

NEW RECORDS OF MYXOMYCETES FROM OREGON. I.

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A moderate amount of information has appeared in the literature dealing with slime molds of Oregon. At the present time, using only the species concepts accepted by Martin (1949), 188 species of Myxomycetes have been recorded from the state. The most extensive investigation, covering a period of more than twenty years, was conducted by Peck and Gilbert (1931). They collected primarily in northwestern Oregon from the western slope of the Cascades south to the Three Sisters Mountains, and the upper northern third of the Willamette Valley including the Coast Mountains. In 1932, Martin reported the occurrence of a new species from Oregon. In recent years only a few species have been added to the list. Two new species have been described by Kowalski (1966, 1968), and I (Curtis, 1968) reported *Barbeyella minutissima* Meylan from southern Oregon.

During the summers of 1966 and 1967, I collected in Crater Lake National Park in the south, central part of the state. Most of the specimens were obtained from moist decaying wood near the melting snow in the months of June and July. Later in the year, the slime molds were collected from duff, bark, fallen twigs and decaying wood. All my collections were taken at altitudes from 4,000 to 7,500 feet. In this paper, 8 species of Myxomycetes are listed as new to the state in the sense that no report of their occurrence in Oregon has been previously published. This brings the total number of slime molds found in the state to 196 species.

All collections have been deposited in the University of Iowa Herbarium, Iowa City, Iowa, and specimens in the Trichiaceae, Physaraceae and Didymiaceae have been deposited in the Crater Lake National Park Herbarium, Crater Lake, Oregon. The numbers used for the collections are my own and in this report indicate only those specimens given to the University of Iowa Herbarium.

LICEACEAE

Licea pusilla Schrad. On decayed coniferous wood 0.2 miles north of Park Headquarters, 6,500 feet, 6, June 15, 1966. A limited number of sporangia were found in one collection. They are purplish-brown, sessile, and dehisce by preformed lobes. This exceedingly tiny species was reported by Kowalski (1966a) recently from California. Previously it had only been found as far west as Iowa, and is considered rare.

RETICULARIACEAE

Lycogala flavofuscum (Ehrenb.) Rost. I obtained only one aethalium on the side of a dead, barkless stump about 4 feet above the ground on the east side of Kerr Valley, 6,500 feet, 52, July 28, 1966. The aethalium is about 15 mm in diameter, ochraceous-grey and the spores are buff in mass.

DIANEMACEAE

Dianema Andersoni Morgan. One collection on decayed wood, about 2 miles north of Park Headquarters, 6,800 feet, 1067, July 14, 1967. The sporangia are sessile, 0.6–0.8 mm in diameter. This Myxomycete has been reported from Washington, British Columbia, and more recently from California (Kowalski and Curtis, 1968). It is considered rare.

TRICHIACEAE

Trichia affinis De Bary. Five collections on bark and decayed wood, one near White Horse Creek and Highway 62, 5,800 feet; two near Park Headquarters, 6,500 feet, 45, 69; one on the east side of Kerr Valley, 6,500 feet; and one in the vicinity of the Vidae Falls Springs, 6,800 feet. The sporangia are 0.5–1 mm in diameter, crowded, and bright golden-yellow.

Hemitrichia montana (Morgan) Macbr. My collections, 67, 835, 857, 1064, indicate that this species is ubiquitous throughout the park at elevations from 6,000 to 7,000 feet. It is so common that I am convinced that perhaps it was reported by Peck and Gilbert (1931) under another name. Hagelstein (1944) uses it synonymously with *Hemitrichia clavata* (Pers.) Rost. This common species may be sessile to short stalked with a translucent, shining peridium. The color is variable from a bright ochraceous-orange to a dark greenish-olive.

PHYSARACEAE

Physarum auripigmentum G. W. Martin. Twelve collections, frequently found beneath layers of decayed wood on fallen logs, at altitudes from 4,400 to 6,800 feet, 1006, 1022, 1090, 1100, primarily from the Rim Village area south to lower Annie Creek, found throughout the summer months in both 1966 and 1967. The sporangia are readily recognized since they are 0.4–0.6 mm in diameter and greenish to bright yellow.

DIDYMIACEAE

Diderma deplanatum Fries. Eleven collections on decayed wood, taken from the Rim Village area southward to the south Park Entrance, North Rim road and Kerr Valley, at elevations from 6,000 to 7,000 feet, 762, 955, 1031, 1105, June and July, 1967. The sporangia are white, sessile and 1–1.5 mm in diameter. They are very fragile and lose their peridium readily.

Diderma nigrum Kowalski. One collection, on coniferous twigs about 2 miles south of Park Headquarters, 6,200 feet, 1041, July 10, 1967. This rare Myxomycete was recently described by Kowalski (1968). The sporangial dehiscence is star-shaped, revealing the white inner sporangial walls and black capillitium.

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REVIEWS

The Evolution and Classification of Flowering Plants. By ARTHUR CRONQUIST. x + 396 pp. Houghton Mifflin Co., Boston, 1968. Price \$6.95.

In an invited paper presented at meetings commemorating the 50th anniversary of the Botanical Society of America, held at the University of Connecticut in 1956, this reviewer had the temerity to suggest that, "there seems to be rather general agreement that sufficient evidence to formulate a really new, thorough-going, and generally satisfactory phylogenetic arrangement of flowering plants is not yet available." (*Amer. J. Bot.* 44: 88-92. 1957.) Later in the same meetings, however, two new systems for at least part of the angiosperms were presented by Herbert F. Copeland (*Madroño* 14: 1-9. 1957) and Arthur Cronquist (*Bull. Jard. Bot. Etat* 27: 13-40. 1957), respectively, and Robert F. Thorne announced that he was working toward the same goal (*Aliso* 6: 57-66. 1968). I do not recall that any of us were then aware of the work of Takhtajan, which has subsequently assumed such major importance.

The present volume is the outgrowth of that original Cronquist paper and is an attempt to devise a general classification of angiosperms responsive to all presently available pertinent information. The scope and variety of this information and its application are impressive. It ranges from the more traditional morphology and anatomy of the flower, fruit, and vegetative body, to pollen, embryology, and biochemical characteristics. The author is especially partial to type of nectary, nuclear constitution of pollen grains, details of ovular structure, nature of seminal food reserves, distribution of vessels, and type of stomatal apparatus, among other features.

Cronquist emphasizes that while taxonomy is necessarily based on multiple correlation of characters, a proper taxonomic system must also reflect (albeit muddily) evolutionary relationships, and that development of taxonomy and the unraveling of phylogeny each influences and strengthens the other. "A phylogenetic scheme which provides for all the available information and hangs together without serious internal contradictions is regarded as not only satisfactory but also something of a triumph." His classification is essentially one of consensus, in which he attempts to capitalize on the various natural groupings that have been achieved in the past. It is interesting to note how numerous these are on various levels. He asserts that if the requirement of a strictly single (monophyletic) origin for groups is not insisted upon too strictly, much of the apparent conflict between phylogeny and taxonomy