

The ATLANTIC COAST of BRAZIL

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APPROXIMATE SCALE IN MILES

ON CACTUS SAFARI IN BRAZIL - 3

Translated from Succulenta, March 1967

Mhr Buining, President of the Dutch Cactus Society, writes from South America:-

The asphalt road between Curitiba and Sao Paulo winds through a hilly area where the slopes are covered with trees. We were fortunate for many groups of trees and bushes were in flower; they coloured the hillsides blue, purple, and golden yellow. A lover of plants becomes bored in a big city so after a short visit to the long well-known cactus collector Harry Blofeld, we left Sao Paulo - the city of millions - to go to Belo Horizonte, a large town in the state of Minas Gerais.

There we visited a reptile institute where they produce a serum against snake bites. After Belo Horizonte the countryside starts to become more interesting. We turned to the right at Curvelo towards Diamantina. Soon we found the first interesting cacti such as *Discocactus tricornis* - growing in pure quartz sand - and *Pilosocereus minensis*, adorning the rocks with their red coloured berries. Just before Diamantina we found another locality with beautiful big *Discocactus tricornis*.

Everywhere round about Diamantina you find diamond diggings. Earth from enormous sand and gravel pits is rotated, sieved, and the last remains are stirred with a stick and smelled in the search for diamonds. The native people are very poor. After one night we left the old diamond digger's town and moved to one of the most interesting hill regions you might find in Minas Gerais.

Having climbed fairly high in the hills, we found that which many people have sought in vain - the scarce and rare HU 106. From Diamantina to Capelinha one encounters a number of ranges, of which probably the most well known are Serra Negra, Serra Ambrosio and the Serra de Noruega. Yet you will find them marked on very few maps. These mountains are difficult to reach and moreover because of the almost impenetrable virgin forest cover are most difficult to ascend.

We found a *Parodia gummifera* growing in pure quartzsand and one new, allied, species which however was found not to have the cells under the epidermis with a sort of white juice (exact translation uncertain - H.M.) Here we found only a small group of these plants. On the mountain slope where these new species grew, we came across splendid groups of *Cephalocereus densilatus*. *Parodia gummifera* belongs, according to my ideas, not in the usual (? H.M.) *parodia* home. Happily I already knew flowering plants and the flower cross section. With considerable difficulty I extracted the few remaining seeds out of the plant. It is certain that in the future yet more surprises will come from this region which is so difficult to reach.

But we must explore further and so our 20-year old Ford truck takes us in good spirits back again to near Curvelo and from there further to the north. Before long the habitat of *Melocactus* commences. In the Serra de Cabral we next found a pair of very interesting, though not well known, ceriform plants. There were, too, huge examples of *Discocactus tricornis*, perhaps a variety of the type plant.

As I have said, before long we came across numerous representatives of *Melocactus* species, in caves. The plants were frequently with splendid cephalia and decorated with fruits of different shapes and colours. It is impracticable to determine the species of all these plants in the short time at our disposal likewise the many *cephalocerei* which we have collected.

Besides Caetite we were held up because of the torrential rainfall. We well knew that only one leap in the direction of Bom Jesus Da Lapa would bring us to the west side of Riacho de Santana, where we found a particularly interesting *Melocactus*.

Owing to the tremendous rains, people advised us seriously to go round by Macaúbus for the north, so we turned off to the right after Brumado. Along this route there grew in the tangled brushwood great quantities of *Stephanocereus leucostele*. The splendid, slender, white columns with the well known growth of cephalium, stand out far above the larger shrubs. Here we also came across, as indeed in many other places, *Arrojadoa rhodantha*, freely flowering and carrying fruits. Further towards Vitória da Conquista began to appear here and there *Cephalocereus glaucescens* with their azure blue trunks.

After Conquista we followed the new asphalted road going northwards as far as the twin town Juazeiro-Petrolina, situated on the west side of the powerful river Rio San Francisco. It was quite a long journey with splendid plants all along the road, too many to relate in a single letter. Later I will write about this section alone, where we found the famous *C. dybowskii* in two places and shot off photographs like madmen.

Amongst these woolly dream-columns grew *C. glaucescens* with its blue complexion which man himself cannot imitate, nor obtain in cultivated specimens. Let us hope that the slides are not faulty. With Christmas drinks we take our lunch in this region with the *dybowskii* rising out of the Caatinga for white candles.

This caatinga is famous and notorious, impenetrable because of thorns, poisonous snakes, and burning plants. If you try to push in through it only 10 metres you come back covered with blood and an itching skin. These wounds continue to itch for many weeks. A cactus lover is apparently not normal and we went on defiantly after our white columns. For the genuine cactus lover this caatinga is a paradise, for the normal traveller, just hell.

With all our collections we had now come about 60km. into Pernambuco and we then turned back along another road to the south, that is via Teófilo Otoni. After 46 days travelling we came back home once again to Arroio de Seca.

With this last letter will our safari soon be closed. We have yet to make one trip for three weeks through Rio Grande do Sul, including one week in Uruguay. Here we again found the genuine *Noto cactus caespitosus* syn. *N. minimus* and a new *Notocactus*. Rio Grande do Sul is rich in handsome cacti and yet it is still not exhaustively explored. Overall we were some 4 days in the so-called *Parodia* habitat, where *Notocactus graessnerii* also appears in different tints.

Our total mileage with the ancient Ford was 22,000 Km (about 13,500 miles). Owing to her great endurance and the very great interest of Herr Horst in these plants, it was a very fine botanising trip, the like of which but few men can make. Collecting cacti in these regions is exceedingly difficult and often very dangerous, yet a burning interest in these plants overshadows the difficulties which are always there, by a growing desire to go out there again to collect more cacti.

To Herr Horst I am eternally grateful.

COLLECTING NEOPORTERIANAE - 3

In a previous issue of *The Chileans* (No.2 p.4, No.4 p.3, No.5 p.3) we have mentioned the winter-flowering habit of the pink flowered *Neoporteria*, which are *Neoporteria sensu stricta*. The *Neoporteria wagenknechtii* of E.W. Putnam went over to spring flowering this year, having failed to flower the previous autumn in its usual manner. A plant of this species also budded up in April this year for G.E.H. Bailey.

Generally, however, this species seems to be amongst the first of the pink-flowered *Neoporteria* to bloom in winter, as in the collection of P. Beeston in New Zealand -

"My *Neoporteria* flowered well this winter (June) - *Neoporteria wagenknechtii* is usually the first to flower, coming out in full flower at the end of February and is just finishing now. Unfortunately this plant lost its roots whilst in bud but this has not affected the flowers

and it is starting to root again now. In June, *N. rapifera*, *microsperma* and *littoralis* are in flower and *crassispina* is just coming into bud. One which for some reason I have difficulty in flowering is *clavata* v. *grandiflora*. It is the largest of all my *Neoporteria*s and flowered for the first time the year before last but last year and again this year has shown no signs of buds though it looks healthy and grows well. It has better roots than any of the others and gets exactly the same treatment. Does it need extra food, more rest in the winter, or what? I haven't been able to work it out so far but it is a very handsome plant. I've repotted it every year and found very little soil left and the plant almost potbound. Have taken some colour slides this weekend and if they're any good will send some on as soon as they are developed (They will be a welcome addition to our slide pool - H.M.)

