of the section 5 mi east of Big Sandy, the writers found the following brackish-water pelecypods (identified by W. A. Cobban): *Anomia* sp. (aff. *A. micronema* Meek), *Anomia* sp. (aff. *A. raetiformis* Meek), *Corbula subtrigonalis* Meek and Hayden. These species are said to occur in both the Colorado and the Montana groups, and are therefore not strictly indicative of Fox Hills age. In 1951, Brown, accompanied by Lindvall, found a large leg bone of an unidentified dinosaur in a gray sandstone 50′ above the shales containing the mollusks. This sandstone is overlain by 10′ of bentonitic clay, dark-gray to purplish in hue—a condition that is matched in the section at the Nielsen ranch, except that the sandstone there is apparently unfossiliferous.

As the Fox Hills sandstone is not known to contain dinosaurian remains, and as the leg bone is from strata that are definitely not identifiable with the local dinosaur-bearing Judith River formation, the beds in question must be later than Fox Hills and earlier than Fort Union—that is, they must be in the Hell Creek formation. This assignment is confirmed by the sequence at the Nielsen ranch, in which the dark bentonitic clay is conformably overlain by relatively unfossiliferous brownish sandstones and shales distributed upward to the first thin coal seam that marks the base of the Fort Union formation. Shales above this and the succeeding coals yield the characteristic Paleocene flora of the Rocky Mountains and Plains region.

Inasmuch as the strata between the sandstone in the Hell Creek and the dark Bearpaw shale are seemingly conformable, they must contain equivalents of the Fox Hills sandstone. Thus it is probable that the mollusk-bearing shale may be contemporaneous with some part of the Fox Hills sandstone farther east in Montana and the Dakotas, and some or all of the underlying sandstone and shale may be classified with the Bearpaw shale.

With this tentative identification of Fox Hills and Hell Creek strata in the somewhat isolated Bearpaw Mountains region the geologic column for the late Cretaceous and early Tertiary fills out normally and corresponds in general to the established sequence in adjacent regions to the east and southeast.

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Comments and Communications

World Medical Congress

The President and the International Secretariat of the World Medical Congress for the Study of Present Living Conditions, which was to be held in Montecatini, Italy, on Oct. 16–18 of last year, regret to announce that the Italian Government vetoed this congress. The interdiction was issued at the last moment without any explanation, when preparations were completed and when all the reports were already written.

It is impossible to believe that the Italian government should have any objection concerning the members of the congress, since these include many famous personalities of the medical profession of 34 countries. Hundreds of doctors, in all parts of the world, have manifested their interest and have held many preparatory meetings to discuss beforehand the various points of the program. The scientific standard of the reports, contributed by eminent personalities, is very high.

All those who have taken part in the preparatory work know that the congress has no other aim than that of being an international medical meeting. They can testify that they have always had complete freedom in the choice of subject matter and the presentation of their contributions to the congress.

This interdiction is a blow to the exchange of scientific information among the different countries of the world. It will cause surprise and dismay among all scientific workers.

For this reason and because of the universal interest in the congress, the International Secretariat feels itself bound to proceed with the organization of the congress, which will be held as soon as possible, in no case later than April 1953. Further news about the new arrangements will be issued later.

The International Secretariat urges all doctors to support the World Medical Congress for the Study of Present Living Conditions and to proceed with the preparatory work in order to secure its success.

Pietro Verga, *the President*
Claudio Massenti
For the International Secretariat
Rome, Italy

Logic and Language in Medical Writing

Good books are available on scientific writing in general and on medical writing in particular. Apparently not enough emphasis, however, has been given to the process that should precede the writing and follow the finding of the substratum of the writing. This process is careful and thorough logical thinking.

In an article on Chicago's philosopher Mortimer Adler (*Time* [Mar. 17, 1952]) we read: "Like a Socratic traveling salesman, he has moved up and down the country, talking to the young and causing

acute attacks of thought in thousands of college students who scarcely ever thought of thinking before." Although thorough thinking does not seem to be one of the popular functions of human beings, acute attacks of thinking should at least precede any kind of scientific writing, and proper language should bear witness to the thinking process. This is lacking in statements such as "preventive geriatrics may well be started in patients no older than 20," or "the patient had had acute retention for twenty years and had been forced to catheterize himself daily." If preventive geriatrics should start at 20, why should not preventive pediatrics start before conception? It is only a matter of semantics to call the latter eugenics and the first plain medicine. When an author of a recent article in the *Journal of the American Medical Association* distinguished between a primarily "physiological" and a primarily psychological illness, he forgot that an illness is never physiological but always pathological.

