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The Macroscopic and Microscopic Structure of some Hybrid Sarracenias Compared with that of their Parents

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[Thesis presented to the Faculty of the Graduate School in partial fulfillment of the Requirements for the Degree of Doctor of Philosophy.]

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Historical Review

Before Tournefort had named the genus *Sarracena* (1) and Linnaeus (2) had accepted the name, the group of the Sarracenias was already known to the early settlers in North America. They collected the plants and sent them to Europe as interesting exotics, where they were carefully described in botanical publications. As early as 1570, Lobel described specimens of the group which had come to his attention. Clusius (1601) (3) figures *S. purpurea* and Parkinson (4) copies his figure and adds a note which seems to indicate that he knew *S. flava* as well. Concerning this plant, which he calls "The Hollow Leaved Strange Plant of Clusius," he writes: "This strange plant hath such strange leaves, as the like are seldome seene in any other that we know growing, for they are nine or ten or more, rising from the head of a small long roote, each by itselfe, being small below, and growing greater upward, with a belly as it were bunching forth, and a bowing backe, hollow at the upper end, with a peece thereon like a flappe, and like unto the flower of *Aristolochia*, or Birthwort, and round at the mouth like a halfe circle, full of great darke purplish veins on the inside; the whole leaf is of thicke substance almost like unto leather; among these leaves sprang a stalke but was broken short off, so that what flower or seed it bore could not be observed. This was sent to Clusius from Paris by one that received it from Lishbone in the same manner. But of late Master John Tradescant the younger found this very plant in Virginia, having his toppe thereon, which he brought home and groweth with him, which I here show you with Clusius his figure. The leaves are longer, narrower and not bellying out, and the flower is borne at the top of the roundish seed vessell." The specimen sent by Tradescant was probably *S. flava*.

Plukenet (6) (7) was familiar with both *S. flava* and *S. purpurea*, since he gives very accurate figures of both species.

John Ray (8) gave a Latin translation of Parkinson's description already quoted. The actual specimen described by him, however, was a natural hybrid between *S. flava* and *S. purpurea*, and was the first natural hybrid collected. (See below.)

Tournefort named the genus *Sarracena*, in honor of Dr. Sarrasin of Quebec (1), and described one species, *S. canadensis*. Linnaeus accepted the genus name and described the two species long recognized, *S. flava* and *S. purpurea*.

Walter, in 1788 (9), described and named two new species, *S. minor* and *S. rubra*. *S. psittacina* was added to the genus by Michaux in 1803 (11). Croom (12) described *S. Drummondii* in 1835.

Since the above time, only one new species has been added, *S. Sledgei* in 1906, by Macfarlane (17).

A few of the botanical publications of this time review the genus as varying in composition:

"Flore des Serres" (13) gives seven species: *S. flava* (L.), *S. purpurea* (L.), *S. variolaris* (= *minor* Walt. = *adunca* Smith), *S. undulata* (Dcn.), *S. Drummondii* (Cro.), *S. rubra* (Walt.), *S. psittacina* (Michx.) (= *calceolata* = *pulchella* (Croom)). Chapman (14) gives all of the above except *S. undulata*, which he considers synonymous with *S. Drummondii*. Hooker (15) mentions eight species but does not enumerate them. Boulger (16), in reviewing the genus, has the six species: *S. purpurea*, *S. flava*, *S. rubra*, *S. Drummondii*, *S. psittacina*, *S. variolaris*.

During the latter half of the 18th century, Sarracenias were widely cultivated in European gardens. New varieties were eagerly sought for exhibition, many new forms were introduced from America and several artificial hybrids were produced. Since each exhibitor appended a name to his own product, a great confusion of names had arisen and a survey of the forms under cultivation became most necessary. Dr. Masters, therefore, undertook the review in three numbers of the Gardeners' Chronicle for the year 1881 (18). Here he gives a key to the forms raised in English gardens and gives for each a short description from living specimens furnished to him. The forms and species described by him are as follows:

1. *S. psittacina* (Michx.) A. D. C. Prod. XVII, p. 4.
2. *S. purpurea* (L.) A. D. C. Prod. XVII, p. 4.
3. *S. Chelsoni* × (Hort. Veitch, G. C. vol. 9, p. 11 (*rubra* × *purpurea*).
4. *S. variolaris* (Michx.) Croom. A. D. C. Prod. XVII, p. 6.
5. *S. Drummondii* (Croom) A. D. C. Prod. XVII, p. 5 (var. *alba* G. C. vol. 10, p. 281).
6. *S. undulata* (Dcn.) = *S. Drummondii* (Croom) Rev. Hort. i, p. 126. Flore des Serres 7, A. D. C. Prod. XVII, p. 5. Index Amer. Bot. p. 40.