I was interested in your comments on the pigmentation changes in your *N. villosa* - ours seems to change very little from season to season and is always a very deep green verging on black. This is one plant which has a very strong tap root, filling its 4" pot although the plant is only about 2½" in diameter. It has flowered - but in summer, not in winter as most of the other *Neoporteria* do."

E. W. Bentley tells us that "my *Neoporteria sensu stricta* always flower in the winter. I had over twenty flowers from my *Neoporteria wagenknechtii* extending from the middle of October to December, but not one seed pod. This plant is on its own roots. My *N. villosa* is never anything but green, although *N. rapifera*, *jussieu*i and various other *Neoporteria*nae in the same tray are almost black in summer. All these plants, too, are on their own roots".

Again from New Zealand, Mrs. E. J. Taylor tells The Chileans:-

"The *Neoporteria*s I have in my collection - about fifteen different varieties of flowering size, have put on a wonderful show this year, many having two flowers out at the same time on the one areole. *N. rapifera* and *N. wagenknechtii* outdid themselves having three flowers out on the one areole. My plants have all but one been purchased as seedlings or grown from seed and are growing on their own roots.

"Perhaps you could help with a problem of identification. A few years ago, when I was new to seed raising, I planted a packet of imported *N. villosa* seed. From these I raised three plants, all with dark bodies, two alike with cream, hairlike radials and black centrals, but the third is completely different. It grew about 2½" high and 1" dia. and then grew pups all over the body. The radial and central spines are straight, all the same length (about ½") fine, soft, and hairlike. At the growing centre they are bright gold and then fade to cream. The ribs are strongly spiralled - I counted twelve on some pups, thirteen on others, you can't see the main stem now. The spines are so numerous that the plant just looks like a ball of golden fluff. What is it? (Any ideas, please? - H.M.)

"The other *N. villosa* plants flowered for the first time this year, but the 'golden monster' has shown no sign of buds. None of us in Hawkes Bay have seen anything like it before.

"Grafting young seedlings certainly makes them grow quickly. I grafted a seedling *N. napina*, ¼" in dia., on to hybrid *cereus* stock, in February. Now it is 4½ cms. tall and over 4 cm. in dia. It is larger than one on its own roots that is five years old. The two look exactly alike except that the spines on the five year old are not quite so heavy."

Also in New Zealand, E. F. Lloyd tells the Chileans "I am ashamed to admit that my plants have been neglected lately (that makes two of us - H.M.) but that still doesn't stop many of my *Neoporteria*nae from flowering. The only time when my *Neoporteria* do not bear flowers appear to be in the heat of summer and even then there is often the odd flower or two. *N. rapifera* is the first to flower, in the early autumn, followed close by *littoralis* and *wagenknechtii*. A little later the *villosa*'s start and then the *microsperma* varieties; these are producing flower in July. Soon I expect to see buds forming on the multicolors, *nigrihorridas*, *clavatas*, *castaneas*, etc. They flower spring into early summer."

H. Middleditch comments on the letter from Mrs. Taylor: "In our No.5 issue I suggested that flower buds which failed to mature appeared to turn into offsets, so affording a possible explanation of the occurrence of offsets near the crown of a plant. This would hardly seem sufficient to explain our New Zealand collector's 'golden wonder'. In any case, I am told by W.T. Holton that he had about 42 flowers on his *N. napina* during the 1966 season and several areoles which sported two flowers have now produced an offset. To cap it all, my own *N. aspillagai* has produced offsets from near the crown on areoles which were already carrying the previous season's flower remains. It looks as though my idea that offsets near the crown are aborted buds, must be jettisoned".

Mrs. J. Mullard can also claim to have an odd pupper - "We have a grafted *Digitorebutia haagii* which produces flowers which instead of setting seed, the seed pod turns into an offset and the plant is now completely covered with offsets and fills a four inch pot." (Just discovered a like phenomena on my *Sulcorebutia steinbachii* - H.M.).

A similar "queery" is being raised by R.E. Hollingsbee:- "An interesting plant received from Japan is a grafted plant of *N. nidus* v. *senilis* forma *monstrosa* which has wisps of long white hair and produces offset upon offset, almost from every areole. These begin a pinky red colour and are very tantalising, suggesting, as they do, that buds are forming. Not only does the plant offset but even the smallest offsets may produce further offsets, often from near the crown, producing a ridiculous looking specimen'.

For beautiful spines, a chocolate brown spined *N. multicolor* takes some beating. One of the most outstanding acquisitions has been a plant on its own roots named "De Taltal", from the Chuo commercial Co. of Japan. This has an attractive glossy black or dark violet body with black spines. It somewhat resembles grafted plants I have seen under the names of *N. taltalensis* v. *occulta* and *N. taltalensis* v. *flaviflorus*. Have any members had this plant and if so can they identify? (Would you like to send a spine count and rib count to help identification? - H.M.)

Incidentally it is generally known that *N. esmeraldana* appears in at least two forms, one solitary (at least in the early stages) and of a dark violet body colour, and the other form freely offsetting and of a paler colour. The silvery white to cream petals of the flowers have a particularly fine sheen."

On the latter point, we hear from H. Ewald "According to Backeberg there are quite a number of different forms of *N. esmeraldana* although in my opinion these are only polymorphic differences and do not constitute a distinct variety of the species. The same applies to the body colour.

"My brownish *N. esmeraldana* has rather slimmer and longer offsets than the red-purple one but produces same just as prolifically. One must not be too particular about certain characteristics which may be caused by different cultural treatment. Just for the fun of it I did graft one of my reddish *N. esmeraldana* on to a 10" tall and rather thin stock of *Selenicereus grandiflorus* v. *tellii* about twelve months ago. Kept rather dry, this plant body is now black, measures approx. 1" across and has rather longer than normal strong, curving, black spines."

Comments from H. Middleditch: Having viewed not one plant, but batches of *N. esmeraldana* cultivated by the dozens by our contributor, it would appear that careful selection of pups for grafting can produce a specimen which remains solitary for a period somewhat longer than normally anticipated. Owing to its ease of vegetative propagation, it is probable that the majority of *esmeraldana* in collections today have been produced this way, rather than from seed. It is perhaps worth recalling that as a result of repeated vegetative propagation of the one and only '*Echinocactus famatimenis*' sent back to Germany in about 1903, a form was produced which cannot now be found in the wild and is called by some '*Reicheocactus pseudoreicheanus*'. Perhaps, therefore, we would be wise not to attach too much importance to apparent variations in an immature plant.

AN EVENING OF GYMNOCALYCIUM

(A lecture given on Dec. 11th 1965 to the Upper Austria Branch of the G.O.K.)

