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ILUUSTRATIONS SHOWN IN BRACKETS

NEW DESCRIPTIONS IN HEAVY TYPE

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THE CACTUS AND SUCCULENT JOURNAL OF GREAT BRITAIN

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Contents

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THE

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AND SUCCULENT

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FROM THE PRESIDENT

It is with the deepest regret that I have, once more, to record the passing of one who gave to our subject so much:

Professor Dr. Gustav Schwantes

who passed on the 17th November, 1960, aged 79.

In the preface to "Cultivation of the Mesembryanthemaceae" by Professor Dr. Schwantes I outlined his career and gave a long list of his many publications on our subject. Since that little book was published his monumental work "Flowering Stones" appeared in 1957. We deeply regret his passing and the loss of one so valuable to us. He lavishly expended his knowledge and experience, particularly on *Mesembryanthemums*, but he held positions of importance in Philosophy and Pre-History and was attached to the University at Kiel. It will be a long time before we have such another.

In the October issue of the Journal I asked for comments from readers in regard to the 'divided areole" of Mammillarias. I have only had one note, from Mr. Boarder. I would be grateful for comments from readers on the subject during the coming season.

We had a very happy annual dinner at the Salisbury Hotel when nearly sixty members and their friends assembled. I am afraid I have to record a failing of my own, a failing which I also made at an earlier similar function. I tried to think of everybody to thank for what they had done towards the occasion, but I forgot one who should never have been forgotten—I refer to our very good friend Mr. Young. Not only was he responsible for so much of what took place, but he also projected the slides. Yes, thanks for that, but all those present must have noted the celerity and slickness of the showing. Sir Oliver and Lady Leese admirably managed the lecture part with some very fine transparencies, but with little or no rehearsal Mr. Young projected the slides with a skill and speed that merited a very special thanks. The whole of the lecture and the projecting was worthy of the highest praise.

Now, I wish you everything you wish for yourselves in the coming season.

E. SHURLY.

Referring to the comment and photographs of Miss Harrison's in the October Journal, Mr. L. E. Newton writes :—"It is not evident in the Journal which plant you were referring to in your note on the name *Aloe filefra*. However, I should like to offer one possible explanation which occurs to me. At the bottom of the lowermost of the two photographs is a rosette of what could well be *Agave filifera* Salm. This species could be called 'cotton Agave' because it has long fibres amongst the leaves (from the leaf margins). Also, it comes from Mexico. If the owner of the plant received the name in conversation, the name 'filifera' could easily sound like 'filefra'."

CACTUS CULTURAL NOTES

By A. BOARDER

Several members have asked me about seed sowing and so a few lines on the subject may be helpful to others as well. The Society's booklet contains a full description of my method of seed sowing and so I can refrain from repeating all that is given there. However, the making and heating of a propagating frame seems to give some difficulty even now but of course I can only give general instructions as each individual will have different opportunities both with regard to the size of the frame which can be accommodated and the expense to which one can go. The points to remember are that any box will do and that the smaller it is within reason the easier and cheaper it will cost to warm it to the desired temperature. I consider that this needs to be between 70 and 75 degrees F., and this can be maintained with the aid of a thermostat. It is false economy to try to do without this piece of apparatus as it will halve the cost of electricity at least. I know that it can be expensive to fit a good thermostat, but there is no need to pay between £3 and £3 10s. 0d. for one, which would be necessary for work in a greenhouse.

As the wattage necessary for a small frame would be quite low, all that is required is a small thermostat to regulate it and one of the type sold for the purpose of heating small aquariums will be quite enough. These can be bought for as little as 10/- each, and they will work satisfactorily for a heater up to 300 watts. Although they are made for insertion in water they will function quite all right in the air and the fact that they are waterproof means that the moisture ever present in a propagating frame will not harm them in any way. The thermostat can be placed about the level of the top of the seed pans and then the required temperature can be maintained. The heating can be done with ordinary lamps, but if these are used do not depend on one small wattage lamp but have sufficient power to maintain the temperature without the lamp having to be working at full stress most of the time. If the lamp is almost always on it will not last very long. Heaters can be bought for as little as 10/- each, and the type used for heating aquariums can be used. These will have to be inserted in water, a jar or large mouthed bottle will do. If not in water the glass tube could crack. If a fairly large frame is used it is possible to heat it with one of the soil heating cables. I have a couple of "Warm Glow" heaters in use which are 50 feet in length and are about 120 watts in power. It is difficult to use one of these in a small frame as the cable must be so placed that the coil is kept well apart. This difficulty can be overcome by placing most of the cable on the bottom and the rest can be wound and supported round the sides of the frame thus giving a better air temperature.

If the frame is made fairly airtight, it is surprising how little electricity will be used to maintain the required temperature. Before the seeds germinate it is possible to cover the frame with material to keep in most of the warmth. This cover must of course be removed once any seeds show up or they will become drawn, white and weak. See that you test the warmth for a night before actually sowing and then you will be sure that the seeds have every chance of growing. The time of the year can be very important and I consider that as long as the necessary warmth can be supplied it is better to sow early in the year, some time in January if possible. I find that by sowing as early as this I can prick out most of the seedlings in May, and then they have every chance of growing on well before the winter. If you can get your seedlings of *Mams.* and *Rebutias* a half to an inch across by October, they will go through the winter at a temperature of 40 degrees F. and be quite safe. They must be kept dry at this temperature or they may rot off.

I still find that the plastic pots I tried give every satisfaction and the *Mams.* I potted in them have grown better than those in clay pots. Not that I think the actual pot makes the difference to the growth of the plant, but it is the fact that they hold the moisture better and so do not dry out as quickly as clay pots and so the plant grows better in hot weather. No doubt, if plants in clay pots could be watered twice a day in warm weather the plants would grow as well. All members have no opportunity of watering as often as this I know. The idea of putting some peat at the bottom of each box and pot was carried out last year and I shall continue to do this. I find that the roots of the plants like to get into this peat which holds the moisture so well. As long as the potting soil is porous there will be no trouble from stagnant soil. The idea of a third of the pot to be filled with crocks, as is often recommended, does not appear as necessary as some writers make out. I have not used this method for many years as I contend that most of the pots we use are small enough as it is without making them smaller by putting in so much crock. In any case I do not think that moisture low in a pot would do any damage to a plant. It is when there is surplus moisture just at the base of the plant that trouble can ensue.

When repotting any globular plant or one resembling a cespitose *Mammillaria* it is a good plan to see that the plant is mound set. This means that the soil immediately under the plant body is slightly higher than that

nearer to the edge of the pot. This method of planting assists surplus water to soak away from the base of the plant. The fact that there is a layer of peat at the bottom of the pot ensures that the upper soil will have most of its moisture drawn down by the action of the peat. The fibrous roots will be able to reach it there, but the base of the plant will not be so likely to be wet most of the time when decay can creep in.

I hope that members never lose an opportunity of encouraging young people to take an interest in cacti growing. Just one small off-set has often meant the starting of an interesting hobby for a boy or girl which has led to a life-long interest. I was started on the road with a small off-set given to me in 1905, and not only do I still have that plant, but the gift encouraged me to start collecting cacti and I have had years of pleasure ever since. We hear so often nowadays of the difficulty of finding something for people to do with their ever increasing spare time, that the importance of a hobby cannot be over emphasised. When I started in the hobby people worked twice as long as most do today, and when I started work I was employed for eighty hours a week. Not much time for hobbies then and sixteen shillings a week did not go far especially when one had to pay for board and lodging away from home. However it was possible in those days to buy a nice little plant in a pot for 3d., and I still have the descendants of a few plants I bought at that price from a florist in 1905.

I hope that this season will see a much better response from some members at the shows. The last one in *September, 1960, was the worst I have ever had to judge as far as numbers were concerned. I have judged about* twenty-eight of these shows at the R.H.S. Hall since the war and many others all over the country, but I do not remember having to officiate at any show of any importance at all where the entries were so few. I try to make all sorts of excuses for the lack of entries but I just cannot understand why a Society as large as ours is unable to get more than a couple of dozen members to exhibit. We have often asked at meetings if there are any classes which the members would like included, but rarely do we get any useful replies. Last year a class was asked for for members who had no greenhouse, but there was not a single entry in the class which was provided. The usual excuse is that transport is so difficult. I know that this can be a problem, but if the wish is there the means of carrying it out should not be unsurmountable. In the 1930s I used to get my plants to the shows when there were far less cars, etc., about and so I am sure that if members really tried they could get their plants to the hall for exhibition.

I am sure that it would be possible for a member to find a few more on the route who would share with the cost of transport. One member could collect from several and the expense being shared would not amount to much and in any case the prize money should cover this. I recall a junior member winning £1 for two firsts when there were only two entries in each class, and so the possibility of covering expenses with prize money is very real. Sometimes I hear the excuse that it is no use showing against 'so and so' as he always wins. I can assure members that very often entries are so few that the show secretary has to phone round to old hands, who had not intended to show, to get them to enter to help make up something worth seeing. These members would have been quite happy to stand by and see new members showing their plants for a change. One never knows how good the plants are until they are placed against others. Let us see if it is possible to have a really good show each time in 1961, as by this means many new members may be brought into the Society and general interest aroused.

See that the glass of the greenhouse is well cleaned so that as much light as possible can reach the plants. This may not be quite so important later on in the year when the days are longer, but for a few months it is imperative to see that the plants get all the light possible. The time to start watering will depend on several factors. Where the plants are kept is one which must not be lost sight of. The warmer their position the sooner may they need some water. It is quite impossible to give any exact date when watering should start as so much depends not only on the actual position but also on the plant. It is always better to watch the plants and only give water to those which appear to be making new growth. In most greenhouses it will probably be sometime after the middle of February when watering can be commenced on those plants which need it, but this does not mean watering the whole collection. Experience alone will tell when this is necessary. Do not start watering when there is a very cold spell about and see that some air is given so that any surplus moisture can soon dry up.

The repotting can be started in March by moving those plants which have started to make active growth and which have either reached the side of the pot or appear to be pot-bound. With all the younger plants it will be beneficial to repot each year but some of the older established plants need not be moved as often. One gets to know when a plant needs a move, not always to a larger pot however. The look of the top soil of the pot sometimes gives an indication that the plant can do with something fresh in the way of nourishment. Remember that if a plant has grown well during the past season it has almost certainly used up most of the goodness in the soil and will grow on much better if given a repotting. Any plant which has run roots out of the bottom should be moved. See that

all old potting soil is removed and any dead or worn out fibrous roots can also be taken off. The plant will soon make new fibrous roots when placed in sweet fresh soil. See that the fresh compost is crumbly moist, not too wet nor too dry. If too wet it is impossible to firm it down without making mud of the compost and if too dry it cannot be firmed at all and a tall plant would fall over after being potted. Any tall plant should be staked immediately and it can be so done that the stake is invisible from the front. Do not tie too tightly or the plant can be cut when it grows.

Keep a watch for root bug when you are repotting and remove by washing in hot water. You will have to dry the roots of any plant so treated before actually repotting as otherwise you cannot keep the roots separate whilst running in the fresh soil. It is a great mistake to water soon after potting as many plants will rot off especially if repotting is done early in the year before the plant has started to make active growth. Providing the potting soil is fairly moist there should be at least a week before any water is needed. It is a good plan to mark the back of the label with the date of repotting as this will be useful the following year. Such slow growing specimens as *Ariocarpus*, *Pelecyphoras*, *Strombocactus*, etc., need not be moved as often as those plants which grow fairly quickly. When a plant which should make reasonable growth has failed to do so during the previous year it may be that it needs repotting. The soil may have become foul or the roots may have died. It is also sometimes found that the pot is filled with packed roots and all trace of decent soil seems to have gone. It is of little use expecting such a plant to grow well until it has been moved to fresh quarters. Where the base of a plant has become dried and very brown it will be found a good plan to cut some of this away and dry the base again before repotting. It is surprising how soon the plant will send out new roots from the cut part. This treatment must only be done when the sun has some power, say from the beginning of May.

Once watering begins in earnest make sure that the plants get enough at each watering. If sufficient space has not been left at the top of each pot it may not be possible to give enough water at each watering to damp all the soil in the pot with the consequence that the centre of the ball of soil may never get wet all the year. A good watering will do no harm providing the soil dries out before the next is given. With care the coming year should bring forth as many flowers as appeard last year and many seeds will be formed, especially if the flowers are pollinated when open during sunny weather.

TABLE SHOW RESULTS, 1960.

1st. Mr. Read, Cheam—12 points.

2nd. Mrs. Sharman, Mill Hill—5 points.
Mr. Collings, New Barnet—5 points.

3rd. Miss Pilcher, St. John's Wood—4 points.
Mr. Naylor, Barking—4 points.

We do hope that members will make special efforts to support the two Shows in 1961 and make them complete successes in numbers as well as quantities. We have repeatedly asked for better support of these shows and we trust that the members will make a special effort this season.

We also hope that members will increase the exhibits at the Table Shows. It is so little effort to bring *one* for this purpose and we feel that every member can do something in this direction.

We hope that it has not escaped the notice of members that 1961 is the 30th anniversary of the founding of the Society and we trust that everybody will do everything they can to make it as memorable a year as possible. Remember what the Society has done to popularise our subject and we are sure you will realise that your own celebration will make our Shows and Table Shows a greater success than ever.

A NOTE ON STAPELIA x MAGNA Berger

By L. E. NEWTON

In a recent issue of this Journal a photograph was published as *Stapelia magna* (Vol. 21, p. 87: Oct. 1959). This name, however, does not appear in Jacobsen's Handbook, for it is one of the many *Stapelia* hybrids which he decided to omit (vide Vol. 2, p. 847). The point of interest about the publication of a photograph with this name is that White and Sloane failed to find a plant which fitted Berger's original description[1] when they were preparing for their monograph on the *Stapelieae* in 1933. Even with the appearance of the second edition of their great work in 1937 they had still not found a plant which answered satisfactorily to the description, althouth they said that plants bearing the name were often to be seen in collections[2]. Berger did not know the origin of his new hybrid. He obtained it as *Stapelia grandiflora* several years before the publication of his book. He points out that in many respects it is very like *S. x cantabrigiensis* Bgr. (described in the same book and also omitted by Jacobsen) and gives the opinion that *S. hirsuta* was probably involved in the parentage of both these plants.

It would be interesting to know how closely Miss Martin's plant agrees with Berger's description, a translation of which is given below. I should not like to offer a definite opinion based solely upon the illustration, but the left-hand one of the two stems in the photograph does not appear to be very square and there is no sign of pubescence on either the stems or the pedicels.

S. x magna Berger.—Stems strong, 25-30 cm. long and 2 cm. or more thick, very pubescent, the edges only slightly prominent and the sides only slightly sunken, thus square in transverse section. Inflorescences from the base. Pedicels strong, pubescent. Corolla 13-16 cm. wide, split into five somewhat over halfway down, with lanceolate lobes scarcely twice as long as broad, entirely dark brown especially in the centre, with numerous concentric transverse weals, those on the lobes more distant from one another, rather undulating and occasionally rather yellowish; whole of inside of corolla with the exception of the upper half of the lobes, bordered with violet-red finely-curled, soft hairs and abundantly covered with longer and somewhat more rigid hairs. Segments of the inner corona deeply cleft, extended in front into a pointed horn.

References:

1. BERGER, Stapelieen und Kleinien, Stuttgart, 1910. p. 295.
2. WHITE & SLOANE, The Stapelieae, 2 edn., Pasadena, 1937. p. 548.

LISTS RECEIVED

S. V. Smith, Wyck Hill Nurseries, Stow on the Wold, Glos., a twelve-paged mimeographed list of cacti and succulents.

Succulenta Nurseries, Suvla, Military Road, Hout Bay, Cape, South Africa: a twenty-paged printed list of cacti and succulents with some notes on the cultivation of succulents.

E. Hepworth, 133 Ambleside Avenue, Telscombe Cliffs, Sussex: an eight-paged printed list of cacti and succulents including 105 different varieties of Lithops.

When giving the Society's Fixtures for 1961 in the October, 1960 Journal the date for December was unfortunately omitted. The Film Show by Mr. Rowley will be on the 5th December, 1961. Will members also note that there will be no R.H.S. Shows on the dates of our own January, May and December, 1961, meetings.

When you have the opportunity of photographing any of your plants will you please remember that I badly need more photographs for illustrations in the Journal.

CULTIVATION OF SUCCULENTS

By Mrs. M. STILLWELL

By the time you are reading these notes another New Year will have dawned and let us hope it will bring better weather than the previous one did. At the time of writing, which is early December, everything is still very damp and wet and, in spite of a concrete floor in the greenhouse, water has managed to seep through owing to the garden being so water logged. I dare not think what it would have been like had the floor not been of concrete. Owing to the unusual damp conditions, I have had trouble this year with a black mould on some of the succulents. I have never before been troubled in this way, and it makes those plants look very unsightly. A large plant of *Crassula arborescens* was one of the worst affected. It has been almost impossible to risk watering anything under these conditions for fear of rot setting in and I have found it far safer to keep the plants dry, even to the point of shrivelling. They usually soon fill out again in the spring, and are as good as ever.

Some of the rare and more delicate succulents I have placed in the propagator with the top off, so that they get just a little bottom heat during the worst part of the winter.

I was glad that earlier in the year I had put a good top layer of coarse sand around the neck of all the *Conophytums*. This enabled me to water them without fear of rotting in the autumn as the water went straight down to the roots. The Bilobe *Conophytums* flowered very freely as usual, but the small globular types, which bloom somewhat later, were not quite so prolific, owing to the dull weather and lack of sun to force the buds out. *Argyrodermas* usually flower for me from every head, but this year proved the exception to the rule. Most of them came into bud very late and one or two are still trying to open, now, in December, others decided to give flowers a miss for the year. *Glottiphyllums* do not seem troubled by the weather and go on blooming away rain or shine. I have had several go on blooming all through the winter and personally I like them, they are the type of plants that thrive on neglect and should never be too generously watered at any time to get the best out of them. *Gibbaeums* do not seem to worry about the weather either; being winter growers they manage to bloom during the darkest days. At this date, I have *G. molle*, *G. pilosulum* out and the following in bud: *G. shandii*, *G. perviride*, *G. album*, *G. velutinum*, etc. They need a little water during the winter when the weather is suitable.

Hoya bella is a delightful little plant that should not be allowed to dry out completely in the winter or all its leaves will drop, it likes a little extra warmth as I find it is rather more delicate than the ordinary *Hoya carnosa*. It grows very well under the staging, particularly if you have glass to the ground, as it does not like too much sun in the summer. The highly scented white waxy flowers grow in bunches from the underside of the branches. *Hoya carnosa* has a similar type of flower but pink. My large plant of the latter had got rather old and woody, so last spring I cut out all of the old growth and it has now made a number of new runners from the base, showing evidence of flowers to come. This plant does not take too kindly to repotting and root disturbance and often sulks and refuses to flower the following year. Cuttings root well in coarse damp sand during the summer months.

I am very fond of some of the choicer and more compact type of *Aloes*. One of the most attractive is *A. concinna*. It has bright green leaves in rosette form, prettily patterned with white markings. It offsets freely from the base and makes a good plant for the house. I have had one in my collection for a number of years, but had never seen it in flower. On looking around the greenhouse last week, I noticed the main rosette has produced a flower stalk. There is one plant that did not object to our summer. *Aloes* are ideal for those people who have a greenhouse that does not get too much sun. There are many comparatively small growing ones that would do well on window sills and our old friend *A. variegata* springs to mind, this is a plant that most beginners manage to obtain as it is very easily flowered even indoors. *Aloe plicatilis*, the fan-shaped *Aloe* is very distinctive, also *Aloe brevifolia* which forms compact rosettes and always looks good. A small very neat little plant, looking very like a *Haworthia*, is *Aloe humilis*. It flowers freely in the spring from quite a small plant and the flowers are a bright orange red. If you have ample space, I would recommend *A. distans*, *A. greenii* and *A. mitroformis* as being well worth having. Everyone should try to obtain a small plant of *Agave victoriae reginae* to add to their collection, the firm dark green leaves appear to be hand painted with a whitewash brush. A small unblemished plant will give you great joy as it develops. On the whole, *Agaves* tend to grow rather too large for the average collection. They do well out of doors for the summer. Be careful if you are spraying with Malathion, as some of my *Aloes* and *Agaves* got badly marked with it this last year and it takes some time for them to grow out of it. *Agaves* unlike the *Aloes* die after flowering, but as they do not bloom until they have reached a great age and are very large plants, that need not worry the modest collector.

My *Haworthia maughanii* flowered recently and I notice it has several seed pods. I find this plant much easier to grow than its close relative *H. truncata* which, with me, used to make one new leaf and lose two old ones until it finally died. I may get another one of these days.

My *Euphorbia splendens* (*milii*) always drops all its leaves in the winter as I keep it rather on the dry side for safety. This year, although most of the leaves have gone, it is still full of bloom. I notice several other *Euphorbias* are also showing bud, but I shall still continue to keep them on the dry side during the winter, it is far wiser, particularly if the temperature goes below 50 degrees at night. I try to keep mine around 45 degrees. The electric heaters barely maintain this temperature if the weather is very cold, so I use two small oil heaters as well. Oil is not detrimental to the plants providing that the stoves are kept clean and the wicks attended to to ensure they do not smoke. I think if I was starting again from scratch with greenhouse heating, I should have soil heating cables which distribute the heat evenly and where it is really required.

I have a large pot of *Cerochlamys pachyphyllum* which has been a mass of mauve flowers for the last two months. More than one flower comes from each head and as one flower fades another is ready to open. They are borne on stalks about four inches high. This is a *Mesem.* I can strongly recommend as it makes a nice splash of colour at the end of the year. It is an autumn and winter grower and rests most of the summer. It likes to get really established before flowering really freely although you may get the odd one or two on quite small plants. I have another much smaller plant which appears to be identical, but has a much deeper, almost violet flower.

Many people will soon be thinking of seed sowing. I personally do not sow anything until March, partly I think because I have to be in the right mood for it and when it is cold and wintry I cannot work up sufficient enthusiasm. I do not grow large quantities of seed, but only those things that are unobtainable from any other source. I am quite sure that a lot of good seed is wasted every year by people who are over anxious and must get their seed in early. Unless you are a commercial grower, or someone with plenty of experience, I would advise you to wait until the first signs of spring.

REVIEWS

The past quarter has seen the publication of four new books on our subject. The most important is "Cacti" by Walter Kupper, illustrated by Pia Roshardt and edited by Mrs. V. Higgins. It is published by T. Nelson & Sons Ltd., Parkside Works, Edinburgh 9, price 42/-. This is the English edition of the German and French editions of Kupper's famous book. The illustrations are the same and, so far as I can judge, the letterpress is simply a translation of the original German text. Although it is but the English edition, this does not belittle the value of the book. Anybody who has seen the original edition will realise how valuable is the book and how wonderful Pia Roshardt has been with the illustrations.

Mr. A. J. Huxley has once more given us another book on cacti and succulents. It is a 60-paged book with over 300 photographs and drawings and is published by W. H. & L. Collingridge Ltd., 2/10 Tavistock Street, Covent Garden, W.C.2, price 7/6. The letterpress gives rather brief descriptions of the plants illustrated. The value of the book is in the illustrations which should enable many plants to be identified and, in fact, the book is called "Picture Book No. 2."

Messrs. Collingridge also give us a 123-paged book, "Collectors' Cacti," by E. V. Bloom, price 30/-. The author restricts his illustrations and his letterpress to what he calls the rare cacti, such as *Ariocarpus*, *Aztekium*, *Negomesia*, *Encephalocarpus*, *Leuchtenbergia*, *Obregonia*, *Strombocactus*, *Toumeya*, *Epithelantha*, *Lophophora*, *Pelecyphora*, *Solisia*, *Astrophytum*, *Wilcoxia*. There are 69 illustrations and 33 line drawings. It is stated that the book was written by the author when he was 18 years of age. It is hard to believe that this is possible and in fact I seem to trace some of the contents from a well known personage in our subject. The author thanks many well known people for the help they have given him and this may be the cause of the previous comment. If, indeed, the author did write the book when he was 18 years of age—he is a very remarkable young man.

A further book that was published in the past quarter is "Variegated Foliage Plants" by Paul Fischer, published by Blandford Press, 16 West Central Street, London, W.C.1, price 12/6. There are given details and illustrations of 137 genera of these variegated plants, but many of them are of genera of succulent plants. It is an extremely interesting book.

All the above books can be obtained from booksellers advertising in the present number of this Journal.

