

|                                                                                                                  | Number of<br>Characters |
|------------------------------------------------------------------------------------------------------------------|-------------------------|
| (1) <i>Experiment Station Record</i> : (Ann. Appl. Biol., 24 (1923), No. 2, pp. 151-193, pls. 3, figs. 31).      | 56                      |
| (2) <i>Journal of Agricultural Research</i> : In Ann. Appl. Biol. v. 24, 1923, p. 151-193, pl. 1-3, fig. 1-31.   | 52                      |
| (3) <i>Philippine Journal of Science</i> : Ann. Appl. Biol. 24 (1923) 151-193, p. 1-3, fig. 1-31.                | 45                      |
| (4) <i>Botanical Abstracts</i> : Ann. Appl. Biol. 24: 151-193. 3 pl. 31 fig. 1923 [or pl. 1-3, fig. 1-31. 1923]. | 40-46                   |

In No. 1, with 56 characters, no data except the irrelevant "No. 2" are given that are not included in the shortest form utilizing but 40 characters. Two pairs of parentheses, "No. 2," "pp." and several commas are redundant. There is no differentiation in type; that is, nothing to catch the eye.

In No. 2, with 52 characters, the following are redundant: "In," "p," "v" and several commas. There is no differentiation in type.

In No. 3, with 45 characters, the parenthesis is redundant, owing to the place of the date of publication. There is, however, proper differentiation of type as to volume, plates and figures.

In No. 4, with 40 characters in its simplest form, there are no redundant letters, figures or punctuation marks, the latter being reduced to a single colon and several periods. The volume number, page, plate and figure references are properly differentiated. Nothing essential is left out. It is the easiest to read and to proof read; the easiest to write, whether long hand or on the typewriter; and what is still more important presents a minimum chance of error. These points are perhaps matters of slight importance in short papers having only a few references but become of very great importance in those works having hundreds and even thousands of references.

There is little force in the argument that type of different styles such as black face, Roman and italics should be avoided in the same line. Most modern composition work is done on the linotype or monotype machine and with these machines the use of different fonts is practically as simple from the standpoint of the compositor as it is for a copyist to operate the shift key on a typewriter for upper case characters.

Merely because an established form of citation has been followed for many years is no reason why a change should not be made, especially if the change still makes the reference entirely clear and eliminates useless characters. Utility, simplicity, clarity and brevity should be the criteria, not past or current

custom. The general adoption of the concise form utilized in *Botanical Abstracts* by publishers, by responsible editors of technical literature and by authors of technical papers is greatly to be desired.

This appeal for the simplified form of citation is primarily directed to publishers, editors and members of editorial staffs. Unless the initiative be taken by these, the individual author is powerless in the matter. Scientists are frequently accused of not being practical, but here is an opportunity of demonstrating on a small scale a distinctly time-saving device that would in the long run make our published data simpler, clearer and more attractive. I venture the prediction that no author who has once prepared a paper in which the simplified form of citation herein discussed is used will voluntarily revert to the more ancient complicated forms that still prevail in the majority of our technical publications, whether these be in serial form or individual volumes.

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#### THE EFFECT OF MINERAL SUPPLEMENTS ON REPRODUCTION OF THE ALBINO RAT

FAILURE of growth in the second generation of rats on a ration of corn and peanut meal supplemented with acid phosphate was reported last year.<sup>1</sup> The basal ration was later fortified with dried meat and cod liver oil. When the improved ration, consisting of white corn 30, wheat 30, peanut meal 25, dried meat 12, and cod liver oil 3, was supplemented with 1.0 per cent. of NaCl and 1.5 per cent. of acid phosphate, reproduction was not more successful than on the acid phosphate ration in the former experiments. The females on this ration farrowed normal numbers of young; but they apparently furnished very little milk and the pups soon became thin and scrawny. Many of the pups were eaten by the dams. None of the litters reached the age of weaning.

The addition of sufficient NaHCO<sub>3</sub> (0.5 per cent. of the total ration) to neutralize the excess of H<sub>2</sub>SO<sub>4</sub> carried by the phosphate resulted in marked improvement. We now have young rats, representing the third generation on this ration, that are being raised successfully.

