DR. E. E. SOUTHARD, of the Harvard Medical School and the Massachusetts State Psychopathic Hospital, gave a lecture on May 14 at the University of Chicago on "War neuroses after the war."

THE Ramsay Memorial Fund, founded under the presidency of Mr. Asquith to raise £100,000 for Ramsay Memorial Fellowships in chemical science, and a laboratory of engineering chemistry at University College, London, has made considerable progress in recent months. Subscriptions and promises to date amount to £32,600. The latest donations include: M. Eugène Schneider, £500; Lady Durning Lawrence, £100 (second donation); Sir G. H. Kenrick, £100; Académie des Sciences de l'Institut de France (of which Sir William Ramsay was a corresponding member), £80; the Fertilizer Manufacturers' Association, £52 10 s.; his Highness the Maharaja Dhiraj of Patiala, £50. "Memorials of the Life and Work of Sir William Ramsay," by Sir William A. Tilden, will be published shortly by the Macmillans.

IN memory of Lieutenant William T. Fitzsimon, Kansas City, who was killed last September, when the German airplanes bombarded the Harvard University Hospital in France, the park commissioners of Kansas City have decided to erect a memorial in the form of a public drinking fountain which will bear an inscription relating the details of Dr. Fitzsimon's work and death.

CHARLES CHRISTOPHER TROWBRIDGE, assistant professor of physics in Columbia University, died suddenly on June 2, aged forty-eight years. Dr. Trowbridge was the author of researches on fluorescence and phosphorescene in gases and also on physical aspects of the flight and migration of birds.

DR. JOSEPH DENIKER, the distinguished French anthropologist, died on March 18, aged sixty-six years. Dr. Deniker, who was chief librarian of the Paris Natural History Museum, was born in Russia.

ALFRED GORDON SOLOMON, of London, known for his contributions to the chemistry of brewing, has died in his sixtieth year.

UNIVERSITY AND EDUCATIONAL NEWS

A GIFT of $400,000 to the Massachusetts Institute of Technology was announced by President Richard C. Maclaurin at a meeting of the corporation on June 7. The name of the donor was not made public. The income of the fund will be used for general purposes of the institute during the war and thereafter applied to the development of courses in chemistry and physics.

THE alliance between Columbia University and the Presbyterian Hospital, which was first made in 1911, and was planned to result in the establishment of a great medical center in New York City, has been cancelled by the managers of the hospital. Columbia University was unable to obtain the money needed for its share of the buildings and rejected the plans proposed as a condition of an endowment from the Rockefeller Foundation.

DR. JOHN T. FAIG, professor of mechanical engineering in the University of Cincinnati, has been appointed president of the Ohio Mechanics Institute, succeeding Professor John Shearer, who has been head of the institute for twenty years. Professor Faig is now taking charge of the college of engineering in the absence of Dean Herman Schneider, who is engaged in military service in Washington.

DR. F. OCARANZA, professor of physiology at the University of Mexico, has been appointed secretary of the faculty of medicine. He is at the same time secretary of the Academy of Medicine.

THOMAS J. MACKIE has been appointed professor of bacteriology in the South African Medical College, Cape Town.

DR. T. FRANKLIN SIBLY, of University College, Cardiff, has been appointed professor of geology at Armstrong College, Newcastle-upon-Tyne, in succession to the late Professor Lebour.

DISCUSSION AND CORRESPONDENCE

DESMOGNATHUS FUSCUS AGAIN

IN SCIENCE (N. S., Vol. 47, Apr. 19, 1918, pp. 390–391) Professor H. H. Wilder under the heading "*Desmognathus fuscus* [sic]" has

much to say about the grammatical sins of biologists in the use of systematic names. These I am not defending, nor is it my intention here to analyze the motives which induced the International Zoological Congress to refuse to sanction subsequent correction of such errors. But the case which serves him for a heading is of a different nature. He characterizes Spencer F. Baird's use of the combination *Desmognathus fuscus* as a "mistake" which "was followed by several illustrious men, both anatomists and systematists, among others by Wiedersheim (1887), W. K. Parker (1879), Boulenger (1882), and as late as 1909, by Gadow." I think it can be shown, however, that these illustrious men, as far as the grammar is concerned, were as correct as the other zoologists quoted by him, who wrote *Desmognathus fusca,* both forms being grammatically correct.

The rule governing the gender of Greek composite words is, as I understand it, that the unmutated composites follow the gender of the final component. Thus *dermatochelys* is feminine because *chelys* is feminine, *chelys* being Greek for turtle, and *dermatochelys* for a leather-back turtle.

Mutated composite words, on the other hand, except personal names, are of common gender, that is, they may be used either as masculines or feminines. Thus *kallithrix* as a zoological appellative may be used either as a masculine or as a feminine noun, notwithstanding the fact that *thrix,* hair, is feminine.

As an example of the above rule, let us examine a familiar word commonly used in forming zoological generic appellatives, for instance, *rhynchos,* a beak, a bill (*rhamphos* might just as well have been chosen). The gender of this Greek word is neuter. Now, were I to describe and classify beaks only, I might speak of a *goniorhynchos* and of an *orthorhynchos* according to whether the beak were angular or straight, and these composite words being unmutated would also remain neuters. But when I designate a fish or a bird as *Goniorhynchus* or *Orthorhynchus* meaning a fish with an angular beak or a bird with a straight bill, these appellatives assume the common gender and the specific adjectives may be masculine or feminine according to my choice. Thus it would be grammatically correct to say either *Goniorhynchus albus* or *Goniorhynchus alba,* but certainly NOT *Goniorhynchus album,* in spite of the fact that *rhynchos* is neuter.