NEW WEINGARTIAS

By F. RITTER

Weingartia longigibba Ritter sp. nova

viridis pallidis, 5–9 cm. crassus, longis atque latis, caespitosis, sine radice turgida, vertice aculeato non depresso; costis ca. 10–13, tuberculis dissolutis; tuberculis productis 2½–4 cm. longis, 1– plus 1½ cm. altis, sine menta areolata; sulcis areolatis descensis; areolis sitis superioribus partibus tuberculorum plus via semilongis tuberculorum basibus descendendis, fulvis pallidis coactis, ¾–1¼ cm. longis, 3–6 mm. latis, ¾–1¾ cm. remotis; in parte areoli superiore pulvine dense albolanate; aculeis cinereofulvis pallidis, coloratis aequalibitibus, acuminibus fere obscuris, rectis vel paene curvatis; marginalibus semi-exteriore dispositis, aliquid rudibus, 7–12, 1–2½ cm. longis; centralibus, rudibus, 3–8, 1½–3½ cm. longis; floribus ex vertice, 2–3½ cm. latis extendis; ovariis 3–4 mm. longis, ca 3 mm. latis, viridibus, vix semitectis squamis brevis, latis, fere albis vicinis, nudis; nectariis reductissimis, ½–1 mm. longis, angustissimis, apertis ; tubis 11–17 mm. longis, nudis, partibus inferioribus plus infundibuliformibus quam superioribus, squamis ovalis, ½ cm. longis, viridibus; filamentibus flavis pallidis, 3–5 mm. longis, insertionibus supra muro toto tubulato; antheriis albogilvis; stilis 12–16 mm. longis, viridibus pallidis, fibris stigmatarum 5–7, flavis pallidis, 2½–5 mm. longis; tepalibus latis dilatis, aureis vel pallidoaureis, 11–16 mm. longis, 3–4 mm. latis, semilatis base, cacuminibus rotundis; fructibus 1 cm. longis, 6 mm. latis, summis angustis, squamis acque ovariis; seminibus paene paraformibus, 1 mm. longis, ¾ mm. latis; testis tenuitibus tuberculatis complanatis, nigribus; hilo albo, basale, fere depresso. Patria: Bolivia, Prov. Oropeza, Rio Chico.

Body: extended long as broad, later double or three times as long as broad, 5–9 cm. in diameter, sprouting at the base. light green, lacking swollen rootstock; crown spiny, not depressed. Ribs: divided into tubercles, ca. 10–13 ribs discernible, tubercles longer and larger than those of W. riograndensis Ritter sp. nov., 2½–4 cm. long, 1½–2½ cm. wide, and 1– over 1½ cm. high, steep, lacking a chin below the areole as with W. riograndensis, the areole groove continues downwards as a dividing furrow between tubercles. Areoles: from the upperside of the tubercle down to more than halfway towards the base of the tubercle, pale brownish felted, ¾–1¼ cm. long by 3–6 mm. broad, ¾–1¾ cm. apart. The woolly fluff in floral zone of the areole just as strongly developed as with W. riograndensis, but less so than with W. lanata Ritter sp. nov. Spines: all uniformly coloured, pale grey brown, tips slightly darker, straight or slightly curved. Radials rather coarse, half outwards directed around the areole, the floral zone of the areole free from spines, 7–12 from 1–2½ cm. long, the lowest the shortest. Centrals coarse, rigid, 3–8, from 1½–3½ cm. long. Flowers: near the crown, scentless, 2–3½ cm. long, petals widely spread, 2½–3½ cm. wide. This observation based upon four flowers from different specimens collected in the same locality. Pericarp: 3–4 mm. long, ca, 3 mm. broad, pale green, half or less covered with semicircular, greenish, scarcely white-edged, naked scales, ½–1½ mm. long. Nectary: reduced as with W. riograndensis, ½–1 mm. long, open, narrowed by the style. Nectar not ascertained, probably very scarce. Tube: 11–17 mm. long, naked, upper part 7–8 mm. broad, lower more widely funnelform than the upper part, inside pale yellowish, outside pale greenish yellow, with oval scales from 5 mm. long and 3 mm. broad, with greenish tips, upper and lower scales similarly coloured. Filaments: light yellow, 3–5 mm. long, the shortest uppermost, upright, insertion over the whole tube wall up to the rim of the tube, densest in lowest part. Anthers, whitish cream, rounded, small. Pollen white. Style: pale green, 12–16 mm., with 5–7, 2½–5 mm. long, pale yellow, stigma lobes, not exserted beyond the uppermost anthers. Petals: widely spreading, golden yellow, sometimes lighter gold, tips often yellow ochre, generally spatulate, 11–16 mm. long, by 3–4 mm. broad, narrowed from base to half-length, tips rounded. Fruit: light green, semi-dry, ca. 1 cm. long by 6 mm. broad, the upper end narrowed, dries without bursting at all. Scaled as for ovary, naked. Seed: 1 mm. long, ¾ mm. broad, ½ mm. thick, generally pouchshaped, but only the dorsal surface arched, base not or only slightly contracted. Testa very finely flattened tuberculate, black, Hilum white, slightly depressed, across whole seed base. Habitat: Bolivia, Department of Chuquisaca, Province of Oropeza, on the sandstone rocks occurring on the Rio Chico. Systematics: closely related with W. riograndensis and W. lanata. The differences from both the latter are amplified in the descriptions. Holotype: in the botanical herbarium of the University of Utrecht. This species was found by me in July, 1958 and has my number FR815.

Weingartia erinacea Ritter sp. nova

Viridis, semicomplanatus vel hemisphaericus, 6–15 cm. crassus; sine radice turgida; costis tuberculis dissolutis; tuberculis productis obtusis; 1–1½ cm. altis, cum gibba similis menta obtusa, sub areolis; areolis in partibus superioribus tuberculorum, albis coactis, sitis in canalibus areolatis, 10–15 mm. longis, 4–8 mm. latis, 1–1¾ cm. remotis, pulvine dense, albolanate in parte superiore areoli; aculeis, flavoalbis, acuminibus obscuris, rectis, rigidis, marginalibus in latere dispositis, paene rudibus, 10–18, 1–1½ cm. longis, centralibus fortibus, 2–12, ¾–1¾ cm. longis; floribus ex vertice, 2–3 cm. longis, 2 cm. latis extendis; ovariis 2–4 mm. longis latisque, viridibus, squamis paucis,

brevibus, latis, viridibus pallidis, nudis; nectariis 1–1½ mm. longis, 1–2 mm. latis, apertis; tubis 7–14 mm. longis, partibus inferioribus infundibuliformibus, partibus superioribus paene tubulatis, viridibus, pallidis, squamis latis, nudis, 2–3 mm. longis; filamentibus 3–6 mm. longis, superioribus 2–3 mm. longis, flavis pallidis, insertibus ex base tubis; antheriis gilvis; stilis viridibus, 11–13 mm. longis, fibris stigmatarum 6–9, paene albis, 3–5 mm. longis; tepalibus exterioribus erectis, interioribus latis dilatis, spatulatis, cacuminibus rotundis, 7–9 mm. longis, 2–4 mm. latis, aureis; fructibus, parvis, viridibus, squamis paucis, albis, brevibus latisque; seminibus paraformibus, 1 mm. longis, ½ mm. latis; hilo albo, basale, testis cinereonigris, paene levis.

Patria: Quiroya, Bolivia.

var. **catarirensis** Ritter var. nova

differt a typo, corpibus moniribus; aculeis tenuioribus; tuberculis minoribus; areolis lanatis densioribus; caespitososioribus.

Patria: Catarire ad meridiem Quiroya, Bolivia.

Body: green, semiflattened to hemispherical, 6–11 cm. in diameter, rarely 15 cm., lacking swollen rootstock, generally not sprouting, crown depressed. Ribs: resolved into tubercles; tubercles very obtuse, longish, 1–1½ cm. high with blunt chinlike protuberance below the areole. Areoles: situated on the upperside of the tubercle and buried in the tubercle groove; 10–15 mm. long by 4–8 mm. broad; 1–1¾ cm. apart. The uppermost part of the flowering areoles bears thick, white, woolly pad, (but which is scarce in W. hediniana Backbg.); areoles, white felted.

Weingartia erinacea Ritter

Spines: yellowish white, darker tipped, straight, rigid, sharp, the flowering part of the areole without spines; radial spines sideways directed, rather coarse, about 10–18, from 1–1½ cm. long; centrals short and strong, radiating in all directions, sometimes only 2–3, mostly 5–12, from ¾ to 1¾ cm. long. Flowers: in a semicircle about the crown, straight to somewhat upward curved, weakly scented, 2–3 cm. long, opening 1¾–2¾ cm. broad. These observations based upon seven flowers taken from different specimens collected in similar localities. Pericarp: 2–4 mm. long and broad, green with a few blunt, pale green, naked scales. Nectary: 1–1½ mm. long, 1–2 mm. broad, open. Receptacle: about 7–14 mm. long; lower part funnel form, upper part almost tubular, pale green with 2–3 mm. long and broad whitish green, naked scales. Filaments: 3–6 mm. long, the upper 2–3 mm. long only, pale yellow, insertion from the tube base. Anthers cream coloured. Style: pale green to greenish yellow, 11–13 mm. long, stigma lobes, 6–9, 3–5 mm. long, almost white, clenched or spreading, exserted more or less to the level of the uppermost anthers. Petals: outer petals upright, inner curved outwards, spatulate, outer only slightly narrower, inner rounded, 7–9 mm. long, 2–4 mm. broad, golden yellow, tips darker yellow, outer petals slightly greenish. Fruit: small, green, somewhat elongated, with a few, whitish, short and very broad, naked scales. Seeds: pouchshaped, 1 mm. long by ½ mm. broad and thick; testa dull grey-black, with very delicate almost flattened tubercles; hilum white, basal, across the whole seed width. Habitat: Quiroya, Dept. Cochabamba, Prov. Campero, Bolivia. Systematics: belongs particularly with W. sucrensis Ritter sp. nov. and possibly also with W. multispina Ritter sp. nov., although widely differing from the latter in spination. The differences are outlined in the descriptions. Holotype: in the botanical herbarium of the University of Utrecht.

var. **catarirensis** Ritter var. nov.

differs from the species by its smaller body, more delicate spines, smaller tubercles, stronger woolled areoles and greater tendency to offset. Habitat: Catarire, south of Quiroya, Cochabamba, Bolivia. This species and its variety were discovered by me in July, 1958 and have my numbers FR812 and FR812a respectively.

Weingartia riograndensis Ritter sp. nova

Viridis, 5–10 mm. crassus, hemisphaericus, sine radice turgida, inclinatione pullulando, vertice paene depresso; costis tuberculis dissolutis; tuberculis productis, 1–2 cm. longis, ¾–1 cm. altis, sine menta sub areolis; sulcis areolatis prope base descensis; areolis sitis in superioribus partibus tuberculorum plus via semilongis tuberculorum basibus descendendis, albis coactis, 5–8 mm. longis, 2–4 mm. latis, ¾–1¾ cm. remotis, in parte superiore areoli pulvine dense albolanate; aculeis, cinereoflavis vel cinereofulvis, coloratis aequalibiteribus, acumininbus obscuris nonnihil, erectis curvatis nonnihil, marginalibus in latere vel exteriore nonnihil dispositis, paene tenuibus, 5–10, ¾–2 cm. longis; centralibus, fortioribus, rigidis, acutis, 3–6, 1–2½ cm. longis; floribus ex vertice, 2–3 cm. longis, 2½–2¾ cm. latis extendis; ovariis 3–4 mm. longis, 3–3½ mm. latis, viridibus, squamis brevis latis, albopraetextis, nudis paene tectis; nectariis catilloformibus, 1 mm. longis, angustis, semiapertis, nectare raro; tubis, 10–13 mm. longis, nudis, partibus inferioribus plus infundibuliformibus quam partibus superioribus, squamis ovalis, 3–7 mm. longis, summis fulvorubris; filamentibus albis, 4–6 mm. longis, insertionibus paene absentis 2–3 mm. summis infra annulis filamentorum muro tubulato; antheriis gilvis; stilis viridibus pallidis, 15–16 mm. longis, fibris stigmatarum 5–6, flavis pallidis, 4–5 mm. longis; tepalibus dilatis, aureis, 11–13 mm. longis, 3–4 mm. latis, basibus artis, cacuminibus

rotundis vel acuminatibus; fructibus ¾–1 cm. longis, ½ cm. latis, viridibus, squamis vicinis, alboviridibus, brevis latisque; seminibus paene paraformibus, 1 mm. longis, ¾ mm. latis, basibus fere contractis; testis tenuitibus tuberculatis, rubronigris; hilo albo basale, basibus paene rugatis. Patria: Puente Arce, Rio Grande, Bolivia.

Body: grass-green, 5–10 cm. in diameter, later a little cylindrical, lacking swollen rootstock, somewhat inclined to sprout at the base; crown, spiny and only slightly depressed. Ribs: resolved into tubercles; tubercles elongated, about 1–2 cm. long and ¾–1½ cm. broad, near the top of the plant ¾–1 cm. high but flattened towards the base of the plant, lacking the chinlike protuberance below the areole. The tubercles are not arranged on the ribs distinctly, they are separated by a peculiar irregular system of furrows, the areole groove continued down as a separating furrow for the next tubercle. Areoles: situated on the upper end of the tubercles, from above to more than halfway down towards the base of the tubercle, white felted, 5–8 mm. long by 2–4 mm. broad and from ¾–1¾ cm. apart. The flowering part of the areole appears thickly filled with fluffy wool, nevertheless considerably less extensively than with W. lanata Ritter sp. nov. Spines: young spines pale yellowish grey to grey brown, evenly coloured, tips somewhat darker; spines somewhat upward curved; radials more or less slender, laterally to somewhat outwards disposed around the areole, about 5–10, from ¾–2 cm. long, the lowest the shortest; the floral zone is free from spines; centrals coarser, rigid, 3–6, from 1–1½ cm. long, widely spreading as with other species and often interlacing with the radials. Flowers: from the crown, scentless, 2–3 cm. long, opening 2½–2¾ cm. broad. These observations were made upon two flowers from several specimens collected from similar localities. Pericarp: 3–4 mm. long, 3–3½ mm. broad, pale green, almost covered with semicircular, white, adjacent, naked scales, 1–2 mm. long. Nectary: plate-like, pale, only 1 mm. long and 2 mm. wide, half-closed by the style and lower filament ring; nectar scarcely exists. Receptacle: about 10–13 mm. long; upper part 7–8 mm. wide, funnel-form, although the lower part even more funnel-form, upper part not so tubular as with other weingartias; inside pale yellowish, outside pale greenish yellow with semicircular or more elongated oval, 3–7 mm. long by 3–4 mm. broad, naked scales, obtuse and pointed, the lower scales pale as the tube, the upper scales dark brown red, white-edged. Style: pale green, 15–16 mm. long, with 5–6, pale yellow, somewhat spreading, somewhat pointed, 4–5 mm. long, downy stigma lobes, not exserted beyond the uppermost ring of anthers. Petals: outspread and curved outwards, golden yellow, 11–13 mm. long, by 3–4 mm. broad, hardly narrowed at base, tips rounded or short pointed, spatulate, opening in the morning. Fruit: ¾–1 cm. long, by 4–6 mm. broad, yellowish green to reddish green, with 2–3 mm. broad and 1–2 mm. long, greenish, white-edged scales with outward curved small spikes. Base of fruit, 2–3 mm. wide and withdrawn. Seed: 1 mm. long by ¾ mm. broad by ½ mm. thick, generally pouchshaped but with the dorsal surface arched strongly, somewhat narrowed at the base. Testa, reddish black, with very delicate, flattened, tubercles. Hilum, white, basal, somewhat folded over the end of the testa like a lip.

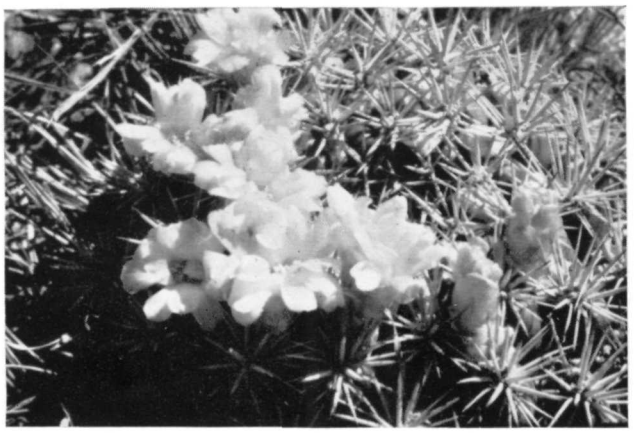
Habitat: Bolivia, Rio Grande near Puerte Arce.

Systematics: closely related to W. pulquinensis Cardenas and W. longigibba Ritter sp. nov. Differences from W. pulquinensis are (according to studies based on material collected from the type locality): lesser number of radial and central spines, stronger divergence of the centrals, strong growth of woolly fluff in the floral zone of the areole and which is absent in W. pulquinensis, the whitish wool in the areole (brownish yellow for W. pulquinensis), larger seeds, distinctly tuberculate (almost smooth with W. pulquinensis), contracted basal end (not so in W. pulquinensis), reddish black in colour (dull black for W. pulquinensis), quite dissimilar flowers and fruit. The differences from W. longigibba are manifest from the descriptions given here. The latter grows locally with W. riograndensis, but both species preserve their type identity, in the same locality, without an intermediate form, so proving their status as separate species and not varieties of a single species.

Holotype: in the botanical herbarium of the University of Utrecht, Holland.

This species was discovered by me in July, 1958 and has my number FR813.

