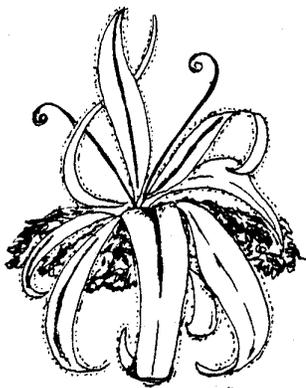


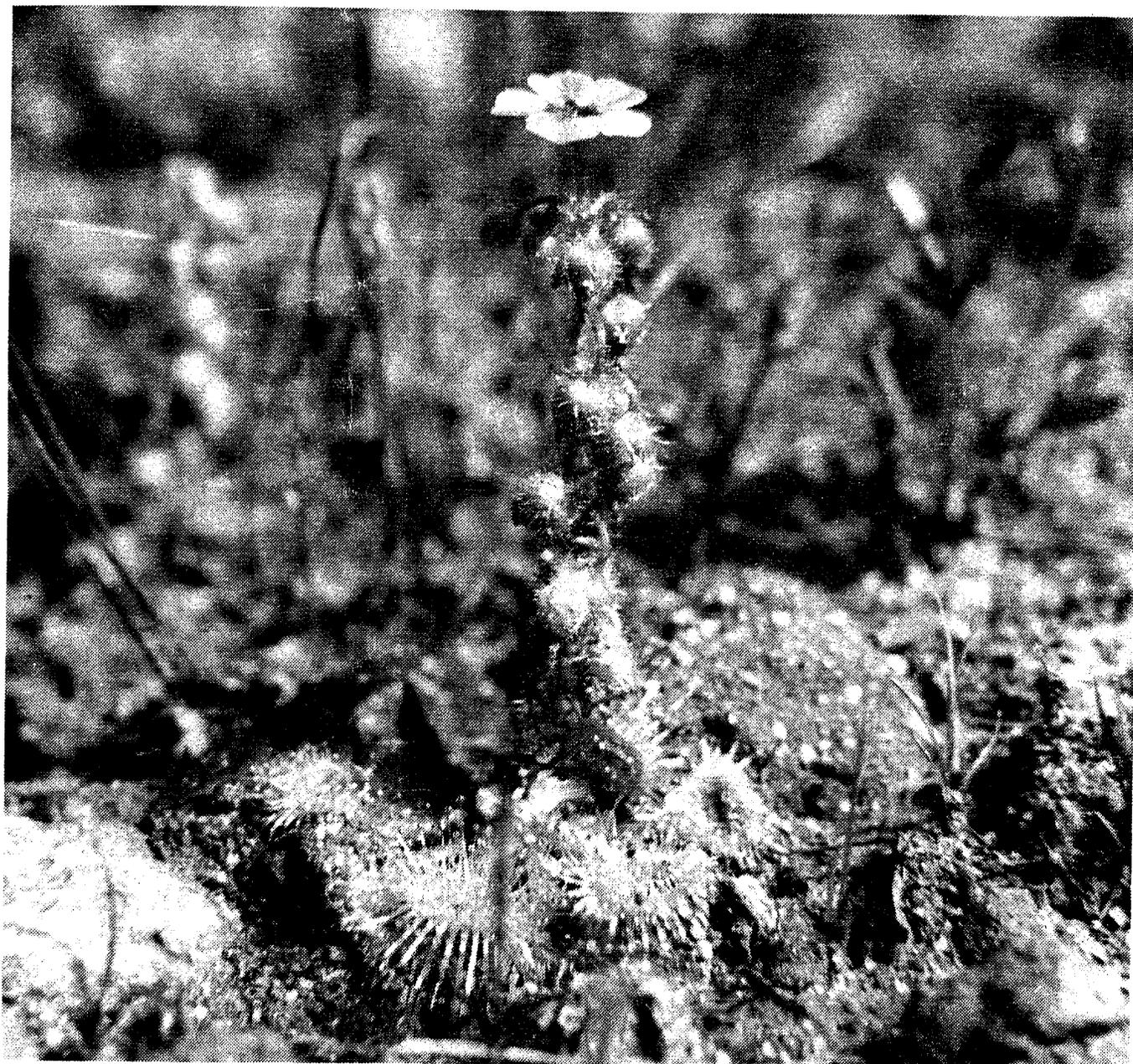
**CARNIVOROUS
PLANT
NEWSLETTER
OF
AUSTRALIA**



Volume 6

September, 1980.

Registered as a Publication, Category B.



EDITORS' : : : :

KEN HATLEY.

SUSAN HATLEY.

CORRESPONDENCE ADDRESSED TO :

C.P.N.A.

Wandena Rd, B~allsbrook East. West
Australia. 6084.

Published Quarterly by C.P.N.A.

Subscriptions \$6-00 Annually.

Back copies issued to late subscribers.

.....

FROM THE EDITORS.

We would like to start this issue with an apology for its late arrival to you. Unfortunately, we experienced an unexpected delay in the arrival of replacment parts for the copying equipment.

