Virginia Academy of Science

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Office of the Secretary
TWELFTH AND CLAY STREETS
RICHMOND, VIRGINIA

8. Plants of "Rock Stable", Amelia County.

J. B. Lewis; *Amelia, Va.*

In the southwest corner of Amelia County, near the junction of Amelia, Nottoway, and Prince Edward Counties, there is a chestnut-oak ridge, ranging in elevation from 400-500 feet above sea level. At its west end this ridge slopes down to Sayler's Creek, over the western half of the slope are great outcrops of granite rock. There are probably twenty acres of exposed bed rock, mostly in the form of a solid irregular floor, that in general follow the slope of the hill. In one place there are great boulders, some of which are nearly as large as a freight car. There are openings between these from 4 to 8 feet wide, their perpendicular walls are from 8 to 10 feet high. It is said that horses were hidden among these boulders at times during the Civil War, hence the name "Rock Stable".

This paper is concerned particularly with the plants of this area, especially those unusual in Amelia County. Slides illustrating the remarkable growth of a chestnut-oak in relation to a large boulder will be shown. Among the species to be found at this point, which are unusual to this section of the State or to Amelia County, may be mentioned: *Selaginella rupestris, Arenaria groenlandica* var. *glabra, Talinum teretifolium, Arabis levigata, Opuntia vulgaris.* These and a number of plants of the area will be discussed.

9. The Grasses of Virginia.

A. B. Massey; *Virginia Polytechnic Institute.*

This consists of a progress report of work being carried on in developing a study of this important group together with plans for the future.

10. Further Observations and Studies on Fruit Bud Formation.

Fred W. Hofmann; *Virginia Agricultural Experiment Station.*

Zoology Division

SATURDAY, MAY 7—9:00 A.M.

1. Effects of Estrin Upon the Estrus Cycle.

Gordon H. Collins; *Washington and Lee University.*

Various dilutions of estrin in oil were given to ovariectomized rats. The effect upon the estrus cycle was evidenced by vaginal smears.

2. Effects Upon Sex in Joined Rats.

Gordon H. Collins; *Washington and Lee University.*

A male and a female rat were joined by surgery through the skin, the graft extending from the region of the scapula to the region of the pelvic girdle. Effects upon sex to be evidenced by vaginal smears and sections of the ovary and testis.

3. Some Notes on a Leafminer in Holly.

G. W. Underhill; *Virginia Agricultural Experiment Station.*

The Dipterous leafminer (*Phytomyza ilicis* Curt.) which makes large trumpet-shaped blotch mines on the upper surface of the leaves is very

prevalent on holly (*Ilex apaca*). The insect is of European origin and has been reported in England, Germany, and Switzerland. It is known to occur in Alaska, British Columbia, Oregon, Washington, California, Massachusetts, Connecticut, Virginia, North Carolina, and Alabama. Infested leaves are greatly disfigured although the mines are very shallow and most feeding takes place after the growing season for holly has passed.

There has been some confusion regarding the life history and habits of the insect, but collections in Virginia indicate one brood. In 1937 the flies emerged in April and May. The eggs were laid singly in punctures anywhere on the undersurface but more commonly near the border and midrib of the young leaves. The small script-like (linear) mines remained inconspicuous until late summer and early fall. The enlarged blotch areas began to show about the first of October. The chief feeding and blotching were done from October through March. The maggots fed during warm spells throughout the winter as evidenced by the size of maggots and of mines in material collected and examined in October, January, February, and March. Only two cast skins were found which indicate only three instars for this insect. In eastern Virginia pupation began in early February 1937 and 1938, but the majority pupated in March. Pupation and emergence were about 5 to 6 weeks later in Giles County (Big Stony Creek area) than at Richmond.

Parasitism ranged from 18 to 54 percent. Four species of parasites have been reared. The most important one was the yellow *Opius striativentris* (determined by Musebeck, U. S. D. A.). Two parasites emerged in small numbers, one of which has been determined by the writer to be *Closterocerus tricinctus,* and the other a species of the genus *Horsimenus.* Another parasite emerged from two different lots and has not been determined.

4. A Summary of Histological and Physiological Studies on *Microstomum* (O. Schmidt 1848).

M. A. Stirewalt; *Miller School of Biology, University of Virginia.*

A description is given of the morphology and histology of two typical members of the genus *Microstomum* together with a brief account of the development of certain functional cells from primitive equipotential cells of the parenchyma.

A study of the method of excretion in the absence of protonephridia is reviewed, and a comparison is made between microstomum's handling of its waste products and its manipulation of the nematocysts of hydra.

5. A Monograph of the Genus *Macrostomum* (O. Schmidt 1848).

F. F. Ferguson; *Miller School of Biology, University of Virginia.*

This volume is a comprehensive survey of all the information upon *Macrostomum* up to the present. Stress has been placed upon the following subjects: History, Classification, Ecology, Methods, Anatomy, Specifit descriptions, Sexuality, Egg and Sperm development, Embryology, Physiology, and Experimentation. The bibliography has purposefully been made extensive in order to serve the needs of other workers.

6. Mesostom Virgianum n. sp.

Wm. A. Kepner, F. F. Ferguson and M. A. Stirewalt; *Miller School of Biology, University of Virginia.*

Evidence of epithelia that respond in a correlated manner to the condition

of the ovary will be presented. This correlation suggests control by hormones.. The presence of an epithelium upon the outside of a visceron of this flatworm indicates that, in the phylogeny of animals, peritoneum may have made its appearance locally before a true coelom had been developed.

7. A Study of the Life Cycle of the European Red Mite (*Paratetranychus pilosus* Can. & Fanz.) and its Control.

J. M. Grayson; *Virginia Polytechnic Institute.*

The European red mite has within the past ten or fifteen years come into prominence as an important pest of deciduous fruit trees in North America. During the fall of 1935 and the spring and summer of 1936 a study was made of its life cycle and control.

The average length of the life cycle of fourteen females was 15.23 days. The average length of the adult period for twenty-eight females was 16.19 days. The average length of time from the deposition of the eggs to maturity of the males was slightly shorter than the corresponding period for the females, being 13.5 days in comparison to 13.78 days for the latter.

Better control was obtained against the overwintering eggs with petroleum oil, either alone or in combination with tar distillate, nicotine sulfate, or dinitro-ortho-cyclohexylphenol than with the water gas tar oils, tar oil-wax emulsion, cresylic acid, or lime sulfur plus nicotine sulfate. It appeared that dinitro-ortho-cyclohexylphenol added to the insecticidal value of the materials. A summer application of Orthol-K oil emulsion was very effective in killing both the mites and the eggs. Fall and mid-winter applications were considerably less effective than those made in the late dormant or the delayed-dormant periods. Further work on control is in progress.

8. Mollusks of Montgomery, Giles and Pulaski Counties.

J. Francis Allen and Paul R. Burch; *State Teachers College, East Radford.*

9. Anatomy of Enterostomula graffi.

E. Ruffin Jones, Jr., *College of William and Mary, Norfolk Division.*

This form which was imperfectly described from sexually immature specimens by Beauchamp in 1913 is re-described from sexually mature specimens.

10. Report of Several Species of Turbellaria not hitherto reported from the United States.

E. Ruffin Jones, Jr., *College of William and Mary, Norfolk Division.*

The forms now reported for the first time in the United States include Enterostomula graffi, Omalostomum schultzei, Sopharynx oculatus and Polycystis mamerita.