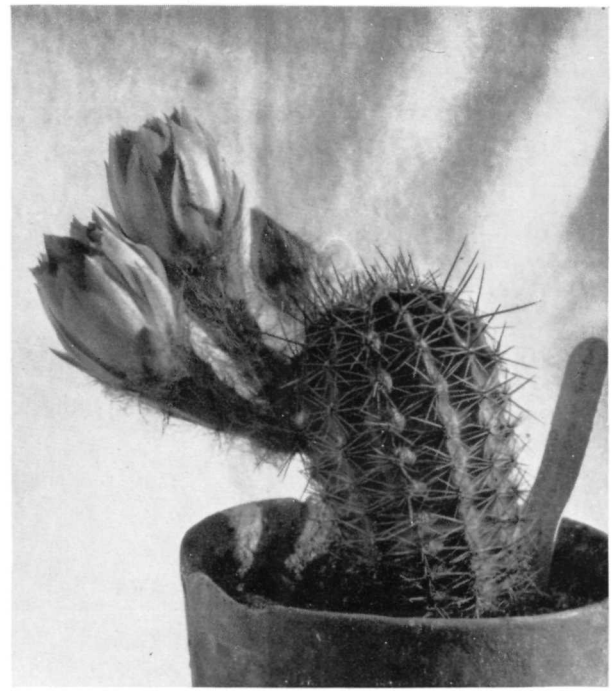
Weingartia longigibba F. Ritter



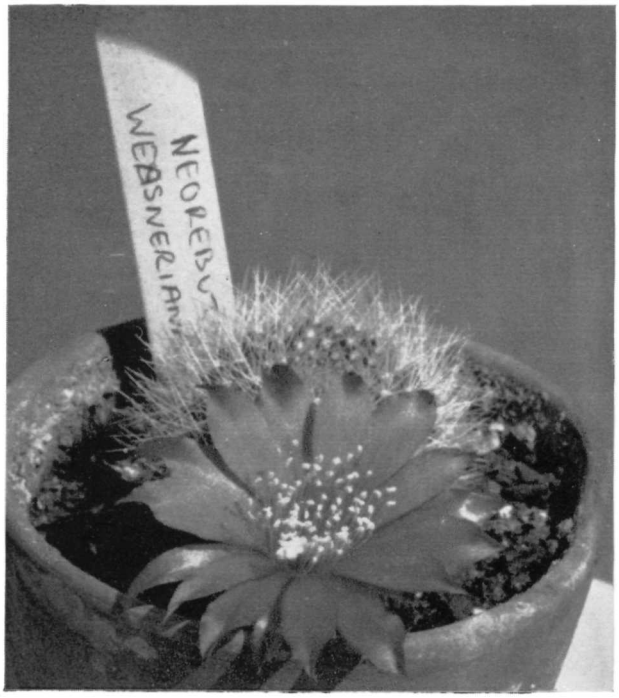
Weingartia erinacea F. Ritter

Weingartia riograndensis F. Ritter

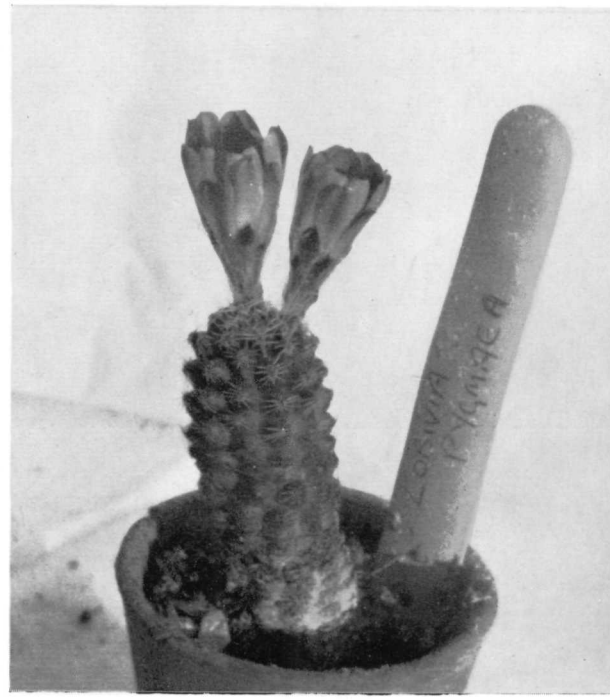
Rebutia pseudodeminuta



Hymenorebutia pseudoachensis



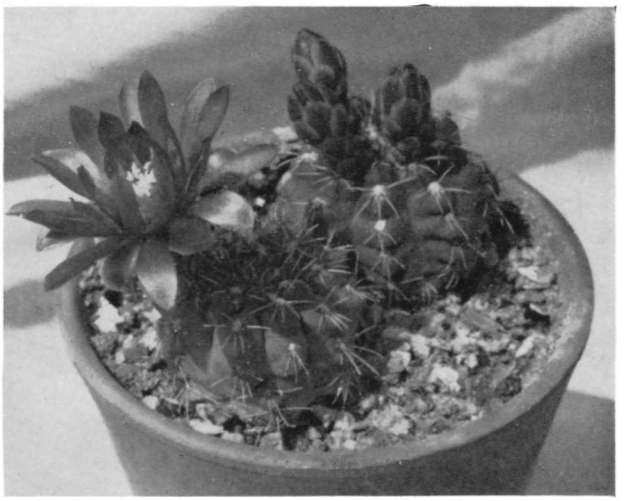
Neorebutia weasneriana



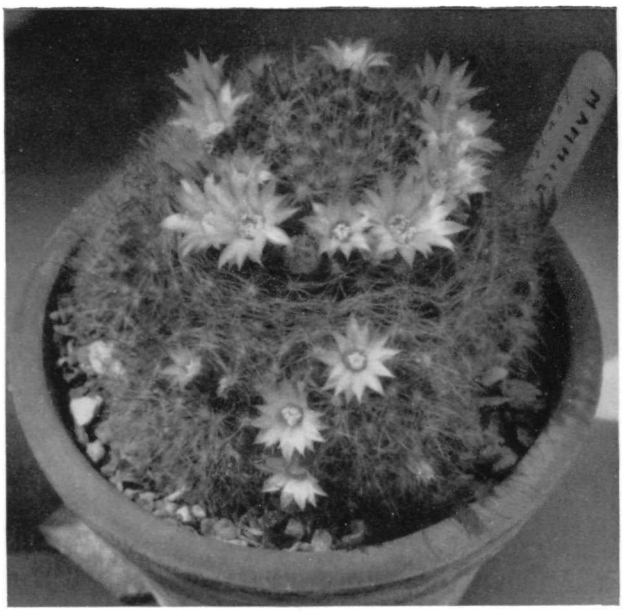
Lobivia pygmaea

Four photographs by G. A. Burton

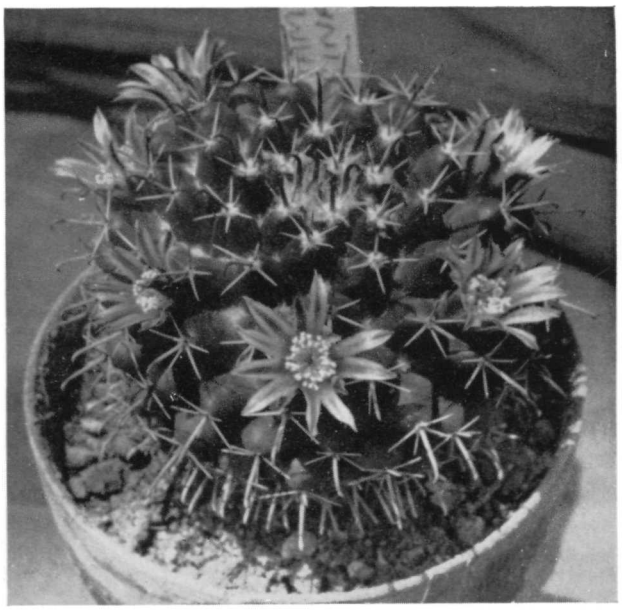
Lobivia obrepanda



Gymnocalycium venturianum

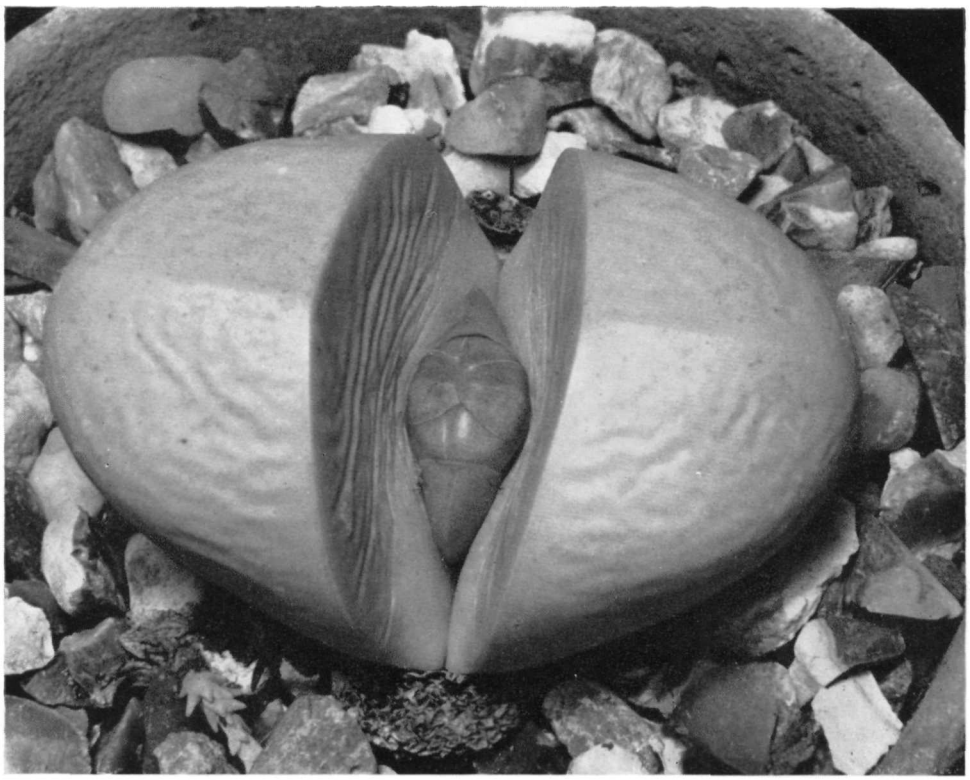


Mammillaria kunzeana

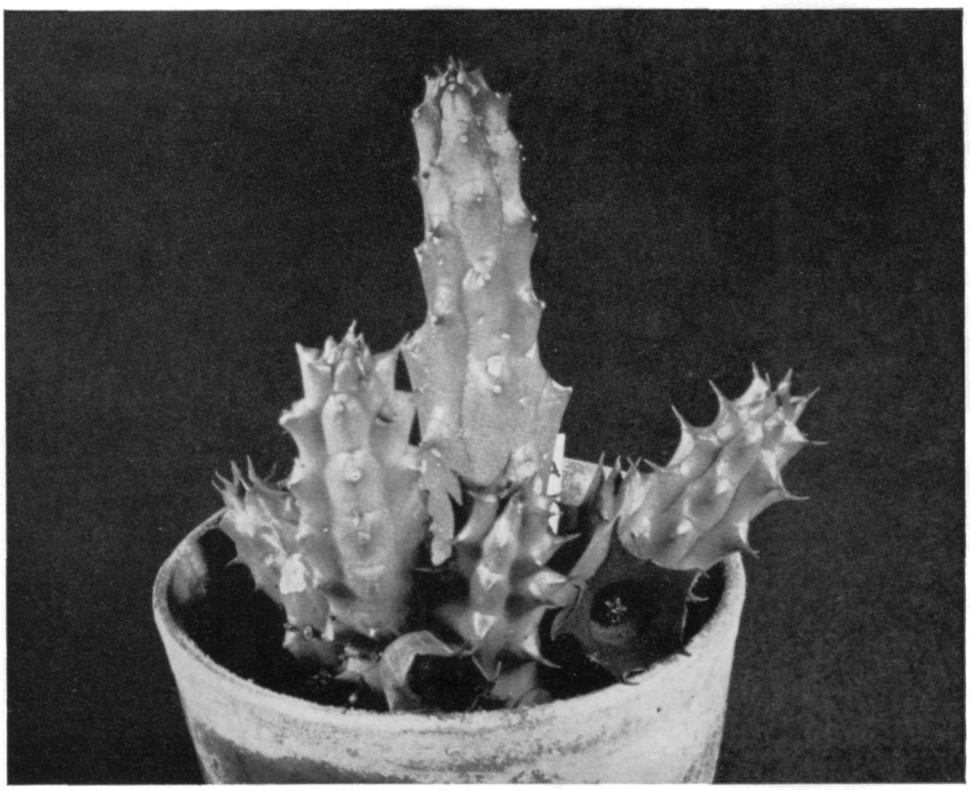


Mammillaria uncinata

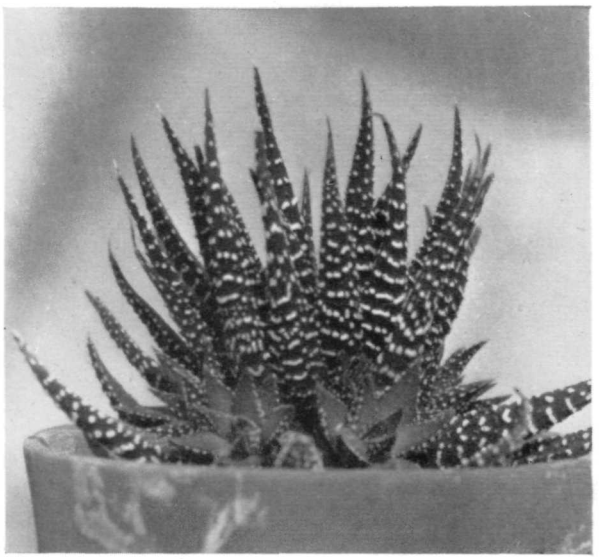
Four photographs by G. A. Burton



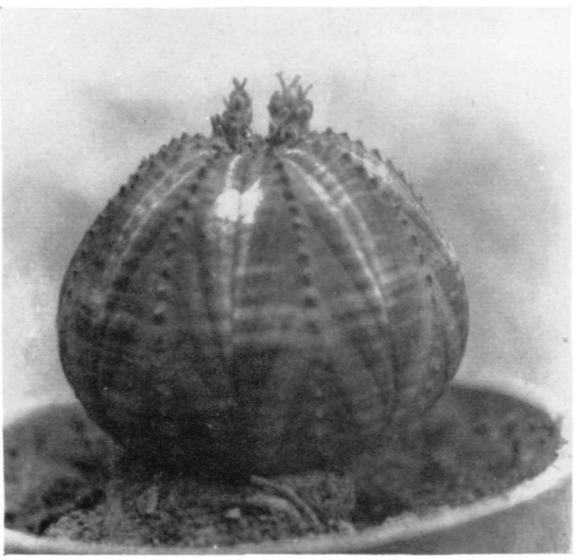
Argyroderma octophyllum



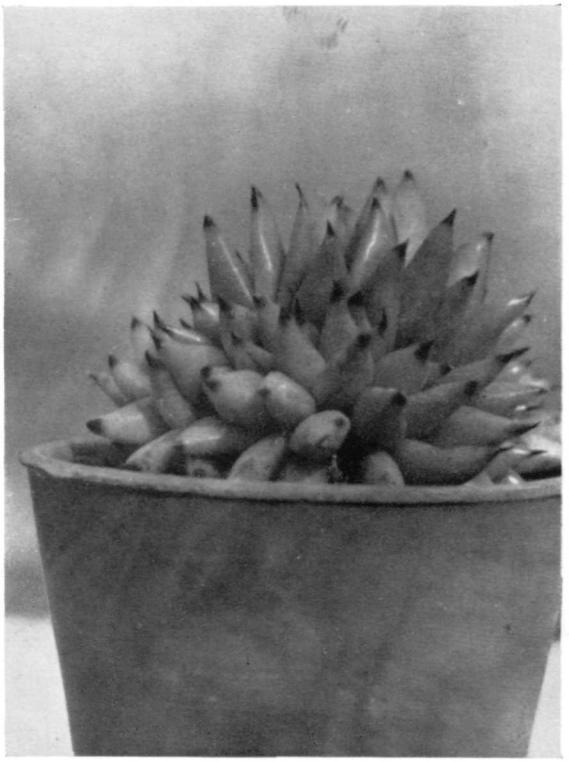
Huernia schneideriana ? Two photographs by R. H. Shepherd



Haworthia margaritifera



Euphorbia obesa



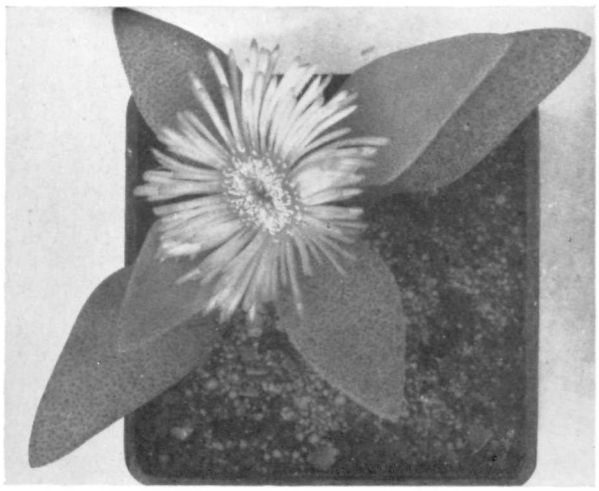
Urbinia agavoides

Crassula gilii

Four photographs by Trecastle Nurseries

Argyroderma testiculare

Lithops kuibensis

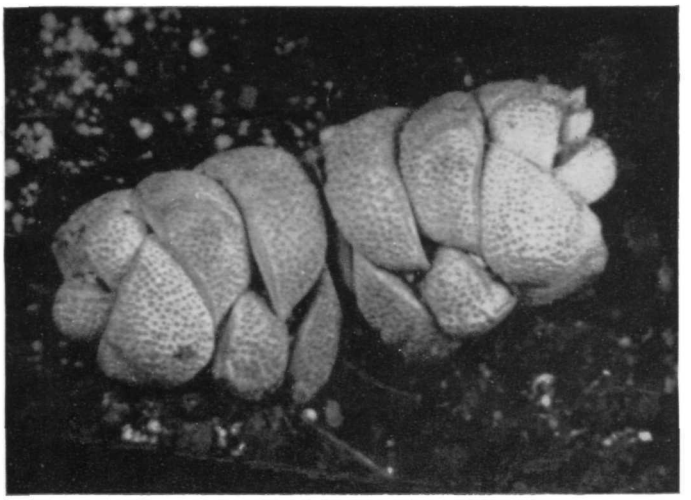


Pleiospilos compactum

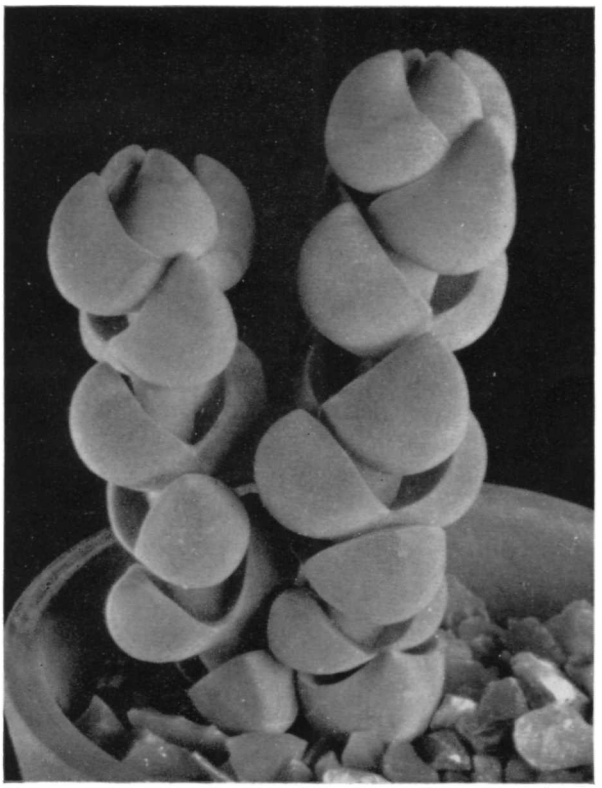
Lithops lericheana

Four photographs by Miss M. J. Martin

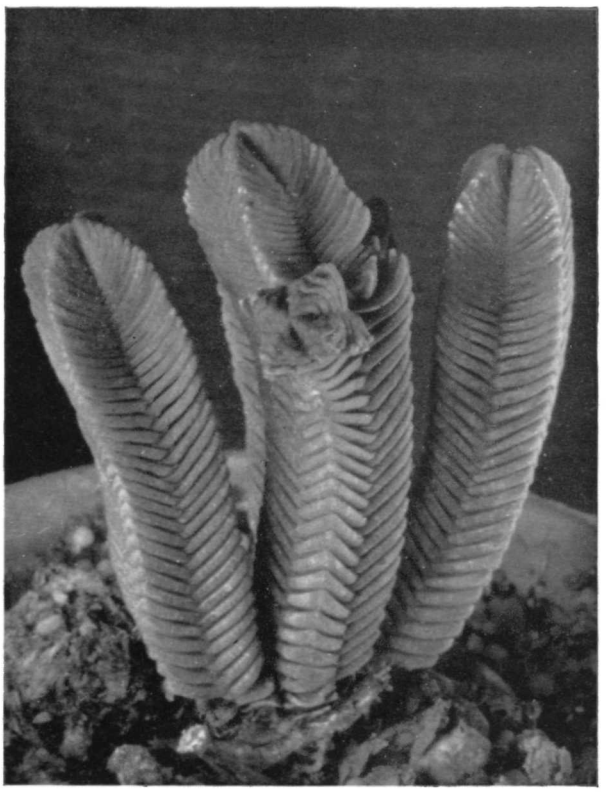
Euphorbia globosa



Crassula deceptrix



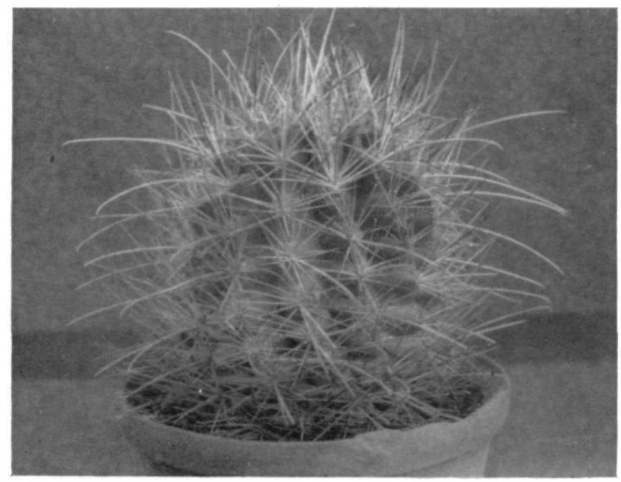
Crassula arta



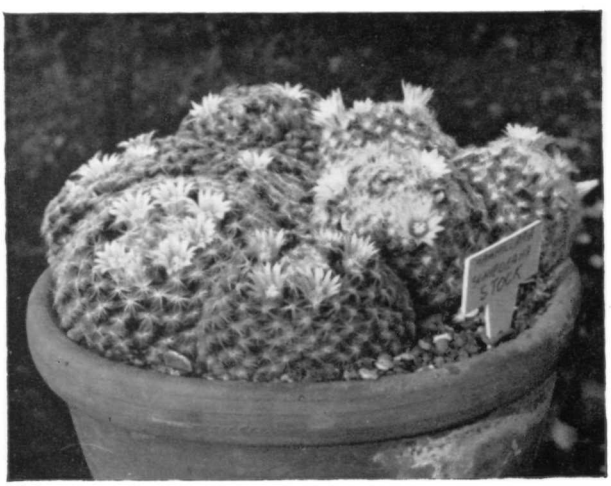
Crassula pyramidalis

Four photographs by Miss M. J. Martin

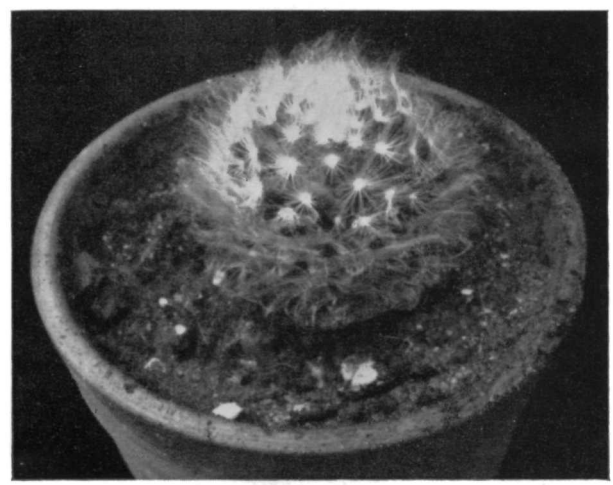
Coloradoa mesaverdeae



Sclerocactus whipplei



Mammillaria schiedeana



Mammillaria cephalophora

Four photographs by Mr. A. S. Jones

SUCCULENT NAMES

By RICHARD A. COLLACOTT

Any enthusiastic cactophile can describe the characteristics of a particular plant, just by knowing the meaning of its botanical name—he need not have to know the plant—or even have seen it! This at least is one interest I find in studying a classical language at school. Latin is the most useful of these languages, I find, yet the Greek language has some very near equivalents, e.g., the Latin word "Cactus", and the Greek word "Kaktos".

When talking seriously about cacti, the botanical name, which is Latin (of a sort) is used. The reason for that is because the common names are not at all precise. All the padded *Opuntias*, for instance, are called Prickly Pears, while the botanical names could select one particular species. Another reason for botanical names, is so that the names become international, and so could be understood throughout all the different countries of the world, while the common names would all be in different languages.

There is a reason for all succulents being named what they are—usually because of certain features which they have, though sometimes where they are found, and even less often, who discovered them.

For those who do not know a classical language, the common names of succulents are exceptionally useful, although they are sometimes deceptive.

The humble *Astrophytum myriostigma's* name comes from the Latin neuter noun, "Astrum," which means "A Star," and this cactus is commonly called the "Star Cactus." The species, myriostigma, comes from "Miriostigmus," which means "covered with scales or dots." This answers fully its description—it is generally globular, as all *Astrophytums* are, it is star-shaped, and covered with many white dots. *A. ornatum* means a decorated (ornate) Star Cactus.

The Old-Man-Cactus, *Cephalocereus senilis* is derived from the Greek word "Kephali," which means "a head," the Latin "Cereus," which means "wax-candle shaped," and the Latin "Senex," which means an old man. The most prominent feature of an elderly man is his white hair, and the Old-Man's-Head-Cactus is smothered with long, white, flowing locks.

The much despised *Chamaecereus silvestrii*'s name is from the Greek "Chamai," meaning dwarf, the Latin "cereus," meaning "candle-shaped," and the Latin "Silvester," which means "wild." This cactus creeps along the ground, and very prolifically at that, and to my mind, it has a very apt name.

The very watery *Crassulas*, for obvious reasons, come from the Latin adjective "crassus," which means "fleshy" or "thick."

The name "Echinocereus," a most prickly genus of Cactaceae comes from the Latin for a hedgehog ("echinus") and "cereus," the reason being quite comprehendable.

The *Echinocactus* also comes from the same word as *Echinocereus*—"echinus," meaning "a hedgehog," though from the Latin "cactus," or the Greek "Kaktos," which means "a prickly plant." They are therefore called "hedgehog-thistles" in the West Indies and Mexico, where they grow uncultivated.

The Christmas Cactus has three botanical synonymatic names. The name "Zygocactus truncatus" is derived from "Zygomeris," which means "yoke-shaped," "cactus," which means "a prickly plant," as aforesaid (although the Christmas Cactus has rather insignificant prickles) and "truncatus" which means "ending abruptly, as if cut off," as the single pads of a Christmas Cactus are. When it is called "Phyllocactus truncatus," the name is derived from "Phyllophorus," which means that the buds are produced at the summit of the stem, or richly covered with leaves. A little more exactly, the name is derived from the Greek noun "Phullon," which in English means "a leaf." The name "Epiphyllum truncatum," which this cactus is more often called than "Phyllocactus truncatus" is formed from the Greek words "Epi"—upon, and "Phullon"—a leaf. This is because the blooms as already stated, are produced at the summit of the leaves.

The widespread "Faucaria tigrina," or Tiger's Mouth succulent has a very fitting name. This plant's leaves are arranged in such a way as to resemble a hungry open mouth. The name is from the Latin word "Fauces," a throat, and "tigrinus"—tiger-like. The other species, *F. tuberculosa* has fewer teeth, is dark green with white warts, and a good deal fleshier. The use of Latin would help to identify this species, as "tuberculosa" comes from "tuberculosus," which means, "consisting of tubers."

The meaning of "Ferocactus" is fairly well known—from "Ferox," which means strongly fortified (with spines). "Ferox," has contracted into English in the word "ferocious," and this succulent has a very ferocious look.

The "Myrtillocactus geometrizans" is a columnar, angular cactus, with very short spines. It is called by its common name, "Blue Myrtle," and that is what *Myrtillocactus* means.

"Opuntia," is an example of place-naming of succulents. Many species of this wide and varied genus of Cactaceae are to be found in Opus, a town of Loeris in Greece.

With the *Oreocereus*, the common name is an almost direct translation of the botanical name. It is derived from "Oros," which, translated means "a mountain."

The latter is a small list to add to my point, on the use of a language. I hope that many readers will find a use of a dead language, in livening up a hobby in its duller moments.

REPORTS OF MEETINGS

9th August, 1960. Mr. P. V. Collings. Cereus.

Under the subject heading of "Cereus" Mr. Collings said that he did not propose to range over the vast field which the title covered but to speak on those plants of which he had personal experience.

He first gave the names of the plants with any comments which he considered useful and then followed with a show of coloured slides of many of the plants with an additional and characteristic commentary.

Among the plants referred to were the following.

Borzicactus aurivilus: Notable for its very fine spines which, as indicated by its name, are yellow. His plant is from 7 to 8 inches high and is a slow grower. The largest he has seen was 12 inches high. He suggested that it was advisable to remove any offsets and keep to a single plant. This should only be done when the offsets are large enough to stand the operation. If this is not done the parent stem is liable to devote its energies to the young to the detriment of itself. *Carnegia gigantea*: The giant cactus of Arizona and its "national" plant. In its natural habitat it grows to enormous heights, up to 70 or 80 feet. It is quoted as being mature when a thousand years old. Mr. Collings' plant is 18 inches high having grown 6 inches in the last eighteen years. *Pitanthocereus peruvianus*: The well-known "*cereus peruvianus.*" *Pitanthocereus jamacaru*: With four-sided body and brilliant yellow spines. Grows to 25 to 30 feet high. *Pitanthocereus chalybaeus*: With blue body. Mr. Collings' plant died at 18 inches. *Cleistocactus baumannii*; *C. strausii*: Well known plants the flowers of which consist of a tube only. They never open but throw the pistil through the centre. They are, however, self setting. *Harrisia martinii* and *H. bonplandii*: The first has angular ribs and very long central spines. Bore white flowers at 4 feet high. *Heliocereus speciosus*: Plant with three or four angles and vivid red flowers with rich cyclamen coloured centres. Something really spectacular. This plant was used extensively in the development of *Epiphyllums*. *Lemaireocereus dumortierii*: Has deep ribs and a number of areoles with yellow spines; tends to twirl in growth. *Lemaireocereus eburneus*: Grey in colour and a very slow grower. Four radial and one central spine, short, of rich brownish red. Looks like chiselled rock. *Lemaireocereus thurberi*: A mass of brownish spines. Mr. Collings' plant is five inches high but he understood that they do grow quite large. *Machaerocereus eruca* (the Creeping Devil): The pride of Mr. Collings' life. It came from Death Valley, California in 1933, when 10 inches long, now over five feet long with an offshoot 18 inches long. It is of prostrate growth and dies off from the back when some seven feet long while the growing point proceeds, hence its colloquial name. It is difficult to keep and should be watered with great care. *Myrtillocactus geometrizans*: A beautiful blue colour with very short spines. Requires a rich, open soil, plenty of sun and not too much water. *Nyctocereus serpentinus*: His plant was over seven feet high and a mass of beautifully scented white flowers. It required the maximum of sun and adequate water in the growing season. *Pachycereus pringlei*: Mr. Collings said that he understood that it was the largest growing of all cacti. It is very slow growing and its shape is well known even to many who are not cactophiles. *Trichocereus bridgesii*: A wonderful looking plant with blue-grey body and few spines. *Trichocereus candicans*: A species with many varieties, some upright, some prostrate, some with yellow and some with dark brown spines. The size and strength of the spines is the beauty in these plants. *Trichocereus macrogonus*: As good a plant as *Pitanthocereus peruvianus*. The number of shallow ribs varies. They are oval, serrated. The flower is white. Mr. Collings had had to cut down his plant. It is now over eight feet high. *Trichocereus pasacana*: Grows to an enormous bulk, six feet high by two-and-a-half to three feet across. *Trichocereus spachianus*: The well known grafting stock. A vigorous grower but which with age tends to get corky and to lose beauty. *Trichocereus shickendantsii*: This plant is not often seen in catalogues. It was thicker than *T. spachianus*. It should flower easily. Mr. Collings had grown his for the last two years in a cold frame. *Wilcoxia schmollii*: Has very thin stems and its variety *W. schmollii var. senilis* has long white hair. *Wilcoxia posalgeri* has hair which is not so long but its flowers are similar. *Aporocactus flagelliformis*: The familiar Rat's Tail Cactus. It is easily troubled by the sun burning the centre of this hanging plant if too near the glass. *Aporocactus mallisonii*: Claimed to be a variety of the previous plant but could well be a natural hybrid. The flowers are larger and a slightly different colour. The plant is rather coarse in growth. *Hylocereus triangularis*: This is a rather rampant grower. Mr. Collings' plant is 25 feet long. It flowers every year and although it is a night-bloomer its flowers do not die at sunrise but persist until about midday. The flowers which are about 12 inches in diameter bloom from early spring to midsummer. *Selenicereus grandiflorus*: (Queen of the Night). A plant with an exquisite flower up to 14 inches across which, unfortunately, by morning is dead. *Selenicereus macdonaldiae*: Is supposed to have an even larger flower than *S. grandiflorus* but Mr. Collings has not seen it. *Chamaecereus silvestrii*: A rather despised plant but well worth a place for its wonderful flowers. It must have a rest in winter. Mr. Collings does not believe in allowing the soil to become dust dry and keeps his plants on sharp sand which is dampened during the winter. Its variety *C. silvestrii var. bodeckeri* is of more vigorous

growth and its flowers are a little larger. *Cephalocereus chrysacanthus*: A tall growing plant with yellow spines. After reaching a certain height forms a cephalium after which it flowers. *Cephalocereus dybrowskii*: This is another plant which Mr. Collings has not seen advertised. It is thickly covered with white wool-like spines with a mass of deep india-red spines between the areoles. *Cephalocereus hoppenstedtii*: Somewhat resembles *Cephalocereus senilis* with a fair amount of loose hairs and yellow spines. *Cephalocereus palmeri*: Is an attractive greyish plant and is another which does not produce flowers until after it develops a cephalium. *Cephalocereus senilis*: (The Old Man Cactus). Mr. Collings thought this plant was at its best when about nine inches high. At above that height it tends to get dark and cleaning will not restore its pristine appearance. *Lophocereus schottii monstrosa*: This plant is unique in its growth. In appearance it resembles an Epstein statue or a totem pole, a fact well brought out by the slides. It is difficult to come by. *Oreocereus celsianus*: (The Old Man of the Andes). They are massive plants with huge spines up to two inches long (but not in cultivation). They have long hair flowing down the ribs and spines from the areoles. *Oreocereus hendriksenianus*: Like *O. fossulatus*, a thin grower with woolly areoles, long, strong spines and hair from the areoles. *Oreocereus trollii*: Covered with long wavy hair and with red spines. *Pseudoespostoa melanostele*: A plant with no spines. *P. melanostele var. internus* has yellow spines. *Espostoa lanata*: Is well wrapped in yellowish wool with yellow spines. In general all like plenty of root room in good rich loam.

