

and shaking these roots up in melted agar and plating there develops, at 37° C., in the course of a few days, from one to five circular colonies of a fungus which grows rapidly and assumes a salmon-pink color. Cover-glass preparations made from these colonies contain numerous sickle-shaped segmented spores, characteristic of *Fusarium*.

There are, according to Dr. Erwin F. Smith, about twenty-five known varieties of this fungus. Some are strict saprophytes, others are parasitic on grains and plants, and others are pathogenic to plants. No *Fusarium* has, however, been known to be pathogenic to animals. I would, therefore, pending the present investigation, which will require some time, propose the name *Fusarium equinum* nov. spec.

VICTOR A. NÖVGAARD.

WASHINGTON, D. C.,
Nov. 14, 1901.

RHIZOCTONIA AND THE POTATO.

ATTENTION has been called recently to the parasitic nature of *Rhizoctonia* on various plants in the United States by Dr. B. M. Duggar and Professor F. C. Stewart. Observations at the Colorado Experiment Station on the relation of this fungus to the potato have brought out some interesting facts. During the spring months sclerotia develop freely on tubers and young sprouts in sacks and bins. A few affected tubers in a sack or bin of clean tubers, under favorable conditions, will spread the disease and in a short time render the entire lot worthless for seed. Affected tubers used for seed transmit the disease to the young plants, and these in turn to the following crop of tubers. Under proper conditions the fungus attacks all parts of the potato plant and in all stages of growth, but it is most destructive to the softer tissues. The weaker plants are often killed before they reach the surface of the ground. Those which are able to withstand its earlier attacks are apt to suffer more or less injury from it later in the season.

Little potatoes are produced by the fungus injuring the tuber stems in such a manner as to prevent free transportation of plant food between the main stem and tubers, or by completely cutting off the tuber stem while the

tubers are small. When the tuber stem receives an injury sufficient to check the free transportation of plant food, the food accumulates above the injury and soon excites the buds on the tuber stem above this point into growth. These buds develop into tubers. The fungus may continue its work and in time kill back the tuber stem, or it may cut off this stem above the newly formed tubers. If the tuber stem is attacked just as it grows out of the main stem adventitious buds may push out on the main stem around the injured point. These usually develop into short-stemmed or stemless tubers, forming bunches of small tubers. If the roots are badly injured the food supply is reduced and the plant puts out weak tuber stems. These stems are easily cut off by the fungus and the plant usually sets few or no tubers. The food which it is able to take up is used mostly in top development. The leaves become thicker, have a tendency to crinkle and take on a yellowish tinge. When the roots are less severely injured but the free transportation of food to the subterranean stems is interfered with, excessive top development is produced, and the axillary buds may develop aerial potatoes.

Aerial potatoes may be produced artificially: (1) By ringing the stem; (2) by tying a line firmly around the growing stem; and (3) by removing the subterranean tubers as soon as formed.

Sclerotia are often found on the surface of the larger tubers. Apparently these sclerotia do no injury, but experiments show conclusively that scabbing and browning of tubers may be produced by this fungus.

The corrosive sublimate treatment is promising as a preventive of this disease.

F. M. ROLFS.

FORT COLLINS, COLO., Nov. 11, '01.

THE WORK OF THE 'ALBATROSS.'

STUDENTS of marine zoology will welcome the appearance of the brochure just issued by the U. S. Fish Commission, compiled by C. H. Townsend, and entitled, 'Dredging and Other Records of the Steamer *Albatross*, with Bibliography Relative to the Work of the Vessel.' This useful paper contains in condensed form

the records of the work of the *Albatross* for eighteen years, for this vessel has never been out of commission since she was turned over to the Fish Commission, all necessary repairs having been made during intervals between the various cruises. The Bering Sea controversy and the war with Spain interrupted the regular work of the vessel for several years, but with these exceptions she has been almost continuously engaged in investigating fisheries and fishing grounds, in deep-sea sounding and dredging, and in other branches of hydrographic work.

The dredging and trawling records run from 1883 to 1900 and include data of 1,786 hauls of the dredge and trawl, from depths of less than 100 fathoms down to the maximum of 4,173 fathoms, the deepest water in which a dredge has been used. Three charts, bearing the serial numbers of stations, show the extensive area covered by these operations.

The record of hydrographic soundings shows the date, latitude and longitude, depth and character of bottom, in 4,032 soundings, but as the figures have been used in various charts no map of these is given.

Then follow records of the surface and intermediate tow nets, miscellaneous records and records of serial temperatures. All these will not only aid in identifying the large collections placed in the hands of specialists or deposited in museums, but make intelligible many references contained in papers on the *Albatross* collections in which localities are referred to by the station number only.

The chronological bibliography relative to the work of the *Albatross* between 1884 and 1901 comprises 233 titles, and a list is appended of 63 papers now in course of preparation. Finally we are given a list of something like 2,000 new species, largely of deep-sea fishes and crustaceans, which have been described from specimens obtained by the *Albatross* and which give some idea of the amount of material secured. Those who are familiar with the magnificent volumes of the *Challenger* report may be surprised to learn that the zoological material on which they are based is in every way much less than that procured by the *Albatross*, but the *Challenger* material has had the advan-

tage of being systematically worked up and published in consecutive volumes, and in a manner to show it to the best advantage. The *Albatross* has probably obtained a hundred deep-sea fishes where the *Challenger* obtained one, a statement that may be illustrated by saying that a single haul of her trawl brought up many more specimens of *Macrurus* than were secured by the *Challenger* in her entire cruise. In a way this wealth of material has been truly an embarrassment of riches, for its accumulation, and particularly its care, have occupied the time of those who might otherwise have been engaged in its study; nevertheless, we can but hope that the scientific work of the *Albatross* may proceed in the future as it has in the past.

F. A. L.

RICHMOND MAYO-SMITH.

THE Council of Columbia University adopted the following resolution on the death of Professor Mayo-Smith:

The members of the University Council have learned with profound regret and unfeigned sorrow of the sudden death of their long-time friend and colleague, Professor Richmond Mayo-Smith, the chief of the Department of Political Economy in this University.

During his zealous, devoted and successful service of twenty-four years in this institution, he founded the department over which he has presided and developed it to so high a point of excellence that it has few equals in this country or in the world. He was, moreover, the chief promoter, if not the founder, of the science of statistics in this country. His published works upon this most difficult subject have brought exact and orderly knowledge into a domain where, before, uncertainty and confusion prevailed, and have earned for him honor and gratitude from the scientific world.

His activity went, however, beyond the limits of his own department. As a member of the University Council from the date of its establishment to the moment of his death, and of several of its most important committees, he contributed largely and ably to the formation of the policies of the University as a whole, and to the present organization of this complex institution.