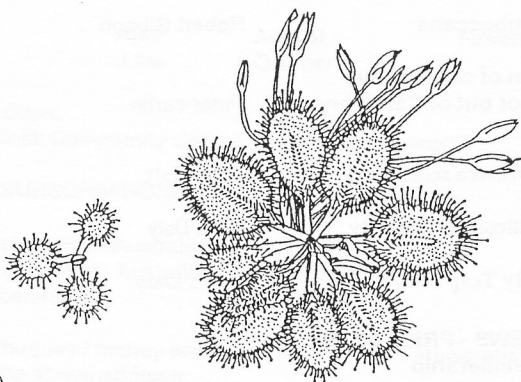


FLYTRAP

NEWS

VOLUME 6 NUMBER 2

OCT/NOV/DEC 1992



Drosera praefolia 14.5.92
Seedling and adult plants - life size.

Rosette almost complete. Note the fallen scapes which flowered in April. The rosette grew from the side of the scape and grew rapidly. Leaves olive green with lily red reticulate glands and diffuse red new leaves and undersides of new leaves. Scapes + pedicels red, fruit ripening now.
(Plants dormant late Sept - mid October depending upon soil moisture).

NEWSLETTER OF
THE CARNIVOROUS PLANT
SOCIETY OF N.S.W

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Free with membership

Editor reserves the right to print articles entire, abridged and make corrections before printing.

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The C.P.S. of N.S.W.
P.O Box 87
Burwood NSW 2134

Remaining 1992 Meetings:
November 13

1993 Meetings:

February	April	August	November
March	June	October	

TIME: 7.30 - 10.00pm

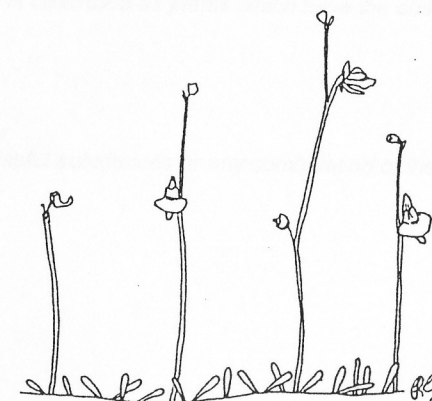
VENUE: Woodstock Community Centre, Church St, Burwood.

MEMBERSHIP SUBSCRIPTIONS:

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* Please make cheques / money orders payable to The Carnivorous Plant Society of NSW sent to the above address.

* All articles submitted become property of the society and cannot be reprinted without the permission of the author and / or society.



U. bisquamata (syn. *U. capensis*) 16.11.1990

EDITORS REPORT.

My second attempt at Flytrap News is now complete. I hope that this is an improvement on the first issue which was far from the standard expected by readers. I received a few articles for this issue and as you read this you will recognise the authors names. No other articles were received and this was not at all encouraging.

And...

Once again there will be no photo in this newsletter as I did not receive one. My photography is far from the standard that one would expect to appear in a newsletter and I ask that if anyone does photograph their plants, they send one in. The newsletter is the backbone of the society and it needs the support of its members.

Spring is my favourite time of the year as a plant grower. My plants develop new shoots, and eventually flower. Insects feed on my plants (similar to Kensey's problem as you shall discover) and as the humidity increases, so do pathogens such as fungal disease. It certainly keeps me busy.

The committee and myself wish everybody a very merry Christmas and hope that it's a safe one for everybody. In the meantime, watch your plants and observe any changes you may see and send these observations to:

THE C.P.S. of N.S.W
P.O. BOX 87
BURWOOD NSW 2134

LETTER TO THE EDITOR.

Dear Peter,

I wish to congratulate you on completing your first "Flytrap News" issue. It certainly takes more time to complete than you would initially expect.

There are two points, however, that I wish to comment on. The first is that you significantly altered my article on "Return to New Caledonia". Although I respect your right as editor to do this, I was not entirely happy with the published version. Could you please notify the author of any article which you modify in the future?

The second point is that the orchid, *Schomburgkia tibicinus*, described in the article would probably be more correctly termed as myrmecophilous (ie ant plant) rather than Carnivorous. This follows from the criteria in "The Carnivorous Plants" (Juniper, Robins and Joel, 1989). Still it is an interesting article to show that carnivorous plants exhibit only part of the spectrum of plant - animal relationships.