23rd November, 1960. Mrs. S. G. Sharman. South African Visit.

The enthusiasts who grow succulent plants do for some obscure reason divide themselves into Cacti types or Other Succulent types. It seems that perhaps the other succulent lovers are in the main—the ladies perhaps because they quite naturally and sensibly object more strongly than the mere male to the vicious spines so predominant on the cacti. I do not think that other succulents may be described as "more pretty," although a collection of well-grown *echeverias* and similar species is bound to attract attention, even admiration, from any visitor, plant lover or not. Never have I been a hardened cactophile—but I do possess more plants of that group than I do other succulents. Yet, I notice as the years go by, that the number of succulents that I possess does tend to increase, particularly as regards stemless *mesems*. *Euphorbias* I exclude from my list today because they have always been one of my favourites and I am already destined to talk to you all in about a year's time on that genus in particular. That glorious country South Africa has, of course, provided us with most of the plants with which we are concerned tonight, and I am fortunate in having spent some time there although my stay was all too short. Before I left the ship that took me there, South Africa was described to me as: A land with rivers without water; A land with birds without song; A land with flowers without scent. There was a fourth phrase, but I prefer to ignore it tonight as I did then. To say, indeed, that the flowers have no scent is wrong—I never tire of visiting and revisiting my *Conophytums* when in bloom just to sample the exquisite perfume that some of them exude. Although in the vernacular we may not accept the odour of some *stapelias* as scent, that genus too, most emphatically contradicts the assertion. In the dry season of course, many of the river beds are indeed without water and that fact should help to indicate to us on occasions the trend of our cultural methods when we attempt to grow some of the South African plants. Although in such a large place, the rainfall does vary considerably as do the seasons. The fact, too, that the seasons do month by month vary from ours, does give rise to some difficulties that are not always clearly understood. Many of the plants from South Africa do oblige and change their season of growth when under cultivation here, but many more do not and grow best in the autumn and part of the winter and then persist in resting in what we call our summer. And who can blame them? Among the other succulents it is of course not the mere prettiness that attracts the plant lover, but more often the odd quaintness and/or curious form, e.g., *Pleispilos*, etc. For the plant lover who asks for something different in appearance and habit then the plants of South Africa do offer just that and more. Those living in South Africa are fortunate in their country in that they have as well as their Botanical Society, a Society devoted to the study, preservation and enjoyment of their own wild flowers. How I wish that such a similar body existed here. These plants that we grow do possess the ability of existing and thriving in what, to most of us, are peculiar conditions of climate and soil. Constructed to absorb very rapidly any water that may be available and then by reason of their specialized construction to conserve that water for the longest possible time. The specialization may occur in the leaves, e.g., *Mitrophyllum*, etc., or in the stems or rootstock, e.g., *Testudinaria*. Then there is the miracle of the window plants where certain tissues, usually at the leaf tips, lack chlorophyll and the practically buried plant receives sufficient filtered light through the windows which reduce the penetrating glare on account of the calcium oxalate crystals present, e.g., *Lithops optica* and *Ophthalmophyllum*. It is only fair that I should recommend to you a few plants that I consider are

Continued on page 23

SHOW RESULTS 13th and 14th SEPTEMBER, 1960

Class 1. *Three Echinocactanae*
1st J. E. Taylor 2nd P. V. Collings 3rd B. Swan

Class 2. *Three Coryphanthanae*
1st J. E. Taylor 2nd P. V. Collings 3rd Mrs. M. Halford

Class 3. *Three Cereeanae*
1st P. V. Collings 2nd B. Swan 3rd J. E. Taylor Commended Mrs. M. Halford

Class 4. *Three Echinocereeanae* (excluding *Rebutias* and *Lobivias*)
1st P. V. Collings 2nd J. E. Taylor

Class 4a. *Three Rebutias* and/or *Lobivias*
1st J. E. Taylor 2nd Mrs. M. Halford 3rd W. Greenaway

Class 5. *One Specimen Succulent* (excluding Cactus)
1st P. V. Collings 2nd Miss A. Pilcher 3rd K. H. Walden

Class 6. *Three Faucarias* and/or *Stomatiums*
No Entries.

Class 7. *Three Euphorbias*
1st P. V. Collings 2nd Mrs. M. Halford 3rd S. C. King

Class 8. *Three Agaves, Aloes* and/or *Gasterias*
1st W. R. Farwell 2nd Mrs. M. Halford

Class 9. *Three Haworthias*
1st P. V. Collings 2nd S. C. King 3rd W. R. Farwell Commended Mrs. M. Halford

Class 10. *Three Echeverias* and/or *Cotyledons*
1st Mrs. H. Hodgson 2nd Miss A. Pilcher

Class 11. *Six Stemless Mesembryanthemums*
1st K. H. Walden 2nd D. R. Humphryes 3rd P. V. Collings Commended J. D. Harding

Class 12. *Three Stemless Mesembryanthemums (for Members who have not previously won a First in any Class)*
No Entries.

Class 13. *Three Succulents other than Cacti*
1st Mrs. M. Halford 2nd P. V. Collings 3rd E. A. Clarke

Class 14. *Three Succulents other than Cacti (for Members who have not previously won a First in any Class)*
No Entries

Class 15. *Three Stapeliads*
1st P. V. Collings 2nd W. R. Farwell 3rd D. J. Humphryes

Class 16. *Succulents other than Cacti raised from seed* sown by the Exhibitor on or after 1st January, 1958
1st Mrs. T. Watt 2nd Miss A. Pilcher 3rd E. A. Clarke

Class 17. *Six South African Succulents* in pots not larger than 3½ ins. inside diameter
1st Mrs. H. Hodgson 2nd S. C. King 3rd D. J. Humphryes Commended J. D. Harding

Class 18. *Group of Cacti and/or Succulents* to cover table space not larger than 3 ft. x 3 ft.
1st W. R. Farwell

Class 19. *Three Cacti and/or other Succulents* (for Juniors under 18 years)
1st N. R. Clyne 2nd W. Greenaway 3rd P. Bent

Class 20. *Bowl of Succulents (excluding Cacti)* not larger than 12 ins. x 12 ins.
1st N. R. Clyne 2nd Mrs. T. Watt 3rd W. R. Farwell Commended Miss A. Pilcher

Amateur Gardening Bronze Medal—K. H. Walden for First in Class 11.

Amateur Gardening Award of Merit—J. E. Taylor for First in Class 2.

Amateur Gardening Diploma—Mrs. H. Hodgson for First in Class 17.

CUPS AND AWARDS FOR BOTH SHOWS, 1960

Sir William Lawrence Cup for Cacti	J. E. Taylor
Evelyn Theobald Cup for Succulents	P. V. Collings
P. V. Collings Cup for Euphorbias	P. V. Collings
R. S. Farden Memorial Bowl for Groups	J. J. Seymour shared with W. R. Farwell
Mrs. Pryke Howard Cup for Succulents	S. C. King
Mrs. Luty Wells Cup for Three Cacti	J. E. Taylor
Challenge Shield for Juniors	N. R. Clyne
S. J. Pullen Cup for Miniature Garden	Mrs. T. Watt
Mrs. A. Hedges Cup for Succulents from Seed	Mrs. T. Watt
W. Denton Memorial Medal for Six Stemless Mesembryanthemums	D. J. Humphryes—Two Second Prizes P. V. Collings—One First Prize, One Third Prize.

REPORTS OF MEETINGS—*Continued from page 21*

worthy of your attention and I limit my recommendations to about twelve species: *Adromiscus cristatus*, from Cape Province, can take up dew from aerial roots. *Agave victoria regina*; *Agaves* of course are mainly Mexican but many grow in N. Africa, many sub-species, var. slow growing.—*Anacampseros ustulata*, Cape Province, etc.—*Ceropegia sandersonii*, Natal.—*Cissus juttae*, S.W. Africa.—*Cotyledon undulata*, Cape Province.—*Crassula hemisphaerica*, S.W. Africa.—*Echeveria derenbergii* and *harmsii*, both Mexicans.—*Duvalia radiata*, Orange Free State.—*Haworthia limifolia*, Cape Province, many, many sub-species.—*Haworthia margaritfera*, Swaziland.—*Hoya bella*, Java.—*Kalanchoe tomentosa*, Central Madagascar.—*Sanseviera*, tropical Africa, E. India; *Sansevieria hahnii*, a form arising in U.S.A.; *Sansevieria trifasciata*, Ceylon.—*Euphorbia millii*, Madagascar, not a succulent but a xerophytic shrub.

Meeting Place : New Hall, Royal Horticultural Society, Vincent Square, London, S.W.1. 6 p.m. for 6.30 p.m.

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SOCIETY NEWS

1961	*Subject*	*Lecturer*	*Table Show*
March 1	ANNUAL GENERAL MEETING	(6.30 for 7.0 p.m.)	
March 14	Seed Raising	Mr. W. F. Maddams	One 1959 seedling
	Repotting	Mr. P. V. Collings	
	(Old Hall Restaurant)		
April 11	Plant and Cutting Exchanges		

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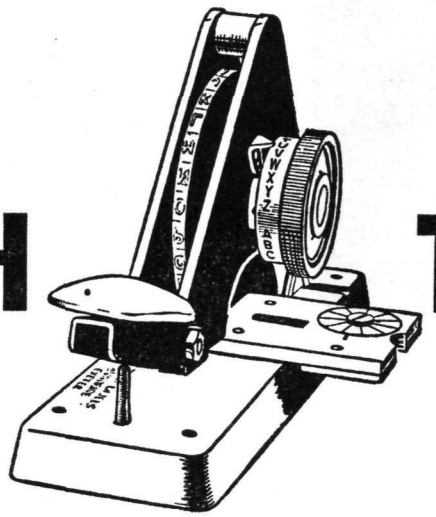
WITH  THIS UNIQUE MACHINE

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We shall, as last year, have a selling stand at the Birmingham Homes and Gardens Exhibition at the Bingley Hall from March 29th to April 22nd.

We shall also once again have our cactus and succulent plants on sale on part of Carters Seed Stand at The Ideal Homes Exhibition at Olympia from March 7th to April 3rd in the same position near the Gardens as last year.

We shall in 1961 try a new venture with a sundries stand at the East Midlands Garden Exhibition in the Granby Hall, Leicester, on March 22nd, 23rd, 24th and 25th.

Remember to come and see us in the big Marquee at the Chelsea Flower Show where we shall be exhibiting from 16th to 19th May.

We shall have a display stand and also selling lines at a Garden Furniture Exhibition at the Army and Navy Stores which opens during the week following the Chelsea Flower Show.

Our EIGHTH OPEN DAY will take place in 1961 on Saturday and Sunday, July 1st and 2nd. We normally open to the general public from 2 p.m. to 7 p.m. on both days, but so great was the response last year that we have again decided to open at 11 a.m. for members of any recognised Cactus Society. There are excellent car parking facilities immediately adjacent to the greenhouses. In the event of wet weather, passengers by car can be set down at the entrance to the big marquee. Covered ways are provided between the greenhouses, the big marquee and the Tea Tent.

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THE

CACTUS

AND SUCCULENT

JOURNAL

OF GREAT BRITAIN

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THE

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OF GREAT BRITAIN

ESTABLISHED 1931

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FROM THE PRESIDENT

I must first apologise to all members for the long delay in sending out the January Journal. Of course, this particular issue rarely is able to be sent out before the end of January because of the delay caused by the Christmas holidays and the printing of the Index for the previous year. A very great deal of trouble had been experienced in getting seed for this year's distribution and the seed list was not ready by the time the Journal was ready, but to avoid further delay it was decided to send out the Journals without the list. Again misfortune struck. The despatch of the Journals is arranged by Mr. Heathcote who was going to send out the Journals the weekend after being informed that they should be sent out without the lists, but both he and Mrs. Heathcote were struck down by the very prevalent attacks of influenza and this meant another week's delay occurred. This was the main reason for the delay, but the delivery of the proof of the Journal back to the printer was also delayed because your editor was in a three month period of accident trouble—a sprained ankle. Some of the members wrote me about the delay and I could not reply, in some cases because I believed their letter had crossed the despatch of the Journals, or I did not know when they would be sent and I could give them no definite information. I trust the members will not have cause to complain in the future.

The past quarter has been very remarkable because in it the Society has published the ninth edition of our booklet "How to Grow Cacti and Succulents" by your editor and included are articles on Seed Raising and Window Culture by Mr. Boarder. The success of this booklet has surprised everybody. At the end of the eighth edition 70,000 had been sold and they have gone all over the world and it is surprising how many have gone to America and the Commonwealth. Orders are still being received for them overseas. I would recommend every reader to get a copy of this ninth edition as although the letterpress is the same as previous editions, the illustrations are entirely new. There are 36 of them and each one of them is of flowering cacti or other succulents. I know how popular illustrations of flowering plants are for identification purposes and these illustrations are even better, in my opinion, than those that previously appeared. All members will help the Society, and consequently themselves, if they do what they can to sell this edition. Every member knows how the sale of these booklets has resulted in our improved financial position and through this we have been able to increase the benefits to our members, most notable of all is the greatly increased distribution of free seed each year. The retail price is 1/3, plus 2d. postage, but we can supply wholesale in quantities of not less than one dozen at 10/- per dozen. We are notifying all the firms and individuals who have previously bought the booklet about the new edition and in other ways have brought it to the notice of all interested in our subject.

E. SHURLY.

HELP! At the recent Council meeting some of the officers of the Society asked if it was possible to have some assistance as the work continues to increase. If any member is willing to be of assistance to an officer would he or she be good enough to get in touch with the honorary secretary, Mr. K. H. Walden.

CACTUS CULTURAL NOTES

By A. BOARDER

Now is the time of year when most of our plants are making active growth and there is plenty to do for the benefit of the collection. All those plants needing repotting should be dealt with by dealing with those obviously needing attention first. These will be the plants where the soil takes a long time to dry out after watering. It will always be a matter for argument as to how often a plant should be repotted, but it is only after years of experience that a grower recognises that a plant needs a move. All the reading of books is not likely to enable one to know this procedure but in time the necessary knowledge can be acquired. My own method is to take notice of any plant where the soil remains wet and starts a green algae growth on the surface, this pot needs a change of soil. Then there is the plant which has reached the side of the pot. It will then be difficult to see if the plant needs watering and so a change must be made to a larger pot.

It does not mean that a larger pot should always be used as plants like *Epithelantha micromeris* can have the same sized pots for years as long as they have an occasional change of soil. The next important point for the assurance that the plants will thrive is the watering. The plants will not grow without water, but if you overdo it the roots can rot and you can lose the plant. For a large collection it is not enough to run all the plants over with a hose or rose watering can. All the plants are not likely to need water at the same time. The ones making vigorous growth will need more than the slower growing ones. Water each pot individually and miss those which still show a dampness of soil. When a plant is watered see that enough is given to soak all the soil even if it means another lot soon after the first. You will do no harm by this as long as all the soil has dried out from the previous watering.

This year's sowing of cactus seeds should be showing good results. I have never known a season like it. Since I sowed most of my batch in early January we have had no winter weather and no hard frosts. I usually find that when there are hard frosts outside the seedlings do not thrive as well as when the weather is milder, but this year there has been no cause for complaint, in my area at any rate, throughout the winter so far, March 10th, we have had only one slight snow shower and no frosts hard enough to freeze any pipe.

This weather is bringing the plants into active growth and many are showing the buds. The seed pods are also on the move. It is noticeable that among the *Mammillarias* are some which produce their seed pods soon after flowering in the same year whilst there are others which do not send out their pods until the following year. I have a plant of *M. winteriae* which flowered well. Later in the autumn it produced eleven seed pods. These are the largest pods I have seen on a *Mammillaria* so far. They are pinkish-red and club-shaped but the thick part is as wide as the top of a little finger. Another plant which is very much like the previous mentioned plant is *M. zahniana*, except that its flowers are a fine yellow and very large. My plant had about 24 flowers in 1960, but although the dead flowers remained fast on the plant there was no sign of any seed pods developing. However, during the past few days some pods have appeared and it looks as if there will be several more. These pods should be quite large when they are fully developed as the plant is a large one and in fine condition.

My seeds so far have germinated very well, but I have had reports from some members that they have not been so fortunate, especially with *Rebutia* seeds. I think the trouble here is that the growers are impatient. I often find that *Rebutia* seeds will germinate after two months or more and so it is well to keep the seed pan damped but not soaked. If too much water is given the seeds can be drowned and although this sounds strange it is nevertheless a fact. By giving too much water you push out the air from the soil and so the seedlings suffer. Of course, it does not do to be dogmatic about seed germination. I can remember a few years ago writing in the Journal about the germination of seeds of *Testudinaria elephantipes* saying that I had sown the seeds in early January, but nothing had come up at all although the pan was in a propagating frame at 70 degrees F. No seeds germinated all through that year or the following spring but in late autumn nearly all the seedlings came up within a fortnight. This led me to the assumption that these South African seeds were only likely to grow at a time corresponding to the spring in their native country. This January I sowed some more of these seeds and some were up in just over a fortnight and at present there are six up. So much for making statements too soon about germinations. Up to the time of writing I have sown over 530 kinds of seeds and most have germinated excellently. I shall not, of course, interfere with them until the cotyledon has been absorbed as until this time the rootlet is so tiny and delicate that it is easily broken. Once the food-bag or cotyledon has disappeared it will be found that the seedling has made a good root system and so can be handled safely.

I have reported previously that I have been unable to get seedlings of *Melocactus maxonii* through the winter. I managed to save one right through to the end of February by placing the seed pan near my lamp. This meant that the plant never got really cold and it certainly looked well and actually growing. This encouraged me to give it some water, but one day I found that it had rotted off like all the others I have tried to get through the winter. Other rather difficult seedlings in the same pan are still all right. Another difficult one to get through the winter is *Echinocactus grusonii*. I had a number of these seedlings in a box doing well but by the beginning of the year most of them had those pale rusty patches on them. They may recover but they look anything but attractive at the moment. Many *Echinocactus* and *Ferocactus* seedlings are difficult to get through the winter unless a temperature of at least 50 degrees can be maintained.

I mentioned my lamp in the greenhouse and this year I have experimented with it and found that instead of cleaning and relighting it each day I can now go five days full on without having to touch it. This has pleased me very much as the time saved can be well employed with another task. I have used a gallon petrol can which lies on its side and acts as a feed-tank. I cut a hole in each end of the top side and another in the filler cap of the lamp. Two four-inch long narrow glass tubes joined together by a short piece of rubber tubing connect the two containers. All I have to do now is to fill the spare tank, tip it until the paraffin can be seen running through the glass tube into the lamp container and then place the spare tank beside the lamp. The paraffin finds its own level from then on and one filling lasts for five days and nights. Later it would last longer as the wicks can be turned down by day. I thought there might be some trouble with the wicks getting encrusted but the present-day paraffin (pink) will burn for days without caking over. I have a cork in the refilling hole of the spare tank and a narrow gauge tube through it to allow air to enter as the oil drops.

The only snag now was to know how much oil was left in the lamp, but I soon overcame this problem by making a float gauge. I cut a hole in the top of the lamp container and soldered on a metal rim. A cork fits this projecting rim with a piece of aluminium rod in the middle. On this rod runs a stiff wire ring attached to an upright length which runs down through the small cork into a wide flat cork which floats on the paraffin. Now as the oil drops in the container the guide ring drops and indicates clearly how much oil is left. I marked the rod with a few cuts and found that the distance between each one represented a day's use of oil. The whole project has been a great success and I could now "enjoy" (?) a few days rest indoors with a cold knowing that the lamp would function well with no attention.

I am making another experiment this year. I have reported that I have had some scorching on a few of my *Mammillarias* and had wondered how it would be possible to provide some shade during the hottest part of the day for certain plants whilst the others were not so shaded. I have now devised a scheme which should be the answer to the problem. I am not entirely pleased with the idea of clouding the glass with a semi-transparent covering and thought that a blind would be better. The possibility of a blind to work over the top lights was a bit of a headache until I thought of inside blinds. I have now rearranged my *Mams.* so that all those liking plenty of sun are at one end of the house which will be unshaded. These include such plants as *M. candida*, *M. hahniana*, *M. perbella*, etc. Those which are liable to scorch such as: *M. tetracantha*, *M. kewensis*, etc., are all in the centre part of the house which will be provided with a sun blind to pull down during the hottest part of the day. I shall run two or three stiff wires down the glazing bars on which the blind will be supported. I shall use stout butter muslin for the blind, attached to round wooden runners at each end. An endless cord will enable me to wind the blind up and down with little trouble. It is only during the hot part of the early afternoon that I have had trouble in the past and so the adjustable blind will give me shade when it is needed but plenty of light for all the plants at other times. The blind will not interfere with the windows in any way, nor will it stop the warmth from the sun penetrating the greenhouse. I will be able to report results at a later date.

For some years I have shaded my seedlings in the outside frame with butter muslin blinds which are fitted all the summer. Growth has been quite good during the time I have used these blinds. They are fitted for the period from May to September.

Make sure that the glass of the frame or greenhouse is cleaned inside as well as out as it is surprising how much dirt can accumulate during the winter and any loss of light can be harmful on dull days. Keep the water in the greenhouse covered from the light to prevent the formation of green algae. An occasional watering with a rose can of a solution of Malathion should keep the collection free from pests. Malathion can be obtained in a powder form in a puffer but I am not sure what the effect would be on mealy bug as I cannot imagine this powder penetrating the meal on these pests. However we shall no doubt be hearing of the results from members who are experimenting with this form.

MAMMILLARIAS I HAVE GROWN *(continued)*

By A. BOARDER

M. calleana is a plant I obtained in 1959, and which bears a very strong resemblance to *M. gilensis*. At the moment I can detect little difference between the two plants. Both have rather pale green bodies, rather fleshy tubercles with a long yellow hooked spine. The flowers, almost white are also similar.

M. centricirrha, is a plant I have had for many years. I first obtained a seed pod from Mr. Farden in 1932 and raised several plants from the seed. My present plant is from seed saved from one of the original plants. It is now in a seven and a half inch pan with several off-sets round it. It flowers with a carmine bloom and is followed by large red fruits. This is one of the plants grouped by Craig under *M. magnimamma*.

M. centricirrha v. centrispina is another I obtained from the same source at the same time and is rather like the former described plant, but has distinct differences of spine formation.

M. centricirrha v. hopferiana is another from the same stable and my plant is now a large group with off-sets two inches across. It fills a large pan and each year gives a good show of red flowers. The seed pods are large, red and have woolly areoles on them.

M. centricirrha v. krameri is a favourite of mine which I obtained from a shop in Uxbridge in 1926. It has large tubercles with a few central spines which are very strong and well curved.

M. centricirrha v. longispina has most of the characteristics of the first two *M. centricirrha* described, but has a much longer central spine. Whether this is sufficient to warrant a different variety is open to doubt, but who decides at which point a plant becomes either a fresh species or just a variety? My plant is another large specimen which has to be housed in a concrete pan over seven inches across.

M. centricirrha v. pazzanii is a large type with strong spines, one of the open tubercle type with plenty of wool in the axils from which the off-sets and flowers spring. My plant flowers freely, a carmine to red bloom with a large red berry to follow. I obtained seed of the plant from Mr. Farden in 1932, soon after the formation of the Society.

