A Field Trip to Darwin and Kununurra for C.P.

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On the 6th of April 1990 I boarded the plane in Perth for the flight to Darwin. Darwin is the capital of the Northern Territory and is situated on the coast at the extreme tip of middle Australia. The weather patterns here are roughly 6 months of dry and 6 months of wet season. The daytime temperatures in the wet and towards the end of the wet when I arrived were, daytime 33°C, night time around 27°C. For the 11 days I spent in this region it only rained twice and then for only a short period.

In 1988 at the same time of the year, I was in this region. I travelled up from Perth in my Land Cruiser with the family. This 1990 trip l knew where I wanted to go and this time I was not being asked to get a move on by the three women in my life. I intended to take my time and have a damn good poke around the bush.

In the first 4 days I checked out three areas I knew about from my 1988 trip. The Howard Springs area, Palmerston and Noonamah. Below is an account of what I found growing in those areas.

Howard Springs

In an area near the Howard River I botanised what I call a meadow. The soil was sandy, low lying ground which was mainly very wet with slightly drier areas scattered here and there. The vegetation was open herb field with a few trees scattered throughout the area.

In the slightly wet areas *D. dilatato-petiolaris* was common, these plants were in flower. The scapes of this species are very tall, up to 60 cm in most cases. I could see from the fruit that they had been flowering for at least two months. Millions of seedlings were also present over most of the ground. *D. dilatato-petiolaris* is a basal rosetted plant with the new leaves semi-erect within the rosette. The older leaves are almost flat to the soil surf:ace. The petioles are fairly broad up to 5 mm wide and the lamina remains dewy even when the leaf has almost moved to the ground level position. This species forms compact clumps up to 40 cm in diameter in some cases on very old plants. The clumps are formed by the parent plant producing plantlets at the base.

In the very wet areas *D. petiolaris* was common. The entire plant here was very dark red where as *D. dilatato-petiolaris* had green petioles and red laminae. The petioles of *D. petiolaris* are very thin, no more than 2 mm wide and up to 8 cm long in most cases. The leaves are arranged in an erect and semi-erect stance. *D. petiolaris* was not in flower and no evidence was present to show that it had been in flower early in the wet. This is a small mystery I intend to clear up shortly.

Amongst the *D. petiolaris* and *D. dilatato-petiolaris* a number of *Utricularia* were discovered. These were pressed and pickled on the spot in F.A.A. solution as well as photographed. Notes were taken of all the specimens and were recorded in my field book. Later in Perth I keyed out these specimens using my stereo microscope and Peter Taylor's wonderfully easy to use book, "The Genus *Utricularia* A Taxonomic Monograph".

The first *Utricularia* I found was *U. lasiocaulis.* This species had pale mauve flowers about l cm across born on scapes 8 cm long. At the base, leaves were present with fairly large bladder traps. This species is easy to identify by the number of hairlike projections covering the entire scape.

As I looked closer, crouching down near the ground I discovered a few more *Utricularia.* Once I got my CP-eyes tuned in to the miniature forest before me, I was

picking out the *Utricularia* easily amongst the numerous herbs that surrounded them. I found *U. minutissima* next. This species was no more than 1.5 cm in height with a very small dark pink flower around 3 mm wide. Leaves and traps were present as I was to find on all the *Utricularia* I came across.

Early authors report that leaves are not present on some *Utricularia* when they are in flower. I never failed to find leaves and traps on every specimen I collected. Personally I feel this misconception has come about by botanical collectors simply pulling the *Utricularia* out of the ground and not taking care to collect the basal portions of the plant. I might add that most of the *Utricularia* in herbariums in Australia have many specimens in this condition, that is Utricularia without leaves or traps.

Other *Utricularia* found at this location were:

U. limosa—small plants to 5 cm tall with one or more small snow-white bilobed lower lips. Each flower was about 8 mm wide.

U. chrysantha—plants up to 20 cm tall with a number of beautiful dusky-yellow flowers about l cm wide with the backs of the corolla dark-pink. This species also grew in dryer soils on slightly higher ground than the main meadow area.