Regards,
Robert Gibson 16/10/92

Dear Robert,

Thankyou for commenting on the newsletter. I will take more care in future when I publish articles and if any alterations do occur, I will forward a copy to the author seeking approval. All articles sent to the newsletter are appreciated as they make the task of being editor easier, yet it becomes necessary to change articles if they tend to dwell on a single point and I believe that this is the right of the editor. This is also stated on the opening pages of "FLYTRAP NEWS".

The article on *Schomburgkia tibicinus* was taken directly from "New Scientist" and was based on information which had recently been discovered and published in August 1989, after Juniper, Robins and Joel's "The Carnivorous Plants" had gone to print. Yet there is more to *Schomburgkia tibicinus* than just another plant - animal relationship. This plant overlaps the boundaries of carnivory and given the following evidence, I believe that this plant can be classed as carnivorous.

Carnivory is described as plants which have the ability to:

- 1) Attract;
- 2) Retain;
- 3) Trap;
- 4) Kill;
- 5) Digest; or
- 6) Absorb useful substances or any combination of these.

Myremecophily is defined as the condition when an organism (a myrmecophile) lives with a Colony of ants. Some flowering plants have specialised inflated organs which house ant colonies. The plant is usually provided with protection from pests by the ants or, as in the case of *Schomburgkia tibicinus*, provided with the nutrients needed for plant growth.

Carnivory and Myremecophily have both evolved from plants being placed under harsh natural conditions and the numbers of plants being discovered with some form of modification due to environmental influences are still on the increase as more plants are discovered and studied.

When Rico - Gray studied *S. tibicinus* in its natural habitat, the conclusion was made that the walls of the hollow bulbs act like a gut, absorbing rotting remains and transferring the chemicals to the plant, especially new shoots. This was proven using radioactive particles and tracing their progress within the plant.

This plant fits at least four of the above criteria on what makes a plant carnivorous. The spread of radioactive particles throughout the plant determines the existence of glands and this is an important factor used to trace the evolutionary path of carnivorous plants.

It is important that plants such as *S. tibicinus* are not dismissed as being carnivorous, especially when no distinct border exists between Myrmecophilous plants, Carnivorous plants and C4 plants. Why not grow and study them all?

NEWS AND REVIEWS.

* I wish to provide an update on the identity of the "Assassin Bug" which I saw on local *Drosera peltata* plants in late 1900, a sketch of which was published in "Flytrap News" Vol 4, number 3. The insect is a species of the genus *Cytopeltis*, a type of capsid bug. A brief review of this genus was given in "the Carnivorous Plants" (Juniper, Robins, Joel 1989). It is incorrect to call them "assassin bugs", as they are known instead as "Drosera Bugs" (Allen Lowrie, pers. comm, 1992).

They are quite common on *D. filiformis* plants in my collection over the summer but I am not sure of where the Drosera Bugs go when these plants go dormant. In early October wingless juvenile bugs (?) make themselves at home on my *D. binata* plants. This is not unusual as they are frequently found on this species in the wild, as nicely illustrated on the cover of Densey Clyne's book on carnivorous plants.

Robert Gibson 16/10/92.

NEWS AND REVIEWS CONT:

* Gordon Cheers new book has finally been released. At this stage I have only had a quick glance through it in a book shop but I have to admit that it is very impressive. The book is full of coloured pictures, propagation notes and a brief history on the evolution of Carnivorous plants. I welcome anybody who fully read this book to send in a review to this column.

* I have been asked to speak to the Bromeliad Society on Carnivorous Plants at Burwood RSL Club. They meet the second Saturday of every month and after seeing the display at the Koi Carp Show, I tend to feel that many species of Bromeliads are quite beautiful in their own right. My talk is scheduled for the second Saturday of January and I have been asked to bring a few plants to sell. If anyone has some plants that they would like to sell, or would like to help at the talk, then please contact Peter on 604 3090 for details.

* FOR SALE: THE CARNIVOROUS PLANT COMPANY

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DROSERA CAPENSIS. Ken Harper

Drosera capensis seem a rather trivial subject to devote an article to, but I think it's necessary for someone to write constructively about it. Like most South African sundews, *D. capensis* is lovely to grow. In its most common form, the leaves of *D. capensis* grow erect with the linear leaf blade curving downwards. The leaf is up to 17cm long with the petiole approximately half this length while the flowering stem (scape) may reach 30cm in height and bear up to 50 rose-pink flowers.