Translated by E. W. Bentley.

To start the evening's meeting, Herr Till spoke about the distribution of the genus *Gymnocalycium*. He emphasised that it was a specially suitable genus for amateurs since the plants remain comparatively small, do not demand blazing sun - indeed do not like it much and even bud and flower in shade (*G. mihanovichii*). By means of a map of South American on which he had drawn a number of confirmed habitats of *Gymnocalyciums*, Herr Till showed that these plants ranged from Comarapa in Bolivia to the Rio Chubut in Southern Argentina. The precise identification of the habitat of individual species shows clearly that within this vast region are species having close relationships, for the identification of which the resemblance of the seeds is important. Thus in the southern parts are found the species forming the *ovatiseminae*, in the north are those of the *microsemineae* (with short corolla tubes), in the east (Brazilians) are the *macrosemineae*, in Paraguay and north Argentina the *muscosemineae*, whilst in the middle of the continent (central Argentina) are found the species of all the bordering populations - as in a melting pot. This has important implications for the history of the development of the genus - and also for its systematics, which undoubtedly needs a thoroughgoing revision. As Herr Till's lecture showed, the mapping of the location of individual species is an important building stone for the proper systematic classification of the genus.

After this most instructive talk, Dr. Simo spoke about *Gymnocalycium guerkeanum*. The occasion for this was the fact that today imported plants of this species can be obtained which produce flowers within a few weeks of planting. *G. guerkeanum* was described in 1911 by Heese as *Echinocactus guerkeanus* (the genus *Gymnocalycium* at that time had been mistakenly with-drawn). In 1904 the Royal Botanical Museum of Berlin-Dahlem received a large consignment from Fiebrig who stated that all the plants came from Bolivia. At that time Professor Guerke was Director at the Museum in succession to K. Schumann; Heese was gardener at the Institute but he also shared in the scientific activities. Prof. Guerke and Heese studied the imported plants in cultivation and published very exact descriptions in '*Kakteen Zeitschrift*'. After Guerke's death, a plant of our species stayed in Heese's possession. Guerke and Heese were of the opinion that it was a *Gymnocalycium denudatum*; they called it *G. denudatum* v. *bolivien-sis*. In 1910 Heese's specimen flowered for the first time. To the surprise of its owner it had a yellow flower. It could not, therefore, be a *G. denudatum*, but rather a previously undescribed species. Heese, in honour of his dead chief, called it *E. guerkeanus*. The yellow flower colour is noteworthy being rare in the genus *gymnocalycium*. Up to the present, the yellow bloomers known and described have been *G. leeanum*, *leeaanum* v. *netrelianum*, *andrae*, and *artigas*. Whether *G. melanocarpum* (ar.) Br. & R. has a yellow flower, as Backeberg suggested, is in the absence of knowledge of the blooms, not known. Recently two more plants have been imported which, according to the native collector, have had yellow flowers. Both these may easily have yellow flowers, but have not yet bloomed for us. All these yellow blooming *Gymnos* come from Uruguay.

It would certainly be surprising if *G. guerkeanum* really did come from Bolivia. Prof. Cardenas has gone into this question, but could neither find *G. guerkeanum* nor any other yellow flowering *Gymnocalycium*, in spite of a thorough search. It is therefore very probable that Fiebrig's statement that the plants, on which we based the description of *G. guerkeanum*, came from Bolivia, was incorrect.

Dr. Simo exhibited colour slides of *G. guerkeanum* in his collection and in the Linz Botanical Gardens. They are still fairly small (about 6 cm. dia and 3 cm. high), flattened - globular with prominent ribs. Heese gave 9 ribs; rib number are, however, unreliable since they depend on the size of the plant. The ribs are broad, quite low, and below the areoles appear clear chin-like prominences. Usually these humps are hidden by the spines. The ribs are separated by sharp furrows. Noteworthy are the areoles; in the young stage these are more or less round, later longish, fairly strongly felted - which is lost in old age. The spination is also remarkable. Heese gives: "5 sturdy, partly adpressed, somewhat upward-bent, spines, central spines absent." In our plants we have two spines directed upwards, two sideways and one down - wards. In new growth the spines are already strongly built, reddish at the base, later greying, not smooth - rather with a rough coating. The crown of the plant is more or less spineless. The body is dark to bluish-green and the epidermis conspicuously granular. The flowers come from the crown. Heese gives "flowers mostly single" as is the case with our imported plants. The corolla tube is scaly, the scales of characteristic form and colour, strongly pointed at the top and edged yellowish on the buds. The floral leaves likewise run to a point. The flowers are imposing, the tube about 3 cm. long, the actual flower 4.5 cm. and when fully open, over 5 cm. wide. The ovary sits deep in the areole, the shortly extended tube continues into the originally greenish, later clear yellow floral leaves which have an external brownish mid-stripe. The stamens are yellow tinged with pale red, the anthers yellow also. Absolutely characteristic for the species is that it is bisexual. While one (male) plant shows in the flowers many well developed stamens rich with pollen, but only a short style with an insignificant stigma which is scarcely visible, other (female) flowers occur in which the stamens are not so numerous, are feeble and without pollen, while the style and stigma are prominent and well developed. From the male flowers, no seeds are obtained.

Heese did not emphasise this peculiarity of the flowers - probably because he only possessed one plant. The fruit is scaly, not hirsute, not very fleshy and seems to shrivel fairly soon. The flesh of the fruit is pink; the seeds are black.

The plants described were obtained this year (1965) from the firm of Su-ka-flor in Wohlen. Quaranyo was given as the place of origin. The River Jaquaranyo forms the border between Uruguay and Brazil. Since the plants were collected from the left side of this boundary river, the species is Brazilian in origin.

Comments on "An Evening of *Gymnocalycium*"

British *Gymnocalycium* enthusiasts may well envy our Austrian friends' good fortune in being able to hear accurate and well-documented discourses on the genus, such as these. Herr Hans Till is a specialist student of *Gymnocalyciums* and has made a close study of their classification by seed characters. This method of classification originated with Fric and Kreuzinger in the pre-war period and is being actively developed today by Bohumil Schutz and others in Czechoslovakia as well as by the Austrian specialists. The validity of this method has been challenged on the grounds that very different types of seed can be found in closely related plants of several genera of the Cactaceae, but it appears to me that this criticism rather begs the question. More to the point is the fact that it is risky to make taxonomic decisions on the basis of one characteristic only.

Dr. Simo's comments on *G. guerkeanum* are very welcome as they throw light on a dark corner of *Gymnocalycium* literature. The true origins of many of the early discoveries among the South American cacti are still obscure ... plants from the River Plate country found their

way to Europe without documentation quite often. Thus Gymnocalycium multiflorum was named by Hooker (as Echinocactus multiflorus) on the strength of a single plant owned by Palmer, a London cactus collector, the precise habitat of origin being unknown. The habitat of G. guerkeanum has been faithfully reproduced as "Bolivia" in every cactus book up to Backeberg's "Lexikon" (1966) : future authors please take note !

