THE GREEN SWAMP AND ATLANTIC COAST TRIP

(Continued from September)

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Certainly the largest proportion of pitcher plants here were *S. flava*, but *S. rubra* was quite numerous being found in large clonal colonies by the thousands. *S. purpurea* was the least common of the three but still easy to find. Surprisingly, there were almost no hybrids to be found in the areas we explored. Only two plants of *S. purpurea x rubra* and a dense group of small plants which appeared to be *S. flava* x *rubra* were seen. Not a single other hybrid was in evidence.

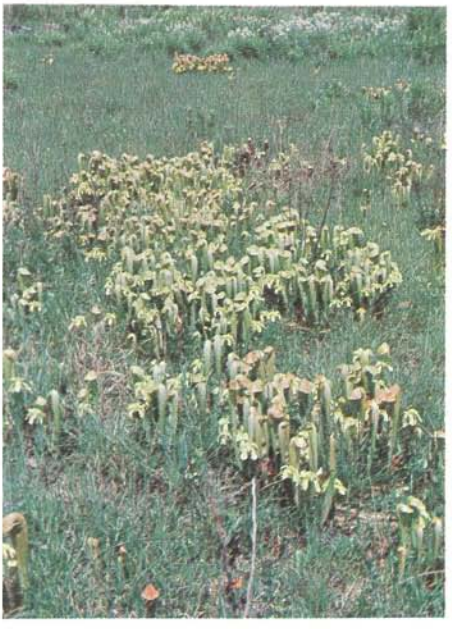
We spent that night once again in Charleston and the following day made our way back to Florida. One last stop just north of Jacksonville proved to be one of the most spectacular sights of our trip. This location was a large field behind a local farmer's house literally covered with thousands of *S. minor* in dense colonies. This field appeared to have been well fired over considering the lack of tall grasses and weeds. This in the only time I have ever seen *S. minor* growing in such profusion. The plant is typically found growing in small groups spread out over a large area. Here they were growing in thick colonies reminiscent of the Gulf Coast stands of *S. leucophylla* or *alata*. (Fig. 5 & 6)

There are a few observations I would like to make in closing based on what Bob and I saw and discussed during this trip. The *S. purpurea* native to the Carolinas are accepted as being different from the northern form and when these plants are compared side-by-side, these differences are apparent. Now if a plant of the Gulf coast form of *S. purpurea* is added, there are noticable differences here too. Most striking is the larger pink flowers of the Gulf plants compared to the smaller red flowers of the other forms. While I cannot claim to have seen all the Gulf plants in flower, the ones I have observed have all displayed a large light to dark rose pink flower (Fig. 7). In addition, the Gulf plants seem larger and with more variability in the patterns of venation. When seen growing in the open, the Gulf forms may assume an almost purple coloration to the pitcher. The Carolina plants seem in these conditions to be rather a brighter red to maroon.

In subsequent correspondence with Don Schnell, I have since been informed that indeed larger, open pitchers similar to the Gulf form are found among plants of relict bogs in the pink flower of the Gulf plants, Don mentions that he has seen the Carolina plants often displaying pink flowers. While I am informally suggesting forma status for the pink flowered plants, I should include Don's comments: "...While some taxonomic distinction may ultimately be justified, I am not certain that we have enough systematic data at hand to justify it." Certainly Don's contributions to the serious study of Sarracenias have been tremendously important in understanding these plants and it will be interesting to see what his conclusions may be in the future regarding these pink-flowered variants.

The final point I wish to discuss are the popular misconceptions regarding *S. flava*. First of all, *S. flava* is most decidedly *not* monomorphic in the Gulf Coast. As noted in my REPORT ON THE STATUS OF GULF COAST CP POPULATIONS, at least four distinct forms can be seen in this region. The large, yellow-green / purple throat form is found in large numbers from southern Georgia to Pensacola, Florida. Comparing this plant beside a Carolina plant will show that aside from some minor environmental differences [green to yellow tube, slightly wavy lid etc.] the plants are identical. This is especially true of plants grown together in the greenhouse for at least one season. Therefore the var. *rugelii* label is invalid. Secondly, all these plants of *S. flava* are capable of producing the large [to 90 cm] pitchers when conditions are right and

(Figs. p.96; text continued p. 100)