In recent times a number of new *D. capensis* forms have made their way into general cultivation and currently I am growing four: typical, white flower, crestate, and narrow leaved. Whether the new forms are genetic flaws or distinct subspecies of *D. capensis* remains to be seen but more probably will be discovered and appear eventually in collections and seed bank lists all over the world.

It is certainly true that *D. capensis* is easy to grow and this was the first sundew in my collection. Over the years I have grown this plant in a variety of potting mixes, ranging from pure sphagnum moss to peat/sand/perlite mixes to only peat moss, each with great success. I believe that the best mix I have used for *D. capensis* consists of 2 parts peat moss, 1 part sand and 1 part perlite, which is exactly the same mix I also use for *D. regia*. Plants should receive as much sun as practical throughout the year but I like to protect all my sundews in summer from the hot midday sun to prevent them from being frizzled.

Propagation of *D. capensis* can occur through seed, leaf cuttings and root cuttings. As each flower is capable of producing an extraordinary amount of seed, I favour propagation by this means but other methods will also be briefly explained. If the quantity of seed produced is to be controlled, it is much easier to remove a number of flowers or, if no seed is desired, the scape should be removed as soon as it appears. After collection, the seed can be planted immediately or stored until the following spring.

D. capensis produces large healthy roots that are suitable to use as propagation material when doing root cuttings. It is best to take root cuttings from large plants when repotting and select one or two suitable roots. These can be cut into 1 - 2 cm lengths and placed in the potting medium to be used, covered by a thin layer of peat moss. Plants should appear in about 4 to 6 weeks.

As with *D. binata* and *D. filiformis* it is possible to take leaf cuttings from *D. capensis*. A fresh adult leaf with about 1 cm of the petiole should be removed and placed, tentacle side upwards, flat in contact with the potting medium, the covered with a fine layer of either peat moss or milled sphagnum. The pot needs to be placed in an environment with high humidity out of direct sunlight and plants should be seen in 4 to 8 weeks but plants grown from leaf cuttings are slower to reach maturity than those grown from root cuttings.

Drosera capensis is a lovely sundew and, as my first *Drosera*, will always remain one of my favourites. Indeed *D. capensis* can become a pest but, unlike *Utricularia subulata*, it has a number of redeeming features which I think warrants its place in any collection. I shall collect and distribute seed of the various *Drosera capensis* forms I am growing in the hope that all CP growers are interested in expanding their collections to include variants of the more common *Drosera*.



Drosera capensis. Sketch from Pietropaolo (1986)

QUARANTINE.

Australia is free from many of the world's most dangerous agricultural pests and diseases due to it being isolated by sea. Today however, the speed of air travel has increased the chances of spreading pests and diseases from one country to another.

Many growers of plants find themselves in a situation where they are tempted to bring in plants or given plants whilst overseas and bring them into the country unaware of the laws regarding this.

When you enter Australia, you must complete a customs, Quarantine and Wildlife statement. False declarations can lead to prosecution.

If you are carrying any plant or animal items with you or within your luggage, you must declare them on arrival. It is not an offence to declare items.

What you must declare:

Entry prohibited.

- * Live plants and animals
- * Plant cuttings
- * Soil

- * Fresh fruit and vegetables
- * Honey and bee products

Entry permitted.

- Subject to inspection/treatment.
- * Any wooden article
- * Seeds, bulbs (some are prohibited)
- * Foodstuffs, (canned, dried, fresh, bottled).
- * Rawhide drums, trimmings etc
- * Cultures of plants or botanical nature.

This is a summary only. If you have any doubts about an item you are carrying please declare it. Customs or quarantine officers at the airport will help you.

Quarantine - A travellers guide

Aust. Quarantine and Inspection Service.

DROSERA BURMANNI NEAR RICHMOND, N.S.W.

Robert Gibson.

Drosera burmanni is a rosetted, annual sundew which occurs in south east Asia (to Japan, and Palau) to northern and eastern Australia (Erickson, 1968; Ziemer, 1988). It occurs near Richmond, N.S.W., which at 33° 40' S, is at the southernmost part of its range. This article will outline the habitat of this species at this location.

