An unacceptable Sarracenia lectotype. Linnaeus named the genus Sarracenia after a Quebec physician, Dr. Michel Sarrasin de l'Etang, who sent him specimens which regrettably failed to get preserved. Earlier diagnoses of Sarracenia purpurea L. by both northern and southern workers were cited. Rafinesque realized that the species is not geographically uniform; changing the genus name to Sarazina, he designated the northern extreme by one word quoted from Linnaeus' diagnosis, gibbosa, and the southern extreme by the descriptive word venosa.

The differences between the two seeming insufficient for species separation, the writer reduced them to subspecies, as ssp. gibbosa (Raf.) Wh. for the northern and ssp. venosa (Raf.) Wh. for the southern element. Unwilling to follow the International Code, Fernald changed these to varieties; then since it had become customary to repeat a species epithet for an infraspecific taxon including the type, or omit it entirely, the two became respectively S. purpurea (typical) and S. purpurea var. venosa (Raf.) Fern. in Gray's Manual, Ed. 8. Without explanation and in defiance of the fundamental principle of priority, McDaniels (Bull. Tall Timbers Res. Sta. No. 9, 1971) "selected" as lectotype for Linnaeus' species the illustration of the southern extreme in Catesby's volume on the plants of the Carolinas. The acceptance of this proposal is herewith disrecommended.

On Darlingtonia vs. Chrysamphora. In 1851, when John Torrey proposed to name the western pitcherplant in honor of Dr. William Darlington, he overlooked the fact that there was already in the literature a "Darlingtonia" applied to a wholly different plant, rendering his proposal invalid under the International Code of Nomenclature. The wholly new name Chrysamphora was accordingly proposed by Greene in 1891. From that date until 1954, this was the valid name for the plant, and should have been used by all writers. Then a committee of taxonomists was asked to study the matter, in which by the narrow vote of 6 to 5, the name Darlingtonia was conserved as reported in the journal TAXON 3, No. 4, May, 1954. By this slim margin, then, validity of Darlingtonia has now been established, and it should be used by all writers, unless and until the problem gets reconsidered.

SOME INTERESTING VARIATIONS IN DIONAEA MUSCIPULA

by Steve Clemesha

As Dionaea is a monotypic genus with a rather small natural distribution, it is fairly logical to think of the plant as being a very uniform one and as I have read nothing to the contrary, I believed this was so until I received plants from friends which clearly are different. Naturally, I was skeptical at first and encouraged to be so by my friends in the U.S.A., but after having the plants for more than one year and propagating new ones from small pieces, it is now clear that all except the last-to-be-mentioned variation is distinct and remains true to type. This could also prove to be true of the last-to-be-mentioned plant, but mine are not yet advanced enough for me to be sure.

In the case of all the plants mentioned below, except those I received from the U.S.A., I do not know if they were originally wild collected or have been selected in cultivation. Perhaps someone else can answer this question. I am fortunate to know where my plants came from even though all reached me indirectly.

The main form I have received from the U.S.A. produces a rosette of traps with a short petiole in early spring and late summer. These traps are prostrate. In the main part of the growing season, the traps are formed on petioles more than twice as long which are much more slender and erect. All my plants of direct U.S. origin have been like this and all with a fairly uniform degree of pigmentation (i.e., light red on the inside trap) except for one.

This plant is still small but clearly differs from all others in being much paler. Most of its traps lack any pigmentation and none is present on the petioles. The plant has an almost yellow-green appearance reminding one of Sarracenia purpurea forma heterophylla. However, at certain times of year, especially when we get a lot of cloudy weather, the plant's new traps color inside. This color does not persist long and soon fades out. It appeared among a batch of normal seedlings raised from wild collected seed.

About eighteen months ago, I received some plants of a Japanese cultivar, "Dionaea muscipula forma erecta." These plants appear the same as those I have received from the U.S.A., except they are deeper colored. Next, I received plants also of Japanese origin of "D. muscipula forma muscipula", i.e., the typical form. This is a very different plant from those I had received from the U.S.A. All traps are on a short petiole and the traps which are crowded close together and the petiole lie flat on the ground. It is a neat colorful form.

