) *the altered mucous membrane* of the pregnant uterus.

CADAVER, -ERIS, *corpse.* > id.

CALL-

CALLUS, -I, *hard, thick skin; callousness, insensibility.* > callosity; calli-section, *vivisection of an anesthetized animal;* callositas [L.]; callosal; callous.

CALX-1, CALCA-

CALX, CALCIS, *the heel.* > id.

CALCANEUM, -I, pl. -A, *the heel;* a rare form of *calx, calcis.* > *the heel bone;* the os calcis; calcane-odynia; calcaneo-scaphoid; etc.

CALCAR, *a spur.* > *a spurlike process;* calcarine.

CALX-2, CALCI-, CALCO-

CALX, CALCIS, *limestone, lime.* (this word and calx above are from different roots.) > calci-c; -penia; -um; calco-phorous; -pherite; etc.

CALCARIUS, *pertaining to lime.* > calcar-eous; calcari-uria, *excretion of lime salts in urine.*

CALCULUS, *a pebble; a stone* in the bladder or kidneys. > *a concretion* formed in any part of the body; calcul-ous; -ary.

CAMP-

KAMPTŌ, fut. KAMPSŌ (*κάμπτω, κάμψω*), *to bend;* KAMPTOS (*κάμπτος*), *flexible.* > campto-cormia, *a condition characterized by flexion of the trunk* [kormos, *trunk of a tree*]; -dactylia; ana-campt-ics, *the study of reflection* [ana-kamptō, *to bend convexly*]; etc.

KAMPSIS (*κάμψις*), *a bending.* > gony-campsis; osteo-campsia; etc.

CANC-

CANCER, -CRI or -CERI, *a crab; a malignant tumor, cancer.* > cancer; -ation; -ine; -ism; cancero-myces; cancro-logy; etc. canker; chancre [through Fr.].

CAP-1, CEP-, CIP-

CAPUT, -ITIS *the head.* > id.; *the expanded extremity of a structure;* capit-ate; -ular; capito-pedal; etc. jani-ceps; multi-.

CAPITELLUM and CAPITULUM (dim). > *small head* or *headlike structure.*

ANCEPS, -CIPITIS (an for ambi-) *two-headed; two-fold.* > ancipit-al; -ate; -ous.

BICEPS, -CIPITIS, *two-headed; divided into two parts.* > *having two heads;* the biceps; bicipit-al.

TRICEPS, -CIPITIS, *three-headed; threefold.* > id., applied to two muscles, t. brachii and t. surae.

PRAECEPS, -CIPITIS, *headforemost, headlong,* hence PRAECIPITO, pp. -ATUS, *to cast down headlong.* > precipitat-e; precipit-ant; -atim; -in.

SINCIPUT, -PITIS, *half a head; the brain; the head* (sin- for semi-). > *the front part of the head;* sincipit-al.

OCCIPUT, -PITIS (obc-), *the back of the head.* > id.; occipit-al; occipito-mental. centri-ciput (formed on analogy of the two preceding words from centrum and caput), *the central portion of the upper surface of the skull).*

CAPILLUS, -I (a dim. form akin to caput), *the hair* of the head; *the fibers* of plants. > id.

CAPILLARIS, *pertaining to the hair.* > capillary, as adj. *hairlike;* as noun, *a minute blood vessel.* capillar-ectasia; capilario-motor; etc.

CAPILLITIUM, *the hair* collectively. > *a network of protoplasmic threads* in a spore capsule.

CAP-2, CEPT-, CIP-

CAPIO, pp. CAPTUS, *to seize, take.* > captation, *a seizing,* the first *stage* of hypnotism [fr. capto, pp. -atus, *seize, snatch.*]; cept-or bi-ceptor; chemo-; contraceptive; cap, abbrev. for capiat, *let him take.*

RECIPIO, pp. -CEPTUS, *take back, receive.* > recept-or; recipio-motor; etc.

ACCIPIO, pp. -CEPTUS, *accept.* > accept-or, *a substance that receives or absorbs another.* So from CONCIPIO, *to take hold of* are derived concept; concept-ion; -ive; from INCIPIO, *take in hand, begin,* comes incipient; fr. PERCIPIO, *to take wholly, perceive,* come percept; imperception; etc.

CARB-

CARBO, -ONIS, *coal, charcoal.* > carbon; carb-ide; -olic [oleum, *oil*]; carbo-cyclic; etc.

CARBUNCULUS (dim. of carbo), *a small coal; a kind of tumor.* > carbuncle; carbuncul-ar; -osis.