Drosera burmanni forms rosettes to 4cm diameter. The leaves are up to 2cm long by 0.8cm wide and are spatulate with a roughly triangular lamina. The leaves are typically a pale green colour but become suffused red with age, or during times of stress. The colourless or red retentive glands on the edge of the leaves are up to 6mm long, surmounted by an elongate red gland, and are renowned for their rapid movement through the angles of 180 degrees (Slack, 1986: 42). Each rosette bears up to 3 red scapes at any one time, and appear to only flower if greater than 2cm diameter. These initially grow horizontally, but rapidly become vertical once they have reached the edge of the rosette, some scapes bifurcate near their apex and produce more flowers than usual. The sepals, and to a lesser extent the bracts, pedicels and upper portion of the scape are covered in short, red, unbranched hairs. The petals are slightly longer than the sepals and are usually white, although pale pink forms were seen. Each flower lasts a day and opens in the morning. Fine black seed, to 0.3mm long, is produced in abundance from the majority of the flowers. Each plant has a fine, branching root system which extends more than 10cm into the soil.

The mature plants and seedlings were growing along a dirt road amongst other herbs, in a rare patch of uncleared woodland, and also grew more thickly along drainage ditches in the surrounding farmland. The soil was fine sandy clay loam which had a high but variable water table. When seen in November 1990, at the start of a drought, the soil surface was very dry, and the surface water had recently disappeared. The majority of the plants were in flower, but were becoming water stressed, and had shrivelling red leaves. In shaded areas the plants were flowering, but were still green and growing.

Along the drainage ditch the plants occurred in a band approximately 50 to 150 cm from the typical water level. The lower limit appeared to be erosional whereas the upper limit was too dry for the species. This area was very open and the plants protect the soil from erosion, so that many plants grew on soil pillars.

Two other *Drosera* species grew with *D. burmanni*. In the woodland area a form of *D. auriculata* with a brown - orange ovary, yellow pollen and white petalled flowers occurred. It was in flower at the time of the visit. Along the drainage ditches a few plants of *D. peltata* "green rosette/ pink flower form" had just finished flowering.

This *D. burmanni* location is in one of the hottest and driest parts of the Cumberland Plain, in the Sydney Basin, but also experiences severe frosts in winter. The species is able to withstand prolonged dry spells as seed, but generally grows throughout the year, supported by a high water table in the areas typically dry winter and spring.

Despite the proximity of this natural occurrence to my house I have had a lot of difficulty in keeping this species in my collection. Ironically, my luck changed when a few stray seeds, from plants I collected at Richmond, landed in a small soak in a paddock close to the house. This soak supports a nice colony of *D. peltata* "green rosette/ pink petal form" and at the time of writing (August 1992) has 20 *D. burmanni* rosettes, to 3cm diameter. Since late April six scapes have been produced, one of which has matured, but the flowers have not fully opened. The plants have survived frost with little difficulty. It may be that the plants from Richmond are more tolerant of low temperatures than those in other parts of its range.

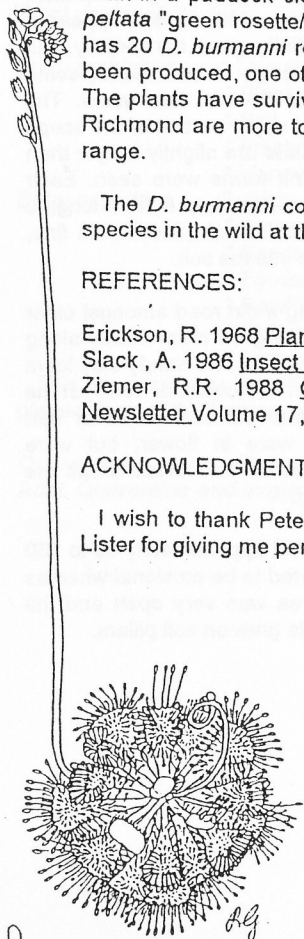
The *D. burmanni* colony near Richmond provides the opportunity to view this species in the wild at the southern most part of its range.

REFERENCES:

- Erickson, R. 1968 *Plants of Prey in Australia*, U.W.A.P
Slack, A. 1986 *Insect Eating Plants and how to grow them*, Alpha books
Ziemer, R.R. 1988 *Carnivorous Plants of Micronesia* *Carnivorous Plant Newsletter* Volume 17, No.3, p. 70 - 73.

ACKNOWLEDGMENTS:

I wish to thank Peter Carlin for letting me know of this location and for Peter Lister for giving me permission to see the plants and collect a few specimens.



Drosera burmannii - green rosette ~ life size

INSECTS EATING PLANTS. Ken Harper.