M. centricirrha v. recurva bears a strong resemblance to the variety *krameri* as it has very stout curved spines with a very open type body. I had my original plant of this from the late Mr. Green of Ruislip, in 1928. My present plant is one I raised from seed since the last war and it has made a fine specimen now.

M. collinsii is a handsome plant with plenty of wool between the tubercles and fine brownish spines. It flowers well but the colour is rather drab. I raised my plant from seed in 1948, and it is not a very quick grower.

M. columbiana is a plant which does not appear to be very common today. I raised my plant in 1948 from seed and I cannot remember seeing it in flower. However there is a seed pod already red on it and so I must either have missed seeing it in flower or was perhaps away when it did so. This plant is outstanding and very attractive. It appears to be very slow growing, but has made two or three off-sets of a fair size.

M. compressa is a plant I raised from seed in 1932, but the original I lost during the war. My present plant was raised from seed in 1946, and has made a fine large mound. The off-sets are quite large and all flower very well each year. This type of plant should always have plenty of space in which to develop as much of its attractiveness is caused by the many off-sets all flowering with the main plant and making a fine show. The seed pods remain red for a few weeks and add to the colour in the greenhouse in the late autumn and early winter.

M. confusa is from seed sown in 1952, and it has made quite a good sized plant. The areoles have some wool and a few white hairs which give the plant a very fine appearance. It does not appear to be difficult to grow.

M. confusa v. reclinatispina was obtained from seed fairly recently and so far does not show very much differences to the type plant. Many of the *Mam.* seedlings do not take on their peculiarities until they are out of the seedling stage, say after two or three years according to species.

M. confusa v. robustispina has very fine strong spines which curve slightly at the ends. The plant grows well from seed and soon makes a handsome specimen.

M. conspicua is a single type plant and my original one was obtained from Neale in 1928. The plant can be best described as resembling a *M. elegans* but with the colourings of a *M. vaupelii*. It does not seem to be difficult to grow, but is rather slow to make up into a good specimen.

M. coronaria has always been a favourite with me. It is a single type plant something like a *M. rhodantha* but with a blueish tint to the body and some of the spines. The numerous spines almost cover the plant and it flowers

well each season to be followed by red seed pods. My original plant I raised from seed from Haage in 1932.

M. cowperae is a new one to me and was first named M. china. I have two or three small plants which I raised from seed in 1959, and they are already very handsome being almost covered with brown spines. When they grow larger they should look very handsome unless I am very much mistaken. I am not able to give any details as to flower as of course they are too small to bloom as yet.

M. craigii was obtained by me in 1928 and my present plants are from seed from the original plant. This plant bears a strong resemblance to *M. kewensis*.

M. crocidata is a fine looking plant with rather short spines but with an abundance of white wool in the upper axils. I cannot find any trace of when I got my plant and think it must have been from seed sown on or after 1946.

M. crucigera is a general favourite with most growers but it does not seem to be very common. Some plants have appeared under this name which do not show the characteristic cross formation of the four central spines and so are probably *M. formosa*. I raised my first plant from seed from Cooper in 1931, and the specimen I now have is from seed I saved before I lost most of my collection during the war.

(To be continued)

LISTS RECEIVED

R. Coward, 1 Marsden Hall Road, Nelson, Lancs.: eight paged, illustrated mimeographed list of cactus and other succulent seeds.

Howard E. Gates, P.O. Box 247, Corona, California, U.S.A.: sixteen paged, printed and illustrated catalogue of cactus and other succulent plants.

Kaktimex, Fislisbach, Baden AG, Switzerland: five paged, mimeographed list of cactus seeds.

K. Mantel & Son, Aalsmeer, Holland: thirty-two paged, printed and illustrated list of plants including cacti and other succulents (wholesale only).

K. Uhlig, Lilienstrasse 5, Rommelshausen bei Stuttgart, Germany: three paged, mimeographed list of cactus plants.

Uplands Nursery (G. G. Fuge), Blackhorse Lane, Downend, Bristol; twelve paged, mimeographed list of cactus and other succulents.

TABLE SHOWS. It has been decided to alter the point system. In future, one point will be given for showing the plant, even if unsuccessful, then three points to the winner, two to the second and one to the third. The points are added up for the year and prizes will be awarded at the end of the year.

DIVIDED AREOLES IN MAMMILLARIAS. Mr. C. Jackson of Stoke on Trent has notified me that he has taken careful note with his plants and he states definitely that *M. kunzeana* and *M. camptotricha* have offsets in the axils between the tubercles and *M. wildiana* has offsets on the tip of the tubercles. I (Ed.) am very grateful for this definite information which surely establishes that *Mammillarias* produce offsets in the axils in some species and at the tip of the tubercles in others. I would be very grateful to any other members who can definitely inform me of the habits of other *Mammillaria* species. The information must be absolute and not supposition to have any scientific value.

CULTIVATION OF SUCCULENTS

By Mrs. M. STILLWELL

April should be a month of great expectation in the greenhouse. Seedlings should be forging ahead and buds showing promise of flowers to come. Before starting my spring repotting I always go right through the collection plant by plant, removing dead leaves, checking for pests and noting which plants need repotting when the time comes. Any unhealthy ones are put in a separate place until I have time to deal with them. This is a big operation when one has hundreds of plants to deal with, but it pays great dividends as no plant is left unexamined. It is well worth the time it takes and I always hope that no visitors arrive at this time as there are usually plants everywhere and hardly any room left to walk, but there is always the thrill when it is all done and the plants are all once more neatly and orderly arranged and each one having received its first good watering where required. I believe that this first watering must be a real good soak and, in most cases, I completely immerse the pot in a bucket of water. It is no good just pouring a little on top of the pot, as after a long rest the soil gets dry and hard and the water just does not penetrate down to the roots. They must then be left to dry out for a week or two before the next watering. On the whole, I found very few pests this year except the odd mealy bug and one or two soft scale which were easily removed. Careful use of Malathion gets rid of most things, but I am convinced that it does mark some of our plants. I feel, if you can, it is better to water the soil only, the fumes rising should kill the pests. I used Tritox last year, also on the succulents, but while it helped I would not say it is really successful with our plants. Possibly it would be if used stronger than recommended. I shall probably make a few more tests this year.

Most of the *Stapeliads* came safely through the winter. A few of the choicer types I stood on top of the propagator so that they got a little extra warmth. All were kept dry and some became rather shrivelled, but soon plumped up after their first watering. As an experiment I have planted a few in Eclipse peat with the addition provided to bring it up to the equivalent of John Innes number 2 and about a third sharp sand added. It needs to be kept rather wetter than most composts, so with *Stapeliads* it is important to make sure that there is a good layer of sand round the neck of the plant. It is also as well to put a good layer of sand on top of the pot to prevent the peat drying out too soon. These plants did very well last year up on an eye level shelf and made strong well ripened growth and also flowered well, so I shall continue to keep them in the same position this year. I am sure that many of these plants are lost in collections because they are grown under the staging in the shade where they become far too green and lush and, therefore, do not stand up to the winter unless you can provide a lot more warmth than most of us can. Last year, being so dull, many of the *Stapeliads* came into bud too late to open, which was a great pity. One in particular I have in mind was *Caralluma burchardii*. I always find it comes into bud very late in the summer and unless we have a good sunny autumn it is doubtful if the flowers will open. The previous year we were lucky and I was able to get some colour shots.

I have concentrated on colourful succulents at the far end of the greenhouse, with a large *Echeveria roseum* as a centre piece. At the time of writing which is early March, the colour of it is really magnificent. The pale green leaves are edged with deep strawberry pink and the inflorescence is the same. This plant has a tall branching habit and is a great favourite of mine as it colours up so well during the winter as do most of the *Echeverias*. *Echeveria derenbergii* is always in bloom very early in the spring, and forms a nice compact colourful plant. *Echeveria nodulosa* is another very attractive one, perhaps not quite so well known. It has thick greyish green leaves prettily marked with dark red. Lovers of *Echeverias* should make this a must and, of course, not forgetting the large flowered *Echeveria harmsii* which has become very popular during the last few years. I prefer to see these plants kept nice and compact and not allowed to become too rampant.

I notice that at the time of writing several of my *Kalanchoes* and *Cotyledons* are in bud, including *K. pumilla*, *K. marmorata*, *C. wickensii* and the hybrid *Cotyledon* distributed last year by Mr. Jones of Normandy which has three flower stalks showing. *Senecio fulgens* and *S. medley-woodii* are also in bud.

The *Euphorbias* are also showing new growth and many are in bud. This year I have moved them all to my back greenhouse where they will not get quite so much sun. They have always flowered well in their former position but tend to get a little scorched looking in the height of the summer. Whether I have done right or wrong remains to be seen. My *Euphorbia splendens* (*milii*) is starting to make its fresh green leaves and showing evidence of flowers to come. Mine always loses all its leaves during the winter and I just give it enough water to keep the stems rigid. It is a mistake to try to keep it growing all the winter, unless you have excess heat and equally it should not be allowed to dry out completely, or it may become too woody and fail to recover in the spring.

With careful attention you should not have much trouble once it has reached adult size. It is usually the young plants which are lost, these probably being cuttings from the previous year which have often not made sufficient strong growth by the first winter.

By the end of April some of the *Lithops* and *Argyrodermas* may be ready for watering. They should all be treated as individuals and each one watered only when the old leaves are almost gone. This is also a good time to repot them. Be careful not to damage the roots and, if no mealy bug or root bug is present, do not disturb the existing soil more than you need.

Conophytums should be resting now until about July, or such time as they are ready for watering according to each individual species. *Ophthalmophyllums* are not ready for water with me until late May or sometimes the beginning of June, according to the weather. I find it is better not to have these too near to the glass as they have very soft bodies and can soon scorch, but they must have sunshine to produce an abundance of flowers. Choose a spot in the house where there is a good current of air and not too much concentrated heat such as one gets at the end of a house where there is no ventilator.

Most of our plants will stand a great deal of sunshine without shading, providing there is a good circulation of air. My houses are never shaded, it offends my eye. I should hate to look out of my dining room on to glass covered with summer cloud or such like. To me these plants are a thing of beauty and I like to behold them as such, both from inside and outside of the greenhouse, but in the summer one must make sure that all the windows and doors are wide open from early morning. If you are going on holiday or even a weekend trip, it is very important to make sure that someone will take charge while you are away and make sure that those doors and windows are opened early.

A collection of *Adromischus* can provide some very colourful plants, especially if grown in a nice sunny position and freely watered. *A. cooperi* and *A. festivus* resemble small spotted birds eggs, *A. maculatus* has large flat leaves chocolate spotted and makes a very handsome plant. Two of the choicer ones are *A. marianae* with longer compressed leaves pointed and curving inwards and *A. leucophyllus* with beautiful white pruinose leaves. All these will grow from a leaf and make nice plants for beginners. The leaves should be laid on the soil.

The *Anacampseros* are well worth growing, particularly if you are able to obtain *A. alstonii* and *A. papyracea*, etc. These are two of the rarer white ones and require a little more care in the cultivation. The commoner kinds, such as *A. rufescens*, *A. telephiastrum*, etc., provide large numbers of flower buds which do not always open, but if you visit the greenhouse late afternoon you may be lucky on a nice sunny day to catch a glimpse of the beautiful pink flowers which in some cases only open for about half an hour. They set seed freely.

Here's hoping for another beautiful summer to reward us for all the hard work we put in in the spring with the repotting and seed sowing, etc.

SCORCH. "I have only once been troubled with this and that was early in the summer of 1959. My plants were in the frames which had been lime washed on the inside, partly for cleanliness and partly because the plants looked better with a white background. I was going on a day trip to the coast and as the morning was wet and dull I left the frames closed. As it turned out it was one of the hottest days of that summer. The following morning I went to open the frames and found that several of the plants were very badly burned, but not on the side facing the sun, but on the back of the plants facing the lime washed rear wall of the frame. In my particular case it was *reflected* light, not direct rays that had done the damage." Mrs. K. Cooper.

CUPS. For a long time past it has been noted that winners of the various cups have no permanent record of their success. The Council has had permanent trophies made and, in future, all cup winners will be awarded one of these—after the cup has been returned at the end of the year in which they held it.

ACCOUNTS. In past years it has been the practice to publish the accounts of the Society, together with the Council's report, each year in the Journal. It has been decided that as each member receives a copy of the accounts and report it was unnecessary to publish in the Journal and so provide further space for articles.

WHAT'S IN A NAME?

By W. F. MADDAMS

My experiences as a Branch Secretary have convinced me that the names of cactus and other succulent plants provide more of a difficulty for many enthusiasts than their cultivation. In some measure this is understandable, and the continuing trend towards longer names was rightly deplored by Gordon Rowley a few years ago. However, the misguided creations of a few errant cactophiles and botanists barely detract from the fact that the names of many succulent plants are logical, descriptive and informative. I was fortunate enough to appreciate this point soon after my collecting activities commenced and I have subsequently gained a great deal of pleasure and information from my delvings into the considerations which prompted the choice of some of these names. In the hope that I may be able to set this matter of nomenclature in reasonable perspective for those in difficulties, a few examples from the immense field available are presented below.

It must be understood at the outset that I shall refer only to accepted botanical names. Some of the trivial names so freely bestowed by our American friends are indeed apt and are proper for the increasing number of cultivar species now appearing, but they can only cause confusion in a logical system of nomenclature. Such a system has been in use in botany for two centuries. It is the binomial system of Linnaeus, which characterises a plant with a generic and a specific name, to which a varietal qualification is sometimes added. When this system was adopted, Latin was in extensive use for communicating scientific observations, and so it was used for naming plants. In the absence of progress towards a universal language, there is every justification for continuing its use in botanical nomenclature today. Having accepted this basic premise, we can segregate these generic, specific and varietal names into three loose categories, which I shall refer to as biographical, geographical and morphological.

Biographical names commemorate persons associated with the discovery, cultivation and classification of plants and are a mine of information. The extensive literature on succulent plants that has appeared of late does scant justice to this subject and to those who have made notable contributions to our knowledge. It would be invidious to attempt an order of merit, but one who stands out both for his work and his noble rank, commemorated in *Echinocereus salm- dyckianus* and the genera *Salmia*, *Reifferscheidia* and *Dyckia*, is the Prince of Salm - Dyck. Born in 1773, his full title, Joseph Maria Franz Anton Hubert Ignaz zu Salm - Reifferscheid - Dyck, Reichs - und - Altgraf, is far more imposing than that of any succulent plant. The family seat at Schloss Dyck, near Düsseldorf in the Rhineland, was overrun by the French revolutionary armies, and while losing his sovereign powers, Prince Salm - Dyck managed to retain his possessions. His botanical inclinations soon became evident, both in collecting and research work. He built glasshouses at Schloss Dyck, and his collection of succulents became the finest in Europe. Frequent visits to Paris and meetings with prominent botanists such as Desfontaines greatly stimulated his interest and his contacts with Redoute and de Candolle were undoubtedly valuable. Many notable publications came from his pen, the most important work being "Monographia Generum Aloes et Mesembranthemi", issued in seven parts, the last after his death in 1861.

The first half of the nineteenth century saw many botanical expeditions to then remote parts of the world and succulent plants were imported into Europe in considerable numbers. There was a marked tendency to regard them as botanical curiosities and they often found their way into exotic collections assembled by the nobility and landed gentry. Thus, William Cavendish, Duke of Devonshire, assembled a remarkable collection of plants at Chatsworth House in Derbyshire and *Monvillea cavendishii* was named for him. Woburn Abbey, the seat of the Dukes of Bedford, has been in the news of late and it is interesting to note that a good collection of tropical plants was housed there one hundred years ago. The then Duke of Bedford commissioned an expedition by G. Gardner to Brazil in 1839 and a number of interesting discoveries resulted. One of these an epiphyte, was named *Schlumbergera russelliana*, the specific name commemorating Russell, the family name of the Duke.

This by no means exhausts the examples of titular persons passing into history via succulent plant names. We may note briefly that the eminent botanist Hooker named *Leuchtenbergia principis* after Eugene de Beauharnais, then Duke of Leuchtenberg and Prince of Eichstadt, and that *Mammillaria karwinskiana* commemorates Baron von Karwinsky, an ardent cactophile, who discovered *Astrophytum asterias* at Tamaulipas in Mexico in 1843. More recently, the Prince Egon Victor Moritz Karl Marin, of Ratibor and Corvey and of Hohenlohe - Schillinsfurst did valuable collecting work in the Andes for the University of California, and wrote extensively in the early numbers of the American Cactus Journal. He is better known as James West, a self-adopted title, and species of *Gymnocalycium* and *Lobivia* have been named for him. (No? Gymnocalycium after Greek meaning naked bud and Lobivia an anagram of Bolivia.—Ed.).

The early students of succulent plants included many medical men. At this period, the compass of human

knowledge was small by present day standards and it is not surprising that medical practitioners could also accumulate a sound knowledge of botany as it then was. One such was Dr. John Sims (1749—1831). He was physician to the London Charity for Delivering Poor Married Women in their Homes, and to the Royal Ear Dispensary. He was a keen botanist and when his friend William Curtis, the founder of the Botanical Magazine, died in 1799, Sims took over the editorship, which post he held until 1826. It was in this magazine, in April, 1818, that *Sempervivium aliatum* was first described. This plant, after several changes of name, is now known as *Aeonium simsii*, and justly commemorates a worthy but little known personage.

Almost contemporary with Sims was Henri Auguste Duval, after whom the genus *Duvalia* is named. He was the first to recognise and name the genus *Aloe*, as being distinct from *Gasteria* and *Haworthia*, and, here again, this botanical work was conducted alongside medical studies. He is also noted for his booklet 'Plantae succulentae in Horto Alenconio', published in 1809, which catalogues a good collection of succulent plants at Alencon in Normandy. This very rare work was reprinted by the Society before the war, and is a classic among the early literature on succulent plants.

Ludwig Carl Georg Pfeiffer was another notable personality of this period who also trained for the medical profession at Gottingen and Marburg, qualifying in 1825. He saw service as a surgeon in the Russian Army during the 1830 insurrection of the Poles in Warsaw, and practised medicine for a time after his demobilisation. However, his avocations, writing, music and scientific pursuits proved too strong a lure, and with great industry he devoted himself to these. He translated foreign medical works into German, studied the flora of his native Hessen, and visited Cuba during the winter 1838-39. His general botanical works included a vast index to the families, genera and sections of flowering plants, and he was the leading authority of the day on land snails. His knowledge of cacti was also extensive; he visited many collections in Europe, and published two books in 1837. He is commemorated in the genus *Pfeiffera*, in *Mammillaria rhodantha v. pfeifferii* and also in the names of a number of molluscs.

Although continental botanists added much to our knowledge of succulents during the nineteenth century, the genus *Haworthia* commemorates an Englishman who ranks with the greatest of the period, namely, Adrian Hardy Haworth (1768-1833). Haworth was assiduous both in collecting and studying cacti and other succulents, and maintained close contact with Salm-Dyck and other continental authorities. His writings show clearly his belief in the manifestation of the Supreme Being through Nature. For example, when he elucidated the mechanism whereby a *Drosanthemum* fruit expands when wetted, his publication ended with a paean of praise and a quotation from Psalm 104 in Latin. He was an ardent believer in finding the unique attribute of every species and naming it accordingly, and he was very successful in coining descriptive epithets. His book 'Synopsis Plantarium Succulentarum', published in 1812, is a classic. Its 334 pages describe cacti and succulents he cultivated in the neighbourhood of London, and it contains the first description of the genus *Mammillaria*. He was also a keen entomologist, and built up a large collection of insects.

When Haworth died, his fine collection was dispersed and some of the plants found a new home with Mr. W. Wilson Saunders at Reigate in Surrey. They formed part of an exotic collection amassed by this gentleman, who appointed as his curator one Thomas Cooper, after whom *Stapelia cooperi*, *Haworthia cooperi*, *Crassula cooperi* and *Adromischus cooperi* are named. Cooper spent the years 1859-64 in South Africa collecting plants for the botanical gardens at Kew, Edinburgh and Dublin, and for his employer. The Reigate collection provided him with a double contact with Nicholas Edward Brown. Brown, as a youth, visited the collection and was fired with an enthusiasm which lasted throughout his long life of eighty five years, and, later, the daughter of Thomas Cooper became his wife. Brown worked in the herbarium at Kew between the years 1873 and 1914, mostly on the Iridaceae and *Mesembryanthema*, in which latter field his work is well known to many of us. His name is given to the genera Nicolasia and *Brownanthus*, and to species of *Caralluma* and *Lampranthus*.

There is a widespread belief that it is a bad thing to name a plant after a person. This is without foundation; Linnaeus gave it his cautious blessing and coined several commemorative names. Nevertheless, various individuals continue to condemn the practice and an article in this Journal a few years ago by Captain Dunne Cooke contains the biting comment, 'One comes across such fearful monstrosities as Meyerophytum meyeri, in which both the genus and species do honour to some otherwise unknown missionary.' Many cactophiles will consider these remarks to be unjustified, none more so than Dr. Schwantes. The unknown missionary is in fact Pastor Georg Meyer of Steinkopf in S.W. Africa, who did much useful work field on the stemless *Mesembryanthema*. In addition to the alleged monstrosity, he is commemorated by species of *Cheiridopsis*, *Conophytum*, *Herreanthus*, *Lithops*, *Nelia* and *Stomatium*. Further, *Conophytum meyerae* is named for Frau G. Meyer and *Ruschia meyerae* for Frau E. Meyer.

One can scarcely touch upon South African succulents without mentioning Gert Cornelius Nel, who is commemorated in the genus *Nelia*, and in species of *Chasmatophyllum*, *Conophytum*, *Gibbaeum*, *Glottiphyllum*, *Herreroa*

and *Pleiospilos*. A native of Greytown, Natal, Nel studied at Stellenbosch, Halle and Berlin before being appointed to the newly instituted chair of Botany in the University of Stellenbosch, a post which he held up to the time of his death in 1950. In addition to his teaching duties, he founded a University Botanical Garden and did much field work, particularly on the succulent *Aizoaceae*. This led to a book on *Lithops* in 1946, and a partially completed manuscript on the genus *Gibbaeum* was edited and published after his death.

This short survey would not be complete without some reference to American workers who have been commemorated in generic and specific names. The extent to which cacti are found in the southern states of the U.S.A. is probably not fully appreciated in this country, but a great deal of information on this topic came to light about a century ago when extensive explorations and boundary surveys were in progress. These expeditions brought back much botanical material which was examined and reported by the Government botanist George Engelmann. He wrote extensively for a thirty year period, and his best known work, 'Cactaceae of the Boundary', which is part of the three volume 'U.S. and Mexican Boundary Survey' (1859) contains illustrations from steel engravings which have never been surpassed for wealth of detail. His name is remembered in species of *Echinocereus* and *Opuntia*.

More recently, there have been few more enthusiastic workers in the cactus field than Howard E. Gates, who died in 1957. He was distinguished both for his extensive collecting in Lower California and as an administrator in the American Cactus Society, having held the office of President. He was also the owner of a fifteen-acre cactus farm in Corona, California, and an interesting account of his activities in this direction appeared in the April, 1957 issue of this Journal. Species of *Dudleya*, *Ferocactus*, *Lophocereus*, *Mammillaria* and *Pereskiopsis* have been named for him. Few books on cacti and succulents have established a greater reputation, or are more in demand than 'The Mammillaria Handbook' by Dr. R. T. Craig. A dentist by profession, Dr. Craig occupied his leisure time with extensive explorations in Mexico in the nineteen thirties and early nineteen forties, and added much to our knowledge of *Mammillarias*. Now Treasurer of the American Cactus Society, he has justly earned commemoration in *Mammillaria craigii*, *Mammillaria kewensis v. craigiana* and *Echeveria craigiana*.

The marked growth of interest in cacti and other succulents in this country during the past twenty or thirty years is perhaps to some extent a whim of fashion. Gordon Rowley has commented that they are the plants of the arid nineteen-fifties, the living expression of the age in which we live. Nevertheless, a great debt is owing to those who have striven to further the interest of cactophiles in this country and it is fitting that a number of them should be remembered in plant names. Not least of these is the President of the Cactus and Succulent Society of Great Britain, and the Editor of this Journal; his work with the genus *Mammillaria* has found recognition in *Mammillaria shurliana*. Two other stalwarts give their names to *Lobivia nealeana* and *Lobivia higginsiana*, while the more recently described *Pygmaeocereus bylesianus* and *Lobivia rowleyanus* derive from equally well known persons.

It would be interesting to learn what has prompted the choice of a name in many instances. One suspects that as far as biographical epithets are concerned, merit and esteem are significant factors, and this being so, it is not surprising that the fair sex have left their mark. *Mammillaria inaiae* is named for Mrs. Ina Y. Craig, wife of Dr. R. T. Craig, and a contemporary figure in American cactus circles; Mrs. Ysabel Wright, is remembered in *Thelocactus ysabelae*. The stemless *Mesembryanthema* provide a number of interesting examples. *Muiria hortenseae* is named for Miss Hortense Muir, daughter of Dr. J. Muir, a collaborator of N. E. Brown. *Conophytum luisae* and *C. angelicae* derive from Frau Luise Meyer and Frau Angelica Rusch, and *Lapidaria margaretae* remembers Fraulein Margarete Friedrich. The popular *Lithops elisabethae* is named for Frau Elisabeth Schneider, and *L. lydiae* for Frau Lydia Triebner. This list is not exhaustive and those interested will be able to enlarge it.

