tip of the rod, and if any practical effect is noticeable it will presumably be to increase the probability of lightning strokes in the general neighborhood of the lightning rod, while tending to shield the rod itself from receiving the stroke.

But the cloud potential will not remain constant, for electric charge escaping from ground by means of the corona discharge on a lightning rod will travel toward the cloud and will thereby decrease the cloud's potential. It is in this effect that one may look for the advantage of the quiet discharge. What data there are available indicate that a powerful lightning stroke represents a discharge of more than half a coulomb. A point releasing current into the air at the rate of one milliampere would neutralize 10 per cent. of the cloud's charge in about a minute, while a point carrying 10^{-5} amperes would require 100 minutes to release the same charge. Many points would unquestionably be more effective than one point, but too little is known about lightning to determine the area of ground surface in which to count the number of points.

Nor can one predict how rapidly the charge of lightning clouds increases, how rapidly the clouds blow by, nor therefore how much time is available for a lightning rod to discharge a cloud. But under the most favorable circumstances it is not likely that a discharge of 10^{-5} amperes could be of much practical use, even though many points were discharging at this rate. On the other hand, a few points each discharging a milliampere might sometimes be a valuable protection.

So the problem becomes one of observation by those located in regions favored by lightning. Is there a visible discharge during a storm from lightning rods? How vigorous is the discharge, and (if such a measurement is not incompatible with safety) how much current does it represent? Does a discharge take place only from sharp points, or is it also to be seen on dull-pointed rods? Finally, is such a discharge to be obtained only on lightning rods, or is it to be found on weather-cocks, radio antennas, power transmission poles, wet trees and other high, conducting points?

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PLEOSPORA LYCOPERSICI E. AND E. MARCH., A TOMATO PATHOGEN IN THE UNITED STATES

A PLEOSPORA rot of tomatoes has been found causing extensive decay in California stock shipped to the eastern markets during November and December. This disease has been under observation since 1919, and each season it has been found the cause of more or less serious decay in tomato shipments during these two months. Inspections of numerous cars of tomatoes on the receiving markets have shown Pleospora rot to be the cause of losses of 50 to 90 per cent. of the fruit during transit and ripening. In the early stages brown V-shaped to oval, moderately dry lesions about the stem scar are characteristic symptoms of this disease. As the fruits ripen, the lesions become softer and the black perithecia of the causal organism become evident in the center.

So far as the writer has been able to determine, no reference has been made to Pleospora rot of tomatoes in this country. In 1921 E. and E. Marchal[1] found a tomato fruit rot in Belgium, incited by a new fungus, which they described as *P. lycopersici*. A careful check of the measurements of the Pleospora isolated from California tomatoes with the description and illustrations presented by E. and E. Marchal for *P. lycopersici* indicate that the two fungi are identical. The conidial stage *Macrosporium sarcinaeforme* Cav. is also present on California tomatoes.

Single spore cultures have been made and it has been demonstrated that single ascospores as well as single conidiospores will give rise to cultures bearing both the *Pleospora* and *Macrosporium* stages. The average measurements for the Pleospora obtained from California tomatoes are as follows: perithecia 325–550 μ diam., asci 28.2 × 167.0 μ, ascospores 15.2 × 34.4 μ, conidia 13.5 × 26.0 μ.

A complete description of symptoms, together with temperature studies and other economic aspects of this disease, will appear in a future article.

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DIPLONEURA NITIDULA MEIGEN

DURING the summer months and as late as last October, this species of Diptera, family Phoridae, was observed in New York City. Rev. Joseph Assmuth, S.J., head of the biology department at Fordham University, observed these individuals in great numbers near the base of a sycamore tree on the campus. Father Schmitz, S.J., after receiving the specimens reports that this is the first authentic observation of this species in North America. The most striking point of interest was their presence in such large numbers. According to the present literature Schmitz observed a similar phenomenon of a species of Phalacrotophora. Fordham University now has several specimens on exhibition in their entomological collection.

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[1] Él. et Ém. Marchal, "Contribution à l'étude des champignons fruticoles de Belgique," *Bulletin Société Royal de Botanique de Belgique*, 54: 109–139, 1921.