Similarly, if one were to speak of a jaw as a *desmognathos,* its gender is undoubtedly feminine, *gnathos* being feminine, but naming, as Spencer F. Baird did, a salamander *Desmognathus* he created an appellative of the common gender and he was at perfect liberty to use the masculine form of the adjective *fuscus* in conjunction with it. He certainly committed no grammatical blunder "in all its shame." Equally correct was Dr. J. P. Moore when he instituted the genus *Leurognathus* for another salamander and named the species *Leurognathus marmorata.*[1]

It will thus be seen that Baird and those who follow him have not "changed the grammatical gender of the noun *gnathos,*" but have simply availed themselves of their right to select from the common gender of the salamander *Desmognathus* that which in their opinion was most consistent with general zoological practise. This, it is interesting to note, has been to regard the mutated appellatives formed by combination with *gnathos* as of the masculine gender.

Thus the mammalian genus *Perognathus* of Wied was originally proposed as masculine and generally so accepted. *Erignathus* was proposed by Theo. N. Gill as masculine and has been universally so accepted. Among snakes we have *Leptognathus,* by Duméril and Bibron designated as masculine and so accepted by Günther, Jan and Cope; *Lycognathus, Ischnognathus* and *Petalognathus,* similarly proposed, and also accepted by Boulenger. Among the frogs we have *Cystignathus fuscus* Günther; *C. ocellatus* Tschudi, Peters; *C. labyrinthicus* Duméril and Bibron, Reinhardt

[1] The erroneous quotation *Leurognathus marmoratus* in the check list referred to by Professor Wilder was due to a lapsus and the use of the masculine gender in this case was quite unintentional. The incorrect citation of Dunn's *D. ochrophæa carolinensis* is also greatly regretted.

and Lütken, Steindachner; *C. pentadactylus* Peters; *C. mystacinus* Burmeister; *C. podicipinus* Cope, etc. Generic names ending in *gnathus* are as rare among birds as those ending in *ryhnchus* and *ramphus* are common (and needless to say no ornithologist, or other zoologist, has used the latter as neuters), but we have at least *Hemignathus* which they have accepted as masculine without exception, among them the purist of purists, Dr. J. Cabanis who is responsible for *Hemignathus procerus*. Finally, giving a few examples from the fishes, I quote *Hybognathus* accepted as masculine by Girard, Jordan and Gilbert, *Cochlognathus* by the same authorities, and last but not least *Syngnathus* proposed as a masculine by Linnæus himself and so accepted by all subsequent ichthyologists. In fact, it is probably not too risky to say that not until Cope discovered that the unmutated *gnathos* is feminine (reversing his own previous practise), were any of the mutated composites treated as feminine. It is also safe to say that most of the illustrious men who adhered to the masculine gender, when so indicated by the original proposer of the name, knew what they were about and showed proper "respect to the Greek language."

LEONHARD STEJNEGER

EVOLUTION OF BACTERIA

I WAS greatly interested in Professor Buchanan's article in SCIENCE[1] entitled "The Evolution of Bacteria." It is not my intention at the present time to take up at length those points raised by him which are admittedly matters of opinion. In matters of classification, there are many possible interpretations of available facts, which can not be easily proved or disproved. The conclusions reached were based on the facts at hand, though it was admitted at the outset that the facts were inadequate. The final answer to these questions can not be obtained at the desk, but in the laboratory. Most of the questions concerning bacterial relationship and descent can be tested experimentally by a study of their metabolic and antigenic characters, and it is such investigations that my article was intended to stimulate.

Dr. Buchanan did, however, raise certain questions of fact which require some comment. In my argument in favor of the primitive character of bacteria the unique combination of the ability to subsist on simple inorganic compounds plus an extreme sensitiveness to sunlight, which excluded aid from that source, was advanced. This combination does not obtain in either plant or animal cells. Cells so constituted as to live on simple inorganic compounds without the aid of an external source of energy may, it seems to me, reasonably be considered as primitive. The sulphur bacteria, mentioned by Dr. Buchanan, contain a pigment which protects them from sunlight and which according to Englemann apparently functions somewhat like the chlorophyl in plants. Molisch dissents from Engelmann's view but claims that these bacteria must have organic food for their nutrition. Why they should be considered more primitive than the prototrophic bacteria is, therefore, not altogether clear.

In regard to the source of the volatile acids and alcohols for bacterial nutrition, I might refer to Kaserer's[2] report of nitrifying bacilli which convert $(NH_4)_2CO_3$ to formic acid and free N, or nitrates. These compounds are not, therefore, necessarily the product of carbohydrate fermentation.

The author draws the inference that by utilization of CO_2 I had in mind oxidation. It requires no profound knowledge of chemistry to realize that such a thing is not possible. What was implied throughout was an ability on the part of the cell to assimilate CO_2. Instances of such assimilation are numerous and this power is particularly evident among the nitrogen-fixing bacteria, the energy apparently being obtained from the oxidation of the N with a simultaneous reduction of the CO_2.

Reports of prototrophic denitrifying bacteria are admittedly not "common and well known." They have, however, been described by Hiltner and Strömer.[3] Somewhat more

[1] SCIENCE, 1918, N. S., XLIII., 320.

[2] *Cent. f. Bakt.*, II. Abt., 1908, XX., 401.

[3] *Ref. Bot.*, 1904, XCV, 157.