E.W. Putnam

THE HABITAT OF GYMNOCALYCIUMS

Herr Till describes the habitat of Gymnocalycium as ranging from Comarapa in Bolivia (roughly half way between Santa Cruz and Cochabamba) to the Rio Chubut in Patagonia. This region includes the plains of northern Argentina, the lowermost slopes of the Andes on the western margin and part of the Patagonian uplands to the South. In addition, Gymnocalyciums are also found in the uplands which spread over Uruguay, south-east Brazil, the Misiones territory of Argentina, and eastern Paraguay. Most species, however, are referred to the lowland plains.

All the Argentinian lowlands and the northern part of the Gran Chaco - reaching through Paraguay and Bolivia - were originally an extensive shallow arm of the sea, many millions of years ago. This great basin was gradually filled by deposits of material carried down from the surrounding mountains - mainly the Andes. The Gran Chaco is formed from alluvial material - principally sands and clays - brought down by the rivers which run in flood after the short but intensive summer rains on the adjacent Eastern Andes.

The 'Pampas' with a drier hinterland, have been built up by the prevailing westerly winds - the Pampero - which has carried eastwards fine grains eroded from the Andes. Near Buenos Aires, the wind transported material is over 900 feet thick. The whole of the pampa soils are fine grained, free from pebbles or gravel. They are sandy in the interior and become steadily finer towards the coast, where they form a rich, black loam.

Two ranges of limestone hills - the Sierra de la Ventana and the Sierra del Tandil, outcrop in the southern part of the Pampas.

The rainfall on the Andean flanks and adjacent lowlands, inland of the 'pampas', is both small and infrequent. The run-off yields only small and intermittent rivers. On leaving the Andes these fluvia soon filter away into the porous soil of the 'pampas'. From Santa Fe to Bahia Blanca there are no rivers crossing the 'pampas' to the coast. The effective drainage will be just above bedrock, so that where this is not covered too deeply by the porous soil, (as in the mid-western pampas) good crops can be obtained from long-rooted alfalfa. Even in the west, the soil is not so porous that a sudden thunderstorm cannot turn it rapidly into a sea of mud. But within twenty four hours it will be dried out again.

The rather less porous soil of the Gran Chaco allows of some surface drainage, but the country is so level that the few rivers follow ill-defined courses and have little or no power to carry sediment, except in flood. The summer rainfall floods the rivers which overflow their banks and spread out miles over the countryside, with no recognisable river channel, forming an esplayado. During the long, dry, season the drying up river channels with their fresh, rich alluvia become overgrown with vegetation, so blocking the following year's flood water and so causing the river to change course annually.

Many small rivers from the Andes never cross the Chaco, being lost by infiltration and evaporation. From Santa Fe northwards to the limit of the plains, only the rivers Salado, Pilcomayo, and Bermejo cross the Chaco from the Andes to the River Paraguay. Beyond the esplayados there is little surface water, but over much the Chaco the water table is not far below ground level.

The Gran Chaco is a region of severe summer heat. It is an inland continental plain at low altitude, with the sun directly overhead at midsummer and too far from the coast for the sea to ameliorate the climate. January temperatures average 90°F and there are a number of days which regularly exceed 110°F. These conditions produce a deep thermal low which draws in moisture laden air which yields intensive rainfall, accompanied by severe thunderstorms. For three months, the whole of the Chaco is sodden and practically impassable. Winter temperatures are in the sixties by day, with occasional night frosts.

The high summer temperature associated with the Chaco extends south along the foot of the Andes to Cordoba and La Rioja. Here the annual rainfall is well under 10" and so evaporation exceeds run-on plus precipitation. Water is exceedingly scarce and such fluvia as exist frequently terminate in shallow basins where the water evaporates and leaves a salt crust, known as a Salar. As a result of steady evaporation in the Chaco during the dry season, salt slicks are also found there, either at or just below ground level.

The moderating influence of the sea winds results in a less severe climate on the 'Pampas' centred on Buenos Aires. Coming even closer to the coast, the effect of the cool ocean current from the Falkland Isles depresses the temperatures for a few miles inland. In northern Patagonia, winter daytime temperatures will be about 40°F - about the same as the average winter temperature in England - and about 60°F in summer.

In the Chaco and the 'Pampas' the rainfall is heaviest in the east and decreases to the west - from about 50" to 20". The Andean edge of the lowlands become drier as one goes southwards, this dry piedmont also widening out southwards until it sweeps right round the south of the 'Pampas', to the coast. Northern Patagonia receives under 10" of rain per annum.

The Gran Chaco receives almost all its rainfall in the months December to March. The Pampas, however, receive their rainfall distributed fairly evenly throughout the year. These rainfall characteristics intergrade on the south and east margins of the Chaco.

The northern limit of *Gymnocalciums* is represented by a line running roughly east from Santa Cruz, approximating to the line of the railroad heading towards Sao Paulo. This line demarcates the northern limits of the frosts which come more or less regular intervals. To the north of this line are found semi-deciduous trees which cannot survive frost. South of this line we find hardwoods which can withstand frost, interspersed with savanna.

There are places in the Chaco where the thorny, deciduous trees grow close together in veritable thickets, difficult to penetrate. In other places, especially near the rivers, the taller trees form bands of dense semi-deciduous forest. Elsewhere the scrub trees are widely spread, like trees in an orchard and where the forest floor itself is grass covered. In places the forest is interrupted by extensive savannas. Generally, the trees are more frequent in the north and east of the Chaco.

Among the scrub trees of the Chaco there is a species known as quebracho - literally 'break-axe' because of its very hard wood - a tree which contains a very high percentage of tannin, used in the tanning of leather. In no other part of the world is there a forest of comparable extent from which this valuable substance can so easily be extracted.

In the dry hinterland between the 'Pampas' and the Andes, the scrub trees become more stunted and more widely separated by grass. Eventually the bare earth between the thornbushes and tough grasses predominates. Sand continues to erode from the foothills of the Andes as it has done for hundreds of thousands of years, forming live sand dunes which even invade the western margins of the cultivated 'Pampas'. This arid climate, virtually a desert, which extends to the coast just south of Bahia Blanca, is called La Pampa by the natives, a term which is applied to similar countryside in northern Chile. The Europeans have confused our geographical terminology by calling the humid plains around Buenos Aires the 'Pampas'.

The 'Pampas' are unusual in having no natural trees, although imported trees grow well. It is possible that any original trees were all killed off by the regular burning of the vegetation by the native Indian tribes. When the Spaniards sailed up the Plata estuary in 1536 only the natural tall Pampas grass grew over the humid plains and over much of Uruguay. This natural grass has now largely been replaced by short grasses - more suitable for the cattle stocks of English origin, or ploughed up for crops. Very little of the flat 'Pampas' remains free of agriculture.

