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# Virginia Academy of Science

## Proceedings for the Year 1936-1937



Minutes of the Fifteenth Annual Meeting

UNIVERSITY OF VIRGINIA

May 6-8, 1937



*Office of the Secretary*  
TWELFTH AND CLAY STREETS  
RICHMOND, VIRGINIA

From an examination of specimens from various herbaria, and from the speaker's own collections, and from a review of the relevant literature, 34 species have thus far been found to occur in the state.

The speaker expects to demonstrate herbarium specimens of 30 or more violets occurring in the state, two of which are new to the state; also maps showing the distribution of species in cases where sufficient data has been secured.

Up to the present time, the herbaria in the following institutions have been examined for violets collected in Virginia: Duke University, Lynchburg College, New York Botanical Gardens, Randolph-Macon Woman's College, University of Richmond, University of Virginia, Virginia Military Institute, Virginia Polytechnic Institute.

## Botanical Spring Foray

SATURDAY AFTERNOON AND EVENING, MAY 8  
AND SUNDAY, MAY 9, 1937

The committee on Virginia Flora plans to conduct the usual spring foray upon the conclusion of the meeting of the Academy. This will be *The Spring Foray of the Claytonia Club*. Saturday afternoon will be spent in the field according to plans to be announced at the meeting. Saturday evening will be devoted to a special program, the principal paper being given by Dr. Paul M. Patterson of Hollins College, on the Violets of Virginia. Dr. Patterson will display his violet collection and others are asked to bring specimens of native violets for display whether they are named or not. We would like to have on display specimens of other plants which are of real interest such as new species, important range extensions, or rare plants which have been found in the State. It is desired to have an interesting and instructive display rather than a large one. Sunday will be devoted to field work. We plan to go into the mountains near Stuarts Draft. Blankets will be *essential*, and other camping equipment will help. Since accommodations will be very limited (two small cabins), everyone should register with A. B. Massey, Blacksburg, not later than May 1, and send initial fee of \$1.00 to cover cost of food.

## Zoology Division

SATURDAY, MAY 8—9:00 A.M.

*Room 11, Monroe Hall*

1. Demonstrations and Papers from the Zoological Laboratories of the Miller School of Biology of the University of Virginia. (1 hour — 9:00 to 10.00 A.M.)

### *Demonstrations*

1. The feeding of hydras to microstomas. The microstomas will be fixed 24 hours after having been fed, and issued to zoölogists in the fixing fluid so that the members may section them in their own laboratories. This

demonstration will be in charge of Wm. A. Kepner and M. A. Stirewalt, Miller School of Biology, University of Virginia.

2. A display of drawings of protozoa of Virginia. Wm. A. Kepner, Miller School of Biology, University of Virginia.

3. Cnidoblasts of hydra fixed as they were being transported from body-proper to the tentacles. J. C. Foster and R. I. Bosman, Miller School of Biology, University of Virginia.

4. Conjugation spindles of *Paramoecium caudatum*. S. L. Meyer and T. H. Alphin, Miller School of Biology, University of Virginia.

5. Mitosis in *Amoeba proteus*. C. McL. Gilbert, Jr., Miller School of Biology, University of Virginia.

6. Sections of hydra prepared without the use of alcohols and xylene. Louis T. Stableford, Miller School of Biology, University of Virginia.

7. Drawings of simple and complex Turbellaria. C. McL. Gilbert and Wm. A. Kepner, Miller School of Biology, University of Virginia.

Demonstration of forty species of amphibia, collected near Radford, Va. (Allegheny Mountains). Paul R. Burch, Radford State Teachers College.

## 2. Notes on Cytological Technique.

Charles O. Hathaway: *University of Virginia*. (Blackboard, 15 min.)

1. Static electrical disturbances have been completely eliminated from paraffin ribbons of microtome sectioned materials by dispelling the charges on the ribbons with ionized air produced by the continuous discharge of a modified Tesla coil. This method is safe and independent of such factors as temperature and humidity.

