

PROGRAM OF THE SECTION ON BOTANY

Chairman: C. L. PORTER, Purdue University

1. Notes on the distribution in Indiana of *Quercus Shumardii* Buckley and its so-called variety *Schneckii* (Britton) Sargent. Ralph M. Kriebel, Newcastle.
2. Dioecism in *Carex picta*. Louis Martens, Indiana University.
3. Distribution of *Lemanea* in relation to geological formations in southern Indiana. C. M. Palmer, Butler University.
4. Notes on Indiana grasses, 1937. J. E. Potzger, Butler University.
5. Recent additions to the flora of Indiana. R. M. Tryon, Jr., Madison, Wisconsin.
6. Studies in Indiana Bryophytes II. Winona H. Welch, DePauw University.
7. Another photoelectric device for measuring leaf areas. Raymond E. Girton and Carl H. Gardner, Purdue University.
8. A note on *Stemonitis fusca* Roth. William D. Gray, University of Pennsylvania.
9. Notes on Indiana fungi, 1937. M. L. Lohman, Indiana University.
10. Studies on control of tulip blight. A. T. Guard, Purdue University.
11. Exposure of fungus organisms to ultra-violet irradiation. J. Emmert Young, Purdue University.
12. Effect of oxygen on inhibition of fungi. R. D. Zumstein, Purdue University.
13. Some acidity studies of dunes and bogs. J. E. Potzger, Butler University.
14. The acidity and moisture content of tree bark. Charlotte Young, Butler University.
15. Pollen study of Cranberry Pond near Emporia, Madison County, Indiana. Jean Paul Barnett and J. E. Potzger, Butler University.
16. Fossil pollen analysis of Fox Prairie Bog, Hamilton County, Indiana. Robert L. Prettyman, Butler University.
17. Pollen spectrum of Lake Cicott Bog, Cass County, Indiana. William M. Smith, Butler University.

The paper by E. R. Smith on hay fever, an abstract of which is included here, was read in the General Session of the Academy.

Floyd E. Beghtel, of Evansville College, was elected chairman of the Section for 1938.

ABSTRACTS

Notes on the distribution in Indiana of *Quercus Shumardii* Buckley and its so-called variety *Schneckii* (Britton) Sargent. RALPH M. KRIEBEL, Newcastle.—These oaks have not been fully understood in Indiana. Until about 1932, authentic collections had been made by

others in seven counties, mostly in the southwestern part of the state. At that time the writer started the collection of herbarium specimens and other data pertaining to the species and its so-called variety. Specimens taken from one to eight trees in each of 64 counties are in his herbarium, and duplicates of most of them were deposited in other Indiana herbaria, as well as in several larger ones outside the state.

Based upon the material collected and observations made in the field, it is contended that the trees answering the description of the species and the variety, having so many characteristics in common, should be considered one species with different modes of expression. The shape of the cup, upon which the difference is based, varies greatly. Intermediates of all degrees can be found which seem to be merely indefinite forms.

Dioecism in *Carex picta*. LOUIS MARTENS, Indiana University.—*Carex picta* characteristically forms circular clumps, each consisting of one plant with a shallowly imbedded rhizome system from which vegetative and fertile shoots arise. The flowers are imperfect. They mature in March and April. The male flowers are composed of three stamens, the female of a tricarpellate pistil. Each type of flower represents a highly evolved floral unit. Generally 40 to 60 of these florets are aggregated in a spike-like inflorescence of problematical morphological nature. As a rule, each individual clump is unisexual and remains of the same sex year after year, but a few instances were observed where the staminate inflorescences were attached to a male plant, and the pistillate to a female plant. Most of the individuals bloom regularly year after year. Those remaining sterile for a period resume their previous sexual expression without apparent alteration. Plants grown in the greenhouse for three years showed no alteration of sex. In four years of observations the only deviation recorded was in the form of an inflorescence of staminate form and heritage with one pistillate floret having replaced a staminate one. These observations show remarkable stability in the sexual expression of this dioecious *Carex*, and, although sex reversal does occur, it is very rare.

Distribution of *Lemanea* in relation to geological formations in southern Indiana. C. M. PALMER, Butler University.—An extensive study of the distribution of *Lemanea* in Indiana has shown that it is definitely limited to the upper Mississippian, the lower Devonian, and the Silurian limestone regions in the southern part of the state. Seventy locations have been found, the largest number being Jefferson and Jennings Counties. The rocks of the Ordovician, Knobstone, and Pennsylvanian regions are apparently unsuitable for its growth.