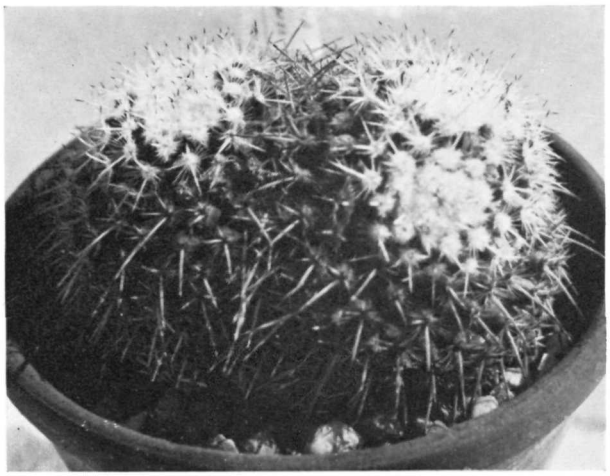
If this article has achieved its purpose, it will have inspired at least a few readers to carry on where I have left off. For these, I suggest that they entertain themselves by investigating the following biographical names. *Euphorbia, Fockea, Neogomesia, Wilcoxia, Dinteranthus, Doreanthus, Echinocactus grusonii, Mammillaria schiedeana, Notocactus ottonis, Crassula milfordae, Borzicactus morleyanus* and *Adromischus liebenbergii*.

To be continued.

THANKS. At the Annual General Meeting a motion was warmly applauded thanking the officers of the Society for their efficient work during the year. The motion also took note that their wives lose their company for much of their spare time while working on behalf of the Society and the motion extended our thanks to these wives also.

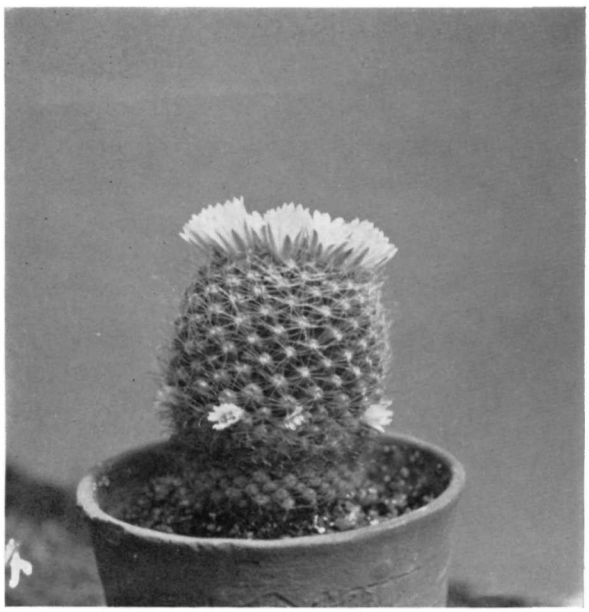
Two photographs of a night-flowering *Epiphyllum*

Miss D. Pierce

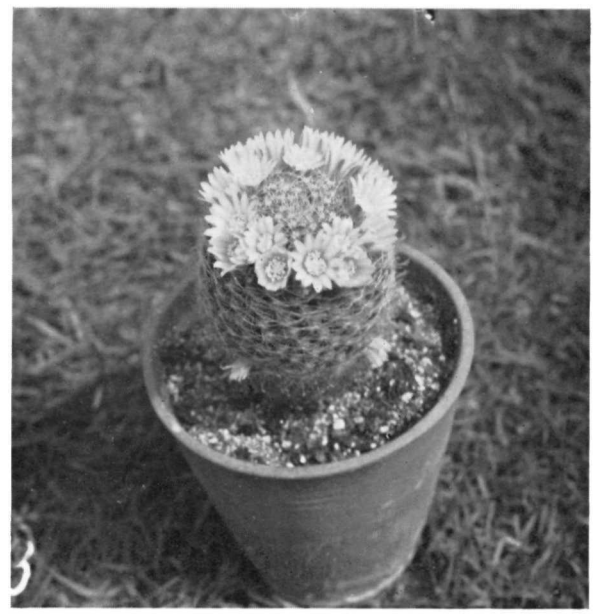


Mammillaria parkinsonii G. H. Johnson

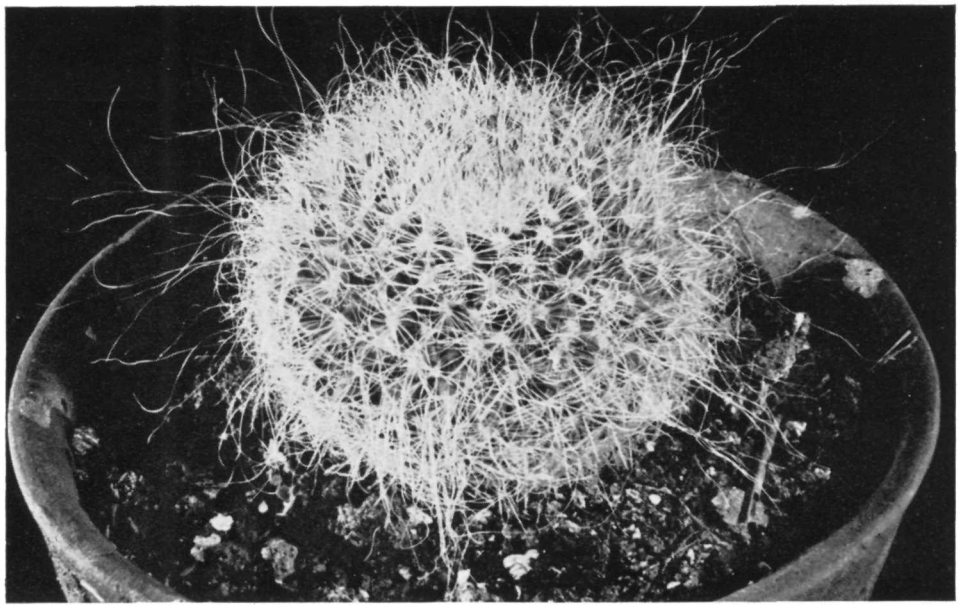
Pan of *Lithops* G. H. Johnson



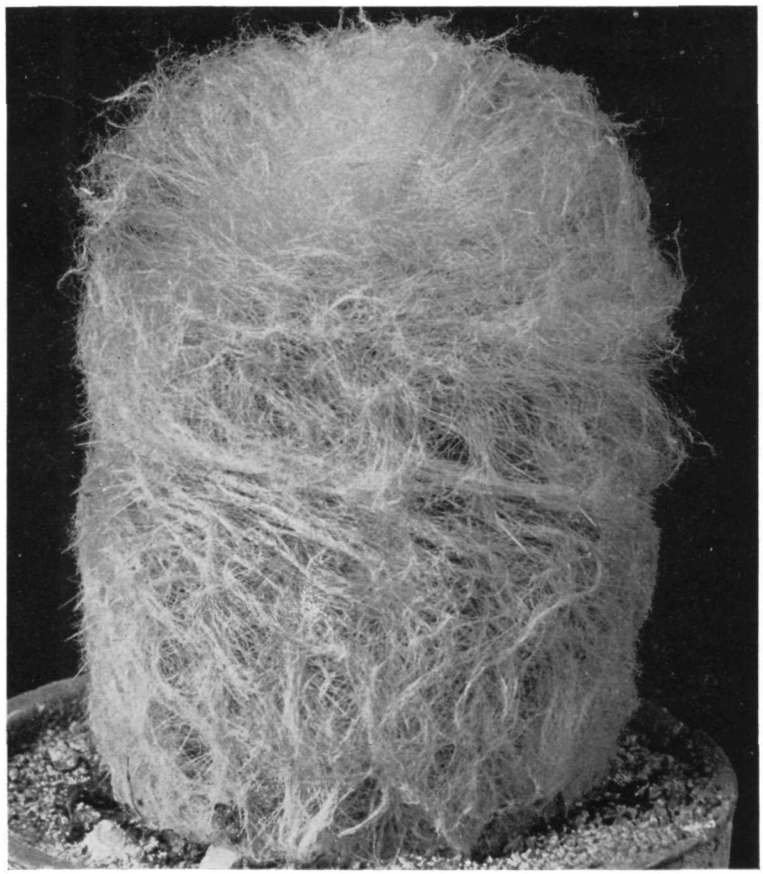
Mammillaria pygmaea



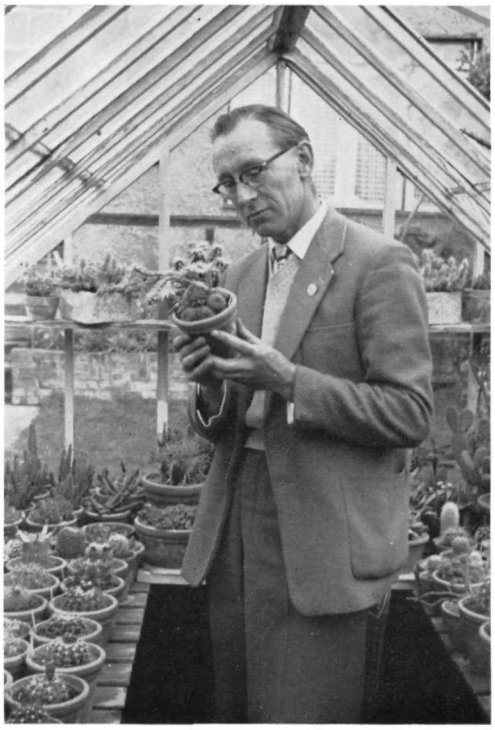
B. D. Cumming



Mammillaria hahniana R. H. Shepherd

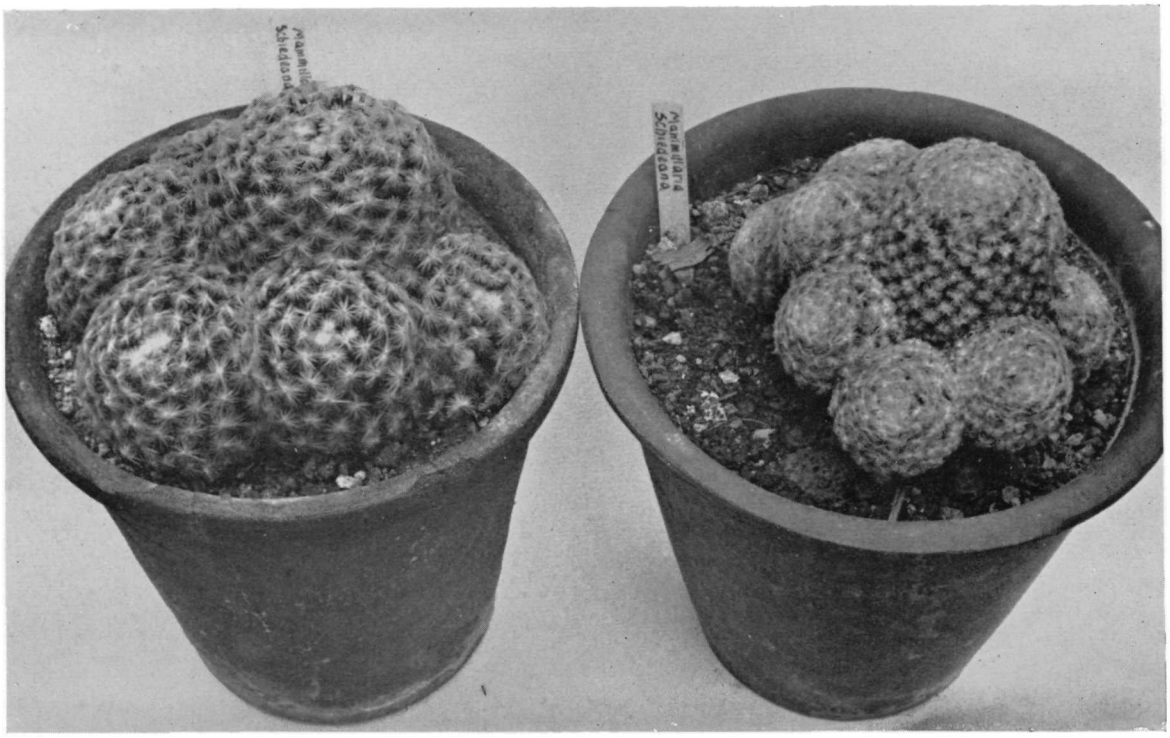


Espostoa lanata R. H. Shepherd



Our seed distributor (Mr. G. R. Hedges)

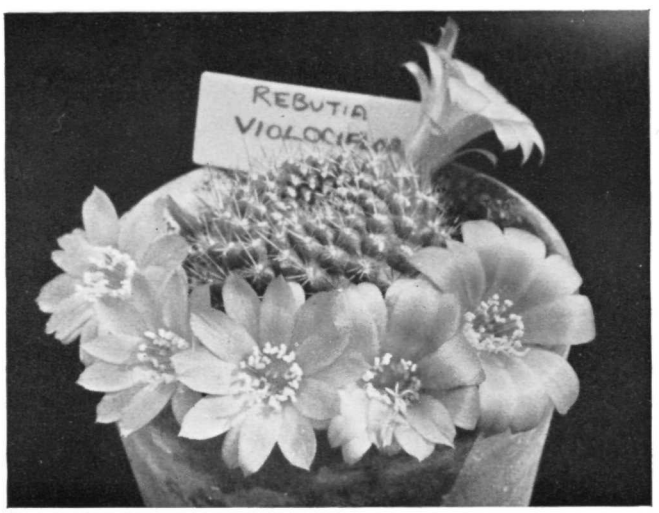
Cylindrophyllum calamiforme G. A. Burton



Mammillaria schiedeana varieties G. A. Burton

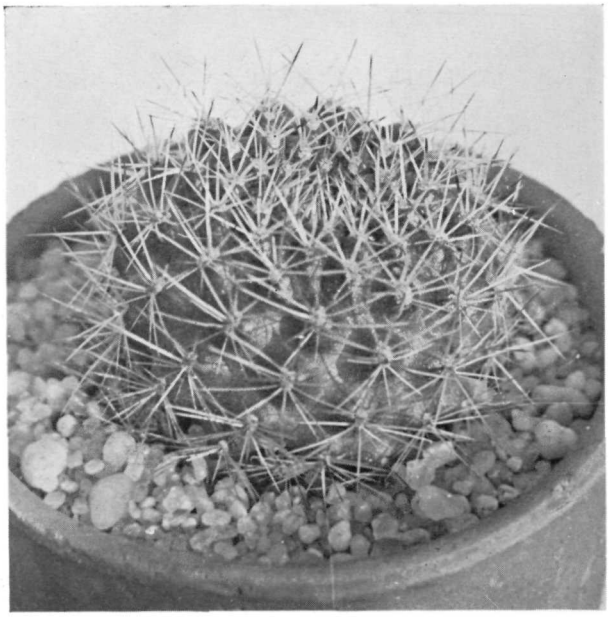
Rebutia senilis G. A. Burton

Digitorebutia haagei pygmaea G. A. Burton

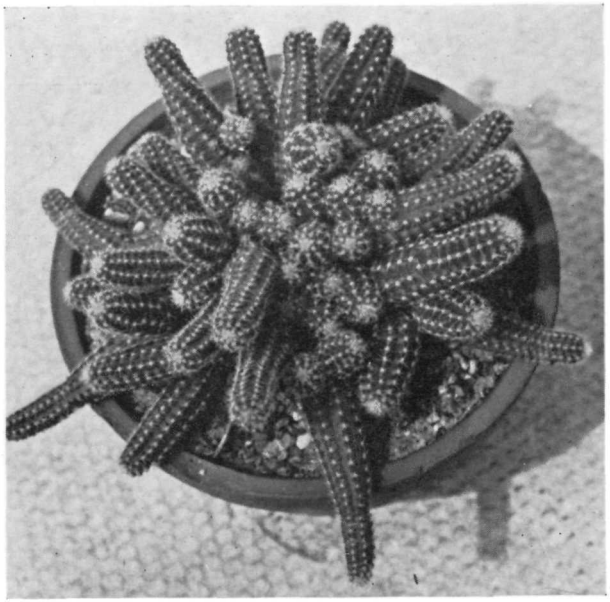


Rebutia violaciflora G. A. Burton

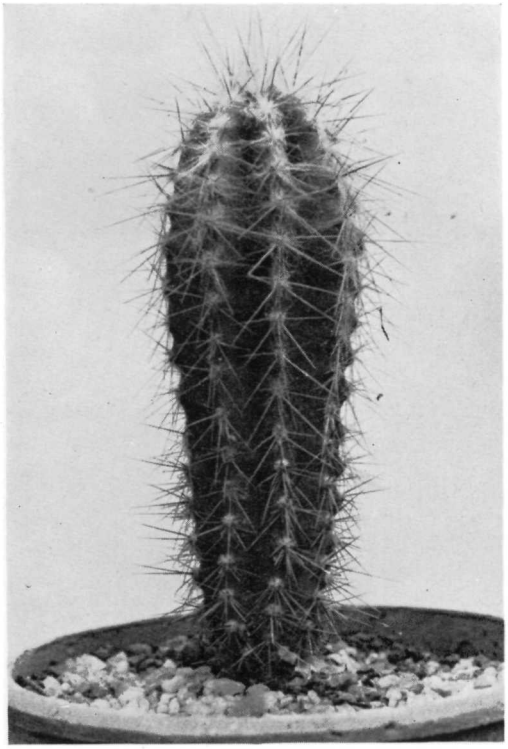
Rebutia krainziana G. A. Burton



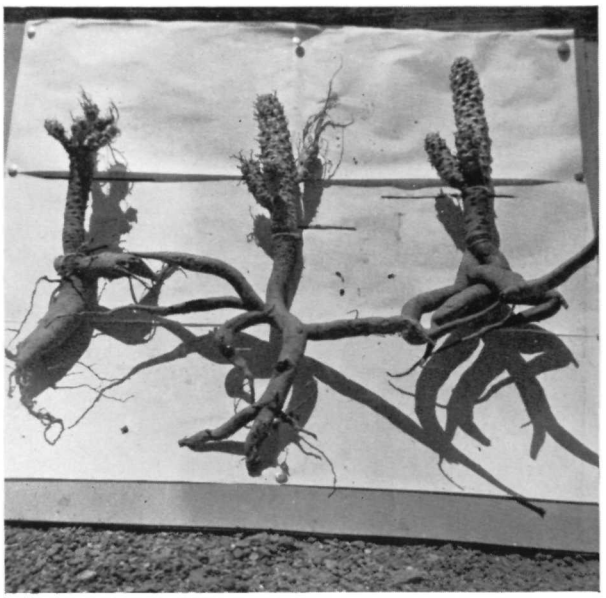
Rebutia blossfeldii P. C. Ryan



Chamaecereus silvestrii P. C. Ryan



Cephalocereus palmeri P. C. Ryan

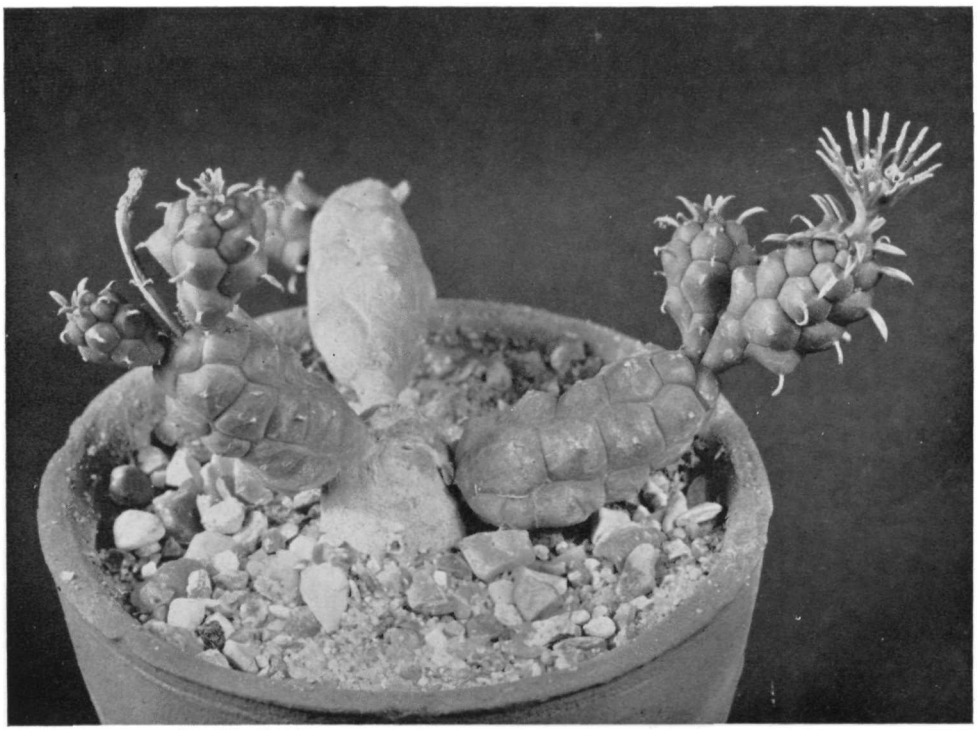


Euphorbia hallii Dr. L. Bolus

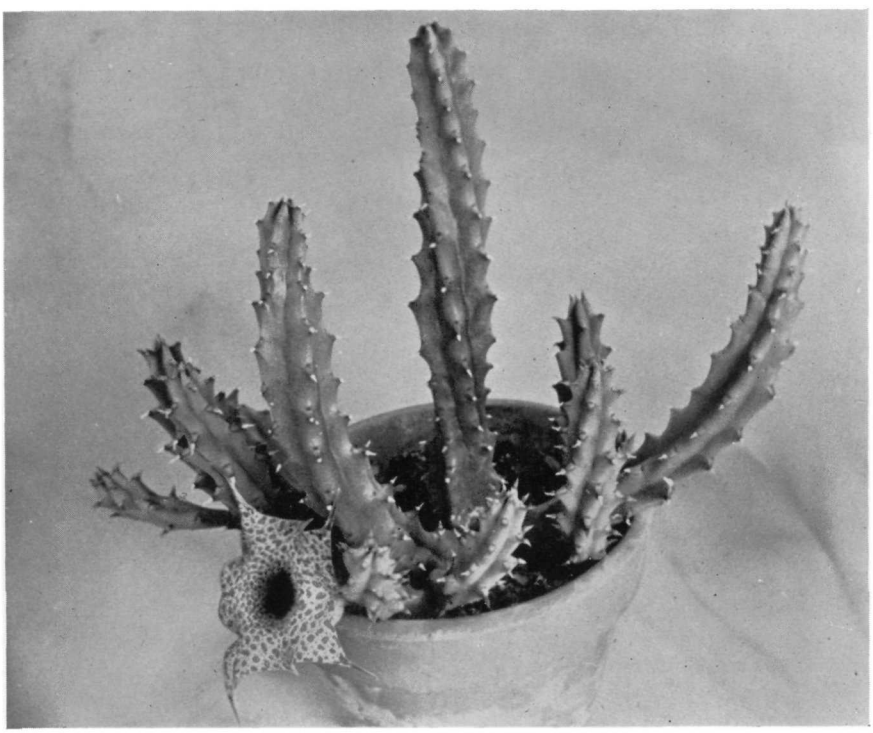
Gibbaeum heathii Dr. L. Bolus

Mosaic of *Crassula columnaris*, *Conophytum muirii*, *Gibbaeum album* and *fissoides* Dr J. Bolus

Gibbaeum cryptopodium Dr. L. Bolus



Euphorbia clandestina Miss M. J. Martin



Huernia kirkii Miss M. J. Martin

SUMMER VISIT TO ZURICH'S SUCCULENT COLLECTION

By Mrs. T. WATT

Our summer holiday (August 1960) was the most enjoyable that my husband and I have ever spent. We left England in late May, and after a very satisfactory journey across France and Switzerland, arrived on the shores of the beautiful Lake Garda, in Italy, very peaceful at this time of the year, and gloriously sunny, without being too hot.

The spot we had chosen for our visit was as near Heaven on Earth as one could hope to get, and we had a very happy stay. Among the things that enchanted me were the dark spires of the Cypress trees which I shall always associate with this part of Italy, and the masses of great *Aloes* sending up spikes of flower buds like giant asparagus, flourishing on the lakeside and in the gardens on the slopes of the mountains, growing to a prodigious size. Also growing in profusion in window-boxes and on balconies, were pink *Nopalxochia* and red *Ackermannii* hybrids, but in spite of the wonderful climate I did not come across any private collections of cacti other than these.

However at a small harbour further down the lake I was enraptured by a beautiful *Epiphyllum* flowering on a window-sill, and I knew that somehow I would have to obtain a cutting of it before returning home. We visited the little harbour several times, and I gazed covetously at my lovely cactus each time, wishing for the hundredth time that I could speak Italian or German, and so make my wishes known to the owner of this beautiful plant.

At last, on our last day, the schoolgirl daughter of our host wrote out what I wanted to say on a piece of paper and armed with this I managed to strike a bargain with the old lady who owned the cactus, and we parted with many good wishes and friendly smiles and handshakes, me clutching my cuttings with joyful hands. I have every hope they will settle down to their new home with me. I took a colour snap of the original plant to refresh my memory; it is something like *E. cooperii* but more beautiful, and flowers right to the end of the stems in great cream and gold profusion.

After two wonderful weeks the day came for us to leave and I must admit to a very great heartache, for it was the most heavenly place, and even the prospect of visiting our Swiss friends, of whom we have a number, did not entirely console me.