The last couple of months have been very busy and it is already dark by the time I get home each weeknight after work and/or University study. Consequently, my plants only normally get special attention on the weekends or in summer, when the photo-period is much longer (ie there are more hours of sunlight in the day).

Last Wednesday (7/10/92), after getting home again after dark, I decided to go and look at my collection with the intention of pollinating some of my *Sarracenia* flowers. Armed with a large torch, I first visited my outdoor peat bog and, to my dismay, found a large plague locust feasting on a juvenile pitcher. The locust did not live long after I had caught it and I can guarantee that it will not offend again.

Happy with my success, I pollinated about thirty flowers in my peat bog before heading to a water tray containing about fifty pots of adult *Sarracenia*. Here again I caught another locust and treated it with the same courtesy that I had shown its relative. After pollinating a number of *Sarracenia* I quickly examined my *Nepenthes* collection and fortunately no further insects were found.

Thursday night (8/10/92) I thought I had better go and look at my plants again just in the off chance that I might have missed one or two predators. To my surprise I found 3: two plague locusts and one grasshopper. One locust escaped me but the others were rounded up and culled.

The CPS of NSW meeting was on Friday night (9/10/92), so I didn't get a chance to go insect hunting. Saturday night (10/10/92) I caught two plague locusts and one slug - this time eating *Nepenthes* and a newly emerged *Sarracenia flava* pitcher.

It is now Sunday night and I have just come in from exterminating four locusts and one slug!! During the next couple of weeks I will go out virtually every night and examine my plants carefully to hopefully eliminate any unwanted pests. In the light of my torch experience (sorry about the pun) I urge you all to try to look at your plants at night, especially if they are being eaten and you cannot find whatever is doing the damage.

Utricularia pubescens is a characteristic bladderwort which is amenable to cultivation. It is a dainty and interesting species, although not outstandingly attractive.

The species was also known as *U. peltata*. The scientific name also refers to the peltate leaves which separate it from all other species in the genus (Taylor, 1989). The lamina is up to 7mm diameter, often with an irregular, roughly circular outline. When covered the petiole grows to 1.5mm tall, but is otherwise very short. Curiously, the upper surface of the leaves are covered in sticky glands. The traps are small, up to 0.8mm long.

The scapes are produced in December, and in the form I grow are up to 17cm tall with up to 3 flowers. The flowers are lilac in colour with the exception of a dark purple basal blotch to the vertical upper lip and a touch of yellow at the top of the palate. The horizontally held lower lip is up to 1cm long and wide, and has a palate of 12 ridges. Numerous hairy projections occur at the back of the palate, adjacent to the upper calyx lobe. These are enhanced by their colouring, which is a dark shade of lilac. The horizontal spur, up to 1.5cm long, projects just beyond the lower lip.

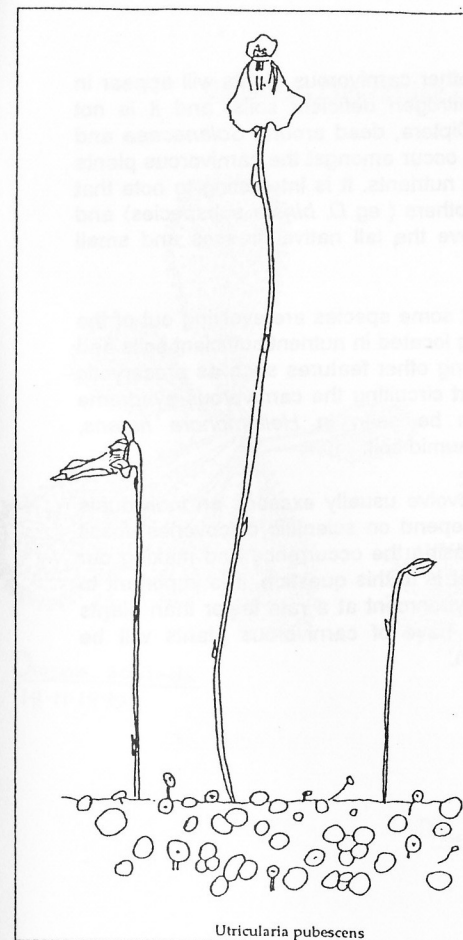
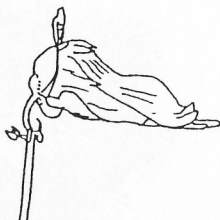
The natural range of the species is from India, tropical Africa and Central and South America (Taylor, 1989). It is a variable species, especially in the size of the flowering parts. The larger flowering forms, which I believe matches the forms which I grow, occur in Central and South America.