The good news this issue is of course that spring is upon us again, and with it the regrowth of our dormant varieties ready to come forward and show off their beauty for yet another year.

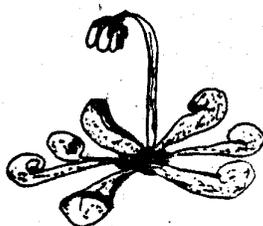
The response for articles for the newsletter is dissappointing to say the least. There is enough experienced c.p. growers in Australia capable of contributing write-ups to ensure the success of the CPNA for many years to come, but if the lack of interest continues the newsletter is doomed to failure.

To put it bluntly, if you want your newsletter to continue then get behind it and give it your support.

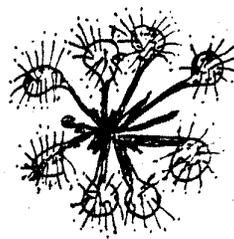
Good Growing,

Editors.

.....



S. psittacina



D. capillaris

.....

FRONT COVER -

DROSER A GLANDULIGERA, HABITAT WEST AUSTRALIA.

C.P. LETTERBOX.



Received a letter from Mrs I.D. Anderson of 23 Harrow St, Launceston, Tasmania 7250 asking of other members in Tasmania. As we don't now publish a list of subscribers we leave it to any member in her area to drop a line and swap C.P. information.

STEPHEN FRIEDRICH OF CANBERRA WRITES : I have just noticed an article in Vol 1 of CPNA in the c.p. letterbox section written by Alan Jary of S.A., stating that he is growing *Nepenthes* where the relative humidity is 100% and night temperatures around 15 deg c. I can also say that I am growing a *N. mirabilis* in a hanging basket in a glasshouse where the night temperature during winter gets as low as 1 deg c and the humidity is as low as 20, possibly less. This same plant also survives the summer months inside, in the lounge room totally unprotected from the hot dry Canberra climate. This *Nepenthes* is extremely healthy even though I am growing it in this abusive manner, the only abnormality is a slight reduction in the pitcher size. My personal opinion is that some species of *Nepenthes* are not as delicate as made out to be.

MR SID MADER OF ADELAIDE WRITES : During my recent holiday tour of New Zealand, I was really amazed with the beauty and wonderful sights I saw. Having grown flowers for the past 40 years this is something I always admire. I only really had 2 occasions where I was able to see C.P's. In Auckland I saw 6 baskets of *Nepenthes* hanging about 10 ft above ground level, these looked really magnificent. Then again in Christchurch where I had the privilege of the head of c.p. growing showing me around, the project is really only starting as it only started 2 years ago. The way it is set out is really something. It's situated in a very high glass house about 25 ft square, in the centre there is a large hill about 6 ft tall gradually tapering to a flat base, this is covered with about 15 inches of sphagnum moss and the plants are mostly planted in three, close together. At the rear of the hill and on one side a large branch of a tree was erected, on this grew Bromeliads and air-rooted ferns. It really made a nice setting. *Drosophyllum* was planted in the sphagnum with various *Sarracenia*'s and *Dionaea*, when finished it will be a sight to see. I also had the privilege of being shown the seeding section and the varieties which were being raised. The c.p. grower does not stratify any seed, it is sown direct in pots and kept at 75 to 80 deg and germination is almost 100 percent. I almost forgot to mention the *Darlingtonia californica* they had growing. One was 15 inches high and really looked its name, Cobra Lily. Anyone visiting New Zealand should visit the Botanical Gardens in Auckland and Christchurch if possible as they are really making a good effort to display carnivorous plants.

LYNETTE WORLAND OF BALMAIN WRITES : For those c.p. enthusiasts who, like Andrew hawkins (June Letterbox), are wondering where they can obtain live sphagnum moss, my experience may prove interesting. I don't know about the other states, but in N.S.W. sphagnum moss is a protected species. I obtain my supplies of live sphagnum moss thus : I buy a package of dried sphagnum from my local nursery, soak the sphagnum and some peat moss in water for an hour or so, then put the mixture into pots, plant the c.p's and keep them wet as usual. In a couple of weeks the sphagnum goes green and a little later new shoots appear. It's really quite amazing to see this dead white stuff become a green growing plant, and it's a lot easier than mounting an expedition to pillage a swamp.

HOW MY COLLECTION STARTED.

BY STEPHEN CLEMESHA.

To my knowledge I was the first person in Australia to grow Sarracenia's in Australia successfully, and I certainly was the first to grow all species of the genus and to distribute plants of the genus widely. Today most plants of this genus in this country are ultimate divisions of plants from my collection.

Today, building up a collection of these plants is relatively easy but it was not when I started. I first became aware of the existence of the genus in 1961 when I was looking through an encyclopedia at Wagga Teacher's College library. I came to a double page on American pitcher plants, Darlingtonia, S. purpurea and S. flava were shown. I had seen plants of Nepenthes in orchid collections and was surprised to learn of this impressive temperate climate genus. The accompanying text described their habitat and I realized that if they could be cultivated they should do well in Coastal N.S.W.