Gymnocalyciums grow on the lower eastern flanks of the Andes, up to about 800 m. (2,500 ft.) in altitude i.e. below the hardwood forest strip. This is entirely sandstone rock formation.

In Cordoba, the gymnocalyciums grow on the eastern facing slopes leaving the even drier western facing slopes and salar basins to the Tephrocactus. Going northwards, the pattern changes slightly so that in Bolivia the Gymnocalyciums are found in the rain shadow of outlying foothills.

If we could divide our Gymno's into Pampas, Chaco, and hill dwellers it might help to understand their requirements for cultivation better. It seems possible that such a division would also apply to seed types and to fruit characteristics - colour and shape. This latter could prove a first eliminator for identification purposes.

H. MIDDLEDITCH.

AN INTRODUCTION TO LOBIVIAE

By R. E. HOLLINGSBEE

Little or nothing has so far appeared in the Chileans on Lobivias and Rebutias, plants from the high Andes of Argentina, Bolivia and Peru. As leader of the Lobivia Study Group I would welcome any interesting snippets of news about Lobivias, Rebutias and Medioblobivias, and new members. We will always be interested to hear of new species, new sources of good plants, imports, grafts, seed etc., or contributed information on cultivation, unusual or interesting features of growth etc. All will help to build up a picture of this complex group of plants about which very little has appeared in our journals or in the well known publications.

Meanwhile I would like to offer a few miscellaneous notes on the subject of these popular but still somewhat underrated plants, for the members who are beginning to take more interest, particularly in the colourful Lobivias. Rebutias, of course, have always been popular due to their more plentiful but smaller flowers.

There is a great gap in our knowledge - among the vast majority of cactophiles at least - as far as Lobivias are concerned. Like Rebutias, Parodias and other genera which have become so popular in recent years, Lobivias are plants with which Britton and Rose were not too familiar when they brought out their monograph. The whole make-up of this section of the Cactaceae has changed beyond recognition.

Unfortunately, the classification of the Echinopsis-Pseudoblobivia-Lobivia-Medioblobivia-Rebutia "group" is, like the Neoporteriae, the subject of a great deal of controversy. Frequent changes or proposed changes of names and the existence of a large number of hybrids or plants masquerading under wrong names, seems to have led collectors and growers alike to give up in despair. The result is that plants are grown and propagated for distribution under the names under which they are first received - even though their flowers and frequently the general appearance of plants should at least cast some suspicion on the name. Fortunately for the distributors, collectors are either blind to this or are prepared to take a gamble.

Often the "rogue" plants, especially those raised from seed, are distributed quite innocently, being sold or exchanged, etc., before they flower. The situation is not assisted by the fact that like the Neoporterias, there are different growth stages. Added to this cultivated plants and imported plants differ considerably from each other in many cases. Then there are numerous forms

of some species and identical plants producing different coloured flowers. When only a few years old many species which would not easily be confused as mature or imported specimens might be thought identical when not in flower.

Lobivia Backebergii is one species which appears to be very varied or difficult to obtain correctly named *L. allegraiana*, *L. weigheana* and *L. (Acantholobivia) tegeleriana* are in the same category. *L. Wrightiana* is a plant which appears to be uncommon in cultivation and sometimes expensive to get hold of and yet my specimen, which dark green stems and pale lilac flowers, is very prolific so I am wondering why. Perhaps seed is short?

An impression I have had for some years that *Lobivias* are difficult to raise from seed was shattered this year. I visited a grower who had raised quite a number and I have heard of other collectors who have also experienced little difficulty. So I tried my hand at raising a few this year and the results are encouraging.

What is difficult is obtaining true seed. Most *Lobivias* (*Acantholobivia tegeleriana* is one exception - does anyone know of others?) are self-sterile so, in order to set pods one has to obtain two plants from different "clones" - plants which don't come from the same original stock - in order to be able to cross-pollinate. Having done this one has still to trust to luck that both will flower at the same time - which is far from certain! An alternative is to experiment with "foreign" pollen, but not pollen from a plant which will result in hybrid seed. I believe this is called stimulation. (More on this subject at a later date. Meanwhile I would welcome information on the subject relating to *Lobivias* - *Mediolobicias*).

On the continent, turning to the subject of cultivation, grafting is widely used for almost everything. This includes *Lobivias*, *Mediolobivias*, *Rebutias* and *Sulcorebutias* and this could mislead the uninitiated. From my observations, however, I do not think it is necessary to graft any species of these genera to grow them successfully. However, grafting is a very useful method of propagating species or speeding up maturity and the production of flowers.

A good stock for grafting *Lobivias* is *Harrisia jusbertii*. Plants grow and flower well on it and produce wonderful spines. For *Mediolobivias* and *Sulcorebutias* *Trichocereus spachianus* or better still, in my view, *Trichocereus macrogonus* is a good stock. I have *L. nealana* and *L. drijveriana* on *Trichocereus spachianus* but they do not grow so fast as one might expect. Growth is not at all lush, however, and spines are good. *Echinopsis* hybrid stock seems good for small materials, as it is for most genera it seems.

Despite the above comments I do not have many grafted plants of *Lobivia* or *Rebutia*. I mention grafting because it is such a useful method of growing material, particularly seedlings, to maturity in a reasonably short time. It should be particularly useful for propagating those species which normally remain solitary and which it is not easy to get seed for.

I forecast that grafting seedlings of all cacti, or practically all - *Rebutias* and *Mammillarias* would appear to be obvious exceptions - will bring about great changes in the future and, I hope, will result in fewer plants being considered rare or being expensive. Already plants of new and unusual species which might have taken years to come onto the market in any numbers are plentiful and reasonably priced - if you buy wisely. Quite often they are ready to be taken off the stock and put down to root, leaving a stump on the stock from which offsets will sprout and provide material for exchange or growing into new plants.

NEWER NOTOCACTI

During our Cactus Tour to the Riviera in June this year, the Members of the party were privileged to examine the nursery section of the Jardin Exotique at Monaco. This contained a number of interesting examples of the newer *Notocactus* and *Eriocactus*. Also, like several of our subscribers, I have obtained specimens of some of the newer varieties from the continent this year and I can now compare these plants with slides taken at Monaco and with illustrations in continental journals.

During this season I acquired my second plant of *N. herteri*, both being grafted on *Trichocereus* stock. The older plant is now about $2\frac{1}{2}$ " in diameter, having a very light green epidermis and 20 ribs (just making 21). There are up to four straight, brown central spines which appear first as a tight bunch, becoming more spreading later. These have only appeared this year - but are not consistent in colour or number - the plant previously being without brown spines. The ribs are rather steep sided and the chins under each areole are about 3 to 4 mm high, camel-hump in shape and very prominent indeed. The younger plant of this species has produced single pale brown centrals fairly regularly - these are about 1 cm. long. They appear to diffuse from cream at the tip to gingerbread brown at the root. The areoles seem to carry some wool which is dropped at the end of a year's growth.