The species is easily cultivated in a peat and sand mix with a high water table. The plant appreciates full sun, but will also grow in shaded conditions where the leaves reach their largest diameter. It makes a nice ground cover in pots of larger carnivorous plants, eg *Sarracenia* and large evergreen *Drosera*, and is easily propagated by division of clumps.

REFERENCES:

Taylor, P. 1989. Kew Bulletin Additional Series XIV: The Genus *Utricularia* - a taxonomic monograph. Her Majesty's Stationary Office, London, pp. 724.

Flower from the side (note the bud)



- gland
- 2) The true pitcher
- 3) Snap traps.

Because evolution is a never ending occurrence, it will take environmental factors to continue this process. The isolation of a single species in a harsh environment can lead to changes in the plants genotype and phenotype eg *D. burmanni* in the Richmond region (R. Gibson, 1992) which is larger and has a distinct red colouring.

The Evolution of The Carnivorous Plants - into or out of Carnivory? Peter Carlin.

Fossil evidence of Carnivorous Plants date back to the beginning of the Tertiary period (Juniper, Joel, Robins. 1989) when Carnivorous plants were very widespread. Carnivory is more apparent than it first appears, especially when the trapping mechanisms of the common species are so different, yet all serve a single purpose.

Plants higher up on the evolutionary scale also show some signs of carnivory, be it just the ability to kill a predator, eg *Solanum sp.* Other plants are nearly carnivorous and depending on the person classifying these, could be classed either carnivorous or not. An example of this is the plant *Roridula*, which has the woody tissue of *Byblis* but the trapping mechanisms of *Drosera*. It bears tentacles and traps insects, yet no use seems to be made of its victims for nutrients.

When plants are so close to being carnivorous, and the ability to become carnivorous would be a simple evolutionary step, will this ever happen? It would all depend on the evolution of several factors surrounding these plants.

- 1) The absorption gland or digestive

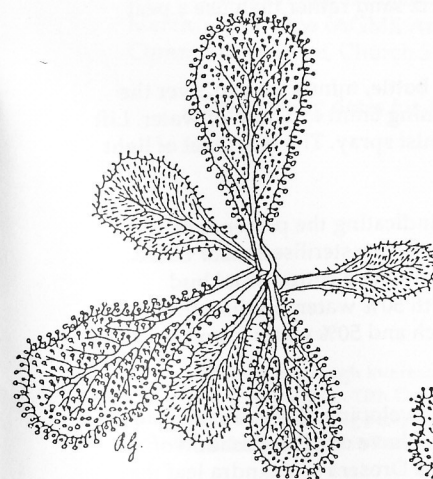
It seems highly likely that evidence for other carnivorous plants will appear in the Bromeliads, plants which occur in nitrogen deficient soils, and it is not uncommon to find small insects, mainly Diptera, dead around *Solanaceae* and *Asteraceae* species. Further advances will occur amongst the carnivorous plants to become efficient at producing their own nutrients. It is interesting to note that single species of *Drosera* stand out from others (eg *D. binata* subspecies) and have become taller to catch its prey above the tall native grasses and small shrubs.

Evidence is also available to show that some species are evolving out of the carnivorous habit, be this to them becoming located in nutrient sufficient soils and developing a true root system, or developing other features such as procaryotic nitrogen fixing nodules on their roots, short circuiting the carnivorous syndrome (Juniper, Joel, Robins. 1989). This can be seen in *Heliophora nutans*, especially where they are found in a moist humid soil.

