Professor Roemer, of Marburg, has been called to Greifswald to conduct the hygienic institute as the successor of Professor Loeffler.

DISCUSSION AND CORRESPONDENCE

A NEW TYPE OF BACTERIAL DISEASE

By this title I mean a disease in which the bacterial growth first develops conspicuously as a thick layer on the surface of the plant, and only later penetrates into its interior.

Ráthay's disease of orchard grass (*Dactylis glomerata*) described by him in 1899 may be taken as the type of this kind of disease. In 1913 I had opportunity to verify Ráthay's statements[1] on material sent to me from Denmark by Professor Kølpin Ravn, and to make pure cultures and further studies of the organism which in honor of Ráthay, may be known as *Aplanobacter ráthayi* n. sp., with the characters assigned to it by Ráthay, and in addition the following:

Nitrates are not reduced; gelatin is finally liquefied, but liquefaction is visible only after some weeks and progresses very slowly; it does not grow in Cohn's solution; growth starts off slowly in milk, but is prolonged with formation of a copious chrome yellow precipitate and a wide bright yellow rim; litmus milk is first slowly blued, but becomes purplish after some weeks; it grows so slowly on agar that poured plates which appear to be sterile may eventually give small yellow colonies. Nearly all of Ráthay's statements have been found to be correct. This note is here published because of delay in the issue of a longer account.

Erwin F. Smith

THE MANUS OF TRACHODONT DINOSAURS

In a recent article in *The Ottawa Naturalist*,[1] Mr. Lawrence M. Lambe has described "The Manus in a Specimen of *Trachodon* from the Edmonton of Alberta," illustrated by three figures. According to Mr. Lambe's interpretation of the Ottawa skeleton the phalangeal formula is as follows:

Digit II. with three phalanges, the third bearing a hoof.
Digit III. with three phalanges, the third bearing a hoof.
Digit IV. with two phalanges, the second bearing a hoof.
Digit V. with two phalanges, the second bearing a hoof.

Whereas in a specimen that I have described the formula is

Digit II. with three phalanges, the third bearing a hoof.
Digit III. with three phalanges, the third bearing a hoof.
Digit IV. with three phalanges, the third a vestigial bone without hoof.
Digit V. with three phalanges, the third a vestigial bone without hoof.

The writer published a description of the manus of *Trachodon annectens*,[2] based on the first reported specimen in which all of the phalanges are present. In this specimen the full number of phalanges are not only present but each digit is articulated either in the right or the left hand and all are encased in a thin layer of matrix in which the skin impression is preserved.

In this uncrushed specimen the long slender metacarpals of digits II., III., and IV. are closely appressed as represented in the figure accompanying the above article, a position verified by structure and by position in three other uncrushed specimens in the American Museum, one in the National Museum, and a sixth in the collection of the Calgary Natural History Society.

In no specimen of the genus *Trachodon* known to me have more than two hoof bones been found in the manus—those of digits II. and III. The terminal phalanges of digits IV. and V. are, when uncrushed, rounded bony nodules, very much reduced and were not covered by a hoof or nail.

If Mr. Lambe's interpretation is correct we have a remarkable specific variation in this genus in which a later species, described by me, has developed an additional phalanx on each

[1] *Sitz. Ber. Wiener Akad.*, 1 Abt., Bd. CVIII., p. 597.

[1] Vol. XXVII., pp. 21–25, 1913.

[2] *Bull. Am. Mus. Nat. Hist.*, Vol. XXXI., Art. X., pp. 105–107, 1912.

of the two degenerate digits. But I think the evidence is not sufficiently conclusive to warrant his interpretation. The skeleton which I have examined is more than two thirds complete, much crushed, and but few of the phalanges are articulated. It seems quite possible to interpret the phalangeal formula in conformity with other Trachodont skeletons in which the phalanges, being not only fully articulated but enclosed within the web of the skin, are not open to any possibility of error.

In Plate II. showing what Mr. Lambe considers the natural position of the elements the terminal hoof of IV. is evidently II.[3] and V.[2] is not a terminal as I have determined by examination.

BARNUM BROWN
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AGRO-DOGMATOLOGY

IN SCIENCE of October 3, 1913, there appears under the title "The Bread Supply" a veritable vegetable cell containing a *nucleus* in the form of a quotation from an address by Professor Bolley; some *cytoplasm* of somewhat alkaline reaction provided by Professor Hopkins; *chromatophores* for which various experiments are called upon to furnish local color; *metaplasm* containing a conglomeration of non-essentials, incidentals and chemical dogma; scarcely enough juice to fill even a small *tonoplast;* an impermeable *ectoplasm*—the whole cell suffering from extreme plasmolysis resulting from the toxic fumes arising from very decadent notions of "plant food."

Professor Hopkins refers with "deep respect" to "the science of biochemistry, as the chief means of making plant food available." With such a conception of its nature it would be better to refer to biochemistry with reverence—an attitude of mind often assumed towards the unknown. The biochemist and plant physiologist might well say to Professor Hopkins, as did the Lord to Moses, "Put off thy shoes from off thy feet, for the place whereon thou standest is holy ground."

We are told that Jensen devised a method for "the destruction of fungous diseases sometimes carried in seed grain." I do recall that Professor Jensen developed the so-called "hot water" method for the destruction of the spores of certain fungi known to cause diseases of certain cereals. When such simple facts regarding plant pathology are available in even our elementary text-books it is evident that "no state in the union can afford . . . to have the minds of its farmers and land owners befogged in relation thereto."

In making analyses of commercial fertilizers, soils, ores and similar materials the "analytical chemist" still plays an important rôle; he may even assist in prolonging human life by detecting sodium benzoate in our canned tomatoes, but no one seriously expects him to fully comprehend, even "two or three centuries after its discovery," the relation of the plant to its environment. In "belittling" the work of the analytical chemist in this connection even a hundred columns of words are not so effective as a comparison with the actual achievements of the biochemist and the plant physiologist.

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SCIENTIFIC BOOKS

Nervous and Mental Disease Monograph Series. Edited by DRS. SMITH ELY JELLIFFE and WM. A. WHITE. Published by the Journal of Nervous and Mental Disease Publishing Company, New York.

This series, it is announced, "will consist of short monographs, translations and minor text-books." To judge by the rapidity with which the successive numbers have appeared and by the promptness with which the editions have become exhausted, the undertaking is certainly well conceived. The first 15 numbers include White's excellent "Outlines of Psychiatry," a condensed text-book of 300 pages; "Mental Mechanisms" by the same author; Franz's "Handbook of Mental Examination Methods," and two other original papers, the remaining numbers being translations. Of these, one of the most important is Kraepelin's study of "General Paresis." There are