I returned to my home in Sydney late in 1961 and soon after Warren Stoutumire of the U.S.A., from whom I received orchid seed, offered me some Sarracenia seed. This I accepted and I was advised to place it on wet sphagnum in a screw top jar until it germinated then pot in sphagnum and grow in full sun keeping the pot in a saucer of water. I followed the advice and a few seedlings appeared. I wondered if any would survive. One did and it grew a little bigger each year. The plant was labelled S. sledgei x S. drummondii i.e. S. x areolata and S. alata leucophylla. It grew vigorously and I have distributed many plants of it and still have part of the original plant.

As its success became obvious I tried to get more. I particularly wanted this species. I received more seed of which the following germinated - S. alata x willissii, S. (flava x leucophylla) x alata, S. alata x purpurea, which years later was identified by Warren Stoutumire as S. alata x self. I also received S. purpurea but I always lost these in their third year until I overcame the problem in the early 1970's.

A few years later I received S. flava, a tall handsome species from Lumberton North Carolina, and Darlingtonia californica which had been sent by 'A Californian'. The above plants were in my collection in 1968 and also a solitary precious Drosera capensis, D. binata and D. pygmaea.

I had not been very successful in getting the species as Warren Stoutumire had only one clone of each in the limited space of his greenhouse and he needed the few flowers for his own hybridising experiments, also he believed some of the species to be self sterile. He lives in cold northern U.S.A. and does not grow his plants out of doors.

In December 1968 I published a short article on growing Drosera binata and D. pygmaea in 'Australian Plants' and soon after received a letter from the editor, and with it was a letter from a Mr Mazrimas in California. He wanted to exchange plants and seed with me but no address was on the letter. I wrote back to the editor and got his address and wondered if he was the 'Californian' from whom my Darlingtonia seed had come from.

He was, and my collection then grew rapidly and within a year Joe Mazrimas had sent most of the species and Warren Stoutumire sent plants of the others along with a few more hybrids. I was then able to add some rare and unusual forms of the species to my collection as they were discovered through the above two friends and Don Schnell. I made many more hybrids myself. All this time I had been working quite alone in Australia. The only other collections I knew of were ones some of my friends had built up from pieces I had given them.

By 1970 interest in these plants was growing and they no longer were just the 'Encyclopedia Wonders' that I started from.

A HOMEMADE TERRARIUM.

BY GLENN CLAUDI-MAGNUSSEN.

A year and a half ago, I built a large terrarium to house some of my carnivorous plants. Early this year I remodelled it and expanded it to its current volume of 546 liters. In it, I have had great success with Byblis liniflora, Nepenthes, Utricularia, and some Drosera. I have found that Sarracenia, Dionaea and some Drosera suffer from the relatively low light level in my terrarium, but this problem could be solved by building a shorter terrarium or raising these species within the terrarium so that they are closer to the lights.

The base of my terrarium is a flat wooden box filled with a planting medium. It is important that the entire box be lined with a tough layer of plastic to prevent leakage. The terrarium can be built to stand on its own legs or to sit on a table.

I built each side and the top of the terrarium separately, then attached them to the terrarium base. The frame of each side is built from four strips of wood, much like a picture frame. The top is built in the same way, but has additional cross bars to support my light fixture. Once I had the frames, I placed them on some plastic sheeting, wrapped the sheeting around the frame, and attached it to the outside of the frame (see diagram). By doing so, I protected the frame and fastening from the humidity inside. I used a strong adhesive tape to attach the plastic to the frame, because I felt that staples or tacks might rip the plastic.

I then used metal fasteners and angle irons on the outside of the frame to attach the sides and top to each other and to the base. Door latches hold the front panels to the terrarium so that they can be quickly and easily removed.

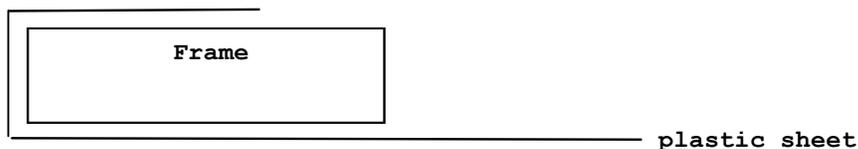
To help keep the humidity high, I used silicon rubber to fill all the spaces between the walls. Once the terrarium is completed, nothing made of metal or wood can be in contact with the humidity inside, because these substances will quickly deteriorate. The outside of the terrarium can, of course, be finished in any of a number of ways, depending on personal preference.

Inside the terrarium, I plant the species requiring moist soil directly into the planting medium. Species that need a special soil, more or less water, or some other special attention are planted in their own containers and placed right in the terrarium.