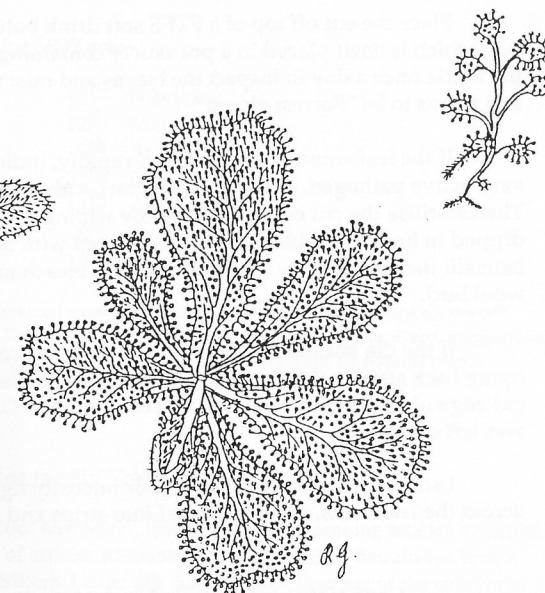
The amount of time it takes a plant to evolve usually exceeds an individual's lifespan, and we are therefore forced to depend on scientific discoveries, fossil evidence and estimation rather than witnessing the occurrence and making our own judgments. No matter what the answer is to this question, it is important to remember that mankind is altering this environment at a rate faster than plants can evolve and the only proof we may have of carnivorous plants will be fragments of collections, and documentation.

Update on Propagating *Drosera schizandra*.

Denis Daly



Drosera schizandra
18.11.1990



Drosera schizandra 18.11.1990 (CF "Flytrap News" 1988 Issue).

Following my previous article on propagating *Drosera schizandra* I advise a major change to the technique, due to further experience, in that *Drosera schizandra* plants should be grown in pure sphagnum.

As previously advised one of the newer leaves is cut from the plant, with a razor blade or sharp knife which has been sterilised in bleach. I now recommended cutting the leaf into sections or cutting tiny pieces out of the leaf as you multiply wound across the veins as it appears that this increases the numbers of new plantlets that will develop.

I have not found a striking media giving better results than peat but I have modified the physical arrangement by placing a thin (1 to 2mm thick) layer of peat over the surface of a pot filled with quartz sand rather than use a peat perlite mix.

Place the cut off top of a PTFE soft drink bottle, minus the cap, over the pot, which is itself placed in a pot saucer containing 6mm to 12mm of water. Lift the bottle once a day to inspect the leaves and mist spray. The best level of light still seems to be "Forrest gloom".

If the leaf commences to die off rapidly, indicating the presence of some very active pathogen, cut off the dead part with a sharp sterilised razor blade. Then sterilise the cut edge of the leaf by wiping it with a cotton wool bud dipped in household bleach solution diluted with 50% water. Sterilise the peat beneath the leaf with by dripping drops of bleach and 50% water from the cotton wool bud.

If the die back is slow or new plants are developing along the edge that is dying back sterilisation would not be necessary. I have used sterilisation of the cut edge of a leaf with bleach to halt die back of a *Drosera schizandra* leaf that was left on a plant.

I still experimenting with higher intensity light levels, multiple wounding across the leaf veins, cutting the leaf into strips and striking leaves in sphagnum.

Cephalotus follicularis 2 years to maturity. Denis Daly

I have a seedling of *Cephalotus follicularis* that germinated in July 1990 that is now (November 1992) producing a flower scape. I intend to let the flowers mature and so obtain seed.

However it cannot be said that all seedlings will mature in two years as the other surviving seedling of the same age has not grown at the same rate nor developed to maturity by November 1992. However I cannot say whether the difference is generic or was due to the differences in growing conditions. The second seedling has just been repotted to duplicate the growing conditions of the first. Further developments will be reported.

1993 Meeting Dates and Christmas Picnic

The meetings are held on the 2nd Friday of the months of February, March, April, June (AGM), August, October, November at Woodstock Community Centre, Church Street, Burwood NSW.

The meeting dates for 1993 are:-

12 th	February
12 th	March
9 th	April
11 th	June
13 th	August
8 th	October
12 th	November

If there is enough interested persons a Christmas picnic may be held on the 2nd Sunday in December i.e. 12th December 1993. Please put this date in your diary. Suggestions as to venue are now being accepted. Due to lack of interest the 1992 Christmas picnic scheduled for Sunday 13th December 1992 was cancelled.

Articles for Fly Trap News Denis Daly

The present editor of our newsletter, Fly Trap News, is seeking articles no matter how short they are. The lack of articles submitted to the news letter has always been a source of frustration to past editors. I hope this situation will improve as the newsletter along with the seed bank will, when used, provide all members with the most benefit. You know something tell others by writing an article and read their articles to learn from others.

If you do not have access to typing facilities send your article in hand written.

**THIS SPACE IS EMPTY AS YOUR
ARTICLE WAS NOT RECEIVED**

This situation must be due to postal delays. However you can be assured that the editor will make every effort to publish it in the next edition.