CARC-

KARKINOS (*καρκίνος*), *a crab; ulcer, cancer.* H. > In compounds, cancer; carcinectomy; -elcosis, carcino-gen; etc.

CARD-

KARDIA (*καρδία*), *heart; mind; the cardiac extremity of the*

stomach. H. > cardia, *the heart; the esophageal orifice of the stomach;* cardi-ac; -agra; -ant; cardio-kinetic; peri-cardi-um [G. perikardion]; etc.

CAROT-

KARŌTIDES, -ŌN (καρωτίδες, -ων), *the great arteries of the neck,* fr. KAROŌ, *to plunge into heavy sleep;* so called from a belief that sleep was caused by increased flow of blood through these arteries. Gal. > the carotids; carot-ic; carotico-tympanic; etc.

CARP-1

KARPOS (καρπός), *the joint of the hand and the arm; the wrist.* > carpus, -i, (Mod. L.), *the wrist;* carp-al; -itis; -ectomy; carpo-ptosia; meta-carpus; etc.

CARP-2

KARPOS (καρπός), *fruit.* > carp-el, *a simple pistil* or *one of the members* composing a compound pistil; carpo-gonium; peri-carp.

CAUS-, CAUT-

KAIŌ, fut. KAUSŌ (καίω, καύσω), *to set on fire, burn;* of surgeons, *to cauterize.* H. KAUSTIKOS (καυστικός) *capable of burning, corrosive.* > caustic; causticum.

KAUTĒR (καυτήρ), *a branding iron.* > cauter; -y; -ize.

CELE-

KĒLĒ (κήλη), *a tumor, a rupture.* H. > celectome, *an instrument for obtaining tumor tissue;* celo-logy. -cele, a suffix denoting *a swelling* or *hernia,* as hydrocele. Compare -cele in the following.

CELI-, COELI-, CELO

KOILOS (κοῖλος), *hollow;* KOILIA (κοιλία), *the large hollow* of the body, *the belly; any hollow* or *cavity.* > In compounds, *the abdomen;* celi- or coeli-ac; -algia; celio- or coelioscopy; celo- or coelo-zoic, *inhabiting any of the cavities of the body* (of protozoa). -cele, a suffix denoting *a cavity,* as mesocele. Compare with the preceding CELE-.

CELL-

CELLA, -AE, *a storeroom, a chamber, closet.* > a cell, *a minute structure.* CELLULA, -AE (dim. of cella), *a small storeroom.* > *a minute* cell; cellul-e; -ar; cellulo-neuritis; etc.

CENT-, CEST-

KENTEŌ, fut. -ĒSŌ (κεντέω, -ήσω), *prick, stab;* hence, KENTĒSIS (κέντησις), *a pricking.* > centesis, *puncture* of a cavity; cardio-centesis; cerato-, *puncture of the cornea;* entero-; etc.

KENTRON (κέντρον), *any sharp point; the stationary point* of a pair of compasses; *the center* of a circle. > centro-phose; -cyte; -plasm; ec-centr-ic; etc.

KESTOS (κεστός), *stitched, embroidered;* as noun, *a girdle.* > Cestod-a; -es, *an order of flatworms, the tapeworms;* -iasis; Centro-cestus, *a genus of flukes.*

CENTRUM, -I, *center* [fr. G. kentron]. > center; centr-ad; centri-ciput; -fuge; -petal [fr. peto, *to seek*]; etc.

CEPH-

KEPHALĒ (κεφαλή), *head.* > cephal-ad; -emia; -ic; cephalo-cele; -tripsy; etc.

ENKEPHALOS, -ON (ἐγκέφαλος, -ον), *within the head,* as noun, ENKEPHALOS, *the brain.* > encephalon, *brain;* encephal-algia; -atrophy; -itis; encephalo-cele; etc.

CERAS-, CRAS-

KERANNYMI, fut. KERASŌ (κεράννυμι, κεράσω), *mix, mingle;* hence, KERASTOS (κεραστός), *mixed, mingled.* > cyto-cerastic; lympho-cerastism.

KRASIS (κρᾶσις), *a mixing, blending; temperament* (of mind or body). > crasis, *constitution, temperament;* dyscrasia; galacto-; ortho-; idiosyn-crasy.

CERAT-, KERAT-

KERAS, -ATOS (κέρας), *the horn* of an animal; *horn* (a material). > In compounds, *a horny structure, material,* or *process,* as the cornea or the epidermis; cerato-dermatitis; -centesis; kerat-in; kerato-malacia; etc.