U. odorata—plants up to 20 cm tall displaying bright yellow flowers up to 1.5 cm wide with long bright yellow nectary spurs. These plants favoured the very wet areas.

U. hamiltonii—plants up to 8 cm tall with single flowers to each scape. The corolla colour is violet with distinctive purple markings near the yellowish palate.

U. capillaris-extremely fine plants with a mosquito-like single flower on a thread-like scape up to 6 cm in height. The entire flower is golden-brown and damn hard to find unless you lay prostrate on the ground. The mosquito-like flower has a 5-lobed lower lip about 3 mm wide and two very long very fine thread-like appendages on the upper lip about 2 cm long. When I discovered this species I wondered how an insect would find *U. capillaris* to pollinate the flower. This plant was impossible to see amongst the other nearby herbs when the sun was overhead.

I finally got the answer to this mystery at another location later in the trip. As the sun is rising or in this case setting, the glow of the later afternoon sun just before sun lights the corolla of *U. capillaris* to the point where the entire corolla radiates its own golden light. The scape doesn't pick up the light and the overall appearance is that of a glowing mosquito in mid-air. At this time of the day the flowers of this species were extremely visible at standing height. I might add it was quite a picture. All the other herbs were quite black compared to this little species glowing like mad and moving about just like a hovering mosquito does in the gentle breeze. I thought at the time what a wonderful adaptation evolution has provided for this species. A plant that can imitate a flying, hovering insect and can advertise its position by glowing gold-like when all the other surrounding plants are quite black. As well as produce this adaptation to perfection at sunset at the perfect time of the day when all mosquitos are active.

Amongst the *Utricularia* I found a new taxa of *Byblis*. *Byblis liniflora* aff. "Darwin." I had found this species in 1988 but I didn't know how common it was to be in the general Darwin region until this trip. This species grows up to 125 cm in height and has short leaves about 3 cm long at best. The plant is maroon with a little dark green and only has one flower open at any one time. The flowers are about l cm in diameter and blue-purple in colour on the inner and outer surfaces. This species is always found in wet soil conditions.

At other locations within 30 km of the Howard River location, I also found the typical *Byblis liniflora* growing near *Byblis liniflora* aff. "Darwin." These typical *B. liniflora* plants were pale green in colour, more bush-like with leaves up to 5 cm long. Each plant displayed a number of open flowers at one time and the plants were always found on higher drier ground. At all of these locations I saw no intermediate forms



Drosera falconeri X *Drosera petiolaris* aff. "mini rosette". A natural hybrid from the Darwin region.



Byblis liniflora. This plant appears to be the TYPE. Plant in the early stages of growth.



Byblis liniflora aff. "Darwin". Species or subspecies nova from the Howard Springs area.



Byblis liniflora aff. "Kununurra". Species or subspecies nova from the N.E. of Western Australia.

between the two species. They were both maintaining their own forms even when they were found only metres away from each other. This evidence alone proves we were dealing with two individual species of *Byblis*.

Amongst the *Byblis liniflora* aff. "Darwin" at the Howard River location, I also discovered a *D. indica* -like plant that can only be described as a new species or at least subspecies of *D. indica*. The plants are extremely small when mature and flowering. The tallest specimen was no more than 5 cm which includes the erect flowering scape at the apex of the plant. The flowers are small, white and narrow petaled. I found this taxa at a number of locations especially when I came across *B. liniflora* aff. "Darwin." At one location I found a few specimens of this *D. indica* aff. "Darwin" that had pink coloured flowers. This taxa is common and forms large swarms over large areas of ground around the Howard River. This species is also quite at home in drier soils.

I found the typical *D. indica* at a number of locations but never growing with *D. indica* aff. "Darwin." The typical *D. indica* in the Darwin region is a large plant, golden green in colour with large pink flowers. First flowering plants are 15 cm in height. I saw specimens in the Darwin Herbarium of this plant that get to 60 cm tall later in the season. It appears the typical *D. indica* can get to rather large proportions if the growing conditions are favourable. The new taxa *D. indica* aff. "Darwin" on the other hand remains extremely small judging from older specimens of this species I later saw in the Darwin Herbarium.

