

BRIEFER ARTICLES.

Relationship of *Cæoma nitens* and *Puccinia Peckiana*.—*Cæoma interstitiale* Schl., or as it is better known, *Cæoma nitens* Schw., has been regarded by different botanists as the probable æcidio-stage of several species of Uredineæ. Dr. Burrill was the first to suggest that it might be an earlier stage of *Puccinia Peckiana* Howe. It was from this suggestion that during the past three years a careful study of these two forms was made, the results being published in bulletin no. 29 of the Illinois Agricultural Experiment Station. Although not successful in a preliminary attempt to produce the *Puccinia* from the *Cæoma* by artificial infection, there was sufficient evidence gathered to conclude that the two were only stages of one fungus. After having written this bulletin, but before publication, an article by Tranzschel¹ was received, in which he gave an account of a successful experiment where he produced *Puccinia Peckiana* by sowing spores of *Cæoma nitens* on young shoots of *Rubus saxatilis*.

Last spring infection experiments were again undertaken by myself with more satisfactory results. Early in the winter underground parts of *Rubus villosus* and *Rubus occidentalis* were removed from the University forest and placed in crocks in the greenhouse. These plants had not been affected the preceeding summer by either the *Cæoma* or the *Puccinia*. In the spring the plants started to grow fairly well, and are yet alive. On June 9th fresh spores of *Cæoma nitens* were placed on the young leaves of both a blackberry and a raspberry, and on June 14th two more raspberries and another blackberry were likewise treated. In each case spores from a corresponding plant were used, save in one of the latter raspberries where spores from a blackberry were used. Besides the foregoing plants several were kept free from spores to serve as checks. On July 26th, forty-seven days after sowing spores, mature sori of *Puccinia Peckiana* were found on one of the blackberries, and a few days later, on the other also. In Tranzschel's experiment but twenty-four days intervened between the sowing of spores and the finding of teleuto-sori. The infection while not abundant was quite apparent on several leaves. No sori appeared on the three test raspberries or on the checks. As raspberries are much better protected by hairs on the lower surface of their leaves, infection of such plants is no doubt much harder to accomplish than that of the blackberry. The time between sowing and apparent

¹Hedwigia 32: 257. 1893.

infection, six or seven weeks, coincides quite well with the time that elapses between the first appearance of the *Caeoma* and that of the *Puccinia* out of doors. As these experiments were carefully conducted there seems no doubt that these forms are related. Experiments producing the *Caeoma* from the *Puccinia* would be much more difficult, as infection in this case no doubt takes place through the very young basal shoots.

The connecting of these forms brings up an interesting point of nomenclature. In the bulletin referred to I accepted *Puccinia Peckiana* Howe as the name of the fungus, while Tranzschel re-named it *Puccinia interstitialis* (Schl.) Tranz. The question is merely whether the rule of priority shall apply to the very first name given or whether to the first name given to the mature form. The latter method seems to me the much more rational as it does away with needless confusion and increase of synonyms. As a matter of curiosity on this point, I submitted the data to five of the best botanists of this country, four of whom have favored me with their opinions. All stated that it was a mootable question, but one that should be settled. Two were inclined to believe that, as now interpreted, priority would be carried to the first name given to any stage, while two decided that the priority rule should apply to the first name given to the mature form.—G. P. CLINTON, *University of Illinois*.

Some field notes.—While searching for some fungi on *Ulmus Americana* leaves, two were found on a young tree which present a strange and interesting departure. The petiole, one-third of an inch above where it becomes a midrib, bifurcates so as to make an angle of about fifty degrees between the two subdivisions. Each of the subdivisions becomes a midrib to a leaf whose outer edge is normal, and the inner edge is also normal down to about an half or two-thirds of an inch above the bifurcation. Here the two leaflets join together, making a compound leaf.

In laboratory pressed specimens of *Viburnum acerifolium* a superficial observer will be mystified by apparent petioles that bifurcate and at each end of the bifurcations will be found a normal leaf. Careful observation will prove the apparently bifurcated petiole to be a stem with a terminal bud, and in the axil of last year's fallen leaf. The terminal bud is best made out from fruiting specimens.

In 1889 while botanizing in the mountains near Elliston, Montana, I passed a low specimen of *Acer glabrum*, whose appearance was such as to strike one as strange, and yet as *Acer glabrum* is the only *Acer* I had found in eight years of Montana work, I passed it by; after going several rods, its curious, indescribable appearance caused me to



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