

same size as those of Ellis and Everhart.⁴ Type specimens have not been seen by the writer. The pycnidia are somewhat larger on the fruits and branches, but the spores are about the same size as those on the crab-apple leaves. The following are the spore measurements: From the same crab-apple tree—leaves, $5-6 \times 6-9 \mu$; fruits, $5-6 \times 8-9 \mu$; branches, $6-7 \times 9 \mu$. From the same common apple tree—petioles, $5-6 \times 7-9 \mu$; fruits, $5-6 \times 8-10 \mu$; branches, $5-7.5 \times 7.5-10 \mu$. The largest spore measurements are mostly from fresh spores developed in the moist chamber. These spore measurements agree with those of Clinton's⁵ "fruit-blotch" fungus.

From the above, it seems evident that the "fruit-blotch" disease of apples is caused by *Phyllosticta solitaria* E. & E. and that the fungus causing it may occur on either the leaves, fruits, or branches (or on one or more of them at the same time) of the wild crab-apple (*Malus coronaria* (L.) Mill.) and the common apple (*Malus Malus* (L.) Britton).

Specimens of the fungus on branches can be furnished to persons requesting them.

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WEST VIRGINIA AGRICULTURAL EXPERIMENT

STATION, MORGANTOWN, W. VA.,

May 25, 1907

HOLOTHURIAN NAMES

AN excellent memoir on "The Holothurians of the Hawaiian Islands" by Dr. Walter K. Fisher, of Stanford University, has just been published "from the Proceedings of the United States National Museum." As I had been informed that Dr. Fisher had fully subscribed to all the nomenclatural rules of the American Ornithologists' Union, I was curious to learn whether he had applied those rules to the nomenclature of the group in question. Years ago, being much interested in the echinoderms, I looked up various questions, with the result of finding unsatisfactory conditions in the naming of the group. The full history of the various episodes has not been given in the current histories by Ludwig (pp. 303-316) and others. I call attention to some here.

⁴ Ellis, J. B., and Everhart, B. M., *Proc. Phil. Acad.*, 430, 1895.

⁵ *Loc. cit.*

Dr. Fisher has referred to "*Holothuria* LINNÆUS, *Systema Naturæ*, 10th ed., 1758," as the source for that name. Evidently he had not consulted the volume cited, for there is no mention in it of any animal now called *Holothuria*.

In the tenth edition (I., p. 657) Linnæus defined his genus "260. HOLOTHURIA" as follows: "*Corpus* gibbum, nudum, ovale, natans. *Tentacula* sæpius ad alteram extremitatem, inæqualia numero et figura." He referred to it four species, (1) *physalis*, a Physaliid or "Portuguese man-of-war," and three other animals having no resemblance to holothurians. Unquestionably, the type of the genus and description was the first species.

In the twelfth edition (I., p. 1089) Linnæus modified his definition and, while including the four species of the tenth, added five species, (1) *frondosa* (*Cucumaria*), (2) *Phantapus* (*Psolus*), (3) *tremula* (*Holothuria* of moderns), (8) *pentactes* (*Cucumaria*) and (9) *priapus* (a worm). This is the starting point of the ordinary holothurian history.

One naturalist who was aware of these facts would not modify the nomenclature to correspond. It remains to be seen whether Dr. Walter Fisher or Dr. Hubert L. Clark will. The case is clear. If the tenth edition of the *Systema* is accepted as the starting-point, certainly *Holothuria* can not be retained within its modern limits, since the original was unaccompanied by reference to a single representative and the diagnosis is inapplicable. One of the synonyms of the modern genus must then replace *Holothuria*. *Fistularia*, the oldest, can not be used, as it was preoccupied. There are many later names, more or less applicable, but which one shall be used will depend on the limits given to the genus. If we accept it with the extent given by Ludwig, *Bohadschia* of Jäger (1833) may be taken. If it is limited by the exclusion of the group so named, *Trepang* (Jäger, 1833), *Sporadipus* (Brandt, 1835), *Thelenota* (Brandt, 1835) and several others are available, according to circumstances.

