

considerable unevenness of the stand, there being quite a proportion of very weak plants. It was known during the season of 1914 that these fields were infested by the wheat straw worm, *Isosoma grande* Riley, and it was thought that the weakened plants were due to infestations of this insect. Careful examination, however, did not reveal the presence of larvæ in the unthrifty plants. While making observations two weeks previous to this time it was noted that the emerged females of the wheat straw worm, *Isosoma grande*, were ovipositing in the wheat plants, and it was naturally our first thought, on examining the fields the second time, that the weakening of the plants was due to the attack of the larvæ. It may be said in passing that the wheat plants were largely volunteer, although some additional seed had been sown in the field.

A number of these plants were carefully examined in the laboratory and it was found that the attached wheat kernels were infected with a fungus which had apparently destroyed their contents at or near the time of germination. Pure cultures of the organism were made and it was found that the fruiting was typical in every respect excepting on nutrient agar cultures, or cultures which tended to become dry too readily.

A search of the literature indicates, in so far as I have been able to determine, that this disease has not been heretofore noted and that the organism has not been previously described. The fungus clearly belongs to the genus *Podosporiella*. We find only one other species under this genus, namely, *Podosporiella humilis* Ell. & Ev. The fungus is not truly parasitic, but seems to attack the wheat kernel about the time of germination, completely destroying the contents in very much the same way that the kernel is destroyed by smut. The result is that the wheat seedling, not getting the proper food supply in the early stages of growth, is permanently dwarfed and produces few stools. The crop yield is much reduced.

An extended description of the fungus and the characteristics of the disease will be given in the near future, at which time the fungus

will be named as a new species of *Podosporiella*.
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OCCURRENCE OF *THIELAVIA BASICOLA* AS A ROOT
PARASITE OF WATERMELONS IN THE SALT
LAKE VALLEY, UTAH

DURING the current season my attention was called to a serious trouble of watermelons, *Citrullus vulgaris* Schrad., in which all the plants in an entire field had been lost and even a second planting had largely died. Many of the plants came above the ground in an apparently healthy condition, but soon wilted or "damped off." Some that did not wilt had a chlorotic appearance and upon carefully removing them from the soil it was found that the lower part of the root system had been destroyed. These plants had developed many lateral roots above the point of injury. Examination showed that the roots were badly infected with the fungus *Thielavia basicola* (B. & Br.) Zoph. In going over the literature I find that Gilbert¹ gives a considerable list of hosts and the distribution of the fungus. This list does not include the watermelon and it is therefore apparent that the watermelon is a heretofore unreported host for this fungus. So far as the writer has been able to determine, *Thielavia basicola* has not been found in any part of the United States west of the Mississippi River; at least, it has not been found as an active parasite.

The fungus has been isolated in pure culture and has fruited characteristically, agreeing perfectly with the descriptions as given in the literature.
P. J. O'GARA

OCCURRENCE OF THE BACTERIAL DISEASE OF SUDAN
GRASS IN THE SALT LAKE VALLEY, UTAH

ONLY very recently has Sudan grass, *Andropogon sorghum*, been introduced into Utah, and with it apparently has been introduced the bacterial disease. Very recently some specimens were brought to the laboratory for examination, where it was found that they were badly diseased. The elongated, red-brown blotches were extremely numerous and had caused the death of many of the leaves.

¹ Bulletin 158, Bureau of Plant Industry, U. S. Department of Agriculture, October 7, 1909.

Most of the lower leaves were entirely dead. On the under surface of the spots there was apparent the characteristic red crust or scabs. This crust consisted of dry bacterial ooze which had come from the interior of the blade. When sections of the younger spots were put in a droplet of water and placed under the microscope the bacteria could be seen oozing from the infected portions in enormous numbers. Pure cultures were readily obtained; some of the plates contained practically no other organism but the causative agent. Colonies on nutrient neutral agar formed rather slowly, being circular, white or pearly-white in appearance. On putting a platinum needle into a colony and lifting it, it was noted that the organisms adhered in such a way as to be stringy or sticky and could be drawn out to considerable length.

It was at first thought that the organism might be one previously described by Smith¹ as *Bacterium andropogoni*, but there seems to be little doubt that the disease is due to the broom-corn bacterial organism first studied by Dr. Burrill, namely, *Bacillus sorghi* Bur. This disease is one of the chief drawbacks to the culture of Sudan grass on the Gulf Coast, but whether it will be serious or not in the Salt Lake Valley remains to be seen. During the present season the month of May was very rainy and humid and this probably accounts for the rather serious infection of the plants. Under normal weather conditions it is quite possible that the disease will not prove a serious drawback to growing Sudan grass as a forage crop.

P. J. O'GARA

SALT LAKE CITY, UTAH,
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THE PENDULUM KEY AND ITS USE FOR RECORDING THE BEATS OF A METRONOME

The pendulum key is a short lever, pivoted at one end, and held vertically. It is so arranged that a slight lateral displacement of its lower end causes it to make an electrical contact. A platinum pin in this part of the lever strikes against a platinum plate fastened to

¹"Bacteria in Relation to Plant Diseases," Vol. 2, 1911, Erwin F. Smith.

the insulated piece from which the lever is suspended. This simple apparatus is an excellent arrangement for recording the beats of a pendulum or a metronome. The writer has found it easy to construct such an instrument by making a few additions to a key with a platinum contact made by the Harvard Apparatus Company, and used in physiological laboratories to make and break a current by hand. The sketch shows the key with the additions to hold it in a vertical position. The

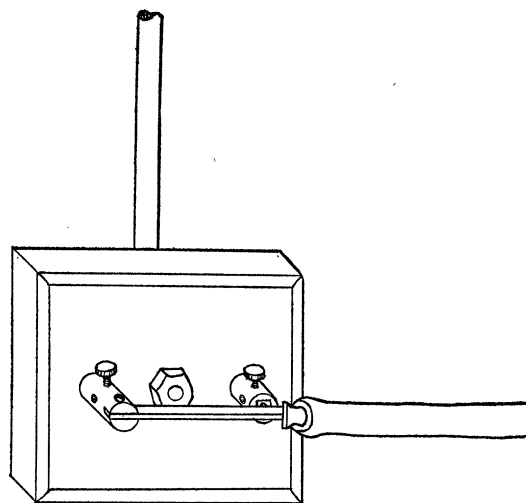


FIG. 1.

end of a short stud passes through a hole drilled in the middle of the slate base, and is held by a nut. A steel rod is screwed into the other end of the stud with its axis parallel to the plane of the base, and at right angles to the axis of the stud. The rod is held horizontally by a clamp fixed to the vertical rod of a tripod stand. By slightly rotating the key around the horizontal rod as an axis, the distance separating the platinum point from the plate against which it strikes can be varied to any desired extent. The lever can be lengthened by slipping one end of a short piece of rubber tubing over the handle, as is indicated in the figure. The tubing acts as a spring in breaking the shock of the impulse of the vibrating rod. The apparatus is placed in such a position that it receives a slight tap at the end