

NOTES ON AUSTRALIAN DROSERAS

by Steve Clemesha

Although Australia has over sixty species of Drosera (including some as yet undescribed), the great majority of the continent is not rich in number of species, as it is in only the southwest corner of Western Australia that an extraordinary number of species grows.

Tropical north Queensland with its contrasting very wet and semi-arid regions has only nine species. Though South Queensland and New South Wales have a well watered coast and highlands and considerable summer humidity, only eight species are found in the entire region and one of these has a very limited habitat within N.S.W. and this very close to the Victorian border. In the south Qld.-N.S.W. region, no species is endemic to the region except D. lovellae F.M. Bailey which appears to be a synonym of D. spathulata and therefore has not been included in the total of eight. The species within N.S.W. and south Queensland show with one exception (D. binata) no local specialization or evolution of distinct forms. They are widespread species most of which extend overseas and those that do not are widespread in other parts of Australia.

Victoria has nine species and the island state of Tasmania has eight. South Australia, the neighboring state to Western Australia, has ten though one of these has three forms.

One of the main groups of Droseras in Australia is the tuberous group. They grow in Western Australia where they grow through the cooler months and survive the summer by means of a tuber. They are totally unsatisfactory in cultivation. Numbers of plants always fail, the plants are hard to propagate as leaf cuttings do not strike, seed production is low and the seed are often hard to germinate. Only a single species of the W.A. tuberous group is found outside this region, that is D. stricticaulis (Diels) O.H.S. which extends to S.A. Plants from there are much smaller and the area they grow in is much more limited. D. peltata, an eastern species, has been reported from a single collection in W.A., but this seems improbable.

An interesting species which possibly is related to the tuberous group is D. hamiltonii Andrews. It is confined to swamps of the south coast of W.A. Here it never dries out and the plant appears to abandon the tuberous habit and become a fibrous rooted evergreen. Its rosette of leaves bears a similarity to those of the rosette forming tuberous species. Because of its loss of the tuberous habit, D. hamiltonii is very easy to cultivate. It can easily be propagated by leaf and root cuttings. It is not very full flowering and is uncommon in its native habitat. Flowers are only occasionally produced in cultivation.

Though only one tuberous species native to W.A. extends outside the state, there are four tuberous species that occur in southeastern Australia. They decline in numbers as one travels north and east and are best developed south where all the species occur and there are two forms of one, D. whittakeri Planch. This plant is found only in Victoria and S.A. The form found in Victoria and in the southeast of S.A. grows in large colonies and increases vegetatively by means of underground runners. Its rosettes are rather small and it is not very free flowering. In the hills near Adelaide two other forms are found. One of these, like the more easterly occurring form, flowers in the spring but its rosettes are larger and it flowers much more freely. It does not, however, increase vegetatively.

The other form is D. whittakeri var. pruefolia (Tepper) Black. This form flowers before the leaves appear in autumn. It has a very limited distribution and it is important that at least one of its habitats be preserved before the species is lost.

D. planchonii Hook. ex Planch. like D. whittakeri, has never been found in N.S.W. but it is more widespread and extends to Tasmania. Generally it is found scattered in sandy soils, often with D. auriculata and D. peltata.

The remaining two tuberous Drosera species do extend into N.S.W. They are very similar to each other and seem to involve different forms. The most reliable way of separating them is by examining the sepals. Those of D. peltata Smith are hairy whereas those of D. auriculata Buckh. are glabrous. These two plants grow in a wide variety of soils and habitats, but are still cultivation problems. D. auriculata extends from S.A. to Victoria, Tasmania and New Zealand. It also extends north through N.S.W. to southern Queensland. D. peltata has a similar distribution but does not extend as far as New Zealand. However, it does occur north to India, Malaysia, China and Japan. D. peltata var. gracilis is reported to be a softer, more slender plant found in Victoria and Tasmania. Some botanists consider it to be a separate species, but I never have seen it and cannot comment.

Another highly evolved group of Australian Droseras is found principally in W.A. This is the pygmy group. While a few species grow in swamps, most are found in regions that dry out in summer; that is, on the soil surface. Their long, fine roots can extend a foot or more to damper levels below. As the hot, dry summer approaches and flowering finishes, the leaves of

all but the swamp dwellers dry up, but a bud well protected by stipules survives, and these can only survive if the plant does not completely dry out. When the autumn rains come, the plants again begin to grow. Over winter they produce reproductive gemmae which are splashed out by rain onto the surrounding soil where they begin to grow. In spring flowering begins, some species having beautiful orange flowers.

With a few exceptions, the plants are hard to grow in eastern Australia where the summer rains cause problems. Since the plants cannot be allowed to dry out fully, they cannot be taken in out of the rain and have water withheld unless one can be sure excessive drying will not occur, and in the hot summer this is very difficult.

Though about twenty species of pygmy Drosera are found in W.A., only one of these is found in the other states; and as well, an annual species which has similarities to the group extends beyond W.A., too.

The eastern pygmy species is D. pygmaea C. It is a tiny plant which like the related D. occidentalis produces single flowered scapes. Until recently it was believed not to occur in W.A., but it has been found along the south coast of that region in a number of localities. Outside of these, it occurs in S.A., Vic., Tas., N.S.W., S. Qld, and New Zealand. Around Sydney it favors sandy regions where there is not much competition. Often plants of D. spathulata grow nearby though the latter extends into wetter habitats. D. pygmaea is easy to cultivate.