2. Maceration studies of tissues are facilitated by the following method: fixation; wash in water; macerate in Karo (white) 8 parts, Delafield's hematoxylin 1 part, alcohol-and-water soluble Eosin Y (1/10,000 in absolute alcohol) 1 part; add cover and warm to increase depth of staining. The result is a typical hematoxylin stain contrasted with the Eosin counterstain.

3. Platyhelminths and nematodes have been prepared as total mounts using dioxan (diethylene oxide) both as the dehydrant and as the Balsam solvent. Any suitable fixative and stain may be used. The object is washed in water, passed to 50% aqueous dioxan, destained in acid 50% aqueous dioxan, differentiated in alkaline 50% aqueous dioxan, then through two changes of 100% dioxan. It is then placed in a thin solution of dioxan and Balsam. The object is then transferred to the slide, straightened and arranged, finally being mounted under the cover in a thick solution of dioxan and Balsam. The advantages of this method are: the number of dehydrating steps is reduced; a minimum of materials is needed; and finally, the absence of higher alcohols and xylene reduces hardening of the object so that it is possible to straighten the object just before the addition of the cover.

## 3. *Brachylæmus peromysci* n. sp. from the Deer Mouse.

Bruce D. Reynolds: *University of Virginia*. (Projection lantern, 10 min.)

Two specimens of a fluke, differing in several respects from *B. virginianus*, have been found in the deer mouse, *Peromyscus leucopus*. These differences are pointed out as a basis for establishing a new species. Also a brief review of the family Brachylaemidae is given.

## 4. Manipulation of Nematocysts by Chlorohydra.

Kepner, Goodwin, and Ingles; *University of Virginia*. (Lantern and blackboard, 10 min.)

Both old and young cnidoblasts of *Chlorohydra viridissima* are digested by the polyp during periods of inanition.

When cnidoblasts are needed, they arise from interstitial cells of the ectoderm of the oral two-thirds of the body-proper. These cnidoblasts with incomplete or fully formed nematocysts are delivered into the adjacent endoderm. The endoderm throws them out into the coelenteron. The shunting fluids of the coelenteron distribute the cnidoblasts to all endodermal regions. The endodermal cells of the tentacles ingest cnidoblasts bearing penetrants, streptolines, volvents, and glutinants; the endoderm of the other regions of the body ingest only those cnidoblasts that house penetrants or streptolines. The ingested cnidoblasts are sent over by the endoderm into the ectoderm to be therein orientated, and eventually used.

#### 5. A Diagnosis of *Microstomum bisparalis* (nov. sp.)

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

This member of the genus *Microstomum* has been described as a new species on the basis of the following characters:

- (1) The length of the mature animal of 4 zoöids is 3-4 mm.
- (2) The spindle-shaped body is posteriorly tapering, anteriorly set off, by lateral indentations in the plane of the ciliated pits, as an abruptly obtuse, mobile, exploratory organ
- (3) The posterior elongation of one zoöid over the next following is absent
- (4) The ciliation is uniform
- (5) Anterior pigment spots are absent
- (6) The openings of the ciliated pits are round
- (7) The preoral enteric blind sac is short, conical, abruptly tapering, reaching only to the plane of the ciliated pits
- (8) The cerebral ganglia lie completely anterior to the enteric sac
- (9) The chitinous copulatory organ is deeply bent in a double spiral
- (10) The two testes are postero-lateral, one developing earlier than the other.

#### 6. *Macrostomum virginianum* n. sp.

F. F. Ferguson; *University of Virginia*. (Lantern, 10 min.)

*Macrostomum virginianum* is a new species of the family *Macrostomidae*, of the sub-order *Opisthandropora*, and of the order *Rhabdocoelida* and class *Turbellaria*. It is a free-living flat worm living in the small streams on the grounds at the University of Virginia, and is the first of a series of new species which will be described from this laboratory.

