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FRESH WATERS OF CONNECTICUT**

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HERBERT WILLIAM CONN

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By

HERBERT WILLIAM CONN, Ph.D.,

Professor of Biology in Wesleyan University



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J.R.S.





A Preliminary Report on the Protozoa of the Fresh Waters of Connecticut.

By H. W. CONN, Ph.D.,

Professor of Biology, Wesleyan University.

INTRODUCTION.

In connection with the State Geological and Natural History Survey, I have been requested to undertake the study of the microscopic life in the waters of the State. This part of the State Survey is naturally a very extensive piece of work, and at the present time only the beginnings of the task can be reported.

The work, as it has come into my hands, has divided itself into three parts.

1. The Protozoa.
2. The Algae and allied plants.
3. The Bacteria common in the waters of the State.

Work upon all three of these divisions of the subject has been undertaken, and is progressing satisfactorily. Up to the present time most of my own attention has been given to the study of the Protozoa. This part of the work has been carried on extensively since its assignment to me, and has reached a point where it is deemed wise to present a preliminary report upon the work already done.

Hitherto a comparatively small amount of study has been given to the Protozoa in American waters. The only extensive contributions to the studies of our Protozoa have come from Stokes* and Leidy.† In addition there have been a number of isolated publications upon the various genera and

* A Preliminary Contribution toward a History of the Fresh Water Infusoria of the United States. Journ. Trent. Nat. Hist. Soc., I, 1888.

† Fresh Water Rhizopoda of North America, Washington, 1879.

species. Prof. Stokes' valuable papers are, at present, somewhat difficult to obtain, and very difficult to follow, because of the lengthy and somewhat obscure descriptions that are given of his different species. His figures, however, are usually satisfactory, and make it possible for a student to identify his species, comparing them with forms which may be under examination. Besides the works of Stokes and Leidy there are only a few scattered papers describing isolated genera and species found in America. This dearth of work makes the study and description of American types of Protozoa especially desirable, in order that there may be in the hands of microscopic students a complete description of the types of Protozoa which are liable to be found in American waters. Such a publication does not, at present, exist. Prof. Stokes' papers have described only newly discovered species, and have never attempted to give any descriptions of forms which he simply identified and which have been described elsewhere. The literature upon Protozoa is in general so widely scattered that it is not accessible in any convenient form to the student of American microscopy. It is, therefore, a great desideratum that the description of all types of American Protozoa should, if possible, be collected and published together for the use of American students. A description of Connecticut species will not, of course, completely fill this need, but will come nearer to it than any previous publication.

For these reasons it has seemed to me that before it is possible to attempt a study of the distribution of Protozoa in the waters of the State, or of any problems associated with their economic relation to the purity of drinking waters, considerable preliminary work must be done which shall include a study and description of the genera and species found in this region. This part of the work has occupied most of my attention during the past year.

The time that it has been possible to put upon the work during the last year has been sufficient to accumulate a large amount of data upon this general subject, and it is probable that I have now obtained and had an opportunity of studying most of the genera of Protozoa liable to be found in Connecticut. This is certainly true of the two groups, FLAGELLATA and INFUSORIA.

Upon the rarer groups, RHIZOPODA, HELIOZOA, and SUCTORIA, my work is less complete, and the forms already found probably do not constitute so large a proportion of the whole as in the other two groups.

It is, of course, perfectly evident that even this preliminary work is not yet complete. It will require a long-continued study of the waters of the State before a complete list and description of all the Protozoa can be given. Before this can be regarded as complete it will doubtless be necessary to obtain the coöperation of microscopists in other localities in collecting material and possibly studying the same. The completion of the work can therefore only be made after some years of study. For this reason it is thought to be wise to publish at the present time a preliminary report upon the Protozoa already found, in order that such a report may be used to stimulate the study of this group by other microscopists in the State, and thus increase the amount of work that can be done and the territory that can be covered. The present report is designed, therefore, simply as introductory, and its purposes are, 1st, to state the progress that has been made in the study of the Protozoa, and 2d, to elicit the coöperation of other microscopists so far as possible. It is hoped, therefore, that microscopists into whose hands this preliminary report may fall and who may be interested in the study of the microscopic life of our waters, will communicate with the author of this paper, in order that, if possible, coöperative work may be started in various parts of the State. The author would be very glad to receive communications from any one within the limits of the State who is interested in microscopic study, and especially to obtain material for study that anyone will be kind enough to send to his laboratory in Middletown.

It is expected that, at a later time, a more complete report of the Protozoa of the State will be published, which, it is hoped, may take the form of a general scientific study of the unicellular animals and their evolution, as illustrated by the forms found in our own waters. Such a study is not feasible at present. The present report is planned with the object of making it as useful as possible to microscopists. Therefore it has been regarded as wise to illustrate carefully all species