Palmerston

A few kilometers south of Palmerston—the area is very hilly and covered with large *Eucalyptus* trees on the higher ground. The soil here is mainly laterite with patches of sand forming a thin covering over parts of the laterite. In the lower areas between the hills large meadow areas are formed which are the drainage areas from the surrounding hills. The soil here is a rich sandy-loam. It was in this drainage area that I first encountered *D. falconeri*. All the plants were deep-red in colour even when they were sheltered under other shrubs. *D. falconeri* forms a flat basal rosette of leaves up to 10 cm diameter at best although the majority of plants were about 6 cm in diameter. The lamina of this species is large, reniform-shaped and around 2 cm in width. No specimens were found in flower.

On the lower slopes of the laterite hills in a mixture of loose laterite gravel cemented together with a little sandy soil I found *D. petiolaris* aff. "Mini Rosette." This species formed flat basal rosettes of leaves up to 3 cm diameter at best. The old inflorescence arrangements were up to 15 cm in height. I know having cultivated this species that it has small white flowers no more than 1 cm in diameter and the scapes are covered in long silky hairs. Each rosette consisted of numerous leaves that were progressively getting shorter and gradually filling the centre of the plant. From the outside of the rosette to the centre, active lamina were present right to the middle of the plant. I could see by this growth habit that the plants were starting to shut-down for dormancy. Although the *D. falconeri* were still in active growth in the wetter soil not far away, the *D. petiolaris* aff. "Mini rosette" habitat was nearly bone-dry.

At one location in this immediate area I found a small number of hybrids between *D. falconeri* and *D. petiolaris* aff. "Mini rosette." This location was exactly where the two soil types met at the bottom of the laterite slope and at the very beginning of the lower drainage area. The hybrids were positioned in a thin line on the border of the two soil types. After a long search I found no hybrids on either side of this border. They only grew where the two soil types met and nowhere else. The hybrid *D. falconeri X D. petiolaris* aff. "Mini rosette" is a 50/50 mix of the two parents. The mature rosettes are 4 cm in diameter, with numerous leaves in a flat rosette and lamina reniform-shaped up to 1 cm wide. The entire plant is deep-red like *D. falconeri*.

On the gravel slopes but between the hills on down hill valley areas the soil is very much wetter for longer periods. It is here where the rain run-off gathers before moving down hill to the lower drainage areas where the *D. falconeri* grows. In these wet sloping valleys, another species is found, *D. petiolaris* aff. "Medium rosette." The soil type is similar to *D. petiolaris aff.* "Mini rosette", however there is a little loam mixed with the laterite and sand. It appears the loam being the smallest particle in size when compared with the laterite pebbles and sand grains travels the farthest distance down hill as the laterite hills are eroded away by the rains. A little loam gets caught in patches where the downhill slope flattens out a little. It is in this habitat that *D.petiolaris* aff. "Medium rosette" grows.

D.petiolaris aff. "Medium rosette" forms a flat basal rosette of leaves up to 5 cm in diameter. Many leaves are present in each rosette. The inflorescence is up to 40 cm in height and looks quite out of proportion when compared to the basal rosette Up to four extremely silky-hairy scapes are formed on the one plant. The flowers are pink in colour and 2.5 cm in diameter. The anthers provide a good character key with the addition of a strange, large hook-like projection above each anther. I have studied the majority of plants in the *D. petiolaris* complex from cultivated and pressed specimens and so far this species is the only one to have these strange hook-like projections at the apex of each anther.

Having revealed the possibilities of discovering more natural hybrids in the *D. petiolaris* complex, I went out of my way for the rest of the trip to check out areas where two soil types met to see if there were more hybrids to be found. I was to be pleasantly surprised at the end of my trip that my theory was correct and many different natural hybrids were found. I also discovered that of the many species in the *D. petiolaris* complex each species only grows in a particular soil type. If the two species are found in the one soil type then the division between the two species is one growing in the wetter ground. The other species in the drier ground.