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\$ c

\$ c

1	Salata	1991	C	_____	31	(S.o x S.m) x S.r"g"	1991	C	_____
2				_____	32	(S.p x S.a) X S.p	1991	C	_____
3	S.leucophylla	1991	C	_____	33	S.p "v" X S.f	1991	C	_____
4	D.acturi (Mt. Ruapehu N.Z.)	1991	R	_____	34	S x readii	1991	C	_____
5	U.gibba	1992	R	_____	35	S.r "g" X S.l	1991	C	_____
6	S.oreophila	1991	A	_____	36	Dionaea muscipula	1991	A	_____
7	D.capensis (narrow leaf)	1992	A	_____	37	D. aliciae	1991	A	_____
8	S.purpurea venosa	1991	A	_____	38	D. acturi (Mt. Willngtn)	1991	R	_____
9	S.rubra ssp gulfensis	1991	C	_____	39	D. acturi (W.TAS)	1991	R	_____
10	D.capensis	1992	C	_____	40	D. auriculata (Bikhth) (pink)	1991	A	_____
11	S. r "j" H	1991	A	_____	41	D. auriculata (Mulgoa)	1991	A	_____
12	S.rubra ssp rubra	1991	A	_____	42	D. auriculata (W.TAS) (pink)	1991	A	_____
13	S.rubra ssp wherryi	1991	A	_____	43	D. burmanni (Richmond, Sydney)	1991	A	_____
14	S.rubra ssp ??	1991		_____	44	D. filliformis (?) var. (?)	1991	C	_____
15	Salata X S.psittacina	1991	C	_____	45	D.auriculata (S. Aust.)	1991	R	_____
16	(S.a X S.ps) X Salata	1991	C	_____	46	S.purpurea purpurea (W.Canada)	1991	R	_____
17	S x aerolata	1991	C	_____	47	U. subulata	1992	R	_____
18	S x aerolata X Salata	1991	C	_____	48	D. capillaris	1992	A	_____
19	S x excellens	1991	C	_____	49	U. monanthos (W.TAS) (white)	1991	R	_____
20	S. flava X Salata	1991	C	_____	50	U. monanthos (W.TAS)	1991	R	_____
21	S. flava X S.leucophylla	1991	C	_____	51	(S.a x S.l) X S.l	1991	C	_____
22	S. l "wide" x (S.a x S.ps)	1991	C	_____	52	S.l X S.p "v"	1991	C	_____
23	S.l X S.a "red form"	1991	C	_____	53	D. rotundifolia (W. Canada)	1991	A	_____
24	S.l x S.ps	1991	C	_____	54	D. pelata (S. Aust.)	1991	R	_____
25	S.l X (S.ps X S.a)	1991	C	_____	55	D. filliformis ssp filliformis	1991	C	_____
26	S.l X S x willisii	1991	C	_____	56	D. indica	1992	A	_____
27	S.m X S.l "wide"	1991	C	_____	57	S. purpurea purpurea	1992	A	_____
28	S.m X S.m "giant"	1991	C	_____	58	S.f x S x willisii	1991	A	_____
29	(S.m X S.o) X S.l	1991	C	_____	59	D.intermedia	1991	R	_____
30	S.o X S.m	1991	C	_____	60	D.coccicaulis	1991	R	_____

SUB TOTAL

PACKETED

	TOTAL "TO MEASURE"
	TOTAL "PACKETED"
	TOTAL PURCHASE
LESS	TOTAL "PAID"
	USE CREDIT Y/N

BALLANCE

If +, must have credit to use.

PACKETED

CONTACT DETAILS

D.auricula (white)	3	1991	20	_____	Name	_____
D binata (W.TAS)	1	1991	30	_____	Address	_____
D. capillaris	3	1991	30	_____	Phone	_____
D. peltata (ssp gracilis?)	3	1991	50	_____		
D.villosa	1	1991	1.00	_____		
Darlingtonia californica	2	1991	1.00	_____		

TOTAL "PACKETED"

KEY (1) Rarity of Seeds

KEY (2) Species Codes

R = Rare.

A = Average or Medium

C = Common.

(?) = Variety not given or uncertain.

a = alata

f = flava

l = leucophylla

m = minor

o = oreophila

p = purpurea

p "v" purpurea ssp venosa

ps = psittacina

r = rubra

r "j" H = rubra ssp jonesii f heterophylla

r "g" rubra ssp gulfensis

2 December, 1992