

sexual or resting spores. As reported in our earlier paper,¹ oogonium-like bodies were found almost immediately after the inception of this work, in cultures on raw potato, lying in the mycelium close to the surface of the substratum. Subsequently they were found in greater abundance in potato gelatin cultures, here imbedded in the culture medium. Growth with varying degrees of vigor has also been secured upon several other synthetic media, including some modifications of the lima-bean agar, recommended by Dr. G. P. Clinton. The oogonium-like bodies have, however, been found but rarely upon any medium except the potato gelatin and the lima-bean agar. Under favorable circumstances they have been obtained in these in sufficient abundance to permit much more convincing study of the details of their development than was reported in our former paper. The most important advance, however, is the discovery of what appears to be fully matured resting spores. The oogonium-like bodies are about 30 microns in diameter, hence distinctly larger than the regular sporangia (conidia) and so different in appearance and mode of production as to preclude the idea that they are closely related to them. The character of the wall especially differentiates these two reproductive bodies, the oogonium-like bodies soon developing a thicker wall, immediately in contact with cytoplasm, which may show stratification and which in turn may be enveloped in an external envelope, of which the details as to development and structure vary with the medium in which they lie. No body clearly comparable to an antheridium has as yet been discovered. Nevertheless numerous examples have recently been found where these oogon-

¹ A paper dealing with this subject was read by the present writer and N. J. Giddings before the last meeting of the Botanical Society of America and abstracted in SCIENCE (N. S., XXIX., 271). The removal of Mr. Giddings to West Virginia has left the responsibility for directing further study with the writer, who is fortunate in now having the assistance of Dr. B. F. Lutman and Mr. C. R. Orton. Professor H. A. Edson has also assisted, especially in devising culture media.

ium-like bodies have apparently developed into mature resting spores. These have a thick spiny brown exospore with dense granular contents, bearing a general resemblance to the oospores of related Peronosporales. None have as yet been germinated hence it remains to be proved whether they do actually function as resting spores. We have found similar bodies in potato leaves rotted by *Phytophthora*. There is need of further painstaking work, including cytological studies now being made by Dr. Lutman, before final conclusions are justifiable, but the evidence at hand encourages the hope that we have in hand the long sought for resting spores of *Phytophthora infestans*.

L. R. JONES

BOTANICAL LABORATORY,
UNIVERSITY OF VERMONT,
October 15, 1909

COLLECTION OF THE ÆCIAL STAGE OF CALYPTOS-
PORA COLUMNARIS (ALB. & SCHW.) KÜHN

THE æcial stage of the blueberry rust, *Calyptospora columnaris* (Alb. & Schw.) Kühn, was collected on *Abies balsamea* near Pictou, N. S., by the writer on July 14 of the present year.

Wintered telial material of this rust which is abundant on the blueberry (*Vaccinium pennsylvanicum*), was sent to Dr. J. C. Arthur for his culture work. He found the teliospores viable and on his suggestion search was made in the vicinity of the collection for the æcial stage. A *Peridermium* was found on the leaves of *Abies balsamea*, which agreed with the description of *Peridermium columnare*. Part of the collection was forwarded to Dr. Arthur, who determined it as the æcial stage of *Calyptospora columnaris*, and this as the first collection in North America.

This *Peridermium*, which could be easily recognized in the field by its yellow color, due to the orange-colored spores, was found sparingly distributed over an area of several square miles on the young leaves of the lower branches of its host. In no case was it abundant, only a few leaves being affected. In several places the leaves of young trees a few inches from the ground showed a more pronounced infection,

and in every instance the swollen stems of rusted blueberry grew among or just beneath the infected leaves.

The delicate peridium disappeared in a few days after the escape of the spores, or the infected leaves curled up and fell from the tree. Several collections were made during the summer, the last being on August 15.

W. P. FRASER

PICTOU, N. S.

THE SMOOTH HOUND, AND SOME OTHER FISHES IN NEW JERSEY

AMONG a collection of fishes made during the past season at Corson's Inlet, by Dr. R. J. Phillips, is an interesting foetal shark. It is one of six removed from a female which measured three feet nine inches, taken on May 16, and was attached to the uterus of the mother by a placenta. This fact is interesting in that it points to the alleged essential character distinguishing *Cynais* from *Mustelus*. Upon comparison with other examples from our Atlantic coast, and the types of *Mustelus equestris* Bonaparte (= *Mustelus mustelus*), I find no difference whatever, except as may be allowed due to age. The presence of a lateral cusp on each side of the median one, in the case of the teeth, is distinct in small specimens, but as they grow larger the outer or anterior teeth at least seem to be smoother. I shall therefore feel obliged to consider the common smooth hound along the New Jersey coast to be *Mustelus mustelus*, thus substantiating Dr. Günther's record for New York in 1870. A fine small example of *Elops saurus*, the first definite record for this fish in New Jersey waters, was taken October 9. *Clupea harengus*, taken on June 6, is also the first definite record in New Jersey for that species. Other interesting species obtained are: *Eulamia milberti*, *Anchovia brownii*, *A. mitchilli*, *Kirtlandia vagrans laciniata*, *Menidia menidia notata*, *Mugil cephalus*, *M. curema*, *Selene vomer*, *Trachinotus falcatus*, *Pomatomus saltatrix*, *Orthopristis chrysopterus*, *Stenotomus chrysops*, *Micropogon undulatus*, *Menticirrhus americanus*, *Stephanolepis hispidus*, *Alutera schœpfi*, *Tetodon maculatus*,

Chilomycterus schœpfi, *Myoxocephalus æneus*, *Prionotus carolinus*, *P. evolans strigatus* and *Pseudopleuronectes americanus*.

HENRY W. FOWLER

ACADEMY OF NATURAL SCIENCES,
PHILADELPHIA, PA.,
November 6, 1909

SOCIETIES AND ACADEMIES

THE NEW YORK ACADEMY OF SCIENCES SECTION OF BIOLOGY

A REGULAR meeting of this section was held at the American Museum of Natural History on October 11, 1909. In the absence of Mr. Frank M. Chapman, chairman of the section, Professor N. L. Britton presided. The evening was devoted to a paper on "Common Mushrooms and How to Know Them," by Miss Nina L. Marshall.

Miss Marshall, who is the author of a popular book on mushrooms, exhibited a series of beautifully colored slides illustrating the principal types of mushrooms. She dwelt especially on the ecology of the different forms and on their economic importance to man. The distinctive characters of the poisonous and non-poisonous kinds were emphasized.

At the regular meeting held at the American Museum on November 8, 1909, Chairman Frank M. Chapman presiding, the following papers were read:

A Naturalist in the Straits of Magellan: Mr. CHAS. H. TOWNSEND.

The speaker gave an account of personal experiences in the Straits of Magellan while a member of a scientific expedition to that region several years ago. He spoke at length of the more interesting mammals, birds, fishes and plants seen or collected. The paper also dealt with the habits of the native tribes of that region. Those living along the more westerly channels of the straits go almost naked, subsist mainly on shell-fish and, in the speaker's opinion, are the lowest among primitive races of man. They are fast disappearing and should be carefully studied.

The paper was illustrated by lantern slides mostly from photographs by the author.

A Trip through Tropical Mexico: Dr. ALEXANDER PETRUNKEVITCH.

The author spent two months during last summer in the lowlands of tropical Mexico collecting arachnida and other invertebrates for the American Museum of Natural History. The paper