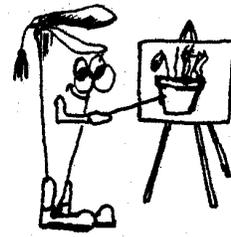
Using the very generalized plan above, a terrarium can be quickly and inexpensively built in almost any size or shape and to meet almost any special requirements. If anyone has any questions or would like more specific details about my terrarium, they can write to me and I will be glad to answer them.

DIAGRAM :**Fasten here.**

V

**Inside of terrarium**

BEGINNERS PAGE.



THE BUTTERWORTS - PINGUICULA.

By Robert W. Riedl.

For centuries there has been a strange and fascinating preoccupation in human minds to associate these plants in one way or another with their livestock, particularly their dairy herds whether they were cattle, sheep or goats. In medieval Europe butterworts were thought to protect cows from wicked mischief of elves and Adrian Slack in his book 'Carnivorous Plants' quotes from the famous 1635 edition of Gerard's 'Herbal' that the husbandmen's wives of Yorkshire used to anoint the drugs of their kine with the butterworts 'fat and oilous juyce' whenever they were chapped, rifted or bitten by any venomous worme. Farm folks in the European Alps practised such treatment until comparatively recently, but claimed the additional benefit that udders rubbed over with the sap of butterworts protected them against snakes trying to steal milk from the teats. According to tales of travellers similar practices are allegedly still upheld by many of the nomadic herdsmen of Siberia. Rural people in northern Europe used to mix the crushed leaves of butterworts with milk in order to curdle it and to prepare a dish similar to junket. While visiting Grenoble in south-eastern France during my travels last year through central and southern Europe I made the acquaintance of a local school teacher who not only took me to some of the nearby mountain bogs to show me various species of Pinguicula growing in the area, but also told me the story of two 15th century sisters who were accused by the people of their mountain village of having used a formidable devil potion prepared from butterwort leaves to put an evil spell on the cows of the village so that they aborted their calves and gave blood in place of milk ; the evidence against the sisters was so convincing to the judge and council of village elders that they were soon convicted of witchcraft and sentenced to torture and death by fire whereupon the cows returned to give milk again instead of blood and the economic survival of the village was ensured.

The genus Pinguicula belongs to the family Lenti-bulariaceae which also embraces the carnivorous genera Utricularia, Polypompholyx and Genlisea. In terms of evolutionary history the Lentibulariaceae are closely related to the family Stylidiaceae to which the fascinating companion plants for many C.P.'s, the remarkable triggerplants belong which occur nowhere else on earth but in Australia (anyone interested in the study and cultivation of triggerplants is advised to write to Richard Davidson, P.O. Box 51, Melton South, Vic. 3338). About 60 species, subspecies and natural hybrids of Pinguicula are known today. They are mainly confined to Europe, northern Asia, North and Central America, but reach into the western part of North Africa with one species and into South America with four species.

Generalising, the Pinguicula plant is a rosette of virtually stalkless leaves of which the older ones lying prostrate and the younger ones nearly so. Depending on the species the rosette may be from 1.5 (P. pumila) to 50 cm (P. vallisneriifolia) across. The leaves of most species are oval-shaped with the margins more or less rolled inwards. They are usually yellow-green, but some species are naturally reddish while others assume a reddish hue or venation if exposed to strong light. They have a faint mushroom-like odour and feel greasy and almost weakly succulent to the touch, hence the name of the genus from the latin word 'pinguis' - meaning 'fat' - used in its diminutive form. The upper surface of the leaves is covered with nearly microscopic sessile glands which confer it a glistening sheen and a granular texture.

Most Pinguicula species flower for several weeks from spring to summer. Some Central American species have even a second flowering season in autumn. The flower scape is often gland-bearing, is 4 to 25 cm tall depending on the species, and supports the single flower at the top.

BEGINNERS PAGE CONT.

Each plant usually grows several flower scapes in succession during the flowering season. Different species⁴ produce white, pink, mauve, red, purple, yellow and often veined flowers which in the small-throated species resemble large, long spurred violets and in the wide-throated species have a distinct likeness to small Gloxinias.

The stamens and pistil have a unique arrangement characteristic of the family. They are located deep in the tube of the flower. The two stocky and slightly curved stamen filaments bearing the globular anthers are almost touching at their apex. Behind the bases of the stamens and attached to the receptacle is the spherical ovary equipped with a very short style. The modified anterior lobe of the stigma is flattened and elongated, so that it hangs over the anthers like an apron. The overall arrangement of the flower tends to encourage cross-pollination rather than selfing. An insect pollinator has to extend its body deep into the flower to reach the nectar and, as it does, deposits any pollen from a previous visit to a flower on the apron-like stigma lobe. As the insect withdraws from the narrow flower tube it tends to lift the apron lobe upwards thus exposing the two anthers so that it may inadvertently pick up fresh pollen from the flower just visited. Pollination can be easily performed on cultivated plants by removing some of the petals which form the lower lip of the flower in order to expose the apron stigma and the anthers; pollen can then be transferred to the stigma with the aid of a toothpick and flowers can either be seated or cross pollinated.

