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Virginia Academy of Science

Proceedings for the Year 1938-1939

Minutes of the Seventeenth Annual Meeting

DANVILLE

May 4-6, 1939



Office of the Secretary
TWELFTH AND CLAY STREETS
RICHMOND, VIRGINIA

5. The Gardens of Monticello and the Plants Grown in Them.

Edwin M. Betts; *Miller School of Biology, University of Virginia.* (Lantern, 15 min.)

A brief description will be given of the different plans Jefferson made for the gardens at Monticello. A list of plants he used will be mentioned with comments on certain interesting ones.

6. Heterothallism and Segregation of Sexes in *Ascobolus geophilus* Seaver.

Edwin M. Betts and Samuel L. Meyer; *Miller School of Biology, University of Virginia.* (Lantern, 10 min.)

Ascobolus geophilus Seaver is found to be heterothallic. Ascocarps do not develop from monospore cultures but may be produced by crossing mycelia from spores of opposite strains. The mycelia are produced by germinating single spores on soil decoction agar. Crossing of mycelia from spores of opposite strains in single ascci shows that four of the spores in an ascus are of plus (Minus) strain and four spores are of minus (Plus) strain. The results indicate that sex factors may be segregated at either the first or second divisions.

7. The Genes Determining Floral Colors in *Impatiens Balsamina* L.

D. W. Davis, Lucy Ann Taylor and R. P. Ash; *College of William and Mary.* (10 min.)

Floral colors in the strains of *Impatiens balsamina* L. known to us are, except in minor variations, determined by genes belonging to four loci. At one of these loci there occurs a set of triple alleles.

White (W) is dominant to Cream. Pale Pink With White Spur (H) and Nearly White With Pink Spur (P₁), when present together, give Deep Pink With Pale Spur. Pink, Deep Spur (P₂), commonly masks the distinction between members of white and cream series except as this is revealed in color of the pollen; and is responsible, also, for deep red or purple color on the lower stems. P₂ and P₁ constitute with p a set of triple alleles, dominance being in the order named. H with P₂ gives Red. Nearly White Tinged With Lavender (L) with P₁ gives Lavender and with P₂ gives Purple. When H, P₂ and L are all present the floral color is Magenta. The combination of H and L makes Pinkish Nearly White Lavender, impossible to be distinguished consistently from the effect of either alone; and H, P₁ and L give a Pinkish Lavender, impossible to be distinguished consistently from Lavender.

Zoology Division

SATURDAY, MAY 6 — 9:00 A.M.

1. *Macrostomum ruebushi schmitti* n. var.

W. J. Hayes, Jr.; *University of Virginia.* (Lantern, 10 min.)

Macrostomum ruebushi schmitti is a new variety of the family *Macrostomidae*, of the sub-order *Opisthodrophora*, of the order *Rhabdocoelida*, and of the class *Turbellaria*. Characters peculiar to this variety are:

1. Body shape.

2. Details of epidermal ciliation.
3. Relative length of enteron.
4. Details of protonephridial system.
5. Shape of the testes.
6. Morphology of the walls of the vesicula granulorum.
7. Shape and size of penis stilette.
8. Morphology of sperm.
9. Morphology of chromosomes.

The type locality is Nashville, Tennessee; a pond on Charlotte Pike, one-fourth of a mile west of the intersection of Old Hickory Boulevard with the Pike. Collections were made in the autumn of 1938.

2. The Ductus Genito-Intestinalis in the Genus *Castrada*, Based upon *Castrada lutheri* n.sp.

William A. Kepner, M. A. Stirewalt and F. F. Ferguson;
Miller School of Biology, University of Virginia. (Lantern, 10 min.)

An organ has been depicted as arising from the anterior wall of the genital atrium of *Castrada fuhrmanni* by Hofsten (1911) and from the anterior wall of the genital atrium of *Castrada viridis* by Luther (1904). These are little more than blind sacs each having sets of unicellular glands associated with its base. These blind sacs could be correlated with no structures previously observed in *Castrada*. *C. virginicensis* presents the first ductus genito-intestinalis to have been discovered in this genus. The anatomy and position of this ductus makes it clear that the blind sacs that emerge from the anterior wall of the genital atrium of both *C. fuhrmanni* and *C. viridis* are vestigal ducti genito-intestinales. Chromosome: $n=3$; $2n=6$.

3. *Klattia Virginensis* n.g., n.sp.

William A. Kepner, M. A. Stirewalt and F. F. Ferguson;
Miller School of Biology, University of Virginia. (Lantern, 10 min.)

