these names were based upon fossil woodborings or the lining of burrows and occasionally upon shells. These parts without the pallets unfortunately do not furnish characters which are at present considered of prime importance in ship worm classification.

Recent studies of the living species have demonstrated that ship worms, like other bivalve mollusks, have restricted ranges, and this knowledge will undoubtedly be used by paleontologists in dealing with fossil species, which will result in the description of many new forms in the future.

Since the classification of recent species is now quite well established it seems a pity to burden the rather limited group Teredo with the many specific means which no one can at present place in their proper genus. It is for that reason that I now suggest the collective name Teredolithus for the reception of these generically indeterminate species of ship worms. This name is not to be considered a genus in the accepted sense, but a convenient repository for such species as we find at present generically indeterminable. This name is to have no type, and therefore continue in use as long as generically indeterminate ship worm species exist.

The splendid precedent for a somewhat similar procedure was established by Dr. Stiles in 1907, when he created the name Agamofilaria for the reception of species of Filarids based upon larval forms which failed to furnish the characters for proper generic designation. This group name has served and is still serving a useful purpose as a more or less temporary resting-place for immature Filarids.

Some of the American fossil ship worms which should be placed under Teredolithus are: *Teredo calamus* H. C. Lea, *T. circula* Aldrich, *T. dendrotestes* Brown and Pilsbry, *T. emacerata* Whitfield, *T. fistula* H. C. Lea, *Kuphus incrassata* Gabb, *Teredo mississippiensis* Conrad, *T. pugetensis* White, *T. simplex* Lea, *T. substriata* Conrad, *T. tournali* Leym. and *T. virginiana* Clark.

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DISCOVERY OF PHOSPHORUS FIXING COMPOUND IN THE SOIL

THE Louisiana Experiment Station has found an iron compound in southern soils which is responsible for the fixation of phosphorus. In the poorly drained soils the compound exists as concretions, ranging in size from below the visibility of the naked eye to fine gravel. In the well-drained soils, the concretions are not so much in evidence.

The concretions usually consist of a series of smaller ones. They are black in color, and when wet are rather soft. The structure is very open, and when the concretions are placed in water they emit a singing noise due to escaping air.

The physical structure of the concretionary material is such that it forms a very reactive compound. It appears that the phosphorus in this compound occurs as a basic ferrous phosphate. Drainage apparently determines whether the basic ferric or basic ferrous phosphate occurs.

The solubility of this phosphorus compound is exceedingly low, about .2 ppm. PO_4 in a .002 N. H_2SO_4 acid solution. As the amount of PO_4 varies in this basic compound it is likely that the solubility also varies. The effect of saturating this compound with PO_4 on the solubility is being studied, as well as various other soil treatments.

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THE BANANA IN EARLY BOOKS: FRUIT OR STEM?

IN a paper[1] published recently I made the statement that the banana, as known to-day, existed in India before the Christian era, but further examination of the evidence makes me less sure of that conclusion. The earliest record, Megasthenes (303 B. C.), refers to a banana, but speaks only of the pseudostem as being eaten. The frescoes of Ajantâ (400 B. C. to A. D. 700) show unmistakable banana plants, but a careful examination has failed to discover any pictures of the fruit, although the mango, lime, custard apple, aubergine and other fruits are clearly illustrated. It seems probable, therefore, that the stem and not the fruit of this banana was eaten. I had previously accepted Pliny's interpretation of Theophrastus' statements as probably referring to leaf, flower and fruit of a single plant but am now inclined to take a more literal translation. In that case only the second "Ετερον δέ οὐφὺλλον . . . ," that referring to the leaf, can positively be connected with the banana. Ibu Serabi says, "Musa. Abēmesuai ē calm ē medio primi grad' humidū ī fine eius nutrit par," and Ibu Sina, though using the name Musa, does not say whether the fruit or stem was eaten. It is not until 1563, with Garcia da Orta, of Goa, that I find the fruit of the banana definitely referred to as being eaten. I can not accept Rung's[2] evidence of its existence in pre-Christian Egypt as convincing, for his figures may represent hands of bananas but look at least as much like bundles of faggots tied together. The evidence of its existence in America is even less convincing. It seems evident that the Physocaulid bananas, *Musa Eusete, M. glauca,* etc.,

[1] Philip R. White, "Studies on the Banana," *Zeitschrift f. Zellforsch. u. mik. Anat.,* 7: 673–733, 1928.