The carnivorous character of Pinguicula was first recognized by Charles Darwin, who through observation and experimentation demonstrated that the leaves not only catch insects, but also digest and absorb their prey. The trapping mechanism is quite simple : small insects which land on the upper surface of the leaf are held by sticky, glandular secretions until digestion and absorption take place. During this process the rolled edges of the leaf can frequently be seen to roll in even further to give the leaf an almost dish-like appearance, a function which may effectively prevent prey from being prematurely washed from the leaf by rain. Electron microscopy has revealed that Pinguicula leaves have actually two kinds of glands on the upper surface : stalked glands which seem more important in the capture of prey, and sessile glands which seem to be more active in digestion. It is thought that absorption takes place at the base of the digestive glands.

There are two kinds of annual growth cycles in the genus Pinguicula, the tropical growth type and the temperate growth type. The temperate growth type species are forming a winter bud (hibernaculum) each year at the end of summer. Such a dormant stage is absent in the tropical growth type, where photosynthesis is also maintained during winter. In both growth types the cycle generally begins with a first set of leaves (generative rosette) followed by flowering. A second set of leaves is then developed (vegetative rosette) during or shortly after the seed stage. In the majority of species the shape and size of the leaves of the generative and vegetative rosettes are identical (homophyllous type). In other species however, and virtually all the Mexican species belong to this group, the two rosettes are different (heterophyllous type).

Temperate growth type species are very difficult to grow in the majority of Australian climates with the possible exception of the colder areas of the Tasmanian and south-eastern highlands. I am trying again this year to grow P. vulgaris in Sydney and this time I shall add ice packs twice daily during the hot months to the well-insulated water tray in which the plants stand to keep at least the roots as cool as possible; once the winter buds have formed I shall store them appropriately packaged for at least 5 months in the refrigerator. Anyone interested in the cultivation of temperate growth types is referred to Jurg F. Steiger's article in CPN, Vol 1v, No 1, pp 8-18.

Most tropical type species - and the majority of butterworts belong to this group - are very easy to cultivate in most parts of Australia. The term 'tropical growth type' could be misleading as most species of this group come from the warm-temperate or subtropical areas of southern Europe, the south-eastern U.S.A. and

CONT OVER

BEGINNERS PAGE CONT.

Central and South America, in brief, from climates not dissimilar to those of subtropical or temperate coastal Australia.

Due to their ease of cultivation it is the tropical growth type species from the south-eastern U.S.A. and the Mexican mountains which have been popular in botanical garden collections and with c.p. growers the world over. Over the last few years more and more of these plants have made their entry into Australian collections and are in limited numbers even available from C.P. nurseries. Some of these species shall be briefly described :

Pinguicula pumila occurs throughout Florida, but ranges as far north as coastal North Carolina and along the Gulf-of Mexico as far as eastern Texas. This is one of the smallest species with a rosette barely reaching 2 cm across. The 1.0 cm flower is most commonly pure white, though pink, purple and yellow flowering clones-are known from Florida.

P. lutea has about the same geographic distribution as P. pumila, but only just reaches into Louisiana along the Gulf coast. Its rosette is 10 to 15 cm across and the large (3.5 cm) flower is brilliant yellow.

P. caerulea occurs along the coastal plains from North Carolina to as far south as the middle panhandle of Florida. Its rosette is 8-10 cm across and its 3.0 cm flower is pale violet reticulated with dark violet veins.

P. primuliflora occurs along the Gulf plain from Western Florida to southern Mississippi. Its rosette grows up to 15 cm across and its 3.0 cm flower is pale blue with a whitish ring around the tube entrance and a bright yellow spur. Contrary to most other butterwort species P. primuliflora sprouts numerous new plantlets from decaying leaves which soon surround the 'mother' plant. Due to its rapid vegetative multiplication this species has easily become the most wide-spread butterwort in Australian collections.

P. ionantha is only found in a small area in the mid-panhandle of western Florida and is therefore a somewhat endangered species. Its rosette is up to 15 cm across and the 2 cm flower is white to faintly violet with a ring of deeper violet around the tube entrance. The spur and external tube is greenish to dull yellow.

P. planifolia ranges from western Florida to southern Louisiana. The rosette measures to 15 cm across. The leaves, contrary to most other species, are brownish red although green-leaved clones are known. The 3 cm flower is pinkish purple with a dark violet ring around the tube entrance. All the North American species described have a conspicuous, 'bearded' structure called the pallate more or less protruding from the floor of the flower mouth. The pallate is present in all Pinguicula flowers, but usually much less obvious than in the forms from the south-eastern U.S.A. Depending on the species the colour of the bearded pallate in the American species ranges from cream to bright yellow.