Noonamah

This area can be best described as being a wet and a very wet area. The wet areas being a film of water just covering the soil surface and the wetter areas being flooded to the depth of 5 cm. The soil is mainly pure white sand grains in some areas in other areas mixed with humus to form black sand patches. Damp ground was also present where the soil formed ridges and hummocks just above the water table depth. This Noonamah area can best be described as CP heaven. In an area no larger than half a hectare, CP were in abundance. A good part of the day was spent botanising the region.

D. dilatato-petiolaris was growing everywhere but only on the hummocks and ridges above the main water table. In the wet areas both where a film of water was present and in the flooded regions numerous *D. petiolaris* plants were present. On the pure white sandy patches hybrids between *D. dilatato-petiolaris* and *D. petiolaris* were found. These were neat little plants, pure red in colour and half way in growth arrangement between the two parents. Each hybrid rosette was around 5 cm in diameter and formed a perfect semi-spherical ball of narrow leaves with every erect, semi-erect and horizontal leaf having dewy lamina present. Overall a beautiful plant. I have grown this hybrid in cultivation and this growth arrangement is maintained. The flowers are white and the scape is almost glabrous. The parents of the natural hybrid *D. petiolaris X D. dilatato-petiolaris* have dark pink and white flowers respectively.

In the drier areas a short distance away from the wet areas *D. burmannii* was common. This species formed small slightly scattered colonies. The majority of plants were green in colour due to shaded growing conditions but where the sunlight reached *D. burmannii* was a little reddish. In 1988 I found specimens of this species in full sun and every plant was maroon-red in colour. The flower colour on all of the Darwin species I found was white.

In the wet and flooded areas Utricularia were present by the hundreds. Along with *U. lasiocaulis, U. odorata, U. limosa, U. capillaris, U. hamiltonii, U. minutissima* and *U. chrysantha* which I had found at Howard Springs I also found the following:

U. leptoplectra—a tall species up to 60 cm in height with up to a dozen blue flowers having a distinctive 2-lobed lower lip and long narrow nectary spur. The lower lip is up to 2 cm in width. The entire outer surface of the flowers are dark-yellow in colour. I found one specimen that was pure white in colour on both the inner and outer petal surface. The plant was about half the size of the typical *U. leptoplectra* in the immediate area. The flower shape was similar to U. *leptoplectra* although the spur was a little shorter. I wondered at the time that I may have a hybrid between *U. leptoplectra* and *U. limosa* as *U. limosa* grew at the base of *U. leptoplectra* in this area where I found this suspect hybrid. I have this specimen in F.A.A. and further study may reveal the answers as to whether I have a hybrid or a weird form of *U. leptoplectra.* In 1988 I discovered a very nice population of *U. leptoplectra* near the Girrawheen Lagoon which had white colouring on the outer surface of the corolla in the place of the yellow coloring normally present.

U. holtzii—a short plant up to 3 cm tall with large cream to creamy-yellow flowers. The distinctive flowers have a deeply recessed 5-lobed lower lip and are around 1 cm in width. This species mainly grew in the wet and flooded areas. Each scape of this plant had individual flowers but many flowers were present in small close-knit colonies. I feel sure that a number of flowers are produced from the mass of leaves at the base which are the one plant.

U. kamienskii—a plant up to 10 cm tall with single white flowers. Each flower was about 1.5 cm in width with a 3-lobed lower lip. This species was common and grew in all the habitats and extended into slightly less wet soils. The bladder traps on this species are weird and the illustration of the traps in Peter Taylor's work is well worth checking out.

U. caerulea—a small plant in the area up to 8 cm in height with small white flowers and yellow palate. I also found this species in 1988 and thought at the time that it was *U. lateriflora*. According to Peter Taylor's work, *U. lateriflora* doesn't grow this far north. Using Peter Taylor's book proved that this species was *U. caerulea.* The main character key being the spurred bracts on the scape.

