THE BARBARIC BLADDERWORT

WILLIS E. KEITHLEY*

If one were asked to tell the difference between a plant and an animal, the obvious response would be that the animal moves, while the plant does not and that the animal captures its food, while the green plant produces its foods from sugar which it manufactures in photosynthesis. Both of those assumptions would be invalid for some plants which exhibit a surprising "agility" in a tropism called *turgor movement.*

One of the most spectacular of these reactions is seen in the common bladderwort, *Utricularia vulgaris.* This plant is completely water-borne and reveals a carnivorous nature by snaring small aquatic insects and crustacea. The traps consist of many small bladders or sacs attached to the stem by a very fragile petiole (See cover illustration). At the mouth is a hinged trapdoor with a very sensitive trigger. To set the trap, the pod or sac is collapsed, just as you would suck the air out of a toy balloon (Figure 1).

When a swimming insect or other small animal touches the trigger hair, the bladder immediately expands *in 1/50 of a second!* This creates a vacuum in the sac and the inrush of water engulfs the hapless insect, which is now ingested while the door is closed and the trap reset.

But the operation is even more spectacular than this description. The petiole by which the trap is attached is quite weak and fragile. Thus, since the sac is not securely anchored, the hydraulic resistance of the inrushing water actually draws the entire trap forward, and in that twinkling of an eye, strikes out like a snake the full length of its petiole. A jaded biologist may be revived with a strand of *Utricularia,* a binocular microscope, and a common straight pin. As the trigger hair is touched, this astounding gnat-trap will snatch the pin so rapidly that the action cannot be seen, but so violently that the tug can actually be felt.

Figure 1. Common Bladderwort

Of course, the obvious questions are, how is such a tropism accomplished without nerve or muscle tissue; what caused it to develop an appetite for plankton; how did it satisfy that yen before the trap was invented; and how did the plant then develop such an extravagant mechanism? We search in vain for any process of adaptive progression, or any primeval ancestry which had profited from some fortuitous experiment of "Mother Nature."

Would it be too tenuous to suggest a Divine act of creation? No other evidence provides an adequate answer.

*Willis E. Keithley is an experienced naturalist, evangelist, and nature photographer. He resides at Rt. 2, Box 1417, Madras, Oregon.

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