Objectionable wording may result from lack of logic or linguistic knowledge. The first is well illustrated by a reviewer's criticism of Russell Brain's book on *Diseases of the Nervous System* (*J. Am. Med. Assoc.*, **148**, 1455 [1952]). The reviewer takes exception to the term "pseudobulbar palsy" because there is nothing "pseudo" about this palsy. He overlooks the fact that "pseudo" in this usage refers to bulbar and not to palsy; hence the correct and generally used term "pseudobulbar palsy." The reviewer overlooks the fact also that spastic spinal palsy is not called "pseudospinal palsy" because this palsy *is* caused by a spinal lesion, as contrasted with "pseudobulbar palsy" which is *not* caused by a bulbar lesion.

Lack of linguistic knowledge is encountered in many medical papers. It is shocking to read that the word "allergy" should have been derived by von Pirquet from the Greek word "ergon" meaning "work," plus an alpha privative. Allergy actually is derived from *allos* ("different") and *ergon* ("work," "action"). *Afibrinogenopenia* literally translated means exactly the opposite of what the author had in mind —that is, it means that there is *no* diminution of fibrinogen.

If anyone criticizes an author's language, he should be quite sure that his criticism is justified. In the anonymous review of Brain's book, the reviewer, in discussing the terms "paresthesiae" and "dysesthesiae," says "para means beside or added to" and "paresthesiae therefore imply an external stimulus." Far from it. *Para* is a Greek prefix denoting a departure from the normal, and *esthesia* (or, more correctly, "aesthesia") designates sensations of any kind, not merely those produced by external stimuli. For example, kinesthesia is not produced by external stimuli. The reviewer rejects the term "muscle tone" instead of "muscle tonus." Using the word "tone" instead of "tonus" complies, however, with the usage in all textbooks and with the definition in Webster's Dictionary. In the reviewer's opinion there cannot be an "antibrachium," only an "antebrachium." Both terms, "antibrachium" and "antebrachium," are correct and are used interchangeably. Antibrachium is derived from Greek, and in this connection *anti* means "opposed to." Antebrachium is derived from Latin and means, literally, "forearm." The Basel anatomical nomenclature adopted the Greek version, "antibrachium."

The use of eponyms is unquestionably overdone. What name should we prefer, however, to the term "parkinsonism," to which the reviewer takes exception? Every student of medicine should be familiar with the term "Parkinson's disease," designating paralysis agitans, just as Babinski's name should remain attached to the most important reflex indicating a lesion of the pyramidal tract. These and similar eponyms are at least a minimum requirement for a knowledge of modern medical history. Why should the name of outstanding clinicians be forgotten if no one takes exception to much more offensive terminology, such as *Klebsiella pneumoniae, Escherichia coli,* or *Neisseria gonorrhoeae?* Purification of technical terminology should start by rejecting such horrible neologisms as "rubroblasts" or "rubrocytes," and should once and for all eliminate such frequent linguistic offenses as "pruritis" (pruritus), "lupus erythematosis" (erythematosus), or "lymphogranuloma venerae" (venereum). The other day I even read about a "hemorrhagia per ano" (anum) and about something ad "voluminem" (volumen). The man who coined the word "appestat" to designate the cerebral center regulating appetite (analogous to thermostat), or the one who used the term "pie syndrome" in the title of an article concerned with the syndrome of pulmonary infiltration with eosinophils has committed an inexcusable linguistic offense.

One might wonder at the motive for the unduly widespread tendency to use abbreviations in practically every field of verbal communications. Many people do not even know what some abbreviations they use stand for. Saving time cannot always be the motive.[1]

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AS MY contribution to the discussion of semantic confusion (SCIENCE, **115**, 633; **116**, 487 [1952]), I should like to mention the group of words used in referring to the pregnant woman and her unborn child, as they relate to the birth process itself—"prenatal, antenatal, prepartum, antepartum"—often used interchangeably with reference either to the woman or to the child.

The child by long usage is associated with nativity, but only the mother can give birth. Hence, restriction of the term "prenatal" or "antenatal" to refer to the unborn child and "prepartum" or "antepartum" to the gravid or preparturient woman would be in the direction of clarity. Similarly, postnatal care would

[1] Bibliography has been omitted deliberately, for obvious reasons. It may be requested from the author.

be concerned, as is neonatal, with the child, and postpartum with the mother.

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A Chamber for Observations on Living Larvae of Anopheline Mosquitoes

IN CONDUCTING certain physiological and toxicological studies on the first two instars of *Anopheles quadrimaculatus* Say, the larvae had to be kept relatively quiescent and observed with a minimum of disturbance for long periods of time under high magnification. In addition, in some experiments, control of the temperature was important.