CERV-

CERVIX, -ICIS, the neck. > *the neck; any necklike structure;* cervic-al; -ectomy, *amputation of cervix uteri;* cervici-plex; cervico-lingual; etc.

CES-, CAES-, CID-, CIS-

CAEDO, pp. CAESUS, *to strike, cut; kill.* > caes-arian section (some derive this word from Julius Caesar, as he is said to have been delivered in this way); caesaro-tomy. amebicide; insecti-; etc.

INCIDO, pp. -CISUS, *to cut into.* > incision; -or; -ura [L.].

CIRCUMCIDO, pp. -CISUS, *to cut around.* > circumcision.

CHEM-

CHĒMIA or CHĒMEIA (χημία or χημεία), *the Egyptian art,* the art of transmuting the baser metals into gold, fr. Chēmia, *the land of black earth.* The Arabs borrowed the word from the Greek and called the art alchemy [Ar. al, *the* + chēmia; others derive the word fr. Ar. al, *the,* + G. chymeia, *a pouring,* fr. cheō, *to pour,* cf. CHY-] > chem-istry; -ical; chemo-taxis; chemico-cautery; etc.

CHIR-, CHEIR-

CHEIR (χείρ), *the hand.* > Chir-acanthus, *a genus of nematoid worms;* chir-algia; -apsia (hapsis, *a touching*): chirognostic; -podist; etc.

CHEIROURGIA (χειρουργία), *a working by hand; a handicraft* or *art;* the practice of surgery as opposed to medicine, fr. ergon (ἔργον) work. H. > chirurgeon; surgeon (abbrev. of preceding).

CHLOR-

CHLŌROS (χλωρός), *green, light-green* (like young grass), *yellowish-green.* > chloas-ma [fr. chloazō (χλοάζω), *be* or *become green*]; chlor-al; -ine; chloro-form; -ma; -sis; etc.

CHOL-

CHOLĒ (χολή), *gall, bile,* pl. CHOLAI (χολαί), *the gall bladder.* > chol-uria; chole-stasia; -sterol (stereos, στερεός *solid*) with various compounds: cholesterol-emia; -uria; etc. chol-eresis (a word artificially formed on a Greek model).

CHOLERA (χολέρα), "*a disease* in which the humors of the body are violently discharged by vomiting and the stool." H. > cholera; -ization; choleri-genous; etc.

CHOLĒDOCHOS (χοληδόχος), *containing bile,* as noun, (sc. kystos, *bladder*) the gall bladder, Gal. [fr. dochos, *containing*]. > choledochus, choledoch, *the common bile-duct;* choledocho-plasty; -rraphy; etc.

CHOND-

CHONDROS (χόνδρος), *groats of wheat or spelt; a mucilaginous drink made from groats; gristle* or *cartilage.* H. > chondrus, 1. *cartilage,* 2. *a genus of seaweeds,* 3. *Irish moss;* chondr-al; chondri-gen; chondro-costal; Chondro-myces, *a genus of bacteria,* so called from its gelatinous cysts.

HYPOCHONDRION (ὑποχόνδριον), *the soft part of the body below the cartilage at the breast-bone and above the navel.* H. and Cels. > hypochondria (because imaginary diseases are often seated in this region).

CHORD-, CORD-

CHORDĒ (χορδή), *guts, tripe; a string of guts; string* of a lyre or harp. > In compounds any chorda or cord, esp. the notochord; chordo-pexy; chord-itis; -tomy; etc. cephalochord; noto- [nōtos, *the back*].

CHORDA, gen. and pl. -AE; Mediev. L. CORDA [fr. G. chordē], *a string* or *cord made from gut; a rope, cord.* > *a tendon; a stringlike structure;* cord; chord-al; etc.

CHORI-

CHORION (χόριον), *the membrane that encloses the fetus, afterbirth,* H.; *any intestinal membrane.* > *the outermost o the fetal envelopes;* in compounds chorion- and chorio- refer also to other membranes, as the *middle coat of the eye, the true skin,* etc. chorion-itis; chorio-retinitis.

CHORIOEIDĒS (χοριοειδής), *like the afterbirth;* c. chitōn, "*the coat like an afterbirth,*" *the chorioid coat* of the eye. Gal. > chorioidea; chorioid or choroid [the latter form comes fr. choroeidēs, an ancient copyist's error for chorioeidēs].

CHROM-, CHROS-

CHRŌMA, -ATOS (χρῶμα), *the surface* of the body; *the complexion; color.* fr. CHRŌZŌ (χρώζω) *to touch the surface of the body; to tinge, stain.* > In many compounds, with sense