It may be added that *Actinopyga* should not be used for the genus first named *Mülleria* by Jäger, as Brandt had long before published a

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subgeneric name (*Microthele*) which is applicable.

While on the subject remarks on several family names may be in order. Of late years almost all echinodermists have adopted the quasi-descriptive names given by Brandt (*Aspidochirotae* and *Dendrochirotae*) instead of *Holothuriidae* and *Cucumariidae*. The last, however, have been adopted by Dr. Fisher and are in accordance with the custom prevalent among modern zoologists. Both names were attributed to Ludwig (1894), but *Holothuriidae* was used by Gray as early as 1842 and 1848. Gray also used *Cuvieriadae* and *Pentactidae*, but, as they were based on obsolete synonyms, they are synonyms of *Cucumariidae*. *Holothuria* being discarded, of course *Holothuriidae* can not be used but may be replaced by *Bohadschiidae*, based on the earliest generic name.

THEO. GILL

CURRENT NOTES ON METEOROLOGY AND CLIMATOLOGY

MONTHLY WEATHER REVIEW

IN Nos. 3 and 4 of the *Monthly Weather Review* (1907) the following articles appeared: "Rainfall and Run-off of the Catskill Mountain Region," by Thaddeus Merriman; a report to the Board of Water Supply of the City of New York, illustrated by a map of the Catskill Mountains and vicinity, showing by isohyetal lines the probable mean annual rainfall; also by cross-sections, showing rainfall values along different critical lines.

"Variation of Precipitation in the Adirondack Region," by Professor A. J. Henry; comments upon a paper by R. E. Horton, in the January *Monthly Weather Review*, pointing out that Mr. Horton's rainfall amounts for the lustrum 1901-5 are not to be taken as average or normal values, this five-year period having been one of heavy precipitation.

"The Temperature in the Front and in the Rear of Anticyclones up to an Altitude of 12 Kilometers, compared with the Temperature in the Central Area," by H. H. Clayton. This summarizes results obtained by means of *ballons-sondes* from St. Louis. Up to about 8 kilometers the temperature was lower in front

and higher in the rear than in the central area; between 8 and 10 kilometers the central area was colder than front or rear; and above 10 kilometers the lowest temperature was in the rear of the anticyclone and the highest in front. Mr. Clayton suggests that the cold air in the northern part of the anticyclone is moving faster than the anticyclone towards the southeast and sinks towards the earth's surface on account of its greater specific weight as compared with the surrounding air. The center of the anticyclone is about midway between the northwest and southeast limits of the inclined stratum of cold air. The circulation of air around a central area is confined to a stratum within about 2 kilometers of the earth's surface. The movement of the air at different heights in cyclones and anticyclones is shown by means of diagrams.

"Cooling by Expansion and Warming by Compression," by Professor C. E. Peet, and "Espy's Nepheloscope," by Professor Cleveland Abbe, describe simple apparatus for use in condensation experiments in school meteorological teaching.

"Bells as Barometers," by Professor Cleveland Abbe; note on some erroneous statements which have been going the rounds of the press regarding the so-called "water-bells" near Lebekke, in Belgium.

"A Proposed New Method of Weather Forecasting by an Analysis of Atmospheric Conditions into Waves of Different Lengths." This is a paper of unusual importance by H. H. Clayton which presents, in brief outline, the results of studies extending over many years in connection with long-range forecasting. The author believes that "the discovery of these facts not merely opens the way to a great improvement in the forecasting of weather from day to day, but also . . . furnishes a scientific basis for long-range forecasting." This paper is well illustrated, and merits careful study.

"The Velocity of Centers of High and Low Pressure in the United States," by C. F. von Herrmann; a determination of these velocities for the period 1878-1904, and a comparison with Loomis's results for 1872-84. Substantial agreement is found. The average annual