U. species—this may be *U. triflora* but further study is required. Plants to 8 cm in height with single mauve flowers and a slightly 3-lobed lower lip. I may have been early on this one and only saw single flowered specimens. *U. triflora* as the name suggests has three flowers. On first appearance my species looks like *U. hamiltonii* but on closer examination it is quite different.

Twelve species of *Utricularia* is quite a lot to handle in the one area. Even though I botanised the area to death, I believe visits throughout the year will produce more species in this same location. No one can claim this is all that grows there. I believe if I had this location on my door step here in Perth, I would turn up a lot more species than what I saw at this very small moment in time.

Also growing in abundance in this Noonamah area was *Byblis liniflora* aff. "Darwin". Many specimens were growing in the flooded areas and enjoying the conditions. This species likes wet feet. Also growing in the same conditions were juvenile plants of the typical large pink flowered *D. indica.*

The next area I wanted to look at was the approaches to and in the Kakadu National Park. I had a scientific permit to botanise the region within the park and to collect anything I came across that was new. As it turned out, Kakadu was bone dry and there wasn't much to be found anywhere. No collections were made in the Kakadu National Park. At the same time in 1988 when I was there, CP were to be found in abundance. It was a good wet year. 1990 however was a disaster as far as botanising was concerned.

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Drosera petiolaris. Darwin region. Matches the *D. petiolaris* TYPE collected on the Endeavour River Queensland on the Cook voyage.



Drosera petiolaris aff. "Kununurra". Species nova from N.E. of Western Australia.



Drosera petiolaris aff. "mini rosette". Species nova from the Darwin region.



Drosera petiolaris aff. "medium rosette". Species nova from the Darwin region.

My fortunes changed however on the approaches to Kakadu. Anywhere a river crossed the main road into the park, I had a good scout around. It was at these locations that I found the true *D. lanata* in abundance. These many leafed basal rosetted plants are covered in numerous dendritic hairs. That is hairs having a number of pointed spur-like projections branching off the main central pointed hair. The hairs are **translucent silvery-**white in colour. Dense masses of these hairs cover the leaves of the plant. Although the leaf is green in colour the mass of hairs give the overall effect of a silvery-grey coloured plant.

The lamina on *D. lanata* is maroon-red in colour and combined with the silvery-grey foliage presents a wonderful sight to the eye. This species was found growing only in white silica sand on high ground away from the main river and the wetter soil found there. I established that this species grew in soil that was only wet when it rained. There was no additional moisture to be gained from drainage from other areas. This species so to speak was a bit of an arid grower.

I wondered about the dense hairy covering and what its function may be. I knew that it would be a good insulation material when the plant was dormant. I have studied the pygmy *Drosera* of S.W. Australia for many years and established the fact that the silvery-white stipule bud on these species acts as insulation from the summer heat in the dormant period.

The answer came to me in a flash when I visited the *D. lanata* area on my way back to Darwin out of Kakadu. It was early in the morning and it hadn't rained for a week. As I set up to photograph these plants, I could see minute dew droplets on every hair through my camera lens. These small droplets were slowly running down to the base of each dendritic hair. Slowly but surely each one of these small droplets in turn joined with other droplets from other hairs. Finally the combined droplets formed a large water drop at the base of each leaf. As it became heavier this large water drop fell from the plant onto the soil surface near the base of the plant. Here the plant could take up the precious moisture through the roots.

Evolution has done a good job here in adapting *D. lanata* to its harsh growing conditions. However, *D. lanata* is not alone with this type self watering adaptation. I have read of plants, mainly very hairy cactus in the dry coastal regions of Chile, that capture their moisture on the hairs from fogs that cover them at times of the day. When the fog disappears the area is a harsh desert.