Another photoelectric device for measuring leaf areas. RAYMOND E. GIRTON and CARL H. GARDNER, Purdue University.—A simple and inexpensive apparatus has been constructed for the rapid measurement of leaf areas. Important features of this apparatus include the following: A small rheostat is built into the lighting circuit so as to permit the adjustment of the intensity of the light source which will otherwise change with line-voltage fluctuations. A "photo flood" reflector is employed for collecting and directing the light rays on to the leaves. Light

intensities are measured by a Weston "phototronic" cell and millivolt-meter circuit. Correction for light transmission by leaves of different types is made with the aid of an original calibration curve.

Studies on control of tulip blight. ARTHUR T. GUARD, Purdue University.—Investigations were made to test the possibilities of naphthalene and formaldehyde as fungicides for the control of tulip blight. Bulbs were treated with formaldehyde and then planted in clean soil. Bulbs were planted in both clean and inoculated soil with a part of each plot treated with naphthalene. The 2% formaldehyde used killed both the mycelium and the sclerotia of *B. tulipae*. Naphthalene completely inhibited their growth, but it was not lethal to either. Neither was injurious to the bulbs in the concentrations used.

Pollen study of Cranberry Pond near Emporia, Madison County, Indiana. JEAN PAUL BARNETT and J. E. POTZGER, Butler University.—A pollen study was made in one of the southernmost areas in the late Wisconsin glacial deposits in Indiana. The bog was filled in 31 feet at the greatest depth. The pollen spectrum indicates the following succession of forests: (based on a count of 200 pollen grains for each foot level) *Picea-Abies* to *Quercus-Larix-Pinus* to *Quercus-Carya* to *Quercus-Acer*. Pine occurs in all levels of the peat but was not a constituent of the forest when settlers moved into the area a hundred years ago.

Fossil pollen analysis of Fox Prairie Bog, Hamilton County, Indiana. ROBERT L. PRETTYMAN, Butler University.—Fox Prairie Bog, one mile north of Noblesville, Indiana, was found to be 40 feet deep, having 29 feet of peat and 11 feet of marl. The upper 12 feet of peat were deposited during a period unfavorable to the preservation of pollen grains. The pollen grains identified and counted revealed a coniferous forest dominated by *Abies* and *Picea* in the lower levels of marl. The transitional period from coniferous to broad-leaved forest was gradual and was characterized by *Pinus* and *Larix maxima* and the general increase of broad-leaved genera. The broad-leaved forest which followed the transitional period was essentially oak-hickory, followed by indications toward the present day beech-maple climax. The successive forest types indicate the following fluctuations in climate: cool moist, warm dry, cool moist, warm dry, and warm moist.

Pollen spectrum of Lake Cicott Bog, Cass County, Indiana. WILLIAM M. SMITH, Butler University.—The bog was filled 31 feet, and the peat was underlain by 3 feet of marl. The pollen analysis indicates the following forest succession for Cass County: a Canadian type of coniferous forest dominated by *Abies* and *Picea* in the lowest three feet; *Pinus*, *Betula*, and *Quercus* from 29 ft. to 26 ft.; a dominance of *Pinus* from 26 ft. to 22 ft.; and a rapid change to *Betula-Quercus*, with *Quercus* and *Carya* forming the climax, and *Ulmus* and *Juglans* the sub-climax, from 19 ft. to 1 ft.

Notes on a suggested treatment for fall hay fever. ERNEST RICE SMITH, DePauw University.—The widespread distribution of fall hay fever, its symptoms, and common methods of treatment are outlined. One of the latter is the use of honey, which in the case of the writer

had absolutely no effect. A study of the use of *fall* honey, however, indicates some success in the control of fall hay fever. The dosage used in moderate cases is as follows: Beginning May 1 and through the month, two teaspoons as full as may be moved from honey jar to dish, (approximately 40 g.) per day; for the month of June, three teaspoons; and from July 1 through the hay-fever season, four teaspoons. Where marked aversion to the strong fall honey is felt or where the case is very severe, probably year-round immunization would be advisable. A dosage of one teaspoonful per day from November 1 to May, with increased amounts thereafter, is being tried in one case. The fall honey will have to be obtained directly from the apiary, taken from the hives either late in the fall or early the following spring. As far as the writer knows there is practically no fall honey on the market. It is so strong that it is usually re-fed to the bees in the spring. Because of limited amounts of available honey, I have data on but six cases. Of the six who meticulously followed the above routine, two cases were almost perfectly successful. One, sickened by the strong honey, dropped treatment at an early state and is now testing the year-round immunization. The other three showed but slight improvement. It is to be hoped that anyone who is interested in the above study of a possible treatment of fall hay fever, and is willing to aid in its study, will keep a record of data connected with actual cases—dates, dosages, severity, some estimate of abundance of ragweed, etc., and report to the writer.