

Focusing on *U. prehensilis*-an Inquisitive Plant

Barry Meyers-Rice, Steward Observatory, University of Arizona, Tucson, AZ 85721

This is the second in a sequence of articles showcasing *Utricularia*, species. In this series I integrate the information in Peter Taylor's taxonomic monograph with my own CP horticulture experience. Since *Utricularia* in CP collections are so often misidentified, I will carefully describe the species being highlighted so you can determine if you are growing it yourself. I warn you against trusting the veracity of your plants' name tags, even if they came from seemingly reliable commercial sources (who may be more confused about *Utricularia* than you!). Unfortunately this is probably also the situation with *Drosera*, especially rosetted species. The subject of this Focusing on *Utricularia* is *U. prehensilis*-a popular plant that is easy to grow and fairly free flowering, although not as floriferous as *U. sandersonii* or *dichotoma*. Its species name comes from an interesting feature you usually do not associate with CPs-but more about that later.

Once I showed a, pot of a nonflowering *Utricularia* to some relatives. When I did, they looked at it and asked questions like "When will it germinate?" and "Died on you, did it?" When I explained to them that the tiny leaves were what I was growing ("No, not next to the 'tiny moss,' it is the 'tiny moss'"), they shook their heads and walked away muttering. I knew then I was out of the will. With *prehensilis* this would not have happened-even out of flower it is unmistakable something is growing in the pot. The leaves are lime green and moderately large-in cultivation they are commonly tip to 2.5 cm long and Taylor reports plants with 10 cm leaves. They are only about 3 mm wide, strap shaped, and terminate with a blunt rounded tip. The leaves are multiveined with a central nerve running along the middle of the leaf and many smaller secondary nerves that branch to the leaf margins. If grown in strong light the nerves and other parts of the leaves are often reddish. They usually lie flat on the soil surface (but can be semierect), and as in many small *Utricularia* do not form a rosette-instead they emerge above ground in unpredictable spots. The underground bladders are up to 1.5 cm across, and smaller bladders are often sporadically formed on the undersides of the leaves, especially if the plant is kept very moist.

Cared for properly, a small clump of *U. prehensilis* will quickly colonize its entire growing area. When the leaves are so densely packed they lie on each other in tangled confusion, the plant may produce a green or golden brown scape about 1 mm thick and round in cross-section. It grows vertically until it is 15 cm or more tall and then it starts to twine. As it grows, the upper several cm waves and wanders through the air in search of something to spiral around. The motion is slow-it takes a few hours for it to move appreciably—but when it ends something it winds tightly about it. Strangely, sometimes the next day you may discover that the plant has unwound itself and wound onto something else. This prehensile nature is the origin of the specific epithet *prehensilis*. Only the most recently developed 5 cm or more of the scape is mobile, so as the tip continues to grow, the length of non-twining scape increases. The scape always twines to the right when viewed from the side. In other words, a scape winding its way around a stick as it climbed it would wrap itself around the stick counterclockwise as viewed from above. About twenty *Utricularia* species may twine, and all grow in this direction except the African plant *U. appendiculata* which grows in the other direction. Each *U. prehensilis* inflorescence produces one to several odorless flowers. They are spaced by up to several cm, and mature slowly. When each flower bud is ready to open, the portion of the peduncle it is attached to is no longer twining and has stabilized. No matter what orientation the peduncle right have gotten itself into, even straight down, the pedicel twists around so the flower is borne level. The corolla (Figure 1) is pure yellow and is remarkably similar to yellow-flowered species of *Linaria*, commonly known as Toad-flax or Butter-and-eggs. In my previous

article (Focusing on *U. calycifida*) I defined some botanical terms useful in describing *Utricularia* flowers and you may find it helpful to refer to my drawing in that issue. The lower lip is about 1 cm long and 1 cm wide. It is approximately obviate-sometimes with a suggestion of having two or four lobes—and its edges often slightly curl towards the ground. A striking feature of the lower lip is its large inflated palate bulge located near where the lower lip emerges from between the calyx lobes. Three grooved indentations parallel to the long axis of the flower divide the bulge into four swollen lobes. The upper lip is a few mm wide and up to several mm long. Its shape varies, and can be strap-like or spatulata with an end that is rounded or, as often the case with my plants, forked to a depth of a few mm. It usually curves over the inflated palate bulge. The spur is conical, sharply pointed, and is as long as or longer than the lower lip. The spur points away from the lower lip by nearly 180°. My flowers average about 1.5 cm long, and this agrees with Taylor's stated range of 0.8-2.0 cm. The two calyx lobes are both ovate or elliptical, and the upper calyx lobe is always at least a little larger than the lower lobe. When the flower is open the lobes are about 5 mm long, but when a fruit is developing they can enlarge to twice this size. Each flower is attached to the peduncle by a pedicel 1 cm long (Taylor reports a range of 0.3-1.8 cm) that is distinctly flattened in cross-section. Where it attaches to the peduncle is a small (1.5-2.0 mm) tapered bract and two shorter and much narrower bracteoles.