One of the main reasons for heading into Kakadu was to try and find specimens of *D. petiolaris* aff. "Erect". I had seen Herbarium specimens of this species in the Darwin Herbarium in 1988. These specimens were up to 35 cm in height. They came from the sandstone plateau in Kakadu. At the base of the sandstone I found this same plant but not growing tall as in the herbarium specimens. This species' growth arrangement was very similar to *D. petiolaris*'. That is, plants having erect and semi-erect leaves. I knew I had found the *D. petiolaris* aff. "Erect" plant as the leaves were extremely narrow and the petioles were covered in the same dendritic hairs as *D. lanata*! The specimens I found however were not erect like the Herbarium specimens but instead were forming a more pin-cushion effect low on the ground. Closer to Darwin many kilometers from Kakadu National Park, I found this species in abundance and in better growing conditions. The plants were a real sight. Many dewy lamina all crowded into a semi-spherical arrangement. Mature rosettes were up to 10 cm diameter and 10 cm in height.

Back in Darwin I went to the Herbarium and studied once again all of the sheets they had on this species. My field observations were correct. I had genuine specimens of *D.* petiolaris aff. "Erect". I spoke to Clyde Dunlop the collector of most of the specimens of this plant in the Herbarium and a few mysteries were cleared up on the spot. Clyde's specimens came from the sandstone escarpment from shallow pockets of soil. He remembered that the plants were growing up through spinifex bushes. These

plants were 35 cm tall because they were growing towards the light. They were also being supported by the spinifex bushes. Common sense told us that the plants could not grow 35 cm tall without being supported as they would fall over in the first wind. I was happy because I had solved the missing link in the known *D. petiolaris* complex.

A natural hybrid was found on this trip as well. It was the cross between *D. lanata* and *D. dilatato-petiolaris.* Although I didn't find a hybrid, I saw a patch of *D. petiolaris* aff. "Erect" growing near a patch of *D. petiolaris* aff. "Medium rosette" in Kakadu. I'm sure I could turn up a hybrid between these two in a good wet season.

Closer to Darwin near Humpty Doo I found *D. banksii* growing on the margins of a flood plain of a small creek. D. *banksii* was only growing in the red loam patches and not in the sandy soil which was the typical soil to be found there. Each plant was at best 8 cm in height and one or two were just coming into flower. I collected this species in 1988 and kept it growing for 18 months before it died. In the field the plants come up each year from seed. This species is not tuberous like *D.subtilis* another one of its kind from the Mitchell Plateau area in the N .W of Western Australia. Each plant of *D. banksii* has individual reniform-shaped leaves that are peltate near the upper margin. The petioles are terete and attached to the main erect stem at scattered locations. In plane-view the leaves are spread around the main stem in a circle. This species has fleshy white thread-like roots travelling a short distance down in the soil. Near the base of the plant further roots are present above the soil surface which in turn finally penetrate the soil. The flowers are white and 5 mm in diameter.

The final days of this leg of my journey were spent around Darwin. In that time I found:

U. muelleri growing in Girraween Lagoon. In amongst the water lilies and no doubt crocodiles, I couldn't resist the temptation to wade in and photograph and collect some specimens. This species is an aquatic *Utricularia* and produces a floating water-sheet arrangement of floats to support the inflorescence. The flowers are yellow. Also growing here was U. *australis* but they were not in flower.

U. *subulata* was found at one location near Girraween Lagoon well away from civilization so it didn't come from some CP collector's collection.

U. scandens was found on the road to Mandorah on a herb field meadow. This yellow flowered species twists its scape around near by herbs for support in the same fashion as *U. uolubilis* found in S.W. Western Australia.

D. dilatato-petiolaris growing in abundance around Palmerston. In one area in this region, I found along with *D. dilatato-petiolaris, D. petiolaris, D. petiolaris* aff. "Mini rosette", *D. petiolaris* aff. "Medium Rosette" and *D. falconeri.* I also found at least one example of a natural hybrid between every species combination of these five species.

On my last day in Darwin I spent some time in the Herbarium. As luck would have it the Herbarium boys had just returned from a helicopter collecting trip to the flood plains of the Finnis River. While the helicopter was hovering just off the ground two guys jumped out quickly (the water was shallow) while a third stood guard with a magnum revolver (crocodile watch). The two very quickly scooped up some water plants they were after and jumped back in the helicopter. The Finnis River is thick with crocodiles. Back at the Herbarium they placed their water plant collections into an aquarium. Much to their delight and mine they had also scooped up a heap of *Aldrovanda.* I managed to get some good photographs of the plants in the aquarium. Also they were good enough to give me a few specimens to take home with me.