D. glanduligera Lehm. is an annual species with flowers similar to some of the orange flowered pygmy species but its leaves are a different shape and produce no gemmae. Its seeds germinate in autumn and plants grow through the winter, and the flowers set seed and die as their habitats dry out. This species is common in W.A. and extends to S.A., Vic., and N.S.W. In N.S.W., the only state where I have seen it growing, it occurs mainly among moss, etc. on nodes and in some instances becomes very wet and sodden over winter. Summer is very hot and dry. Within N.S.W. it is most common in southern inland areas but extends to the south coast where it is much less plentiful and seems to prefer habitats that do get very hot in the summer. This species is very hard to keep in cultivation, and I find seed germination poor.

D. binata Labill is probably the best known Australian Drosera because of its ease of cultivation. Unlike all the other species, it seems to be southeastern based. It extends from southern Qld. through N.S.W. and Vic. to Tasmania, S.A., and New Zealand. In Qld. and along the swamps of northern N.S.W., the form that exists there has much more heavily pigmented leaves than the others, and these are narrower and branch more freely. In one region, the flowers have a pink tinge, but in other regions they are white as is normal for this species. Plants of this form from cold winter regions of Qld. are deciduous, like many southern forms except those from milder habitats which are evergreen.

Around Sydney, a green form with most of its leaves double-branched is most common. It grows in wet soils, between rock crevices and along small stream banks. In a rather limited area of the Blue Mountains a third form exists. Its leaves divide only once. There appear to be forms intermediate between the last two, i.e., ones which produce occasional twice divided leaves.

D. arcturi Hook is a small species with a few erect narrow leaves. It is an alpine plant growing among other plants of its habitat above the treeline. It is difficult to cultivate in areas with short, mild winters like Sydney. It is found in N.S.W., Vic., Tasmania and New Zealand.

D. spathulata Labill in Australia is confined to the east coast. It extends south to Eastern Victoria. It grows in wet sandy places and its red rosettes are usually the first Drosera with which people become familiar. Usually the flowers are pink, but in some regions populations of white flowered plants occur, usually as isolated stands and not intermixed. D. spathulata is usually a perennial but in dry years plants die off and colonies are replaced by seedlings. This species extends to Japan and occurs in most countries between.

D. burmanni Vahl is similar to D. spathulata and like it is usually, but not always, a perennial. I have only seen it growing once in its native habitat and that was on a swampy flat with D. pygmaea and D. auriculata. It extends from about Sydney northward to Taiwan but is uncommon in the southernmost part of its range.

The remaining Australian species that occur outside southwest W.A. are tropical, and I have not seen any of them in their natural habitats.

D. adalae F. Muell and D. schizandra Diels grow near creeks in fairly heavy shade. They have only been in cultivation a few years but already are becoming more common in collections.

D. prolifera C. T. White appears to be even less common than the two preceding species. It also grows in shaded habitats and so far has not been introduced into cultivation.

D. petiolaris R. Br. appears to be related to the pygmy group, but as far as records indicate at this stage, it does not produce reproductive gemmae. It grows in sunny habitats which become dry on the surface at least. It grows across northern Australia and in New Guinea.

D. indica Linn also grows across northern Australia and also around waterholes of inland regions such as central Australia. It is an annual species and often is locally plentiful. In Australia, it is a plant of the tropics. It extends to Africa, India and Japan.

D. banksii R. Br. is a slender, rather weak-looking plant with the habit of D. auriculata generally, but its roots are fibrous and no tuber is formed. Possibly it is an annual. It is found across northern Australia and there appears to be no record of an attempt to cultivate it.

SPECIAL NOTICES

FINAL RENEWAL NOTICE!

This is the last issue for those who have subscribed to one volume and have not yet renewed. Please use the renewal blank (and complete the poll) in the previous issue of CPN (No. 3). ALL RENEWALS MUST BE IN BY JANUARY 15, 1975. We cannot guarantee that you will receive Volume IV if you delay beyond that date.

ZELIMIR K. TVRTKOVIC SAHIN (Uiterweg 34, Aalsmeer 1210, The Netherlands) is looking for large quantities of seed and other material of all CP, labeled, so that he can distribute them in outlets in Europe, hoping to reach many people. Commercial arrangements might be worked out if mutual financial arrangements could be made. Various U.S. and other commercial sources of CP may be interested in contacting Mr. Sahin since this would ultimately involve bulk shipments of material to him rather than many individual little mailings all over Europe.

FRANK PETERSON (761 Hialeah Drive, Hialeah, Florida 33010) has a large number of Nepenthes khasiana plants for sale in 8, 10, and 12 inch pots, the prices being \$15.00, \$20.00, and \$25.00, respectively.

After the last mailing of CPN, the Postal Service returned CPN issues because it was unable to deliver them. So, at this time, Joe would like to remind everyone to give your COMPLETE address. Mail was returned for the following reasons:

- (1) You moved and forgot to give a forwarding address.
- (2) You forgot to write in Street, Drive, Way, or Circle on the end of the street name.
- (3) You forgot to give the apartment number.
- (4) You forgot to give the zip code.

If you have a friend who is complaining that he hasn't received his issues yet after a long wait, please have him write to Joe again and include the correct address so that he can enjoy reading CPN again.

While we are on this subject, Joe would appreciate getting only permanent addresses rather than a temporary one. Definition of a permanent address is living at one address for a period of three months or longer. Please do not send temporary addresses, especially those that are good for two to three weeks only since it confuses Joe's system of registration.

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Jim Peterson, 7231 Kermore Lane #8, Stanton, California 90608 Retail only.
Sun Dew Environments, P.O. Box 503, Kenmore Station, Boston, Mass. 02215.

A change in address for Armstrong Associates:

Armstrong Associates, Inc., Box 94H, Kennebunk, Maine 04043
Insectivorous Plant Environments, 26381 Whitman Street, Hayward, California 94554 - sells Sarracenia, Darlingtonia, Pinguicula, Drosera, and Dionaea.