Utricularia can be variable in many ways, especially flower color. But as a rule yellow flowered species like *prehensilis* are almost always consistently yellow flowered. In contrast, species that have flowers colored with whites, pinks, lilacs, and purples are prone to great variation in flower coloration (i.e. see the discussion of *U. calycifida* in the last installment of this series). Of course there are some exceptions to this, for example those yellow flowered plants which can produce small white or reddish cleistogamous flowers (e.g. *subulata*), or two species that are normally purple

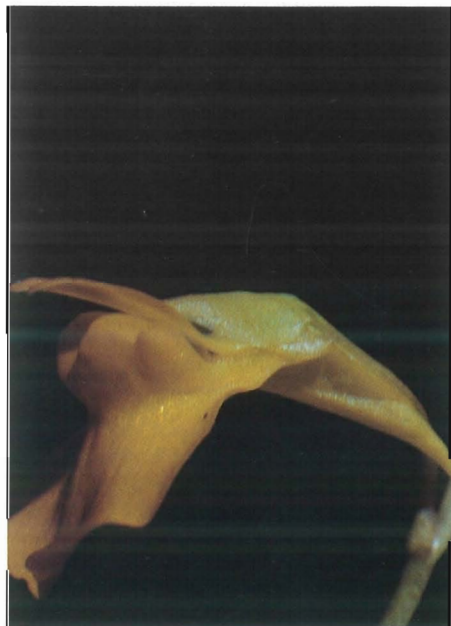


Figure 1: A flower of *U. prehensilis*. This flower is only 1.5 cm long.



Figure 2: A raceme of *U. prehensilis* climbing a chopstick. Notice the large spacing of flowers, and that the part of the peduncle with mature flowers has stopped twining.

but with occasional yellow forms (i.e. *spiralis* and *tortilis*). Still, it is a useful rule to remember.

Cultivation of this species is easy. It will grow in pure milled Sphagnum or a 2:1 peat-sand mix. I grow mine in moss and my plants flower well. I do not advise live Sphagnum, especially species with coarse and large tufts, because they will overwhelm the *Utricularia*. As with all my CPs, I use water purified by distillation or reverse osmosis. I keep the water level 2-5 cm beneath the soil surface but some growers raise the water level to the soil surface or even submerge the plants when they become established. I have found this to be a successful method but if you grow your pot of *prehensilis* in a deep tray of water with other CP pots, stolons from the plant will quickly grow out of the pot and invade the neighboring pots. This plant enjoys warm temperatures but is not picky, 15 °-32°C (60°-90°F) is fine. If temperatures are too high, the flower scapes may abort, even if they are more than 30 cm long. I grow my *prehensilis* in terraria under fluorescent lights and in the greenhouse under 50% shade cloth. Its cultural needs are easily met, so the only challenge the plant offers is when it flowers. Left on its own, the questing scape will quickly find other nearby plants—including other *prehensilis* scapes—and will wind around them. I forgot about this once and when I checked on the plant a few weeks later, one scape had found my *D. regia* and the other a large clump of *D. binata dichotoma*—when I finished untangling the mess I was thoroughly slimed. The easiest way to restrain the plant is to insert a vertical stick into the pot and let the scapes wind around that. I use chopsticks, and when they reach the top I train them back to the bottom and let them climb up again (Figure 2). Since crawling pests such as wingless aphids use toppled scapes as bridges from one pot to the next, training the scapes can decrease the occasional insect problems that inevitably occur in greenhouses.

In the wild, *U. prehensilis* grows in tropical and South Africa, and in Madagascar. In this range it grows in bogs and often shallow water. It typically flowers during the wet season, but in permanently wet conditions it flowers all year. I keep my plants constantly wet and they flower year round, but most heavily during the late winter and spring.

Growing and studying carnivorous plants is fulfilling for many reasons. We may marvel at their beauty and form, be fascinated by how they fill difficult ecological niches, enjoy the challenges posed by growing them, or even take ghoulish delight in how they devour their prey. But as I watch the curiously probing scapes of *U. prehensilis* thrash around, fitfully searching the air one day and then sliding against a terrarium wall which offers no foot-hold (and I use that term uneasily) the next, I know it is the only carnivorous plant that makes me laugh.

Growing Terrestrial *Genlisea*

Barry Meyers-Rice, Steward Observatory, University of Arizona, Tucson, AZ 85721

Late in the summer of 1991 I received in trade a plastic bag filled with live Sphagnum. Carefully exploring through the strands I was thrilled to discover that the object of my desire had survived the shipping ordeal, and I finally had an opportunity to grow a *Genlisea*. My new acquisition was smaller than a grain of rice, so I planted it immediately. Some species of *Genlisea* are aquatics and others are terrestrials. I wasn't sure of my new plant's preferred habit, so to be safe I embedded it in a loose mix of live fluffy Sphagnum just a few cm above the water table. The plant is now thriving and has taught me many things about growing species from this genus.

Despite its reputation as a difficult plant, my first species (*Genlisea hispidula*) is very accommodating. I grow mine in live or unmilled dead *Sphagnum*. A more densely packed medium (such as a peat or sand mix) may not allow tiny aquatic creatures to swim into the traps. I keep the water table near or just below the moss surface. Of course, use only pure water for these plants. I grow mine under 50% shade cloth. The spatulate or cuneiform leaves (up to three cm long each) are arranged in a rosette. The