Backeberg's Lexicon describes this species as having about 22 ribs, strongly hunchbacked, with 8 - 11 radial spines, four (occasionally six) centrals, up to 2 cm. long, brownish red, with a flower purplish-red in colour. The habitat is given as Cerro Galgo in the Rivera Department of Uruguay.

Occupying a 4" pot in the Jardin Exotique was one of these plants having 21 ribs and a light green body with the very prominent chins, the centre of the crown being filled with a very fine, short wool through which the new chins first appear. At the edge of this wool mat were three flower buds, surrounded by much wavy brown wool of a similar brown to the central spine colour, with just the tip of the red petals visible through the wool.

Somewhat similar in body and spine colour is *N. horstii*. My own plant is only about 1" dia. and is just showing brown spines in the crown, the older spines being a dirty cream colour.

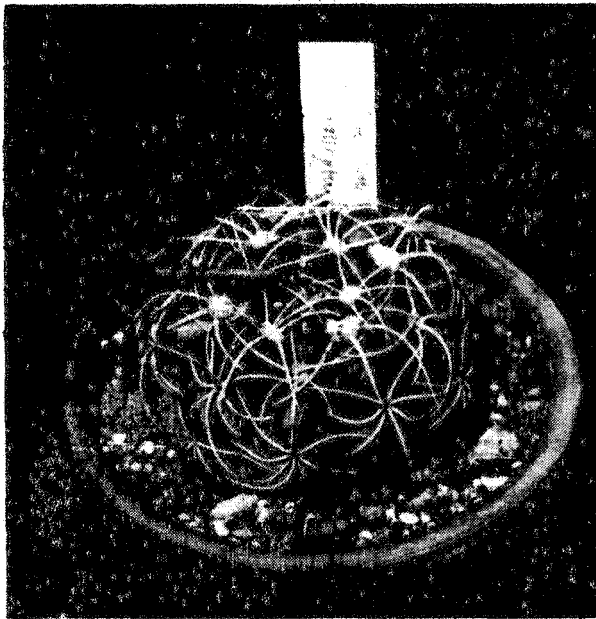
This species is illustrated in the January 1966 issue of the Dutch Society Journal *Succulenta*, where it is shown as having 14 ribs, both central and radial spines appearing to be somewhat wavy. Ritter's appended description quotes 12 - 16 ribs with 10 to 15 radial spines and 1 - 4 centrals. He gives the habitat as the southern slopes of the Serra Ceral in Rio Grande do Sul province of Brazil.

In a previous issue (*Chileans* No. 5 p. 6) the genus *Eriocactus* was reviewed. This genus was established by Backeberg but is not accepted by many authorities. I suppose that I must have seen several *Eriocactus leninghausii* in flower at various times, but have not consciously noted the yellow stigma which I suppose forms the easiest method for an amateur collector to distinguish this genus from the *Notocactus* with the red or purple red stigma. Having now seen an *Eriocactus magnificus* in flower in the Jardin Exotique, again with the yellow stigma, one perhaps comprehends a little more clearly the basis for Backeberg's separation of the genus *Eriocactus*.

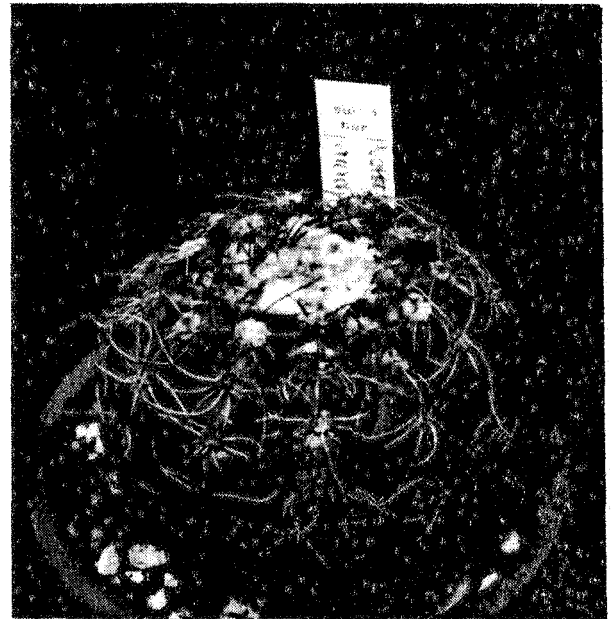
The globular body of *E. magnificus* is a dull darkish green, very deeply divided into ribs which slope away sharply from the edges. Of my own plants, one from Uebelmann about 1" dia, has 10 ribs, a $2\frac{1}{2}$ " imported specimen from Uhlig has 12; of two plants some 4" dia. at Monaco, one had 10 ribs and one had 13. These latter plants had some fine wool covering the edges of the ribs between the areoles, from the crown almost down to the maximum body diameter. One plant had three or four buds covered with dark brown wool, close together in the crown. On my own plants all spines are very thin and slightly wavy, pale cream in colour, the new spines in the crown being a golden brown colour and up to 2cm. long on the older plant.

The first general impression given by a small *E. claviceps* (from Uebelmann) is of some affinity with *E. leninghausii*, perhaps because of the close packed spines in the centre of the crown being rather more golden brown than the creamy yellow of the remainder, which tends to give the plant a darker 'eye'; perhaps because the large number of close-spaced areoles and thin spines hides more of the body than almost any other *Eriocactus* except *E. leninghausii*. My plant has 19 ribs, fairly steep sides with a blunter edge than *E. schumannianus*. The spines are very fine, up to 1.5 cm. long and appear to point somewhat downwards.

The August 1966 issue of 'Succulenta' carries an illustration of an *E. claviceps* with about 26 ribs. Ritter's appended description quotes 23 - 30 ribs, which compares with Backeberg's Lexicon figure of 'rather more than 30' for *E. leninghausii*. Ritter gives the plant habitat as Julio de Castilhos, Province Rio Grande do Sul, Brazil.



Notocactus crassigibbus



Notocactus arachnites

(Photographs by H. Middleditch - Collection Jardin Exotique)

Also seen at Monaco was a *Notocactus crassigibbus*. This is flattened globular, with a slightly depressed crown covered with a close mat of pale creamy white wool. The 12 ribs were very flattened, being only slightly more rounded than the general body curvature. The grooves between the ribs were shallow and narrow and practically disappeared half way down the plant. The areoles were widely spaced - some 1.5 cm. apart - and slightly sunken into the ribs. There was a faint suggestion of a chin between areoles. Once devoid of the first growing season's wool, the areoles are very small indeed. The spines are a dirty white, about 1 to 1.5 mm thick, one central and about six radials, somewhat wavy, app 1 cm. long, closely adpressed to the body. The immediate impression from this appearance was that the plant was a *Gymnocalycium*, until you found one with a hairy bud. There were several other plants of comparable general appearance, with only field collection numbers for identification.