P. moranensis covers a somewhat confused complex of plants which in many respects are almost identical. Yet due to minor differences in rosette size, leaf shape and flower size and colour the different forms of these plants are presently still taxonomically isolated from one another, and go under such names as P. caudata, P. mexicana, P. rosei, P. sodalium and others. Plants which I have raised from seed labelled P. caudata have grown vegetative rosettes 25 cm across. The 5 cm flowers are brilliant bluish-pink with white around the tube entrance and a pale-green 14 cm spur. The much flatter generative rosettes are rarely more than 10 cm across, but have a greater number of leaves. The species complex of P. moranensis occurs in many temperate and subtropical mountain areas of Mexico.

P. gypsicola also comes from the mountains of Mexico. In contrast to any other Pinguicula species it has very narrow leaves which gradually taper to a blunt tip. The rosette is about 10-12 cm across and the 2 cm purple flowers have a white throat and a long spur. The winter rosette is flat and composed of small, hairy, succulent leaves which are neither mucilaginous nor carnivorous; in appearance it has been compared to a small Sempervivum.

All described species are successfully grown in a 50/50 mix of quartz sand and peat. The Mexican species, coming from limestone areas, require the addition of 2 heaped teaspoons-full of dolomite powder per pot.

BEGINNERS PAGE CONT.

The pots are stood about 1/3 deep into water during the warmer months, but are kept somewhat drier during the winter months; particularly pots of P. gypsicola are kept just barely damp during the winter rosette stage. All butterworts can be periodically sprayed with a weak fertiliser solution during the active growth period and lost dolomite from the pots of the Mexican species is replaced twice yearly by watering with a suspension of about 1/2 teaspoon of dolomite powder per pot which must not wet the leaves directly. All butterworts, whilst enjoying a very light position, must be protected from excessive midday and afternoon sun.

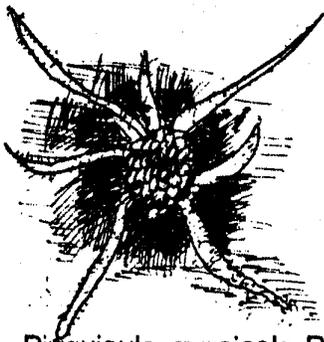
All Pinguicula species described here are easily raised from viable seed. The seed is thinly sprinkled onto the surface of a pot filled with the mix recommended above. The pot is placed into a light, warm spot, but away from direct sunlight, stood into a few cm of water and periodically sprayed with a fungicide solution (Benlate, Captafol, Captan) to minimize damping off. The seed usually germinates 10-30 days after sowing. One year old seedlings can then be transplanted to permanent positions. Seed-grown plants usually reach flowering size when 2 to 3 years old.

Pinguicula species can also in many cases be successfully propagated vegetatively. As already pointed out natural leaf budding will spontaneously occur in P. primuliflora, but also to a lesser degree in P. planifolia and P. ionantha. With all other species the growth of new plantlets can be induced by removing whole mature leaves in spring (winter leaves in the Mexican species at the point in time when new summer leaves are just beginning to form). The entire leaf is placed right side up on a moist bed of sphagnum in the case of American species and sand/peat mix with some dolomite addition in the case of Mexican butterworts. The lower side of the leaf must be flat on the surface of the substrate which can be achieved by pinning it down with toothpicks. The pot is then covered with plastic to maintain high humidity and placed into a mildly warm, light place away from direct sunlight. Young plantlets will appear on the gradually decaying leaf surface after several weeks. When these are 2-3 months old, they can be gradually hardened off and are then transplanted to separate pots.

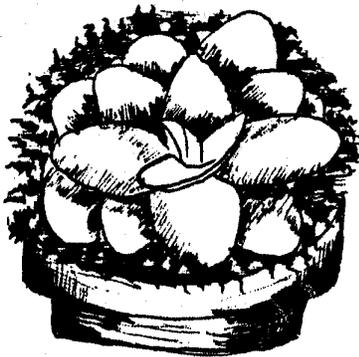
Caterpillars and aphids occasionally become troublesome pests, but can be easily eradicated using a pyrethrum spray which does not harm the plants.

References :

- Beckstrom, Marc. 1979. A Search for Mexican Pinguiculas. C.P.N. Vol 8, pp 55-57.
 Carroll, W. 1979. Propagating Pinguicula Lutea. C.P.N. Vol 8, pp 58-59. 71.
 Schnell, D.E. 1976. Carnivorous Plants of the United States and Canada.
 Slack, A. 1980. Carnivorous Plants.
 Steiger, J.F. Standardized Photography of Pinguicula Blossoms. C.P.N. Vol 7, pp 43-50.



Pinguicula gypsicola Br.



Pinguicula vulgaris L.

C.P. IDENTIFICATION PROBLEMS.

By Allen Lowrie.

One of the problems we have here in W.A. with the local c.p. is botanical identifications and naming of the numerous forms of known c.p.'s. In the American C.P.N. we often see *S. flava* 'heavy veins', 'red form', 'green form', typical forms etc. To the botanist's these plants are all *S. flava*, but to C.P. collectors forms of known species add that little extra to the c.p. collection.

In the orchid world they not only have varieties of and forms of, they also have the awards that the individual plant has gained at plant shows tacked on to the end of their name. This form of plant identification allows collectors a better idea of what plant is being discussed in conversations etc.

