Ascospores were taken from these fruit bodies and placed in drops of water on the leaves of *Prunus avium* seedlings in the greenhouse. This was repeated several times and resulted in every case in abundant infection, followed in a few days by typical *Cylindrosporium* acervuli. Later pure cultures were obtained from the ascospores, and the inoculation tests were repeated, using pure cultures, with similar results.

The study of the life history, relationship, etc., of the fungus is being continued, the results of which will be published in the near future.

The fungus belongs clearly with the Phacidiaceæ and is apparently an undescribed species of *Coccomyces*. The fruit body is imbedded in the tissue of the leaf, extending usually from one epidermis to the other. At maturity the wall of the fruit body bursts irregularly on the under side of the leaf, exposing the grayish-white hymenium beneath. The asci are club-shaped with a constricted, short-pointed apex. The spores are elongate, one- to three-celled, and borne in a fascicle in the end of the ascus.

Arthur,[1] in 1887, described what is probably the same ascogenous form (or closely related species) on plum leaves which were affected with *Cylindrosporium* the previous year. A similar ascogenous fungus was also mentioned and figured on dead leaves of *Prunus* by Pammel[2] in 1892, but in neither case was the fungus named or its connection with the *Cylindrosporium* stage proved.

The question now arises as to what species name should be applied to the perfect stage. One might employ the combination *Coccomyces padi* were it not for the fact that we are confronted with certain difficulties in the use of that name. In the first place we are not certain that the European form on *Prunus padus* is identical with the American form, though there is little doubt that a similar, if not identical, ascigerous stage is present on the dead leaves of that species in Europe. Furthermore, several different names have been used for the prunicolous species of *Cylindrosporium* in North America and a similar difficulty would arise if a choice of one of these were attempted. In the second place, while a specific name already employed for an imperfect stage might be used for a new species there would always arise confusion as to what principle of nomenclature was followed in the combination if a name previously employed for an imperfect stage were used. According to the International code of nomenclature adopted at Brussels in 1910, relating to polymorphic fungi, a species name applied to the perfect stage has precedence over names applied to an imperfect stage. In order, therefore, to avoid any confusion, I propose for the perfect stage of the fungus on *Prunus avium* the name *Coccomyces hiemalis* n. sp. with the following brief diagnosis.

Coccomyces hiemalis n. sp.: *Ascomatibus sparsis* interdum subaggregatis, punctiformis, nigris, ovatis vel orbicularibus, primum claussis, deinde in lacinias plures acutas dehiscentibus; disco pallido carneo, 125–210 μ lat. ascis clavatis, crassiuscule stipitatis, 70–95 $\times$ 11–14 octosporis, apice papillato; paraphysibus filiformibus, simplicibus aut ramosis, apice curvato; sporidiis linearibus 33–45 $\times$ 2, 5–3, 5 μ, simplicibus aut 1–3 septatis.

Hab. In pagina inferiore deiectorum foliorum Pruni avii.

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[1] Arthur, J. C., "Plum Leaf Fungus," N. Y. Agr. Exp. Sta., Rept. 5, 293–298, 1886.

[2] Pammel, L. H., "Spot Disease of Cherries," Iowa Agr. Exp. Sta., Bull 13, 55–66, 1891.

On the History of Cottons and Cotton Weevils

Referring to my first article on the Peruvian square-weevil,[1] in which were presented data relating to the origin of the cotton plant, it now seems possible to make certain well-founded deductions. The presence of the nearest wild relatives of *Gossypium* only in the New World indicates that the stock from

[1] *Journal of Economic Entomology*, April, 1911.

which these sprang was evolved in Antarctica and spread northward during the Mesozoic after both the African and Austromalaysian connections had been broken. South America was the last of the great land masses to be cut off from Antarctica, hence only in America do we find such nearly related but distinct types as *Ingenhousia* and *Cienfuegosia*. The Australian cottons have been isolated since the southward dispersal of the type which preceded *Gossypium* and which originated in the north. Hence they are found to be farther removed from the Asiatic and American true cottons than are the latter from each other, being properly separated under *Sturtia*. They represent more nearly the immediate type from which *Gossypium* s. str. sprang.

Anthonomus is a type of North American origin, where it was dominant during the Tertiary—Oligocene and Miocene. From some of its first waves of southward dispersal sprang the group to which belongs *Anthonomus vestitus*, which latter has developed on cotton alone in South America. From a later wave of southward dispersal sprang the *A. grandis* group, this species likewise developing on cotton alone, but originating in Central America and Mexico. Almost certainly one of the periodic separations between North and South America took place while the *A. grandis* group dispersal was in progress, thus cutting this species off from South America. During subsequent connections of the two continents no extensive dispersals of these groups occurred. This explains the fact that *A. vestitus* belongs to a group not represented in North America, and indicates the great probability that *A. grandis* does not occur in South America. It also explains the now quite evident fact that both of these weevils have no other food-plant than cotton, having originally developed on that plant.

From these points we may deduce that *A. vestitus* has probably attacked cotton in humid northwestern South America for upward of a million years, if not longer. It is therefore extremely probable that this species is not confined to Peru and Ecuador.

CHARLES H. T. TOWNSEND

THE ASTRONOMICAL AND ASTROPHYSICAL SOCIETY OF AMERICA

THE fifteenth meeting of this society was held in Cleveland in connection with the American Association for the Advancement of Science, from December 31, 1912, to January 2, 1913. With the exception of the joint session with the American Mathematical Society and Sections A and B of the American Association for the Advancement of Science on Tuesday afternoon, December 31, the meetings were held in the recitation room of the department of astronomy of the Case School of Applied Science. The secretary of Section A has already reported on the joint meeting (see page 76 of this volume).

The time was so thoroughly filled with the program of papers that little opportunity was afforded for attendance of the meetings of the various sections of the association and the other affiliated societies, or for excursions about the city. Most of the members, however, visited the observatory of the Case School, where are housed an excellent almucantar, a zenith telescope and a transit instrument, and accepted the privilege of visiting the Warner & Swazey shops.

The following members were in attendance: Sebastian Albrecht, S. I. Bailey, L. A. Bauer, J. A. Brashear, E. W. Brown, C. A. Chant, W. A. Cogshall, W. S. Eichelberger, Philip Fox, William Gaertner, James Hartness, G. F. Hull, W. J. Humphreys, F. C. Jordan, N. A. Kent, Kurt Laves, T. A. Lawes, W. I. Milham, D. C. Miller, E. W. Morley, E. F. Nichols, J. A. Parkhurst, E. C. Pickering, J. S. Plaskett, W. F. Rigge, H. N. Russell, Frank Schlesinger, H. T. Stetson, R. M. Stewart, J. N. Stockwell, G. D. Swazey, W. R. Warner, F. P. Whitman, D. T. Wilson, H. C. Wilson, Anne S. Young, E. I. Yowell.

Visitors: G. L. Coyle, S. F. Cusick, Patrick Rafferty, J. I. Shannon.

The following were elected members of the society: W. O. Beal, J. R. Collins, Ralph E. DeLury, R. T. A. Innes, William H. Morton, Earl C. Slipher.

Abstracts of the 36 papers which were read follow in the order of presentation.

The Correction of Actinometer Measurements for Aqueous Depletion: FRANK W. VERY.

Tables have been prepared for the approximate correction of actinometric observations with air masses and pressures of aqueous vapor as arguments. The first table of multiplying factors is