C. L. E. Moore; "Notes"; "New Publications."

The November number of the *Bulletin* contains: "The Fifteenth Summer Meeting of the American Mathematical Society," by H. E. Slaught; "Answer to a Question raised by Cayley as regards a Property of Abstract Groups," by G. A. Miller; "Note on the Theorem of Generalized Fourier's Constants," by W. D. A. Westfall; "On the Logical Basis of Grassmann's Extensive Algebra," by A. R. Schweitzer; "General Algebraic Solutions in the Logic of Classes," by L. M. Hoskins; "A General Diagrammatic Method of Representing Propositions and Inference in the Logic of Classes," by L. M. Hoskins; "Heinrich Maschke; his Life and Work," by Oskar Bolza; "Notes"; "New Publications."

The American Naturalist for October opens with a paper by F. F. Blackman, on "The Manifestations of the Principles of Chemical Mechanics in the Living Plant." D. D. Whitney describes a number of experiments on "The Desiccation of Rotifers," the conclusions drawn from them being that rotifers do *not* revive after being dried for any length of time, the supposed resuscitation being due to the appearance of those hatched from the winter eggs. O. P. Hay has an article "On the Habits and the Pose of the Sauropodous Dinosaurs, especially of Diplodocus"; he considers that the attitude of these animals was probably like that of a crocodile with the body prone and legs more or less sprawled out, and doubts that they walked erect with legs in an elephantine position. Dr. Hay may not know that crocodiles—some at least—occasionally stand on their hind legs and rush at an assailant. W. A. Setchell gives some "pointers" on "Juvenile Substitutes for Tobacco."

The *Report of the Commissioners on Fisheries and Game* [for Massachusetts] for 1907 contains much general information and is very interesting reading. We commend it to that writer in *Nature* who recently stated that there was no evidence that the lobster was decreasing! As in the report for 1906 there is much information as to the history and status of the heath hen which there is a possibility of saving from extermination. The cut of the new knockabout type of Gloucester fishing vessel shows how far common sense has overcome the prejudice of sailors against any innovation; while the value of the innovations is shown in the statement that "again we are able to record that not a single Massachusetts fishing vessel has foundered." To appreciate this it is necessary to recall that in the ten years ending in 1883, 82 vessels and 895 men were lost.

Part II. of "The National Collection of Heads and Horns," issued by the New York Zoological Society is mainly devoted to a description of the splendid series gathered by A. S. Reed and presented by Emerson McMillin, another bit of testimony of the liberal manner in which New Yorkers support their scientific institutions. The specimens are from Alaska and British Columbia and comprise some striking examples of the mountain sheep, caribou and giant moose of that region.

Incidental to the recent meeting of the International Fishery Congress the Bureau of Fisheries has issued an account of its establishment, functions, organization, resources, operations and achievements. This is well illustrated and contains not only information in regard to the work of the Bureau of Fisheries but as to the fisheries of the United States.

MOOREHOUSE'S COMET

Professor E. B. Frost, director of the Yerkes Observatory, calls attention to the recent increase of brightness of Moorehouse's comet and writes on October 29:

> It was visible to the naked eye, and three or four degrees of tail could readily be seen in a small field glass. Three spectrum plates were obtained with the Zeiss ultra-violet doublet and objective prism by Mr. Parkhurst with some assistance from me. Two of these had exposures of one hour. No continuous spectrum was perceptible, whence we may reach the important inference that last night the comet's light was very largely intrinsic. Seven bands were very conspicuous as knots on the plate. I am measuring

the spectra this morning, but have no doubt that they will prove to show the ordinary hydrocarbon spectrum.

The photographs taken last night at the Harvard Observatory show a tail at least nine degrees in length, and much longer than on previous nights.

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October 31, 1908

SPECIAL ARTICLES

NOTE ON THE OCCURRENCE OF RHODOCHYTRIUM SPILANTHIDIS LAGERHEIM IN NORTH AMERICA

IN the *Botanical Gazette* for October, 1908,[1] there is published a note on the occurrence of this interesting parasite upon the leaves of the ragweed (*Ambrosia artemisiæfolia*) in North Carolina. This short note is published in the hope that some readers who do not have access to the *Gazette* may have their attention called to this organism and that they may be on the lookout for it in other sections.

The plant is an alga devoid of chlorophyll. It is parasitic on the leaves, stems, pedicels, flower bracts, etc. It begins its development in early summer on the small seedlings and by developing succeeding crops of zoospores continues infection of these same plants throughout the season, until finally the flower racemes are affected. The main body of the parasite forms sporangia which vary from 50 to 300 μ in diameter, the smaller ones being on the leaves. The plant has a reddish-yellow oil deposited in the protoplasm which is so massed in the larger sporangia that it causes a bright red color visible through the thin layer of cortical tissue, so that the plant has the appearance of being studded with minute red dots, suggesting a *Synchytrium*. The plant is always located in or adjacent to the vascular bundles. There is an extensive system of mycelial rhizoids which are profusely branched. These rhizoids extend both up and down. The terminal mycelium is provided with numerous haustoria, many of which are often applied very closely to the spiral ducts, but never entering them, so far as I have observed. The plant body remains connected with the outside wall by the entrance tube. The outer end of these tubes is broadened into a trumpet-like expansion which is the remains of the zoospore wall. The plant thus resembles a giant *Entophlyctis*. The outer end develops into a broad exit tube through which the zoospores escape. The zoospores are biciliated, containing a reddish-yellow oil which is accumulated in the forward end of the elliptical zoospore where the two cilia are attached. Many of the zoospores conjugate in pairs, this taking place during the process of swimming. When the zoospores come to rest, they become rounded and are 8–10 μ in diameter. The zygozoospores are considerably larger.

The resting spores are provided with a very thick wall which is divided into three layers. At maturity there is an abundance of the reddish-yellow oil in the resting spores which is withdrawn along with the protoplasm and starch from the rhizoid system. The rhizoids then become plugged where they join the main body of the sporangium. The inner wall of the resting spores is laid down entirely distinct from the other walls and forms a complete envelop around the content which can be separated distinctly as the endospore from the other walls. The sporangia as well as the rhizoids are provided with starch. Great masses of starch are present in the sporangia. This starch is not, however, manufactured through the photosynthetic process by the organism, but is obtained from the host.

This organism, *Rhodochytrium spilanthidis* Lagerheim[2] was described by Lagerheim[2] fifteen years ago, from material collected on a species of *Spilanthes* in Ecuador. Though Lagerheim searched diligently on other genera he found it occurred only on *Spilanthes*. Here is then an interesting problem of distribution. Collectors in the southern part of

[1] Atkinson, G. F., "A Parasitic Alga, *Rhodochytrium spilanthidis* Lagerheim, in North America," *Bot. Gaz.*, 46, 299–301, 1908.

[2] Lagerheim, G. de, "*Rhodochytrium*, nov. gen., eine Uebergangsform von den Protococcaceen zu den Chytridiaceen," *Bot. Zeit.*, 51, 43–53, pl. 2, 1893.