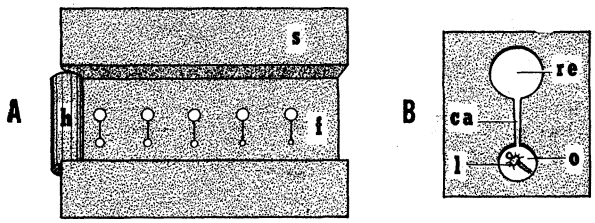

FIG. 1. A, aluminum insert (top view) which fits into an electric microscope stage incubator. B, enlargement of a portion of the floor of the insert. *f*, Floor of insert; *h*, case around thermometer of stage incubator; *s*, side arm supports of insert; *o*, observation cells; *ca*, connecting canal; *re*, reservoir; *l*, larva.

The problem was solved by the design of a simple chamber in which larvae are suspended in hanging drops of water or other test fluids. The chamber, shown in Fig. 1, is formed of two parts: (1) A metal insert that fits snugly into (2) an ordinary electric microscope stage incubator (manufactured by the Fisher Scientific Company). The insert (*A*), fashioned from an aluminum sheet 1 mm thick, is $75 \times 55 \times 12$ mm. One portion of the insert (*h*) encases the thermometer bulb of the Fisher stage incubator. A series of holes, 0.5–3.5 mm in diameter, is bored through the floor (*f*) of the insert to serve as observational cells (*o*) for larvae. Each of these is connected by a small canal (*ca*) (0.5 mm wide) to a hole 3 mm in diameter, which serves as a reservoir (*re*) for water or other test substances.

An ordinary medicine dropper with a narrowed tip is used to place larvae in the observation cell (*o*) and to fill the reservoir and the canal. Larvae tend to remain remarkably quiet within the hanging drops in the open observation cells. This arrangement permits detailed observations on intact organs of the larvae at magnifications of 400 diameters.

To prevent quick changes in temperature in studies where this is a critical factor, it is necessary to cover the assembled chamber. A plexiglass sheet was found suitable. Since this sheet tends to fog, it is necessary in some experiments to make a small opening in it in order to observe the larvae. When the cover is in use, larvae can be observed at 75 diameters with a dissecting microscope, but for higher magnifications with the compound microscope it is necessary to remove it.

This chamber, suitably modified if necessary, might profitably be used to study a number of problems pertaining to mosquito larvae and possibly to a number of other aquatic organisms.

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The Biological Activity of Mixtures of Lycomarasmin and Glutamic Acid, Glutamine Glutathione, or Cysteine

LYCOMARASMIN, isolated from culture filtrates of *Fusarium oxysporum* f. *lycopersici* by Clauson-Kaas, Plattner, and Gaumann (*1*), has been postulated to be an active toxin in *Fusarium* wilt of tomatoes. It is a dipeptide, and its structure has been determined by Woolley as N-(α-(α-hydroxypropionic acid))-glycylasparagine (*2*).

Strepogenin, a peptide of glutamic acid, augments the growth of *Lactobacillus casei*, as also do glutamine and glutathione (*3*). Because strepogenin reduces the toxicity of lycomarasmin to tomato cuttings, and lycomarasmin reduces the activity of strepogenin on *L. casei* (*3*), Woolley has suggested that lycomarasmin may be an inhibitory analogue of strepogenin (*3, 4*). On this basis one would expect glutamine and glutathione to reduce the toxicity of lycomarasmin to tomato cuttings; in fact, Albert has stated that the high cost of glutathione is all that prevents its use to control Fusarium wilt of tomatoes, said to be caused by the analogous polypeptide lycomarasmin (*5*).

Another suggestion for a lycomarasmin antidote comes from studies of the effect of patulin on living cells by Miescher (*6*). Miescher has pointed out that patulin, being inactivated by compounds containing free SH groups, probably reacts with essential metabolites containing SH groups and with SH-containing enzymes. Patulin affects cells somewhat similarly to lycomarasmin (*7*). Glutathione is an essential metabolite in many cells and, if lycomarasmin should be toxic because of its reactivity with SH groups, it will be inactivated by both glutathione and cysteine.

Either of these hypotheses, if correct, might lead to control of any portion of the syndrome of Fusarium wilt of tomatoes, which is caused by lycomarasmin; therefore, the authors investigated the ability of glutamic acid, glutamine, glutathione, and cysteine to reduce the toxicity to tomato cuttings of lycomarasmin in the presence of iron, which potentiates the toxicity of lycomarasmin (*1*).

Lycomarasmin[1] was mixed with ferrous or ferric sulfate and with water, glutamic acid, glutamine, glutathione, or cysteine. The concentration of each component of the mixture was 0.001 *M*. A small tomato

[1] Crystalline lycomarasmin was obtained through the kindness of Ernst Gaumann.