The night of the 17th of April, I flew down to Kununurra in the N.E. of Western Australia about 500 km as the crow flies from Darwin.

The following day I want straight to the locations I had found in 1988. The season was pretty grim. Just like Kakadu they had not had a good wet season. The areas I was interested in however were still holding up and producing fairly good growing conditions for the CP's.

First on the agenda was D. petiolaris aff. "Kununurra". I had discovered this plant in 1988. I thought at the time that it was *D. lanata*. The more I studied the problem the more I had my doubts. Uncovering the real *D. lanata* in Darwin confirmed for all times that D. *petiolaris* aff. "Kununurra" is a new species. This species is covered with hairs just like *D. lanata* although not all of the hairs are dendritic. The petioles are broader and lanceolate in outline. The biggest plant I saw was 18 cm in diameter. The average size was 18 cm in diameter. Unlike *D. lanata, D. petiolaris* aff. "Kununurra" formed large clumps of plants of 40 cm in diameter. In my travels over the next few days I discovered this species is quite well spread, I found it in a 50 km radius of Kununurra township. Always growing at the base of spear grass in sandy soil.

At the same locations I also rediscoverd *Byblis liniflora* aff. "Kununurra" which I found on my 1988 trip. This species is robust. Plants up to 30 cm tall even in rather dry conditions. Multiflowered heads are normal on this species unlike the *Byblis liniflora* type. The flowers are large on this Kununurra plant. Each petal is pink on the surface and lemon-yellow on the outer surface. The apex of each petal is also serrated.

On my return to Perth I compared the seed of *B. liniflora, B. liniflora* aff. "Darwin" and *B. liniflora* aff. "Kununurra". In all cases the seed is quite different to each other. This fact plus many other differences leads me to the conclusion that we are dealing with two new species of *Byblis*.

The only other CP I found in Kununurra was *D. burmannii*. It was exactly the same plant as found in Darwin, as well as Sydney which I saw in 1987. The whole trip was a complete success and I got some very nice photographs from the 60 shots I took. I collected some great plants live and I have these in my collection now. There is a lifetime CP discovery in the northern regions of Australia and I intend to retum as soon as possible at the end of the next wet.

Special Notice

By Don Schnell

Dionaea is finally being proposed for Appendix II under CITES at the March, 1992 Conference of the Parties (8) in Kyoto, Japan. A similar proposition was written up tentatively for presentation at COP3 in 1981, but was withdrawn due to what was felt to be lack of sufficient information. Since then, mapping of locations, particularly in North Carolina where about 90% of the populations occur, has been undertaken and will be completed during 1991-1992. Also, there is documentation of the massive numbers of plants being removed literally by the dumptruck load, both legally and by poaching, but being passed for overseas shipment primarily to Europe via a few well-known nurseries in one country in particular. At least one of the companies has the gall to feature large color posters showing huge numbers of potted *Dionaea* on rack after rack in greenhouse, supposedly "propagated" but in reality grown from "bulbs" collected primarily by one contractor in North Carolina who employs others to help. Some of these commercial collectors have been caught in illegal activity as much as 20 times. The business is so lucrative when massive numbers of plants are collected (1.4 to 4.5 million per year) that the fines are shrugged off as business expense.

It is felt that Appendix II placement will discourage massive transfer of *Dionaea* out of country and encourage propagation activities. It is not clear what if any action will be taken by the US Fish and Wildlife Service under the Endangered Species Act [ESA] (if the Act is still with us next year!) and recommend to Congress in the Federal Register.



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Front cover: *Drosera dilatato-petiolaris*. Darwin region.

Rear cover: *Drosera petiolaris* aff. "Kununurra." Species nova from NE of Western Australia. Both photos by and copyrighted by Allen Lowrie. Please see article beginning on page 114.

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