The next form is not a form at all. This is "D. muscipula forma filiformis" which has the basic habit of the "erecta" type but is a rather pale form and its traps are on a very long slender petiole and give the appearance of a plant growing in heavy shade. I do not know how tall it becomes as my original was accidentally pulled up and lost presumably by a bird.

Fortunately, I propagated two tiny plants from it before this happened and these are still small but are showing the same strange habit.

The remaining plant is "D. muscipula forma linearis." It also has the basic "erecta" habit and just how it differs, I cannot tell from my tiny plants. So far its petioles seem more linear and less tapered in shape and the teeth on the trap are shorter and finer; but as the plants are only small, these characteristics could disappear, so here it is clearly a case of wait and see.

WHY A FLYTRAP IS NOT A BEAR TRAP

by Stephen E. Williams

The obvious similarity in form between the structure of a Venus' flytrap and a bear trap has on occasion led people to carry the analogy too far and draw a number of false conclusions about the mechanism of movement and insect capture in Dionaea. A review of this subject, which is apparently more confusing than first meets the eye, may help to avoid further false analogies.

A look at both a flytrap and a bear trap--of the type often depicted in cartoons--reveals that:

1. Both have two lobes which close together.
2. Both have teeth on the edges of the lobes.
3. Both have a trigger (or triggers) inside the lobes which spring them.
4. Both have bait* which attracts the victim to the trap.

These similarities easily lead to the formation of further, but false analogies between the bear trap and the flytrap. For instance it would be tempting to draw the analogy that the "teeth" or projections along the margin of the flytrap lobe might bite into the prey, or to conclude that the midrib of the flytrap acts as a hinge. Indeed the second of these analogies has been seriously made in various scientific papers. It does not require scientific training, however, to easily confirm the falsity of both of these analogies.

Observation of the flytrap reveals that it imprisons its prey between the lobes and that the cavity formed serves as a gut during the digestive stages. The teeth on the lobes serve to bar the escape of a sufficiently large insect and not to grasp it or stab it to death. By contrast the bear trap grasps its prey between its jaws and holds it until the trapper returns. In this case it is the trapper who provides the digestive apparatus. Charles Darwin placed a great deal of emphasis on the fact that the teeth on the lobes of the flytrap allowed the little ones to get away thus saving the leaf the energy consuming process of digesting an insect which would only yield a small return.

That the midrib of a flytrap is not a hinge is also easily observed. Most fully expanded leaves have lobes which have a concave outer surface. During closure it may be seen that the lobe reverses its form and its outer surface becomes convex. The majority of the movement occurs because the lobes mechanically flip inward. This mechanical flipping of the lobe amplifies a biological response in the lobe epidermis that is more sophisticated and is not well understood. The movement occurs in the lobes of the trap, not in the midrib and thus the midrib is not a hinge. On the other hand the bear trap consists of a spring loaded set of jaws connected by a hinge at each end and the closure of the rigid jaws consists of the rotation of the jaws on the axis of the hinges. There is no flipping (or flexing of the jaws) involved.

A consideration of the differences between flytraps and bear traps offers an explanation of why there are no reports of Venus' flytraps capturing North Carolina's bears but it does not really tell us how a Venus' flytrap closes. There are a number of experiments which have been performed which give us some indication of how this movement occurs. There is one hypothesis which I believe is the most plausible. Some of these experiments were done using Dionaea and others using Aldrovanda, which presumably has a very similar mechanism of movement.

*The outermost sessile glands of the Dionaea leaf have been called alluring glands. Firm evidence that they do attract insects has yet to be established but it does not seem unlikely that there is some sort of attracting agent.

Work with Aldrovanda done by Joji Asheda in 1934* indicates that all ofthe movement in the leaves of that plant occurs in a "motile zone" about one-third of the way up the lobe and that the outer epidermis is under stress when the trap is fully open. After the movement the outer epidermis does not appear to be under stress. Asheda stated the very attractive hypothesis that the cells of the inner epidermis and the outer epidermis are both turgid when the trap is in the open position and that triggering the trap causes the cells of the inner epidermis to loose water and become more flaccid (as the plant does when it wilts). Asheda believed that the outer epidermis would then expand since it was no longer