My own small plant of *N. crassigibbus* has 11 ribs, very flattened, the dividing groove looking almost like a cut. The spines are a dirty brown-tinted white, the centrals up to 1 cm. long and the radials about 7 mm.

Whilst on the Riviera, our party visited the nursery of Allevina at Borgighera and saw a bed - some six feet square - full of *E. leninghausii*. As two-year old seedlings these had all had the growing point nibbled out by some pest. Each had produced several offsets so I suppose

that there would be upwards of two hundred heads crammed together, up to about 12" high. There was a sun-breaker cover of wattle over the bed and apart from half a dozen heads on the north edge of the bed, which were facing the clear sky, every other head was sloping to face south.

Several of the recently imported specimens of *Eriocactus* seen at Monaco had a columnar body, of which only the top inch or two was green, the remainder being a dirty corky grey. Two of our subscribers who have viewed imported examples at Uhlig's this summer, also comment on this same appearance of most specimens there. It would be interesting to know if it is the "loose sand left by the eddying flood waters" to which Mhr Buining refers in his article, which gradually builds up round these plants and produces this effect, or whether it arises from the existence of other low-growing vegetation, or from some other cause.

H. Middleditch.

Comments on the above from K. Halstead:-

I like the article on Newer *Notocacti* except for the title. According to Backeberg, *herteri* was first recorded by Werdermann in 1936 who renamed it *Echinocactus herteri* the following year (see Rev. of S. Am. Bot). In view of this it can hardly be called one of the newer *Notocacti* although I have a shrewd suspicion that very few of these plants were to be found in collections prior to the very much increased interest shown in the genus after the new discoveries in 1966.

I too, have a *herteri* grafted on *Trichocereus* stock. It is $4\frac{1}{4}$ cms ($1\frac{3}{4}$ ins) in dia. The body is mid-green with 20 ribs. The colour is darker than the type species but in most other respects it compares very similar to Backeberg's description and the central spines are constant in colour and size (1.3 cms the lowermost which is also the longest) all over the plant. Ritter's description differs considerably from Backeberg's and one wonders whether these two authorities are talking about different species. The description of the specimen seen in the Jardin Exotique sounds very similar to that of Backeberg and my own plant. Is Ritter the odd man out? If so, what plant is he describing?

Notocactus should have reddish to purplish (not brownish red) stigma. The colour is variable from pale pink in *mueller melchersii* to velvety purple in *rutilans*. Incidentally *Parodia bueneckerii* which flowered for me this year produced a bloom with a very pale yellow stigma. Can this therefore, be a *Notocactus*? (See our next issue -H.M.)

The new *Eriocacti* are very interesting. *Claviceps* reminds me of a cross between *leninghausii* and *schumannianus*; *magnificus* is a distinct new species. It has been suggested that the corky body of these new *Eriocacti* arises from draught - a natural cause we cannot simulate in our greenhouses so in this country we have to put up with clean looking specimens unless we are lucky enough to sustain red spider or scale insect attacks!

The new gymnocalycioid types to which *crassigibbus* belongs also includes *arachnites* and *uebelmannianus*. It remains to be seen whether these will be collapsed into one species. My own *crassigibbus* is completely bare in the depressed crown whereas the other two have quite an amount of white wool in the crown, *uebelmannianus* possibly more so than *arachnites*. Furthermore *arachnites* has 12 ribs and 6 - 8 radials spines

<i>crassigibbus</i>	12	"	"	8	"	"
<i>uebelmannianus</i>	14	"	"	10	"	"

The spines in all cases are adpressed to the body which is dark green.

F. R. NUMBERS

In the preface to the list of F.R. numbers in our yearbook we referred to the errors that had occurred in other publications and then proceeded to do the same. We also have some additions from J.D. Donald and these are all listed here:-

F.R. 1	<i>Rhipsalis cassytha</i>
F.R. 19	<i>Cleistocactus baumannii</i>
F.R. 27	<i>Cleistocactus baumannii</i>
F.R. 33	<i>Cymnocalycium spegazinii</i>
F.R. 121a	<i>T. berteri</i> v. <i>kuehnrchianus</i>
F.R. 82c	<i>Lobivia cintiensis</i> v. <i>brevispina</i>
F.R. 133a	<i>H. m.</i> v. <i>p. subv. chrysacanthus</i>
F.R. 182	= <i>H. chosicensis</i> v. <i>m.</i>
F.R. 223a	<i>Horridocactus tuberisulcatus</i> v. <i>minor</i>
F.R. 342	<i>N. vorwerkii</i>
F.R. 355	<i>Bolivocereus</i> s.
F.R. 436	<i>G. joossensianum.</i>
F.R. 505	<i>C. longispina</i>
F.R. 514	<i>Rodentiophila m.</i>
F.R. 515	<i>Rodentiophila l.</i>
F.R. 783a	<i>Echinopsis rhodotricha</i> v. <i>spinosior.</i>
F.R. 819	<i>G. guerkeanum.</i>
F.R. 956a	<i>Pilosocereus gounellii</i>
F.R. 968	<i>Acanthocalcium brevispinum.</i>
F.R. 1155	<i>Soehrensia suberba</i>
F.R. 1220	<i>Pilosocereus caesius</i>
F.R. 1221	<i>Pilosocereus hexaedrophorus</i>
F.R. 1222	<i>Pilosocereus catingicola</i>
F.R. 1223	<i>Pilosocereus pachycladus</i>
F.R. 1218	<i>Pilosocereus gaturiensis</i>
F.R. 1234	<i>Coleocephalocereus pachystele</i>
F.R. 1260	<i>Pilosocereus arrabidae</i>
F.R. 1272	<i>Malacocarpus leprosporum</i>
F.R. 1273	<i>Malacocarpus polyacanthus</i>
F.R. 1326	<i>Pilosocereus</i> sp. nov.
F.R. 1327	<i>Cipocereus pleurocarpus</i>

SOME EXPERIENCES WITH GRAFTED PLANTS - by E.W. PUTNAM

Like perhaps the majority of British cactophiles, I had little interest in grafting or in grafted plants for many years. The opening of my eyes to the "facts of life" with regard to grafting began really when I took out a subscription to 'Dodonaeus', the lively journal of the Belgian Cactus Society. Since then I have become fully converted to the usefulness of grafting as an aid to propagation and cultivation, though I do not go so far as to prefer to keep grafted plants rather than self-rooted ones. I doubt if even the golden prose of our Belgian friends will ever convert me that far !

I have used grafting so far only in a very limited way, but my few experiences do serve to illustrate several valuable aspects of the method so a recitation of them may interest others.

In making grafts myself I have saved a Copiapoa coquimbana seedling from certain death by grafting it onto Trichocereus spachianus and watched a tiny, sickly seedling grow rapidly into a fine sturdy scion. I also took offsets from a so-called 'Neoporteria reichii' (which I understand is correctly regarded as a form of Lobivia famatimensis now). The mother-plant was a clump which was given to me in a very sad condition and appeared to be on its last legs. I grafted one offset on an Echinopsis hybrid and another on a piece of mongrel Cereus (which I have yet to identify). Both grafts took easily and both have grown well. That on the Echinopsis is becoming embarrassingly large now, and I shall de-graft it next spring and try to get it going on its own roots.

