

Field Studies on CP at UMBS

by Larry Mellichamp

This past July my wife Audrey and I were privileged to spend five days at the University of Michigan Biological Station (UMBS). The station, one of the country's largest and most famous, is located near Pellston in the extreme upper tip of the lower peninsula of Michigan. It is just 25 miles south of the Straits of Mackinaw. The station will be celebrating its 75th year in 1983 and has had an illustrative history of teaching and research in this highly interesting part of the Great Lakes region. Dr. David Gates, who has been director since 1972, has done an outstanding job in improving the quality of the overall program of UMBS.

The climate at the station is wonderful — usually cool nights and mild days. Sometimes it is cold and wet. I remember one night when I was a student there in 1972 and it got down to 39° F in mid-July! This of course reflects the location, and perhaps contributes to the unique and unusual flora of the northern Great Lakes region. There are many exciting habitats and interesting plant species to be found there. On this particular visit we accompanied Dr. Edward G. Voss on field trips to bogs and lake shores, and saw beds of *Drosera rotundifolia*, *D. linearis*, and a few *D. × anglica*! (See CPN, Vol. 9, p. 16.) These lush sundews with their glistening sticky tentacles were surrounded by hundreds of *Sarracenia purpurea*. All of these CP may be found growing in marly (alkaline), moist beach flats along the edges of pools or on rotten logs; and, with the exception of *Drosera linearis*, in acid sphagnum bogs. The pH does not seem to matter as much as constant moisture and lack of competition from other plants. The pitcher plants can be quite spectacular as they literally carpet the sandy beach flats

along the shores of Lakes Huron and Michigan in the Straits region. Many are now preserved at Grass Bay, a large lakeshore tract recently acquired by the Nature Conservancy.

Those of you who like more subtle CP will not be disappointed, either. In those wet beach pools may be found *Utricularia vulgaris*, *U. intermedia*, *U. minor*, and *U. cornuta*; and the very rare *U. resupinata* has been found in the UMBS region by Dr. Voss (see H.W. Rickett's *Wildflowers of the U.S.*, Vol. 1, Northeastern States, p. 518 for photos). *Pinguicula vulgaris*, one of the gems of the rocky shores and boreal habitats, is frequent also in the region. Much research could be done on the ecology and distribution of CP here. Aspects of the pollination, seed dispersal, habitat specificity, pH and moisture relationships, and other ecological aspects of *Drosera* and *Utricularia* would be especially lucrative endeavors. The pollination biology of CP in general has been terribly neglected and this area offers many opportunities.

UMBS has many excellent facilities, including a fine reference herbarium, many unique and varied field habitats, and well-equipped modern laboratories. The faculty encourages independent research projects as well as conducting some very educational and exciting courses. Dr. Voss, who is an expert on the flora of the Great Lakes region, teaches courses in boreal (northern) flora and aquatic plants. Other courses in the well-rounded curriculum include ecology, physiology, mammals, birds, insects, and nature photography; and there is a new and growing naturalists program. The modern dining room mixes plenty of good food with rustic living; and ample opportunity is provided to encounter nature face

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Sarracenia purpurea
UMBS — Tr. End Bay



Drosera linearis
Marly Beach, Charlevoix Co.
Photographs by Larry Mellichamp



Pinguicula vulgaris
Waugoshance Point

An Introduction to *Genlisea*

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Genlisea was discovered in 1833 by Auguste de Sainte-Hilaire in Brazil. It belongs to the family *Lentibulariaceae*, along with *Utricularia*, *Pinguicula*, and *Polypompholyx*. Its range is more extensive than that of most other carnivorous plant genera and includes South America, Africa, Madagascar, and the West Indies. Its trap is unique, most closely resembling that of *Sarracenia psittacina*, but substantially different from even that species. *Genlisea* is, however, probably the least well-known genus of carnivorous plants.

Like *Utricularia*, *Genlisea* is a rootless, aquatic or semi-aquatic herb. This perennial plant grows from a slender, occasionally branching rhizome. There are two leaf types which grow simultaneously: foliage leaves and traps. The foliage leaves are linear or spatulate, and often grow in a dense cluster (less dense in the larger species), forming a hemisphere of leaves.

The traps vary in size (depending on the species) from 2.5 to 15 centimeters in total length. The trap consists of a bulb-shaped cavity atop a long footstalk. From the end of the cavity there is a long cylinder with the trap's mouth at the end.

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to face in creating a unique atmosphere of study and social interaction.

If you are a junior or senior undergraduate student, graduate student, or post-graduate researcher and have a serious interest in field biology, then you would certainly profit from a summer at UMBS. The experience is invaluable for meeting other students from all over the country in the fascinating environment of northern Michigan. Financial aid grants are available. For further information on course offerings and admission write: Dr. David M. Gates, Director, University of Michigan Biological Station, Ann Arbor, MI 48109.

On each side of the mouth, there is a spiral "arm." The trap is attached to the rhizome by the footstalk, and usually hangs in an inverted position with the arms reaching downward. Copepods, nematodes, water spiders, and other small prey apparently follow the spiral arm to the trap's mouth. Once inside the mouth, long, pointed hairs which line the cylinder prevent the prey from backing out. Eventually the prey makes its way to the bulb, where it is decomposed and its nutrients absorbed.

The scape is simple, slender, erect, and often very tall. There are several to many evenly spaced flowers. The calyx has five parts, but the corolla is bilobed. The lower lip of the flower is large and trilobed, and the spur is incurved.

Genlisea africana. This species is found in wet grasslands in much of tropical Africa, including Guinea, Sierra Leone, Angola, Zimbabwe, and the Ivory Coast. It has numerous, spatulate leaves which range from 0.5 to 3 centimeters in length. It has from two to twelve violet (or, rarely, white or yellow) flowers on a scape which may reach 35 centimeters in height. The 0.6 to 0.8 centimeter flowers are densely covered with gland-tipped hairs. The lower lip of the flower is deeply incised, forming three distinct lobes. This species has two subspecies: *Genlisea africana* ssp. *africana* (= *G. subviridis*) and *Genlisea africana* ssp. *stafii* (= *G. stafii*).

Genlisea filiformis (= *G. luteo-viridis* or *G. anfractuosa*). This small species is found in swampy areas of Brazil, Venezuela, Guyana, Cuba, Colombia, Guatemala, and Belize. There are few to many spatulate foliage leaves in a rosette. The leaf blades are about three to five millimeters long and rounded at the apex. The leaf stalk is about as long or somewhat longer than the leaf blade. Two to four greenish-yellow or yellow flowers are found on a wiry scape which may be up to 20 centimeters



Utricularia cornuta, which can be found at the University of Michigan Biological Station.

Photograph by Larry Mellichamp