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## UWM'S FIRST PH.D. IN BOTANY AWARDED FOR STUDY OF CEDARBURG BOG

ANOTHER MILESTONE in the development of UWM and the Field Station was passed this January when Thomas F. Grittinger was granted the first Ph.D. in Botany on our campus. Tom had, of course, used the Field Station as a base of operation during the three years of his field study which encompassed the whole bog area. His thesis, entitled "Vegetational Patterns and Edaphic Relationships in Cedarburg Bog," summarized the results of many strenuous days of work at all seasons which he spent traversing his sample lines. He collected not only a tremendous amount of data and many voucher specimens of plants, but also countless mosquito bites, frost bite, soaked clothing and sumac poisoning (to which he became increasingly sensitive with prolonged exposure and which nearly forced him to abandon the study). But all's well that ends well and we are, of course, very proud of Tom's achievement.

For the first time we now have a large amount of information about the variety and detailed composition of the vegetation within the bog, together with related factors such as peat depth and water quality. The vegetation types were objectively analyzed, described, and mapped, then related to site factors and history of disturbance. A copy of the thesis will be filed at the Field Station, where it will be invaluable as background material for future studies in the bog area or similar sites in southeastern Wisconsin.

Several important conclusions of Tom's study are of general interest. One of the most interesting is that some fairly large areas in the remote central part of the bog are of a "string bog" type, considered to be distinctly northern and not previously reported nearer than Seney in Upper Michigan. These areas consist of open, very soft and wet floating mats dominated by small sedges (*Rhynchospora* spp.) and herbs, interspersed by more or less parallel small ridges supporting bog shrubs, pitcher plant and very stunted trees of tamarack and cedar. There is a gentle slope in the string bog of from 1.5 to 3.5 feet per mile generally from north to south, but flow of water through the peat is evidently very slow and the water therefore is very low in oxygen and in available nutrients. String bogs have been reported

from northern Europe, Canada and the norther Lake states, but as yet botanists are not agreed as to the causes of this type and Tom hopes to do further work on this phase of the problem.

In general this bog turns out to be a complex mosaic, similar in some respects and in some parts to the more southern shrub-carr and southern lowland forest vegetation types as described by J. T. Curtis. It is not entirely typical of *Sphagnum* bog types as found in northern Wisconsin, probably due to a less acid condition and higher nutrient levels caused by inflow from the relatively fertile calcareous soils and substrate of the surrounding area.

The shallow glacial basin occupied by the bog is not a smooth bowl, deepest in the center, but rather irregular with measured depths up to fifty feet but much of it less than 20 feet to mineral soil. Marl layers up to four or five feet thick underlie the peat in places. The water table varies considerably with weather cycles, affecting shallower areas more than the deep peats, but this has been complicated by early feeble attempts to improve drainage by clearing and deepening the outlet and later, 1959-61, by a small dam at the outlet which raised the water level of Mud Lake and its borders by 18-24 inches. This flooding killed many trees in the swamp forest areas near Mud Lake and up to the bend of Blue Goose Road. Logging for pilings, poles, and posts, mainly before 1940, also was a major influence in some parts of the bog. Yet much of the bog reflects a more typical successional sequence from the open water through emergent aquatics, sedges, bog shrubs, tamarack and cedar stages to swamp hardwoods on the border areas.

Our congratulations and thanks to Tom for accomplishing this important contribution to our field studies. Our thanks, too, to the State Board for the Preservation of Scientific Areas and the Wisconsin Department of Natural Resources for permission to study the portions of the bog which they control.

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## PHENOLOGY

AFTER THE CHARM of the winter season comes to an end, there is a renewal of interest in various events which herald the coming of spring. Some of these include the earliest appearance of wild flowers, the emergence of various insects, bird migrations and the sounds and movements of animals which have not been noted since the past autumn. Oldtimers often look forward to the ice break-up on their favorite lakes, the sap flow of the sugar maple trees or signs indicating the frost is out of the ground. Events of