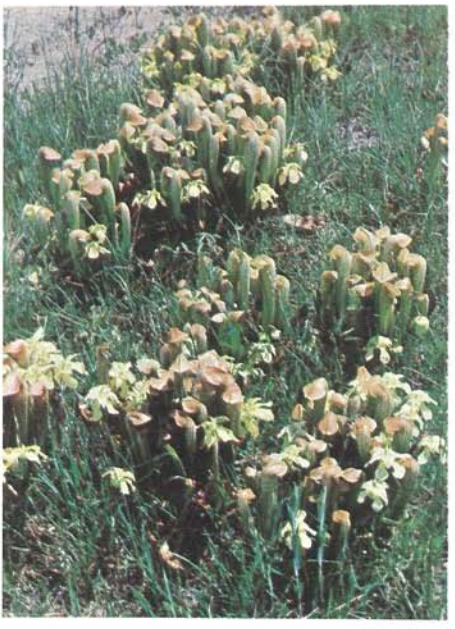


FIG. 5 FIG. 6

Extensive growth of *Sarracenia minor* in a farmer's field north of Jacksonville.

All photos by the author.

FIG. 7. The pink flowers of *Sarracenia purpurea* as seen in the field near Mobile, Alabama.

Review of Recent Literature

De, D.N., S.N. Ghosh. Autoradiographic studies on the terminal heterochromatin of *Drosera burmanni*. Bull. Bot. Soc. Bengal 32 (½):41-47 1978.
The 20 minute chromosomes of this CP species have terminal segments of heterochromatin which the author shows replicate late in the cell cycle.

Dodge, Harold R. 1947. A new species of *Wyeomyia* from the pitcher plant. Proc. Ent. Soc. Wash. 49:117-122.
This paper contains Dodge's formal description of *W. haynei* which he feels best fits the southern populations inhabiting *Sarracenia purpurea* ssp. *venosa* pitchers, while the older *W. smithii* are found in populations of the northern ssp. *purpurea*. Previously, it was thought there was one species, *W. smithii,* involved. This older reference is of some interest because it eluded us so long even though we knew generally of the concept; now we have the exact reference. (See also Castanea 37:146-147, 1972; Castanea 44:47-59, 1979.)

Erber, D. An investigation of the biocenosis and the necrocenosis in pitcher plants of Sumatra. Arch. Hydrobiol. 87 (1): 37-48. 1979
Nepenthes pitcher content is influenced by the structure of the pitcher and life history of the insect species.

Heslop-Harrison, Y. and J. Heslop-Harrison, 1980. Chloride ion movement and enzyme secretion from the digestive glands of *Pinguicula*. Ann. Bot. 45:729-731.
Protein challenge studies of leaf segments of *P. ionantha* indicate that rapid movement of chloride ion from reservoir to endodermal to head cells in secretory glands causes a flush of water movement which washes stored enzymes out on to the leaf surface. (DES)

Mogi, M., J. Mokry. Distribution of *Wyeomyia smithii* eggs in pitcher plants in Newfoundland, Canada. Trop. Med. 22 (1): 1-12. 1980
Most eggs of this mosquito were laid in new pitchers of *Sarracenia purpurea* and chmical stimuli specific to new pitchers played a dominant role in selectivity. The distribution pattern of eggs suggested that a female lays eggs neither at random nor in a large batch but in small numbers. The ecology and evolution of mosquitoes breeding in small-container habitats was discussed.

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therefore the var. *'maxima'* label should also be discouraged.

Also in the Gulf area are found a variety of light to heavily veined specimens with a great degree of variability in coloration. The once thought to be nearly extinct form with red tube and green lid may be locally common in some locations in the Gulf. Finally, a copper-lid form with large wavy lid is found in only a few locations around and near Pensacola and appears to be the rarest of the *S. flava* forms in the Gulf area based on my explorations.

WILLIAMS - continued from p. 91

trap narrowing in *Dionaea* (Droseraceae). Amer. J. Bot. 64:881-886.

Williams, S.E., 1976. Comparative sensory physiology of the Droseraceae—the evolution of a plant sensory system. Proc. Amer. Philos. Soc. 120:187-204.

Williams, S.E. and Pickard, B.G. In press. The role of action potentials in the control of capture movements of *Drosera* and *Dionaea*. In: Galston, A.W. Plant Movements. Springer Verlag. Berlin, Heidelberg, NY.