However, once in Switzerland which I love, and always shall, I began to look forward to my visit to the Municipal Succulent Gardens in Zurich, and on the Monday morning, with the kind assistance of a friend at Schoenenwerd, I contacted Mr. Krainz, the curator. When he heard I had an introduction from Mr. Shurly he very kindly arranged to meet me the following morning. We arrived at the Mythen Quai where the gardens are beautifully situated right on the shores of Lake Zurich, and my husband left me while he visited his firm's Holding Company nearby.

There was no mistaking the M.S.G.Z., the entrance to the glasshouses flanked by large *Opuntias* and *Epiphyllums*, and great activity proceeding in the erecting of a fine new wing to this expanse of glass, which I shall look forward to seeing full of plants on my next visit.

I felt very shy as I knew that Mr. Krainz spoke as little English as I did German and I wondered just how we would manage to understand each other. However, I was approached at once by a workman who took me up to Mr. Krainz' office. Here I was greeted by his secretary, a very pleasant girl who spoke some English and we managed to talk to each other while waiting for Mr. Krainz. We went out to look at the contents of some of the frames set at intervals round the main glasshouses, and very interesting they were, full of the most beautiful cacti, *Rebutias*, *Echinocereus*, *Lobivias*, *Gymnocalyciums*, *Mammillarias*, etc., many of them in flower and many were of the rarer kinds, *M. guelzowiana* and *M. longiflora* for example, the former large and flourishing plants, which caused me to gasp and ask what age they were. The answer astonished me for the plants were over ten years old I was told, and on my remarking that I had always understood that these *Mammillarias* were particularly difficult to keep in a collection for more than a very few years, it was suggested that an acid soil was in part responsible for their good condition and maturity. (Those of us who have read Franz Buxbaum 'Cactus Culture' will remember that he too stresses the need for an acid soil for most *Mammillarias*.) The *Rebutias* too were many of them over twenty years old and were fine plants with many heads to them.

There were a number of grafted plants I noticed, and the reasons for this were later explained to me, and under the circumstances it seemed a sensible procedure, leading as it did to the preservation and ultimate flowering and seed-setting of the rarer kinds, in a much shorter space of time than normally was the case. As this no doubt in time may breed a hardier strain of certain plants it has a good deal to be said for it. In one long frame I was interested to see there were collections of cacti brought back from various expeditions, and bearing labels with the names of the finders and the habitat of the plants, etc., housed at M.S.G.Z. for the purpose of study and seed

production. There was altogether so much to interest me that I felt I had only a fleeting impression of everything which whetted my appetite for a further visit.

Presently one of the gardeners came to tell us that Mr. Krainz had returned, so we went back to his office to meet him. I found Mr. Krainz a very friendly person with a warm smile and handshake, and I wished that I could speak his language. It is singularly frustrating to be struck dumb at a time when one would like to say so much! However, after an exchange of greetings he led the way down to one of the houses where he introduced me to a friend of his, a Dr. Mettler, whom I was delighted to find spoke excellent English, and very kindly acted as interpreter. There followed a wonderful 'conducted tour' of the frames and glasshouses, with a good deal of conversation about cacti and the various people connected with our hobby. It was clear that Dr. Mettler also was a very knowledgable person on this subject, as well as being a keen cactophile, and I found the two of them delightful company.

I was very interested to see that Mr. Krainz' method of 'growing on' his seedlings was very like Mr. Boarder's that is to say they were in containers made of a form of concrete, all fitting neatly into frames raised from the ground, and having cable heating running through a base of peat. The seedlings for the most part were beautiful plants but a few, as could be seen by the date on the label, had slowed up a little in growth, so it would appear that all of us who enjoy the fascinating business of raising cacti from seed, occasionally suffer a set-back, but I am sure that the answer to problems of this kind will be found at M.S.G.Z. if they are to be found anywhere.

The glasshouses were beautifully set out with magnificent *Opuntias* and *Cereus* dominating the scene, while great *Agaves*, *Echinocactus*, *Cleistocactus* and many prostrate types of *Cereus* mingled with smaller rarer kinds of cacti to make up a wonderful display. At one end was a large plant of *Selenicereus* 'Queen of the Night', which had the remains of several flowers on it and more buds to come. I only wish I could have seen this glorious cactus in bloom. Another similar species had a huge bud which I was told would open into a flower well over twelve inches across. I'm afraid my memory has failed me over the names of many of the cacti I admired. In a smaller house there were many beautiful *Mammillarias*, *Notocactus* and large *Astrophytums* also fully mature specimens of *Melocactus* of various species with Cephaliums holding red seedpods, *N. leninghausii* in bloom, a lovely flower, and the wonderful blue of *Cereus azureus*.

The cactus I liked best of all, a plant with many cylindrical golden heads, the one most of us know as *Seticereus aureivirillis* or *icosagonus*, although I can't remember what it was called in this instance, I think it was *Binghamia*. (After studying Borg I find that there are many synonyms of this!) By any name it was a glorious plant and a joy to behold. Also worthy of mention was a (dare I say 'humourous' looking) tall *Cephalocereus* with a magnificent cephalium growing for a foot or more down one side of its considerable height, like a long grey beard, soft to the touch.

I was very much impressed by the whole beautiful collection and I did not see all there was to be seen in the two and a half hours there, they went all too quickly and I cannot wait to return and look my fill for much longer. The thing that struck me most was the healthy, cared for look of it all, more like a much loved private collection, and I am sure that Mr. Krainz must be blessed with a team of splendid workers who take real pride in carrying out his instructions.

Next time I shall take a couple of rolls of colour film and my close-up lens and bring back some nice pictures, as I have discovered since my visit that they come out very well even on a cloudy day. However, I was given a set of fine postcards of the collection and they give a very good impression of it, and my memories of my happy visit and the friendliness and kindness I was shown will remain with me for a long time.

Anyone who has the good fortune to be able to pay a visit to this fine collection will find it a most rewarding experience and will, I hope, enjoy it as much as I did.

In the illustration pages will be found two photographs of the well known night flowering *Epiphyllum*. This plant belongs to the Misses Cockshott of Hove and was grown from a cutting taken in 1956 from the original which was brought from Jamaica some years ago. The photographs were sent us by Miss D. Pierce, also of Hove.

CORRECTION. In the January Journal it will have been noticed that in the original description of *Weingartia erinacea* the name of the new species had also been printed half way through the description. The description had been incorrectly printed in the proofs received by the editor and corrected when returned to the printers. Unfortunately, the printers still retained the unnecessary name in the middle of the description.

HOW I BEGAN

By Miss ANNIE DIXON

The above title is still a popular feature of the Journal, so some reminiscences of my early memories of cacti may interest some younger members.

While still at school, we lived at Didsbury, the near-by Darrah Collection of cacti at Manchester soon became a regular pilgrimage for me and my family. Mr. Cobbold, the then Curator was ready at any time to explain or point any item of interest. As he had been the gardener who helped Mr. Darrah build up the collection, he could discuss the plants' histories from when they were received in England.

He told us of unpacking some of the very spiny *Ferocactus* and *Opuntias* that had been packed in cases with grass, a very painful process.

As the pilgrimage continued over a few years, I was able to watch the plants in their growth. One day, I remember we were greeted by hose pipes, water everywhere. "The end of the dry season."

Before the first world war, when the suffragettes were active, Mr. Cobbold and park attendants were on duty day and night to protect the Cactus Collection. Night blooming *Cereus* were given an advertisement in the Manchester papers and many admirers came to see them.

When my parents left Manchester for Prestatyn, and my mother commenced her collection of cacti, the first plants from Woolworths, we became very friendly with Mr. Cobbold. He would visit them for weekends when all he wished to do was to work in the tiny greenhouse, mix soil and repot the plants. I always had a weekend at home and spent the time with Mr. Cobbold and the cacti. I would like to pay tribute to this very fine gardener, who worked with cacti under difficult conditions, very little literature, no lectures on habitats, but his chief grouse was then, as now, the changing names. This is past history, some of the old members may have known the Darrah Collection and Mr. Cobbold. The Collection is still there, many cacti very old, many of my favourites gone, but the Parks Committee have brightly coloured plants, Begonias, Geraniums, etc., to give more interest to the main house.

(Yes, I remember the Collection in the later twenties and also Mr. Cobbold—later Mr. Harry Hall. It certainly was then a very fine collection with large, mature plants excellently displayed. Some enthusiastic authors put the value of some of the plants down to thousands of pounds, but the real value in those days was that such a collection had been got together and provided such interesting and valuable material to all students who were able to visit them. Ed.).

I.O.S. We have been notified that the 1961 Congress of the I.O.S. will be held at Barcelona on June 5th to the 10th. Any member who is interested should write to the British Delegate, Mr. J. D. Donald, 48 Wicklands Avenue, Saltdean, Sussex.

STAPELIA MAGNA. "I cannot compare *S. magna* to Berger's description as I no longer have it. It was so similar to *S. grandiflora* and *S. hirsuta* that it had to make way for other things. The plant was about twelve inches high, the stems somewhat pubescent, like *S. hirsuta*, flowers were similar to *S. grandiflora* in colouring, but smaller, the buds were pointed as with *S. grandiflora* (*S. hirsuta* buds are rounded)." Miss M. J. Martin.

OFFICERS. At the Annual General Meeting the present officers of the Society were re-elected unanimously.

SHOW AWARDS, 1960

Mr. P. V. Collings. Evelyn Theobald Cup for Succulents. P. V. Collings Cup for Euphorbias. Denton Memorial Medal for Stemless Mesembryanthemums. Amateur Gardening Award of Merit. 10—1st 7—2nd 2—3rd £8 2 6

Mr. J. E. Taylor. Sir William Lawrence Cup for Cacti. Mrs. Luty Wells Cup for 3 Cacti
7—1st 2—2nd 2—3rd £4 15 0

Mrs. T. Watt. S. J. Pullen Cup for Miniature Garden. Mrs. A. Hedges Cup for Succulents from seed.
2—1st 1—2nd 1—3rd £1 12 6

Mr. S. C. King. Mrs. Pryke Howard Cup for Succulents.
1—1st 2—2nd 2—3rd £1 15 0

Mr. W. R. Farwell. R. S. Farden Memorial Bowl for Groups (Shared with Mr. J. J. Seymour).
2—1st 1—2nd 2—3rd £2 7 6

Mr. J. J. Seymour. R. S. Farden Memorial Bowl for Groups (Shared with Mr. Farwell). Amateur Gardening Silver Bronze Medal.
1—1st £1 0 0

Mr. D. J. Humphryes. Denton Memorial Medal for Stemless Mesembryanthemums.
3—2nd 2—3rd £1 12 6

Mr. N. R. Clyne. Challenge Shield for Juniors.
3—1st 1—2nd £1 12 6

Mr. G. L. R. Hedges	3—1st	3—2nd	3—3rd	... ...	£3	7 6
Mrs. M. Halford.	1—1st	4—2nd	3—3rd	... ...	£2	15 0
Miss A. M. Pilcher.		3—2nd	1—3rd	... ...	£1	7 6
Mrs. H. Hodgson.	2—1st			... ...	£1	0 0
Mr. W. Greenaway		2—2nd	1—3rd	... ...		15 0
Mr. J. D. Harding		1—2nd	1—3rd	... ...		15 0
Mr. B. G. Inglis	1—1st		1—3rd	... ...		15 0
Mr. K. H. Walden Amateur Gardening Bronze Medal.	1—1st		1—3rd	... ...		15 0
Mr. H. Rider	1—1st		2—3rd	... ...		14 6
Mr. J. R. Moore		3—2nd		... ...		15 0
Mr. R. H. I. Read		1—2nd	1—3rd	... ...		12 6
Mr. B. Swan		1—2nd	1—3rd	... ...		12 6
Mr. P. Bent			3—3rd	... ...		12 0
Mr. D. H. M. Brooks	1—1st			... ...		10 0
Mr. E. A. Clarke			2—3rd	... ...		10 0
Miss M. Hancock		1—2nd		... ...		7 6
Mr. W. F. Maddams		1—2nd		... ...		7 6
Miss M. Falcon	1—1st			... ...		7 6
Mrs. I. Blake	1—1st			... ...		7 6
Mr. F. H. Smyth			1—3rd	... ...		5 0
Mr. F. L. Hatcher			1—3rd	... ...		5 0
Miss E. M. Drage			1—3rd	... ...		3 6
North Surrey Branch	Group 1st				£5	0 0
Herts Branch	Group 2nd				£3	0 0
N.W. London Branch	Group 3rd				£2	0 0

SOME CHOICE SUCCULENTS

By P. BENT

Hottentot's Bread of Elephant's Foot, better known as *Testudinaria elephantipes* is a caudex plant and very interesting. Shiny green orbiculate leaves rise out of the caudex when winter arrives and then, and only then, should water be given. At the end of the season, which is spring, the leaves will die off and water should be withheld. Double potting is recommended as this prevents roots from drying off due to baking in the sun. This potting method holds enough water to keep the plant fresh and not all contracted. A special note should be given to the potting method. The caudex should always be planted so it can be seen—never bury it completely. The habitat of *T. elephantipes* is South Africa.

Euphorbia obesa is, without doubt, one of the most interesting *Euphorbias*, seconded, perhaps, by the tall candelabra *Euphorbias*. Its squat obese growth interests all those who grow it. Like *meloformis*, *obesa* is dioicous, i.e., male and female flowers are found on separate plants. After the flowers have finished, their remains give rise to spine like growths, but these should really be called thorns. This plant likes moderate water in summer and only a tiny drop in winter. Long Tom type pots should be used to house the long tap root which prefers to go down and not round and round. Cape Province is its habitat.

Like *Testudinaria*, *Frithia pulchra* is a winter grower. Many growers find this *Fenestraria* like plant difficult. G. Schwantes, in his book "The Cultivation of the Mesembryanthemaceae" states that it grows readily from seed, but mature plants suddenly disappear. This I think is due to giving this plant too much water in winter which will certainly cause death from rotting. During summer no water should be given and double potting should be employed for reasons stated earlier.

Muiria hortenseae is another winter growing *Mesemb.* It is without doubt harder to grow than *Frithia* as it is most rot susceptible. Water should be given in a minimum of quantity and withheld from September to the end of November when a process, seen in *Lithops*, will take place and the new body will form within the old. Flowers are small and push through the fissure which separates the leaves.

Stapelia gigantea needs mention because of its very large flowers which can reach a foot or more in diameter. Cultivation is easy if a fairly high temperature is maintained during winter and some water given, but only a little. In summer water should be fairly free as this is a fast growing plant. It is advisable to sink base of the plant in spar grit, just in case rot should occur.

Tavaresia grandiflora is a difficult *Stapeliad* if care is not exercised. If given just enough water during summer to keep the plant filled out, it will grow with success. In winter no water should be given and a temperature of about forty to fifty degrees should be maintained. Potting in spar grit, as described under *S. gigantea*, should be used. N.B. If Black Spot is noticed, cut it out or it will spread (*Stapeliads* only.).

CRASSULA GILLII. "One of the photographs in the Journal is wrongly named. *C. gillii* has the leaves in a rosette, the one pictured appears to be *C. anomala*, I have both." Miss A. Dixon, St. Albans.

PHOTOGRAPHS. The Editor would be grateful if readers (and he appeals to readers overseas) would send him photographs of cacti and other succulents in flower. Groups of plants are not very popular as photos of single plants are most useful for identification purposes. Photographs should be sharp as if out of focus (woolly) the fault is magnified when reproduced. Naturally, photographs of the rarer plants are very welcome even if not in flower, but photos of plants with flowers or with fruit are especially welcome. They are wanted for publication in the Journal.

Meeting Place : New Hall, Royal Horticultural Society, Vincent Square, London, S.W.1. 6 p.m. for 6.30 p.m.

Annual Subscription—21/-

SOCIETY NEWS

1961	*Subject*	*Lecturer*	*Table Show*
May 9	Adromischus (with slides)	Mr. B. Makin	One Adromischus
June 27	SHOW. Flowering Cacti (with slides)	Mr. R. H. I Read	One Cactus in Flower.
July 11	Euphorbias	Mr. A. S. Jones	One Euphorbia.

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We shall, as last year, have a selling stand at the Birmingham Homes and Gardens Exhibition at the Bingley Hall from March 29th to April 22nd.

We shall also once again have our cactus and succulent plants on sale on part of Carters Seed Stand at The Ideal Homes Exhibition at Olympia from March 7th to April 3rd in the same position near the Gardens as last year.

We shall in 1961 try a new venture with a sundries stand at the East Midlands Garden Exhibition in the Granby Hall, Leicester, on March 22nd, 23rd, 24th and 25th.

Remember to come and see us in the big Marquee at the Chelsea Flower Show where we shall be exhibiting from 16th to 19th May.

We shall have a display stand and also selling lines at a Garden Furniture Exhibition at the Army and Navy Stores which opens during the week following the Chelsea Flower Show.

Our EIGHTH OPEN DAY will take place in 1961 on Saturday and Sunday, July 1st and 2nd. We normally open to the general public from 2 p.m. to 7 p.m. on both days, but so great was the response last year that we have again decided to open at 11 a.m. for members of any recognised Cactus Society. There are excellent car parking facilities immediately adjacent to the greenhouses. In the event of wet weather, passengers by car can be set down at the entrance to the big marquee. Covered ways are provided between the greenhouses, the big marquee and the Tea Tent.

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THE

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AND SUCCULENT

JOURNAL

OF GREAT BRITAIN

Established 1931

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THE

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FROM THE PRESIDENT

The past quarter has been interesting to me personally because I have received a few comments to my request for information in regard to "divided areole". Unfortunately, they are by no means sufficient and it is impossible to form any opinion that would be worth while. First, let me make it quite clear what I mean by "divided areole". Throughout Cactaceae the areole is the site of the flower and the vegetative reproduction (offsets), until we come to the *Coryphanthanae* in which some species have a groove and the flower travels down this groove from the tip of the tubercle, the site of the areole, down to the axil between the tubercles. In *Mammillaria* it has generally been held that the flower and the fruit finally find their resting place in the axil, so that it has left vegetative reproduction as one of the functions of the old site at the tip of the tubercle. Information has reached me in sufficient quantity to establish that this arrangement is often varied and the flower and the vegetative reproduction come from the axil, the tip of the tubercle or either. This information upsets the above view and I must suspend my point of view until there is more information available.

It will be remembered the original meeting that founded our Society was held at the St. Brides' Institute, London in November 1931. Letters have arrived at St. Bride's ever since, but they have been sent on to us. Mr. Eppele's letter, referred to elsewhere, was also sent there, but it was sent on to Mr. Walden, even though thirty years have elapsed since the foundation meeting. It is remarkable that the Institute should keep its files for so long and render such fine service to those who have used their building. Many thanks to those who are responsible.

I am always appealing to members and readers to send me photos of single species (not groups) for publication in the Journal as authors do not always illustrate their articles by photographs. It has been suggested that we might get a better response if a prize was given each year for the best photograph published in the Journal. I would like to have your views. All photos should be of close ups and should be in good focus with details clearly shown. Reproduction increases any faults, haziness, etc and that is why sharp photos are necessary.

Owing to increasing circumstances I have been endeavouring to pass some of my duties on to other members so that if anything should happen the members will not suffer. As you are aware, Mr. Heathcote has been despatching the Journals to you each quarter. Now, Mr. J. Seymour of SouthWoodford has undertaken the handling of old copies of the Journal. Orders should be sent to me with remittance and I will send the orders on to Mr. Seymour for despatch. In July Miss A. M. Pilcher has been good enough to agree to take over the blocks for illustrating the Journal and to re-arrange them in alphabetical order. And I must not forget to mention that Mr. G. R. Ibbotson, of Caterham, is undertaking the despatch of the booklets, orders for which should still be sent to me. You can be sure I am very grateful for this assistance and these moves will satisfy the membership that eventualities are kept well in mind.

E. SHURLY.

Do not forget to send your entry for the September Show early to the Show Secretary, Mr. K. H. Walden, 152 Ardgowan Road, Catford, London, S.E.6. The date of the Show is September 12th.

CACTUS CULTURAL NOTES

By A. BOARDER

It is the middle of May and I have just started to repot my plants. It is a major operation to see to nearly a thousand plants in pots to say nothing of trying to keep weeded some 160 boxes of seedling plants in my frame. This year's seedlings are needing to be pricked out and so far only the *Lithops* and *Astrophytums* have been attended to. Many of the *Mams.*, are ready to be moved but they will have to wait. It is frustrating sometimes when one makes good intentions to do a certain task and then something crops up to stop work, perhaps an unexpected caller or urgent correspondence has to be attended to. No set pattern is possible in my life these days. Bookings for lectures or judging tasks can be forgotten until a peep at the appointments book brings forth some frantic readjustments. Last Friday I journeyed to Bristol to judge their annual show commencing at 8-0 a.m. on the Saturday morning, then back at night to be ready for a Branch visit to my greenhouse on the Sunday. Now tomorrow and Thursday I shall be on a stand at Chelsea, and so it goes on.

I seem to be away from home almost as often as I have days here. Added to this is the fact that Cacti growing is not my only hobby. I breed fancy goldfish and have lecturing, writing and judging to do for this side of my activities. Part of this work is to answer queries for "The Aquarist" journal and so far I have written, with copy, one thousand, seven hundred and seventy seven letters and also a few hundred for a well know firm of fish food suppliers.

I had repotted earlier in the year on previous occasions, but I find that May is quite a good time for the task as the plants have started to make new growth and their roots can be examined far better than if the repotting is done earlier in the year. Most of the *Mams.*, were budded and they have since flowered. It does not appear to retard the flowering in any way and the plants seem none the worse for the disturbance. It is always nice to be able to handle the plants often for the first time for at least a year. Some which have been unnoticed all that time look so good when at close quarters and many which have remained almost hidden take on a fresh charm when repotted and tidied up. Some had been almost hidden by other plants and now have come under notice once more and can be suitably admired. I was wondering where all the pots were going to be placed because of extra space required for those plants needing larger pots. However I have got over the trouble for the time being. I have put up a large shelf for all my *Lithops*. I do not as a rule like shelves, but the *Lithops* can I think stand the sun likely to bake them on this shelf near the glass. The moving of over sixty rather large pots has given me some space at last but as I continue with the repotting it is quite obvious that the spare room will soon be eaten up.

I do not, of course, use large pots unless absolutely necessary but in many cases it is imperative to give a larger pot such as when the plant was touching the side of the old one. I have so far found very little trace of root bug. I always rub some paradichlorbenzine round the inside of each pot and feel sure that this helps to keep the pests away. I found that the roots of most of the plants had penetrated well into the peat I had placed in the base of the pots last year. I shall continue to use some peat in each pot as it seems that the plants appreciate this and I am sure that it holds much moisture when ordinary soil would have dried completely.

I am still using one potting mixture for all my plants and find that they grow as fast as I want them to and give me plenty of flowers. When one sees all kinds of soils recommended for the different genera one wonders if the writer has ever grown many Cacti or is just a pen-grower, one who is too busy with the pen to have the time and experience needed for succesful growing. I know that I can learn something new each year regarding the growing of these plants and I have been growing them for fifty-six years. Perhaps I am slower to assimilate knowledge than the newcomers, but at least it keeps my interest alive as it must be very boring to know it all.

Although travelling about to judge shows takes me away from my own plants, it does enable me to meet other growers and to see other plants. My visit to the Bristol show was such an occasion. This Society goes from strength to strength. Each show seems to surpass the previous one. A new venue was a great success and I wish that our Society could get as good a hall as the new one in Whiteladies Road which housed this year's wonderful show to perfection. There were over two thousand plants in the forty-five classes and the quality of most of the cacti was excellent. Perhaps the other succulents are not quite up to those we might see at our shows, but the cacti would stand every chance of winning. The Bristol Society are fortunate in having such a fine core of lady helpers who see that everything goes with a swing. It was a great pleasure to me to see and judge such a fine show.

Each year I find a fresh *Mammillaria* in flower and my hobby of recording all on a coloured slide is a very satisfying one. If only for my own use, this record of flowering *Mamms.*, is very interesting and one which is a permanent record of the colour and shape of the flowers. So many members are getting a new interest in their hobby by the

means of colour slides. I do not use an expensive camera, just a Kodak Colour-snap type with close-up lenses enabling me to get to within about eight and a half inches of my subject. As most of the flowers only open with good sunlight there is no need to worry over lighting troubles and I get by without using a light meter. What appears to me to be the problem in future is knowing when to stop. This year a plant with ten flowers is photographed but next year there may be twice as many flowers so what does one do? It is apparent that another snap will have to be taken, but where does one go from there? Seemingly there is no end to this retaking problem. Ah well! not to worry.

I find that rain water is much better than the water from my tap. This latter appears to be so lime heavy that a firm crust of lime forms round a pot if tap water is used to any large extent. I prefer rain water and have just purchased a hundred gallon tank in which to catch and store the rain. I shall now be praying for this, but expect that now I am ready for it it won't come, whereas much has been running to waste from my rusted old tank. If rain water cannot be procured it is advisable to see that water is not used directly from the tap, but left in a tank to mature if only for a couple of days. This will enable the water to soften a little and lose the chlorination treatment.

Looking round the greenhouse I see that at least twenty of my *Lobivias* are going to flower, in fact some have already done so. What lovely flowers they are, but what a pity that they only last for one day. Even plants no larger than an acorn can flower. There are so many shades of colour from clear yellow to darkest red, through orange, pink and magenta, that this genus provides some of the most outstanding colours of flowers among all cacti.