This American rhabdocoel in all except two fundamental features resembles the European *Polycystis goettei* Bresslau. *Klattia virginensis* has a receptaculum seminalis which has not been found in *Polycystis goettei*, though Meixner (1923) studied its anatomy intimately in searching for a bursa copulatrix, which Bresslau had shown as being present. The genus *Polycystis* is characterized by having a cuticular duct leading from the vesicula granulorum into the male genital canal, whereas the vesicula seminalis lacks such a duct. *Klattia* has a cuticular duct or stylette with which both vesicula granulorum and vesicula seminalis communicate. Chromosomes: $n=8$; $2n=16$.

4. Further Studies on the Physiology of *Microstomum* O. Schmidt 1848.

M. A. Stirewalt; *Miller School of Biology, University of Virginia.* (Lantern, 10 min.)

Earlier studies on excretion in *Microstomum*, which lacks organized protonephridial tubes, have been continued by micro-injection of a variety of stains into the parenchyma and endoderm of living animals. These injected specimens were studied both in the living condition and from stained sections. The results of the study show the method by which the animal tissues are freed from the injected materials.

5. *Phonorhynchus pearsi* n.sp.

William A. Kepner, F. F. Ferguson and M. A. Stirewalt;
Miller School of Biology, University of Virginia. (Lan-
tern, 10 min.)

The anatomy of a new species, specimens of which have been collected by the junior authors at Beaufort, North Carolina, will be described.

6. A Check-list of American Turbellaria—with Notes on Distribution and Taxonomy.

William A. Kepner, M. A. Stirewalt, F. F. Ferguson, T. D. Brown, and W. J. Hayes, Jr.; *Miller School of Biology, University of Virginia.*

7. Studies on the Turbellarian Fauna of the Mountain Lake Biological Station: I. Ecology and Distribution.

F. F. Ferguson, M. A. Stirewalt, T. D. Brown and W. J. Hayes, Jr.; *Miller School of Biology, University of Virginia.*

An alphabetical list of the American genera of Turbellaria, distribution maps, distribution charts, sketches and drawings of representative species, and living cultures of certain available species will be on display in connection with papers 6 and 7.

8. A Malthusian Study of the Goldenrod Gall Fly.

Lorus J. Milne; *Randolph-Macon Woman's College.* (10 min.)

Waste acreage with the Goldenrod *Solidago canadensis* L., was found to be infested with the Goldenrod Gall Fly (*Eurosta solidaginis* Fitch) to a little greater extent than one stalk in four. Two hundred and fifty galls from five sample areas were studied to learn the specific factors which regularly reduce the population of the fly in proportion to the number of viable eggs. It was found that prior to April 5, insectivorous birds had eaten over 43%, other predators had accounted for an additional 2%, inherent causes of death had removed another 14% from possible reproduction, while hymenopterous parasites had killed 1.6%. A discussion of other hazards in the life cycle of the fly indicates the manner in which the remaining 39.2% would be reduced so that from each female's batch of about seventy-five eggs, only one male and one female would develop to reproduce the species.

9. Some Studies of Chemically Treated Tree Bands as An Aid in Controlling the Codling Moth of Apple.

A. M. Woodside; *Virginia Agricultural Experiment Station.* (15 min.)

For several years bands of single-faced, corrugated strawboard, treated with a mixture of beta-naphthol and lubricating oil have been tested as a supplementary control for codling moth. In a heavily infested orchard such bands have been found to capture about 70% of the larvae. Less than 1% of these larvae were able to transform and emerge from properly treated bands. When half-bands of treated and untreated strawboard were applied on the same trees more than 70% of the catch of worms was found in the treated halves, showing that the treatment does not make the bands repellent.

The efficiency of the bands varies with the weight of the chemical coating if other factors are the same. A coating of 0.4 ounce per foot of 2-inch

band, 40% of which should be beta-naphthol, is satisfactory for Virginia conditions. Jute-faced paper apparently makes a less effective band than kraft-faced paper if the weight of coating is the same. Addition of a small amount of aluminum stearate to the dipping mixture seems to increase the efficiency of the bands, while the addition of paraffin wax results in a marked decrease in efficiency.

10. Further Observations on the Turbellaria of the Eastern United States.

E. Ruffin Jones, Jr.; *College of William and Mary, Norfolk.* (10 min.)

This is a continuation of the study which was reported at the meeting of the Academy last year. Several additional forms, new to this country have been found, and a number of morphological observations have been made. Included under the head of morphological observations are some made on *Monoophorum triste* Graff which disclose that this animal has been placed in the wrong genus and should be classified as *Cylindrostoma triste*.

New officers for the year 1939-40 were elected as follows:

Chairman, Bruce D. Reynolds.

Sub-Chairman, J. G. Harrar.

Secretary, Lena B. Henderson.

LENA B. HENDERSON, *Secretary.*