In 1927 Mr. L. Kulik attempted to find the exact location of the meteorite and led an expedition to the Tungusk region. Owing to the lack of funds and the extreme difficulties of transportation in the wilderness of taiga and tundra, the expedition was not altogether successful. However, Mr. Kulik was able to reach the area where the taiga bore distinct traces of the passage of the meteorite. An area struck by the meteorite is a water table between the upper part of the Podkamennaya Tunguska and its right tributary the River Chuni. The area is largely covered with tundra in the process of formation, intersected by hills, small lakes, swamps and typical tundra. The immediate area is surrounded by high naked hills, deforested by the falling meteorite. All trees are still on the ground, their tops are spread out in fan-like fashion away from the central zone of the fall. Exceptions are noted only in the ravines or in the gorges and deep perpendicular valleys and also in a zone which can be considered as the "interference" zone. And even in these places the trees, in most cases, are scorched and though still in upright position they are all leafless and dead.

The zone where the heat effect of the meteorite is evident is considered by L. Kulik to be 30 kilometers in diameter and the area of the air-wave breaking the trees is 50 kilometers in diameter.

The central part of the "fire zone" is covered by shallow "funnel" shaped craters, reaching in some instances many tens of meters in diameter and not greater than 4–5 meters in depth. The bottom of the craters is covered with swampy growth.

Unfortunately, Mr. Kulik was not able to find the body of the meteorite or determine the depth to which it had sunk.

He believes that the meteorite of 1908 was an aggregate (a swarm) of meteors, moving with a rate approaching 72 kilometers a minute. Some of the aggregates undoubtedly exceeded 130 tons in weight. Hot gases (above 1,000° C.) surrounded the meteorite and started fires before the meteorite had reached the ground and sunk into it, forming craters, uprooting the trees and burning everything that can burn in the center of its fall.

GEORGE P. MERRILL

U. S. NATIONAL MUSEUM

## CONCERNING A RHIZOCTONIA WHICH FORMS HYMENIAL CELLS AND BASIDIOSPORES IN CULTURE

WHILE investigating root-rot diseases of alfalfa in October, 1924, a Rhizoctonia was isolated from a mass of hymenial cells and basidiospores which occurred on one of the diseased alfalfa plants. Several weeks later this Rhizoctonia was observed to have produced its perfect stage in pure culture and has continued to form hymenial cells and basidiospores up to the present time, when grown on certain artificial media and under proper external conditions.

Numerous single-spore isolations have been made from individual basidia of the spore-forming Rhizoctonia and with very few exceptions, all have formed spores. While under constant observation through a microscope, complete sets of spores have been picked from basidia by means of a Barber micromanipulator. All of the spores that germinated and continued to grow formed the perfect stage similar to the original isolation. This Rhizoctonia, therefore, is considered to be homothallic.

The hyaline mycelium formed by this Rhizoctonia can not be mistaken for that formed by *R. crocorum* (Pers.) D.C., which also occurs on alfalfa, and it is not believed that the two fungi are genetically connected. Cultures of Rhizoctonia were received from plant pathologists in various parts of the United States and amongst these one was found which is believed to be similar to the spore-forming Rhizoctonia isolated in Michigan. The former culture was isolated in Minnesota from an alfalfa root, which apparently was not affected with the violet root-rot disease. When grown under similar conditions the Minnesota Rhizoctonia was found to have spores and other characters identical with that of the Michigan strain.

The spore-forming fungus under consideration differs in many ways from *Rhizoctonia solani* Kühn (*Corticium vagum* B. & C.). The mycelium of the former is characteristically hyaline and lacks the brown color associated with *R. solani*. The sclerotia are smaller and less numerous. These differences are especially pronounced when the two fungi are grown on potato dextrose agar. Differences in sterigma length and in spore size distinguish the perfect stages of these two Rhizoctonias.

The perfect stage of the new spore-forming Rhizoctonia is apparently to be considered as a *Corticium* which is characterized, both on artificial media and upon inoculated alfalfa plants, by the unusual length of sterigmata.

J. E. KOTILA

MICHIGAN STATE COLLEGE AND
UNIVERSITY OF MICHIGAN

## MODELING CLAY AS A SUBSTITUTE FOR COLOPHONIUM WAX IN THE PHYSIOLOGICAL LABORATORY

IN the experience of the writer and of several associates the colophonium wax which has such a general use in the physiological laboratory has proven unsatisfactory in several ways. Plasteline modeling-clay has been found a satisfactory substitute and free from some of the faults of the wax. This is due to its more stable consistency. It does not require warming before use. Low temperatures do not cause