Other investigators have shown that the pig, goat, cow, rabbit and monkey are able to combine ingested mineral acids with ammonia and excrete the ammonium salts through the urine. Some of their experiments have shown that protein storage on a normal level of protein intake or growth through a considerable period of time was not interfered with. It has not been shown, however, that normal repro-

<sup>1</sup> Salmon, SCIENCE, 60, 457, 1924.

duction occurs under conditions of prolonged ingestion of mineral acids.

Our observations show that a small amount of  $H_2SO_4$  may limit the growth of the rat in the second generation even when little or no effect on the growth of the first generation was apparent.

A study of the effect of various acids and acid-forming substances on the reproduction of rats and swine is now being made in this laboratory.

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### THE HYDROID OF CRASPEDACUSTA RYDERI IN KENTUCKY

SINCE the finding of the hydroid of *Craspedacusta ryderi*<sup>1</sup> (1920) in Boss Lake, Elkhart, Indiana, I have been anxious to find it elsewhere, especially so since all the medusae at Elkhart were females and all medusae found elsewhere were males. I have been interested in the sex question involved and wish to transplant hydroids from some other source to Boss Lake.

July 30 I made a trip to Benson Creek, where Garman<sup>2</sup> found the medusae in 1916, 1917 and in 1924, and was rewarded by finding the hydroids on the rocks in the shallow water just above the place where the medusae were most abundant. As the water was muddy and most of the rocks covered with slime only a few hydroids were found. Some of these I took to my laboratory, where they now are and where I hope to be able to rear them. When the water clears I shall try to find more of them.

In comparison with the hydroids in Boss Lake they are much smaller, but otherwise they look the same. The size difference may be merely a question of the food supply. The water in the creek contained very few micro-organisms.

The hydroids were not producing hydroid or medusae buds. This would also indicate unfavorable conditions.<sup>3</sup>

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### SCIENTIFIC BOOKS

*The First One Hundred Years of American Geology.*

By GEORGE P. MERRILL, head curator of geology, United States National Museum. XXI + 773 pages, 6½ x 10 inches. Yale University Press. 1924.

In the report of the U. S. National Museum for 1904 Dr. Merrill published "Contributions to the his-

<sup>1</sup> Payne, *Journ. Morph.*, Vol. 38.

<sup>2</sup> Garman, *SCIENCE*, Vols. 44, 56 and 60.

<sup>3</sup> Three weeks later hydroids were found in abundance and transplanted to Elkhart.

tory of American geology," a work of great and timely interest. The present volume is practically a republication of the former work, with the addition of three new chapters on special subjects and an appendix of personal letters. It makes a handsome large octavo volume of 773 pages, with 36 page plates and 130 text illustrations. The illustrations are slightly less in number than in the former volume. Twenty of the plates and 105 of the text figures are portraits. This is the first work published on the Philip Hamilton McMillan Memorial Publication Fund.

The history covers the ten decades from 1785 to 1885, grouped in eight eras. The first two eras are named after the two most active workers in the early days, William Maclure, the "father of American geology," and Amos Eaton, the earliest teacher of the science. The Maclurean Era includes the years 1785-1819, and the Eatonian 1820-1830. Five chapters cover five decades of State Geological Surveys (1830-1888), with chapter eight devoted to the National Surveys. The special problems discussed in the previous work were, "The fossil footprints of the Connecticut Valley," "The Eozoon question," "The Laramie question" and "The Taconic question." The three new special topics are, "The development of the glacial hypothesis"; "The development of micro-petrology," and "How old is it?"

The biographical sketches of the geologists are not the least interesting part of the history, and the author has described the workers and their work with discrimination and fairness. The appended personal correspondence is a welcome addition. It also emphasizes the large psychologic element, especially in the pioneer work. Geology is not an exact science, but relies on observation, diagnosis, comparison and interpretation. The personal element in the early years is shown by the diverse and even contradictory views on phenomena and features which to-day are lucid. A touch of humor is suggested by the placing of the portraits of Cope and Marsh side by side.

The student of geology finds the history a real romance. The young worker especially needs it for breadth of information and as suggestion of caution in his work and modesty in opinion. Dr. Merrill has done a good service not only to the geologic profession but to general science, and to the history of the evolution of real knowledge. It was a rare and fortunate combination for the author to have access to the literature and records, the time, patience and industry for collecting the vast mass of fact and the knowledge and discrimination necessary for its effective presentation.

The only suggested criticism of the work is its