I have also bought a good many grafted plants and have faced the problem of risking loss by de-grafting them. Two cases in particular are worth mentioning: a Gymnocalycium capillaense on Nopalea stock and Sulcorebutia steinbachii on Trichocereus spachianus. The first, when I got it, was "pumping" its stock dry ... the wretched Nopalea was shrunken and flattened while the Gymnocalycium remorselessly drew on the food and water supplied by its host. I cut it off, leaving a stump. Within three weeks the cut-off scion had made strong roots and is now a vigorous self-rooted plant without any stigma of parasitism ! The Sulcorebutia's stock looked rather sad, so I cut it free too. In a peaty compost, during July, it rooted easily and strongly. Within three months it was producing offsets. The stump left on the graft has so far produced four offsets, one of which I have rooted up on its own.

I am probably behind the times in my late conversion to the usefulness of grafting, but I daresay there are still others who have yet to embark on either grafting or de-grafting experiments. Can I suggest to these that they take their courage in their hands and try using this technique? Both as a life-saving operation for valuable plants and as a means of propagation of the scarcer items, it is invaluable.

A good exposition of grafting methods by Mr. A. J. S. McMillan appeared in the National Cactus & Succulent Journal for December 1966 (Vol. 21/4, p. 96). In the March 1967 issue of the same Journal Mr. Middleditch published an illustrated article on "de-grafting" (Vol. 22/1, p. 16) based on material from "The Chileans". Both these articles will repay careful study by those who, like myself, are mere tyros at the art of grafting.

E. W. Putnam

SEEDLING EXCHANGE

Many enquiries have been made to the Chileans regarding exchange of, disposal of, or obtaining, seedling plants. In response to these letters, we can now offer you three alternatives.

1. Member to Member exchange. The following plants are available from the subscribers named. If you are interested in any of those listed, please contact the person concerned directly (Not through the Chileans) and make your own mutual arrangements for exchange or purchase:-

H. Ewald, 29 Kirkgate, Sherburn in Elmet, Leeds.

(requires Oroya, Islaya, Copiapoa, Eriosyce, Neoporteria)

Copiapoa tenuissima cristate.

Copiapoa humilis

Melocactus ruestii

Neochilenia esmeraldana

Melocactus maxonii

Neochilenia hankeana

Coryphantha vivipara v. neomexicana

Sulcorebutia steinbachii (brown/red spines)

Sulcorebutia steinbachii (yellow spines)

Sulcorebutia kruegeri (white spines)

Neochilenia malleolata (Born's seed)

R.E. Hollingsbee, 46 Markland Road, Dover, Kent.

Copiapoa barquitenis, *streptocaulon*, *marginata*, *echinoides*, *cinerescens*, *carrizalensis*.
Neoporteria chilensis v. *borealis*, *hankeana*, *littoralis* v. *intermedia*
Arequipa erectocylindrica.
Mammillaria lousiae, *ootherle*, *dioica*, *bravoae*, *oliviae*, *mercaderensis*.

G.W. Sykes, 10 Ashley Close, Thornton Cleveleys, Lancs.

Frailea aurea, *columbiana*, *pumilla*, *pygmaea*.
Lobivia leucomella, *backebergii*.
Tephrocactus corrugatus, *russellii*, *diademata* v. *oligacantha*.
Neoraimondia arequipensis.
Eulychnia acida.
Weberbauerocereus johnsonii
Pyrrhocactus curvispinus

Arequipa rettigii
Rathbunia alamonensis
Aylostera albiflora
Neoporteria senilis

R.L. Purves, 19 Brocks Drive, Fairlands, Guildford, Surrey.

Rebutia Krainziana.

Gymnocalcium gibbosum.

2. Seedling exchange. One year old grafted plants or two year old plants on their own roots may be sent to our seedling exchange organiser, E.W. Barnes, 22 Coniston Grove, Ashton under Lyne, Lancs. You will be credited 2/6 per plant for any plants sold before January 1st 1968, on which date you will be offered the return of any residue. You will then receive cash to the value of plants sold less the cost of post and packing for return of the residue.

These plants will be available from our seedling exchange at a cost of 3/6 per plant, post and packing paid. Plants will be sent only on receipt of cash and despatched at purchaser's risk. For information on plants available, contact the seedling exchange organiser, E.W. Barnes, 22 Coniston Grove, Ashton under Lyne, Lancs.

Please confine seedlings sent for credit to the less common species, preferably South American - but we shall certainly welcome anything good. All plants should be ex-pots and free from pests.

Any cash remaining after meeting the running costs of the exchange will go to the Chileans funds.

3. Seedling pool. If you have surplus seedlings that you feel inclined to offer to 'The Chileans' for disposal for the benefit of our funds, they will be most welcome. They should be sent to our seedling exchange organiser, E.W. Barnes, 22 Coniston Grove, Ashton under Lyne, Lancs, stating clearly that you do not require credit for them. These will be available to subscribers for their own use or for disposal for the benefit of Branch funds. Prices will be fixed by the seedling exchange organiser having regard to size, rarity, etc. Any income from sales from the seedling pool will go to the Chileans funds.

Plants should be ex-pots and free from pests. Nothing reasonable will be turned down.

NEWS AND VIEWS

New subscribers may like to know that we have available our 1967 yearbook, comprising a list of all known F.R. field numbers of F. Ritter and appropriate plant names. This is priced at 2/6 to subscribers and 7/6 to non-subscribers.

All back numbers are still available; a full set of our first year's issues costs 10/6.

We should like to acknowledge several donations of slides to the slide pool, which now exceeds 150 slides. These are now in the hands of our Slide Librarian, to whom application should be made for loan or any other information.

We have the following articles in preparation at the moment for future issues:-

Fraileas. Translated from the Dodonaeus journal.

Matucana. Translated from the Czech Society Journal.

Winteria aurispina. Translated from the Dutch and German Journals.

Discocactus. Translated from the German Journal.

Blossfeldia. Translated from the German Journal.

Subscribers prepared to offer comments for publication should write for a pre-publication view of the article concerned.

SUBSCRIPTIONS 1968 - 69

To cover the cost of the expanding size of our bulletin, it will be necessary to raise our subscription to 15/6 for next year (commencing April). A renewal form will accompany our No.9 issue.

STUDY GROUPS

Epiphytes	A.J.S. McMillan, 5 Oakfield Road, Bristol 8.
Lobivia.	R.E. Hollingsbee, 46 Markland Road, Dover, Kent.
Neoporterianae	H. Middleditch, 5 Lyons Avenue, Hetton-le-Hole. Co. Durham.
Notocactinae	K.H. Halstead, Little Firtrees, Wellington Close, Dibden Purlieu, Southampton.

THE CHILEANS

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