Based upon the criteria previously used by other workers in this field, *M. virginiana* is a new species because of the following diagnostic characteristics:

1. The body has a three-fold lateral indentation.
2. There are three types of epidermal ciliary processes.
3. The sperm cell is differentiated into feeler, body, and tail, and bears setae "Nebengeisseln."
4. The stilette has a right angle bend near its base plus an oval distal opening that lies on the convexity of the curve and is distinctly terminal.
5. The chromosome count is  $N = 3$ ,  $2N = 6$ . The chromosome morphology is peculiar to this species.

#### 7. A Method for Preparing Small Parasitic Nematodes for Sectioning.

Sarah Virginia Holden; *Virginia Polytechnic Institute*. (Lantern, 10 min.)

Parasites were secured from their hosts while yet alive and placed in physiological salt solution at 40° C. Two methods of fixing were employed. In the first, the nematodes in the salt solution were heated in a water bath until they straightened out, the salt solution was poured off, and any suitable

fixative was used. The second method comprised the decantation of the salt solution from the worms and the application of a hot fixative.

Since the specimens could not be used immediately, they were washed for half an hour in 50% alcohol and transferred to 70% ethyl alcohol for storage. When the material was required for sectioning, it was placed in diaphanol for 6 hours. Zirkle's method for preparing plant tissue was utilized with the exception that the material was left for 30 minutes in each grade instead of an hour, and dilutions from 50% mixture of butyl alcohol and on up were employed instead of 11%

The method described above has yielded fairly uniform sections for staining, and these results indicate that it is superior to methods involving the use of the higher ethyl alcohols and xylene.

8. A Preliminary Report on Some Marine Turbellaria from the East Coast of the United States.

E. Ruffin Jones, Jr.; *Norfolk Branch, College of William and Mary*. (Opaque Projector, 5 min.)

About forty different marine Turbellaria have been collected at various times along the coast of Virginia, North Carolina, and at Wood's Hole, Massachusetts. While many of these have not yet been identified, a report will be made on some of the more easily recognizable forms.

9. Studies on the Life Histories of Some Cyclops.

J. Southgate Y. Hoyt; *Washington and Lee University*. (Opaque Projector, 10 min.)

A report on the life histories of several species of *cyclops* from the egg to the adult. Observations were made on the effect of different laboratory conditions on the relative number of molts and time interval of each respective molt.

10. Identification and Distribution of Two Simuliids in Virginia.

W. R. DeGarmo and G. W. Underhill; *Virginia Polytechnic Institute*. (10 min.)

Recently it has been found that certain species of the blood-sucking Simuliidæ, or Black Flies, are carriers of a malaria-like protozoan that causes a serious disease of turkeys in Virginia. For some years it has been known that other species transmit a similar disease of ducks.

As a part of these investigations, the identification and distribution of the species of Simuliidæ in Virginia has been undertaken. The extent of the present phase of the problem includes the identification, description (with drawings), and distribution of the species of larvæ in collections from streams throughout Virginia, together with notes on their biology.

At present two species, *Simulium vittatum* and *Simulium hirtipes* have been studied in detail. Structures of apparent value in classification are the mouth parts, antennæ, markings on head or body, number and shape of the blood gills, and the structure of the anal ring.

Notes on the distribution, both seasonal and geographical, of the two species are according to present collections.

11. Mollusks of the Radford Area.

J. Frances Allen and Paul R. Burch; *Radford State Teachers College*. (15 min.)

Pen drawings of the species of Mollusks of the region about Radford which have been collected within the past three years will be shown on the screen.

There will be an introduction and some comment. The actual animals will be available for inspection.

12. Structure, Spawning, Fertilization and Development in the Oyster.

R. V. TRUITT; *University of Maryland*. (22 min.)

W. L. THRELKELD, *Secretary*.