Here in W.A. we have a vast amount of land, much of it today still un-explored. Each time a trip is made into the field one sometimes finds new species and different forms of named c.p.'s.

A few of the forms (maybe varieties) I have discovered over the years are as follows :

D. erythrorhiza (sand plain form) this plant is similar to R. Ericson's drawing, (Plants of Prey plate, 3), sometimes up to 9 cm across the rosette.

D. erythrorhiza. (Hills form), generally found growing in loamy gravel country. The rosette can be up to 15 cm across, made up of approx 12 leaves. The leaves are more lanceolate in shape and tend to be somewhat thicker than the (sand plain) form. Visually a totally different plant.

D. erythrorhiza (Giant). See photograph C.P.N.A. front cover. This plant is a giant form of *D. erythrorhiza* (sand plain form).

D. erythrorhiza (multi colour). Where as the other *D. erythrorhiza* leaves are either green, red or a mixed combination of these two colours, this particular form has banded colouring in the leaves, i.e. The outer edge of the leaf is red for 5 mm, then inside that a band of bronze for 5 mm, then green for 5 mm, followed inside with maroon, terminated in the middle with lime green. Plants side by side in the field of this particular form do not all follow the same banded colour sequence. Other colours found on these banded leaves are yellow, orange, purple and tan.

I have found different forms of *D. manziesii*, *D. bulbosa* and *D. macrantha* to name a few, that display either different flower colours or growth forms.

This is only a small example of the C.P. in W.A. that could be given variety or form status, not to mention the number of already discovered *Drosera* species, (as yet not named).

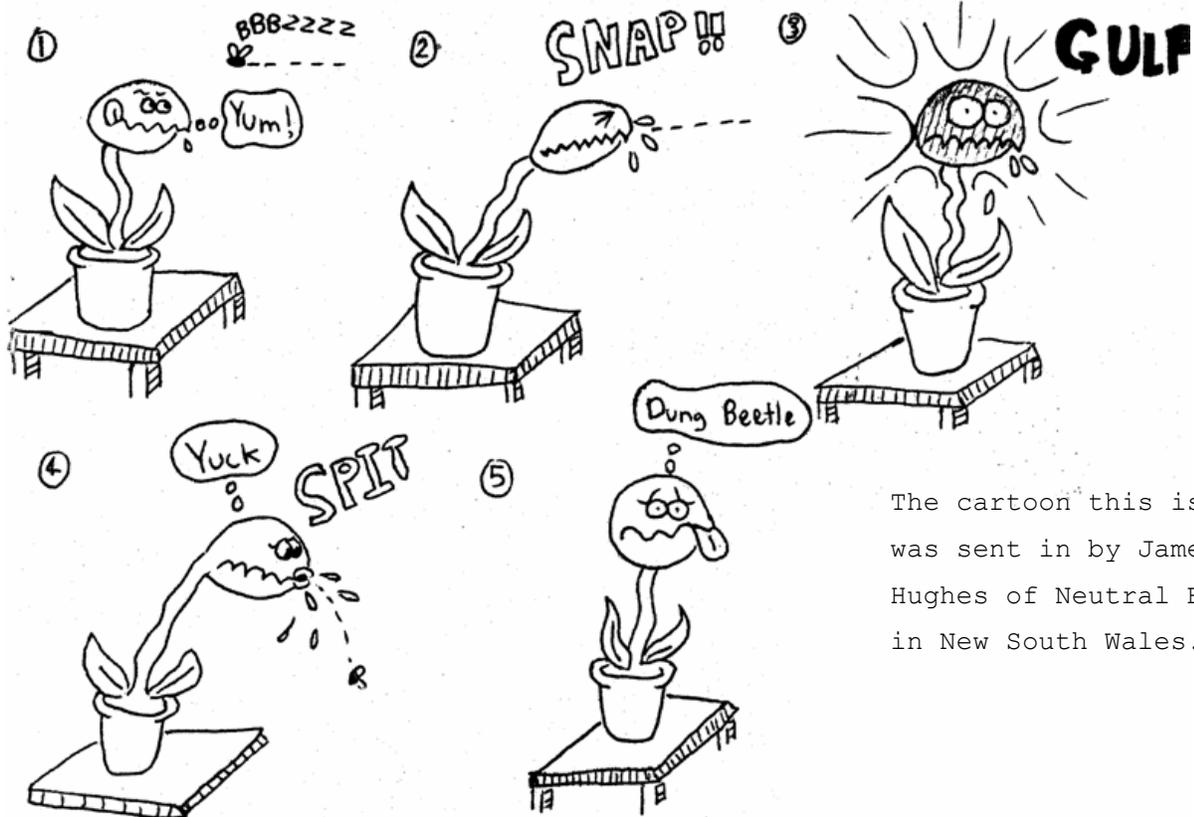
The problem we have here in W.A. at the moment is the time required for an interested botanist to name the new species of c.p. as well as the varieties and forms of.