[2] Richard Rung, "Die Bananankultur," in J. Perthe's "Geog. Anstalt," Bonn, 1911.

were known in North Africa, Asia Minor, India and perhaps America at a very early period but that the Eumusae were unknown in these regions until a much later date than we had supposed. I should appreciate any references that I have missed and especially any pre-Christian records from the Malay Peninsula, Siam, Cochin China or the East Indies.

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THE COLOR-BLINDNESS OF INDIANS

THE department of psychology of the University of Denver has begun a preliminary study of color-blindness of Indians. In the spring of last year (1929) we tested 390 Indians of the southwest with the Ishihara test for color-blindness, and found seven red-green blind, but none definitely totally color-blind. This is an incidence of not more than 2 per cent. Only one was a female. It is planned to visit numerous Indians of the central far-west and administer the same test with the Nela test from the Johns Hopkins University during the spring and fall of this year so as to determine if the incidence of color-blindness among Indians is greater or less than it is among whites.

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THE PRESIDENCY OF THE BRITISH ASSOCIATION

IN the extract on the British Association from the London *Times*, reprinted in SCIENCE of April 4 (p. 354), it is stated "if General Smuts becomes president of the London meeting (in 1931) he will be the first president elected from one of the Dominions." It may be noted Sir William Dawson, of Montreal, was president at the 1886 meeting held at Birmingham.

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SCIENTIFIC BOOKS

Methodik der wissenschaftlichen Biologie. Edited by TIBOR PETERFI. Vol. 1, Allgemeine Morphologie, xiv + 1425 pp., 1 col. pl., 493 figs. in text. Vol. 2, Allgemeine Physiologie, x + 1219 pp., 358 figs. in text. Berlin, Verlag von Julius Springer. 1928. Price (bound), 198 marks.

A PARTICULARLY illuminating insight into the rate of progress in the biological sciences, a layout of their diversification and ramifications and a display of the dominant directions of biological developments can be observed in a comparison of the contents of Peterfi's recent monographic encyclopedia of methods of scientific biology with any book in the fields of methods, say of fifty years ago. The very word biology in the last half century has itself acquired new and wider meanings and has established itself beyond displacement by the quibbles of botanists and zoologists, followers of disciplines diverted from their common interests by the artificial jurisdictions of herbarium and museum. There is really only one biological science, though many avenues approach it. Both the diversity and divergences of these avenues as well as the unity of the science of biology are revealed in this encyclopedia of biological methods.

As an index of the shift in emphasis and selection in biological work now current, possibly some what distorted by editorial guidance, one notes that the entire subjects of botanical and zoological collecting and of museum and herbarium technique are restricted to 148 pages of the total of 2,644, which is less than the space devoted to the care of living plants and animals. There is less occasion for the inclusion of these subjects under "Allgemeine Physiologie."

No one person could possibly function as an expert, and scarcely even as a critical compiler of methods in so diversified a field. Hence Dr. Peterfi has associated with himself in this enterprise no less than forty-two other biological specialists, each of whom is responsible for one or more chapters in this work.

The first volume deals with general morphology, but in a more restricted sense than the extremely comprehensive "Handbuch" of Aberhalden which covers the entire field of the natural sciences. The aim has been rather to restrict the subject to, and to intensify the treatment of, those fields of the natural sciences which are more or less distinctly morphological or which impinge thereon. The first volume is therefore written for morphologists, botanical and zoological alike. It includes the basic methods of morphology, microscopy, the study of cells, tissues and of development.

The volume opens with a 200-page introduction to the mathematical treatment of biological problems by Professor A. Walther, with abundant illustrations of the applications of formulas and graphs to specific biological data. Professor A. Köhler discusses the optics of the microscope and Dr. H. Zocher the ultramicroscope.

The subject of general microtechnique is introduced by Fr. P. Vonwiller with articles on the use of direct illumination and on vital staining, by Dr. R. Keller on electrohistological staining reactions and by Professor G. Levi on tissue culture, while Professor T. Peterfi writes of micrurgie, or the study of cells with the micromanipulator; Professor G. C. Heringa writes