Our local botanical people, unfortunately for us, are extremely busy on other plant identifications.

Until time can be made these available for someone in this area to name these plants, we in the c.p. world will have to be content with names of plants such as, *D. species* 'Lake Badgerup', *D. species* 'Gidgegannup', *D. erythrorhiza* 'Hills form', etc, for identification purposes. It wouldn't be much fun writing to your c.p. friends inquiring 'How's your No 541 growing!'.

*D. trinervia**D. x californica***S. alata x S. purpurea*

CARTOON CORNER.



The cartoon this issue was sent in by James Hughes of Neutral Bay, in New South Wales.

AUSTRALIAN

PLANT & SEED SOURCES
CATALOGUE.

NAME & ADDRESS.

GENERA.

CARNIVOROUS & UNUSUAL SEEDS.
3 Normandy Ave,
Para Hills. S.A. 5096.

S.A.E.

Carries a good variety of seed only.

EXOTIC & BIZARRE PLANTS.
Wandena Road,

SEND
200

Dionaea - Nepenthes

Bullsbrook East.
West Australia. 608¹⁴

STAMP

Pinguicula = Drosera •
Sarracenia Cephalotus
Most C.P. Seed.

Overseas inquiries please contact United States agent
Mr R. Minton. Carolina Exotic Gardens. P.O. Box 1492, Greenville, N.C. 27834. USA.

A 10% discount on plant orders is available to C.P.N.A. subscribers. (Aust Only.)

TRADING POST.



BUY TRADE SELL

When sending in Want Ads, please print clearly name & address in order to eliminate mistakes. Please mark clearly whether you wish to Buy, Swap or Trade. Adverts from Commercial sources will not be accepted except where a private collection is involved.

Keep strictly to your trade agreements and where possible answer all replies promptly.

.....

JANICE EMMINS. 342 GALLAGHERS RD, GLEN WAVERLEY. VIC. 3150. Phone 561-2231 Wishes to obtain a *Darlingtonia californica* and a *Sarracenia psittacina*.

.....

GORDON HANNA. 168 KILABEN, RD, KILABEN BAY. N.S.W. 2283.

For sale or exchange *Drosera schizandra*, *Drosera proliferata*, *Drosera petiolaris*, *Drosera adelae* and *Nepenthes mirabilis*.

.....

TIM BURFIELD. 5 GROVE ST, UNLEY PARK. S.A. 5061.

Would like to trade or buy Tuberous *Drosera*, *Nepenthes* plants or cuttings, *Pinguicula*'s, *Drosera binata* var *dichotoma*, W.A. pygmy *Drosera*'s, *Drosera linearis*, *Drosera anglica*. Offers for trade : *Drosera capillaris*, *Drosera whittakeri*, *Drosera capensis*, *Drosera burmanii*, *Drosera burkeana*, *Drosera peltata*, *Drosera planchonii*, *Drosera montana*, *Drosera adelae*, *Drosera binata*, *drosera aliciae* and a variety of *Sarracenia*.

.....

HELMUT KIBELLIS. 3114 WISDOM RD, GREENWICH. N.S.W. 2065.

Would like to buy or swap any *Pinguicula*'s except *P. lutea*, *P. caudata*, *P. primuliflora*, *P. gypsicola*. For sale or exchange *P. primuliflora* (small), *Utricularia dusenii*, *Sarracenia leucophylla*, *Sarracenia alata* x *psittacenia*, *Drosera burmanii*, *Drosera pygmaea*.

.....

JOHN GRAHAM. 8 WARUDA ST, BRACKEN RIDGE. Q.L.D. 4017.

Wishes to obtain via trade only, W.A. pygmy *Drosera*, W.A. tuberous *Drosera*, large *Dionaea*, Northern Territory and South American *Utricularia*, Tropical *Pinguicula*, *Nepenthes*.

I offer both C.P's & Bromeliads for trade as follows : *Drosera capillaris*, *Drosera capensis* (narrow leaf), *Drosera binata* var 'Extrema', *Drosera filiformis* var *filiformis*, *Drosera spathulata*, *Drosera montana* (white flower), *Utricularia longifolia*, *Utricularia praelonga*, *Utricularia dusenii*, *Utricularia lateriflora*, *Utricularia menziesii*, *Drosera pygmaea*, *Drosera* sp. 'Lake Badgerup', *Drosera aliciae* (pale flower), *Byblis liniflora*, *Nepenthes kampotiana*, *Nepenthes gracilis*, *Nepenthes maxima*, cuttings only of *Nepenthes*. *Tillandsia mallemonitii*, *Tillandsia schiediana*, *Tillandsia 'Nez Misso'* (*mallemonitii x recurvata*), *Aechmea 'Foster's Favourite'*, *Aechmea racinae*, *Cryptanthus 'IT'* *Cryptanthus racinae*, *Nidularium innocentii* var *lineatum*, *Vriesea carinata*, *Vriesea petropolitania*.

.....