Now and again something happens as a surprise and it is often a visitor who spots the unusual first. Such an occasion was when a visitor spotted some fine pink flowers on one of my groups of *Mammillaria elongata*. I could not remember what kind of flower it had had previously, but here at any rate was something very attractive and as the stigmas on the different flowers had different totals of forks it seemed that the plant might have been a hybrid. The flower on *M. melanocentra* is an exceptionally fine one, being large and a darkish pink with a stripe of a darker shade. It will be noticed that the size of the flowers often increases with the size of the plant, a small seedling having a small one, but as the plant grows so does the flower get larger. Some seedlings of *M. mollihamata* have flowered for me and they were only sown last year.

My *Coryphanthas* which flowered last year produced a good crop of large green seed pods. This year I see that a plant of *Coryphanta difficilis* is budded. I hear that many members do not get their *Coryphanthas* to flower and I notice that some of mine take a long time to flower after being raised from seed. There is much patience needed to succeed with flowering this genus. Most of my *Gymnocalyciums* are in bud and some have flowered already, this genus rarely fails to provide many flowers. The *Notocactus* are again in flower and here is another genus which usually provides plenty of bloom each year. My *N. leninghausii* which flowered last year produced a large seed pod and this year has a crop of off-sets forming at the base. The *Parodias* are budding well and promise a fine crop of flowers. I like to give these as much sunshine as possible. I have fitted a blind to let down on the hottest days to shade a small section of the greenhouse. I shall keep those plants which I find need some shade in this section and will see what benefits they derive from the shade.

The plants I tried in plastic pots appear to be growing very well and, having asked several people how they fare with them, I think I can safely say that plants appear to grow better in them than in clay pots. Time will tell whether they last as well, a lot will depend on the thickness of the pot and the type; some I tried a few years ago were too thin and split when exposed to plenty of sunshine. Whilst the weather is warm take any cuttings from plants which are needed for an increase. I find that it is a good plan to have two of a kind if possible. I find that cuttings strike in an equal mixture of peat and washed river grit. If moisture can be supplied from the base only, the roots soon form and then the cutting can be carefully potted into ordinary soil. If the base of a cutting is kept too wet it often rots instead of throwing out roots. Also it is unwise to push the cutting into the soil as the same will happen. When watering try to make sure that enough is given at a time. If sufficient space was left at the top of the pot water can be run in and enough given at a time to damp all the soil in the pot. If the soil is brought up to the top of the pot when repotting then very little water can be given at a time and so most of the soil in the pot never gets damp and no plant can be expected to grow under such conditions. As long as it is fairly warm plenty of fresh air should be provided every day, even having the door open if provision is made to keep out cats.

Any large plants can be placed outside in a sheltered spot for the rest of the summer and such plants as the hybrid *Epiphyllums* will benefit from the fresh air and rain. Do not be tempted to put out anything rare or tender as slugs are almost sure to pick on such a plant for a feed. Any damage so caused may never disappear completely. If you do wish to experiment with a few plants to leave out of doors all the winter use hardy types and only then if you have a spare plant in safety somewhere else. A corner sheltered from too much wet can be a good place for some of the coarser growing *Opuntias* and *Cerei*.

CULTIVATION OF SUCCULENTS

By Mrs. M. STILLWELL.

July is a month full of activity with most of the succulents. Now is the time to water most of the *Conophytums* and *Pleiospilos*, many this year seem well forward, it must have been the warm spell in early spring. There are no hard and fast rules for watering, one has just to watch their individual plants. It can be quite a test to watch the *Conophytums* shrivel more and more each day, and what a relief when they start to grow again.

I have been trying out the Eclipse peat with the enclosed addition to bring it up to the various John Innes strengths. *Epiphytes* and *Stapeliads* seem to respond to it well and made plenty of new growth, but as it dries out somewhat quicker the plants have to be watered more frequently and, as Stapeliads rot easily if kept too wet, they should be watered with care from the base. With the latter it is as well to make sure that all of them have a good thick layer of sharp sand, or cornish grit at the base and round the neck of the plant, you can then water overhead as well if necessary and know that the water will drain away and not stay on top of the pot. I have heard it said that this is the compost of the future, as it is light, clean, and easy to handle, but I am not yet quite convinced that it would suit all of our plants.

I do not feel it is necessary to rush and repot all our plants in the spring. I feel a plant should only be repotted when you know it needs it, which could be any time during the year. Some plants, particularly the mimicry types which are slow growers, prefer to be left undisturbed for several years. They benefit from being repotted just at the end of the resting period. My repotting goes on most of the year, I do a few whenever I get the time. There is no need to disturb the roots too much if a plant looks healthy, but just needs a bigger pot, carefully remove it from one pot to another and fill it with the new soil. *Stapeliads*, in particular, should be potted on as soon as they reach the edge of the pot, most of them make a tremendous amount of root and soon exhaust the soil they are in and benefit from the extra added as they are potted on. By July these should be well budded, particularly if grown up on a shelf where they get well ripened and a good colour. It is a good thing to break them up after a while and remove some of the tired growth which has ceased to be active. Most of these will make good sized plants in one year from seed and it is a good way of obtaining some of the choicer kinds which are not always obtainable as fully grown plants. A collection of *Huernias* and *Carallumas* provide some of the most attractive and unusual flowers in the whole succulent world and without the offensive odour of the larger *Stapelias*.

Since moving my *Adromischus* to a spot where they get full sun, I have been delighted with the beautiful colours they have developed. Among those fairly easy to obtain are *Adromischus cooperi, festivus* and *maculatus*. These make attractive, beautifully marked plants, especially if placed outdoors for the summer where they get unrestricted sunshine. A collection of these plants grown in a shaded house can look very green and uninteresting, that is the reason I believe many people are not so keen on these plants, but grown properly and in the right conditions they can be a thing of beauty. Some of the choicer kinds well worth looking out for are, *A. marianae, leucophyllus* and *cristatus*. These plants are quite easy to grow and will propagate from a leaf.

In May, I went through the *Lithops* and repotted where necessary, I removed the top half inch or so of soil in all pots and replaced with cornish sand, so that only the actual roots were in the soil. I did the same last year with the *Argyrodermas, Conophytums* and *Ophthalmophyllums*. This is well worth the effort if you have the time and patience, it can also be extended to other mimicry plants at your discretion. If you happen to have *Lithops vallis-mariae* in your collection and it is not doing too well in your usual soil, try it in two thirds limestone grit and one third compost. It is a great lime lover.

I have been asked how to keep *Bryophyllums* in good condition as they tend to lose their bottom leaves and get very leggy. I would suggest that you grow these plants as biennials and start again with a new plant every other year. They are so prolific, that there is no trouble in doing this. It is also possible to behead sturdy plants and reroot the head, throwing away the old leggy base. To get those lovely large flowering plants complete with all their bottom leaves, the temperature should not go below 50° in the winter, and they would probably benefit from mild doses of fertilizer.

For the lovers of leafy succulents, I would suggest a few of the *Kalanchoes* to add colour to the collection. These make excellent backgrounds to a group in the shows and provide just the right touch of colour to offset the greens of the cacti. One of the best for this purpose is *K. petitiana*, sometimes referred to as *K. granata*. Towards the autumn it turns a rich ruby red. Another not quite so common is *K. orygalis*, which grows into a tall, very beautiful plant with cocoa coloured leaves, the reverse side being silver grey. It is very easily marked if roughly handled. *K. marmorata*

has striking bluish leaves with chocolate markings and very large white flowers borne at the top of the growths, each flower having a tube over two inches long. *K. pumila* is a comparatively small, farinose white leafed variety with attractive red violet flowers borne very freely in the spring. This should be another must for all succulent lovers.

My small plant of *Jensenobotrya lossowiana* which has now reached the four inch pot size has been a mass of flowers from April onwards. I grow it on the shelf with the *Stapeliads* where it gets plenty of sun and is watered from the base. It should not be allowed to grow too fast, or it will lose its true characteristics which are leaves resembling bunches of grapes. In this country they do tend to elongate a little. The flowers are pale pink.

The large red flowered *Echeveria harmsii* should be at its best in July and is a plant that commands plenty of attention at the shows, as well as in one's own greenhouse. It has a branching habit, is very easy to grow and flowers freely. It roots quickly from cuttings in the spring, especially if left lying on a shelf for about a fortnight before potting up. You may prefer the old method of rooting *Echeverias* by turning a pot upside down, and sticking the cutting through the hole, so that the rosette rests on the base of the pot. Examine it frequently, or the roots may become too thick to pull back through the hole in the pot.

Now is the time to start cultivating a nice large pot of *Crassula lactea*, ready to take indoors for Christmas when it should be a mass of white flowers. It will do very well outside for the summer, and also blooms better if old plants are broken up every few years.

I hope you have experimented again this year with an outdoor succulent garden, especially those people who rely on window sill culture. You will see your plants in all their true beauty and they will also get well ripened and coloured before they have to go back indoors in the autumn. If you live in a flat without a garden, do try and erect something outside of your window. or on your balcony for the summer, it will give your plants such a treat. If you are fortunate to live in a district where the soil is nice and open, you can make a fine garden with all of your odd cuttings. *Crassula argentea* makes a fine centre piece for a round bed. Most of the *Echeverias* will grow well and produce an abundance of flowers out doors. It is as well to be generous with the slug bait, particularly if the weather is damp.

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The booklets are going as well as could be expected after over 70,000 have been sold. We would remind you that the illustrations to the ninth edition are entirely new and are different to any that have been published in previous booklets. The sale of these booklets has been of the greatest benefit to members and much increased benefits have resulted. It is in members' interest to do their uttermost to increase the sales of the booklets. They retail at 1/3, postage 2d. extra, but we can supply not less than one dozen at wholesale rates, viz., 10/- per dozen. Orders and remittances should be sent to the Editor, 7 Deacons Hill Road, Elstree, Herts.

Mr. W. Greenaway of Charlton writes me that *M. sanluisensis* has offsets from the tips of the tubercles, while *MM. elongate v. echinata, gracilis, fragilis, prolifera, multiceps* and *erythrosperma* (confirmed by Mr. B. A. Wilmer) have offsets in the axils between the tubercles. This brings up the point—what is *gracilis* and *fragilis*? I have already dealt with *gracilis* in previous issues of this Journal, but I do agree that there seems to be a variety whose offsets break off at the slightest touch, quite different to the type species on which the offsets are firm.

CACTUS. CEREUS. PHYLLOCACTI.

Grandest Flowers on Earth

Amateur's Handbook for Easy Culture, being the result of many years' experience

By Miss WORTH

(I have thought it would be interesting to members and readers to reproduce a little booklet that will be known to some of our oldest members to compare with modern ideas on our subject).

I may premise by saying that Cactus plants are no novelty in this country, having been cultivated in English gardens for upwards of 150 years. About a half century ago or thereabouts, these plants were in great demand, for a "craze" had set in, but it did not last long, chiefly, I consider, through the requirements of these plants not being properly understood. The idea then prevalent was that Cacti only wanted plenty of sand and, given this, could be trusted to look after themselves. Undoubtedly numbers survived under this treatment, for a Cactus plant is hard to kill, but very few flowered annually, and to this I attribute their rapid loss of popularity. Cactus plants, when intelligently treated, will not fail to bloom each year, and frequently, during a sunny summer, twice in the same season; May and June being the months for the Grand Show, while October, November and December will generally furnish a few dozens of flowers. At the time of writing this (December 1912) I have quite a number of *Phyllocacti* which will be in full bloom by Christmas, and this goes on constantly year by year.

I will now proceed to explain how to attain this result, which is truly worth trying for, as the flowers of the *Phyllocactus* and *Cereus* family measure from four to twelve inches in diameter, while the range of colour is marvellous and kaleidoscopic in variety. I may mention, en passant, that anyone who possesses a heated glass structure, either large or small, can undertake their successful cultivation, while even a window, provided it has a South aspect and is not shaded, can be utilized with advantage.

SOIL. Two parts by measure of yellow fibrous loam and one part coarse sand (Bedfordshire sand if possible), with a little leaf mould added and a sprinkling of bone dust will grow any Cactus plant to perfection.

DRAINAGE. Never less than one third, and in striking cuttings, if a large pot be used, it should be half filled with drainage. This is essential and I would impress upon my readers the fact that free drainage is an absolute necessity at all times, and one of the chief stepping stones to success.

POTS. Never use a large pot where a small one will suffice, as you thereby defeat the object of obtaining flowers, for, as a rule, Cacti do not bloom until the pots get full of roots, and this stage being reached, can be left in the same pot for years. When absolutely necessary to shift a plant, merely place it in a pot just large enough to hold the roots comfortably, with a space of about a quarter inch all round, which should be filled with the proper soil and rammed down hard. Most Cactus plants can be grown in 48 size pots as a final shift. This size pot measures $4\frac{3}{4}$ inches across the top, inside measurement.

MANURE. A weak solution of liquid manure, about once a fortnight, during the growing season, from May to the end of August, will greatly benefit the plants. It is very important, and should be remembered, that manure should always be applied in the liquid form and not, on any account, in the solid state, as it then tends to clog the drainage. I may also mention that liquid manure should never be applied when the earth in the pots is dry, as much harm may be caused by such a proceeding. Have a large flower pot (caulking up hole) in which put soot up to half way, filling up with water. Add a thumb pot measure to two pints of water, if used as often as above. For a change now and then have a tin of Clay's fertiliser by you, using in same way. *Mammillarias* do not need manure except when very large.

WATERING. Rain water should be used, if possible, and of the same temperature as the house where the plants are kept. From the middle of May to the middle of August, the plants may be watered freely every day; in very hot weather twice a day; but from the end of August to the end of April, they should only be kept just moist enough to prevent shrivelling. About the end of February the flower buds will begin to show when, in sunny weather, the plants may be slightly syringed overhead with advantage.

TEMPERATURE. You cannot, in this country, have too much sun heat, provided the ventilation be free and without draught. It is as well though, when the temperature exceeds 90 degrees, to damp down the floor by syringing. The lowest temperature in the winter, to be quite safe, should be 40 degrees at night, with a rise of at least five degrees during the day. I may add that, provided the plants are not kept too wet, they will remain safe for a considerable time, as long as frost be actually excluded from the house where they are placed.

PROPAGATION BY CUTTINGS. It may be taken as a fact that the rooting of a Cactus cutting is absolutely certain, provided care be taken not to give too much water at the onset, and that the base of the cutting be thoroughly dried before being planted. Pieces of the stem, about three inches in length, should be cut off the plants, and the bases dried by exposure to the air for a day or two, when they may be be planted singly in small pots (62s, 72s or 80s). If a large pot be used, a number of cuttings may be placed round the edge close together

and almost touching the sides of the pot. In planting cuttings it is as well to fill the pot with at least one third drainage, then one third of the mixture described under the head of "Soil", finally filling up with sand only. in which firmly bed the cutting. Placed on a dry shelf, as near the glass as possible, where they can get all the sunlight, and sprinkled overhead morning and evening, they quickly root, from May to August, without the aid of artificial heat. Cuttings, when rooted, generally start to grow from the base, just beneath the surface of the soil, and as soon as this takes place, more water may be given, and from this time they may be gradually shifted into pots a size larger until No. 48 size be reached. It is quite possible, however, to flower them in the small sized pots, as I have already explained that blooms are formed as soon as the pots get filled with roots, but, of course, the flowers produced are smaller, as well as less in number than when shifted.

If cuttings be taken at any other time than the four months indicated, it will be as well to provide a little bottom heat, especially at night, which can easily be done by the aid of the paraffin lamp used to exclude frost from the greenhouse. A sheet of tin or zinc, raised on four flower pots, so that the lamp can be placed beneath, will answer every purpose, and the small pots containing the cutting can be stood thereon, when rooting will take place in about a fortnight. Of course, care must be taken to prevent any moisture falling on the lamp wick. Should this happen, a fresh wick must be substituted at once, but with ordinary care, this need not occur. A coating of finely sifted ashes should be placed on the sheet of metal to the thickness of about half an inch, so as to absorb any surplus moisture when watering the cuttings.

RAISING CACTUS PLANTS FROM SEED. Seed sowed in March in a mixture of equal parts fibrous loam and sand, with a bottom heat of 70 to 80 degrees, will germinate in about three weeks, but if less heat be available longer time will be taken. During a hot summer seeds ripen on the plants without much trouble. All that is necessary is that the centre of the flowers, when fully expanded, be dusted over, by means of a soft brush, with the pollen from the anthers on another plant. Seed pods will then be produced and, when as large as an ordinary plum and of the same colour, should be gathered, the seed collected and dried for sowing. Marvellous results are obtainable in this way, but, of course, it is rather slow work; still, to an enthusiast, this is a mere bagatelle.

GENERAL REMARKS. Frost and stagnant moisture are both fatal to Cactus plants. Frost, however, can easily and economically be excluded by the use of a paraffin lamp. One with a four inch wick, holding about a quart of oil, will burn for 24 hours without attention, and will keep hundreds of plants in security. It is not necessary that the flame produced should be of great volume, in fact, the wick should not be turned up very high, as quite a small flame will answer the purpose, and the fumes from burning paraffin have no bad after effects on these plants. Such a lamp will effectually exclude frost from a house of 600 feet cubical capacity, say 14 feet long by 7 feet broad, the average height being about 6 feet. Of course, in building a greenhouse specially for Cactus plants, as sheltered a spot should be selected as possible, with a due South aspect for preference, so that every ray of sunshine may be utilized. A waterproof blind on the outside of the roof at night will conserve the heat to a great extent, making a difference of several degrees in cold weather. Sheets of newspaper spread loosely over the plants will, in very severe weather, afford considerable protection, and can easily be removed on the return of milder weather. When a plant looks out of sorts without any apparent reason, do not attempt "to buck it up" by giving manure or stimulating soil, but just repot with plenty of sand and half drainage, then stand on a shelf as near the glass as possible, leaving it for a week or two, with merely a sprinkling of water now and again, when it will soon pull round. Tobacco ashes are very useful as a mild stimulant and should be well stirred into the surface soil with a pointed stick. If a pot be drained with old broken bones, the plant will not need a shift for many years. After plants have flowered, it is a good plan to stand them out of doors, in a sunny position, from the middle of June to the end of August, and they need not be watered the whole time. By this treatment, not only are they sure to flower the following year, but a few will again develop buds and bloom in October, November and December. Consider—what plant is there beside this that, after blooming profusely in May or June, can be turned out of doors, exposed to the full force of the sun's rays until September, requiring no attention whatever during the interval, and not only still survive, but be benefited by the treatment? Absolutely none! And for town folks or those who like a prolonged summer holiday this should count for something. Again—it is almost impervious to disease of any kind and, provided it be not exposed to frost, cannot readily be killed. Under this outdoor treatment, the plants may occasionally present a somewhat shrivelled appearance and turn a reddish brown colour, but this is a good sign and augurs well for the production of flowers later on. All Cactus plants, after blooming, require a good long rest, and this outdoor system is the very best way to ensure it. Always remember:—1. Thorough drainage. 2. Not too large pots. 3. All the sun possible. 4. Not to coddle the plants.

In conclusion, I may say that, all things considered, *Phyllocacti* are much the easier for Amateurs to manage, but there are quite a large number of the Cactus family well worth extra attention and trouble. My object, however, is primarily to diffuse a knowledge of the very simple requirements of *Phyllocactus* plants, which may be grown and flowered with absolute certainty, either in greenhouse, sitting room or kitchen, so that no one need be debarred from the pleasure of cultivating some of them. IVANHOE.

MAMMILLARIAS I HAVE GROWN *(continued)*

By A. BOARDER

M. dealbata was obtained in 1933, from seed and has never grown at a fast rate. It has remained simple, just growing slightly but not making a very elegant plant.

M. decipiens is just the opposite to the previously described plant. I had my first specimen from my old friend Mr. Green, of Ruislip, in 1926. It has always grown well and flowered each autumn. It seems no trouble to grow at all. The flowers appear at a time when most of the *Mams.* have finished flowering and so is extra welcome in the dull days. I like this plant as it makes a good group with time.

M. densispina is one of the most handsome of the *Mams.* The tightly packed golden spines completely cover the plant which so far has remained simple. It is not an easy plant to grow and I know several growers who have failed with it. I raised my first plant in 1933, from seed and my present plant is a seedling from this one.

M. dietrichae I raised from seed in 1956, and it appears to be the variety of *M. parkinsonii.* It is quite handsome and looks like making a fine specimen.

M. dioica has been one of my awkward squad. I have never been able to keep a specimen for long. Several times I have raised one from seed but after a few years the plant dies out. It is one of the strongly hooked type which I find not at all easy to grow. I see that I raised my first plant from seed in 1932, and I am without one at the moment.

M. discolor is another favourite of mine. It is something like a *M. vaupelii,* a single plant well covered with short golden and light brown spines. My plant, a seedling raised a few years ago has flowered well and although I do not think it an easy one to grow it is nevertheless a very desirable plant for any collection. I had my first plant from the London Garden Stores in 1930.

M. divergens is one of the *magnimamma* type and no doubt would be included in that species by Craig. I raised my present plant from seed in 1955. It is a low growing type with dark green body and a few strong curved spines.

M. dolichocentra is a plant I obtained from Cooper in 1927, and one that appears to remain simple. It makes a fine large specimen and is very shapely with a fine crop of spines. The flowers are magenta in colour.

M. donatii was raised from seed in 1932, and is a favourite with me. It rather resembles a *M. elegans* and has close spines so thick that the body is hidden. The pink flowers come in a fine ring near the top of the plant and it never fails to flower for me each year.

M. droegeana is a problem plant with me. I obtained one from a dealer several years ago and it has hardly moved since. I cannot make out if it is a true species or just another variety of *M. rhodantha.* I do not think it has grown half an inch in ten years but it seems to be still alive.

M. dumetorum is another problem plant being very like a *M. schiedeana.* I do not know if it is a variety of that species, but it certainly seems to be one. It remains small and compact and is quite a handsome plant.

M. durispina is an old favourite and I had my first specimen from Griffin in 1932. This is another simple type, making no off-sets. It grows fairly large and is a good type in a mixed collection.

M. dyckiana I raised from seed in 1951, and since then it has fought with me all the time. Sometimes I think it is dead and at other times I see signs of life. I do not know what gets into some plants, they have the same treatment as others which thrive, but yet show little signs of growth themselves.

M. differentes was raised from seed sent me by Mr. Roan in 1947, and I do not know if it has been described or not. I like this plant very much. It is simple and shaped like an *M. elegans* but the centrals are longer and black tipped. It flowers very freely and is a fine looking specimen.

M. deluisiana was a seedling in 1949, and then later on the plant was renamed *M. bella.* My plant is one of the finest flowering types I have. It bears a close resemblance to *M. spinosissima,* but has longer spines and larger flowers.

M. dawsonii is a plant I raised from seed in 1956, and so far has shown few signs of being very different from *M. magnimamma.*

Have you a library book which you have kept rather a while? You must remember that for so many of our library books the librarian has a long waiting list. Many of these books are out of print and can only be purchased as they become available on the second hand book market, so that it is difficult to obtain duplicate copies of many of the books published some years ago. We want you to get the benefit of borrowing these books, but please remember your fellow members are waiting.

EUPHORBIA

By P. BENT

The *Euphorbia*, or Spurge Family is world wide in the distribution of its species. Africa is the home of most of the succulents (*Euphorbia* and *Jatropha*) and in the *Euphorbia* many types resemble the *Cereus* especially *E. cereiformis* from which it got its specific name. They grow in semi arid grasslands known as the savannah and are aptly named candelabra trees. Their flowers, for the most part, are insignificant and only the bract is the coloured part. When flowering is over berries are formed which dry and explode in time and disperse their seeds, like the gorse.

Many globular species are dioecious, i.e., have flowers of different sex on different plants, e.g., *E. obesa*. These globular plants also imitate cacti showing parallel evolution, brought about by lack of water. On closer observation, it becomes more apparent that a *Euphorbia* is not a cactus because of the absence of areoles which cacti possess. *Euphorbia* spines are actually the flower peduncles which only occur in the *Pereskia* Tribe (Cacti). This accounts for those tall species, *E. erithrea*, having thorns at divisions and not continually up the stem. Apart from the elongated and globular ones there are the thorny species such as *E. milii* (*splendens*) and *E. hislopii*. These plants have a striking resemblance to the *Pereskia*; perhaps they can be considered as primitive *Euphorbias*. The snakey *E. caput medusae* is a plant showing stem dimorphism because snake-like growths arise from a globular central part. Propagation from these is best carried out by seed, not from cuttings as these form atypical forms. A cristate form is grown which often gives rise to snake growths. The origin of these cristate or monstrose forms is unknown, though many theories have been put forward, some of which seem to be very unlikely. Simply what happens in a cristate plant is that the point of growth (meristem) suddenly forms a line and grows on in that form, forming a fan-like growth which can be very beautiful.

Much emphasis has been put on the latex saying that it is poisonous. This may be so, but it is only slightly dangerous if it gets into the eyes, it certainly is not fatal. Perhaps this reasoning has arisen from the fact that the latex in Manihot (tapioca) which is a member of the *Euphorbiaceae*, contains prussic acid. Another species of the family yields the rubber (Hevea) which is not poisonous. This is similar to the tomato and deadly nightshade which belong to the family *Solanaceae*. At one time it was considered that the tomato was poisonous till someone ate one and lived. I am not suggesting that you should cut your prized *E. obesa* up and drink the juice, it is only just an example of how it can cause confusion.

Euphorbias lend themselves to propagating from cuttings which are, on the whole, harder to raise than cacti or *Crassulas* on account of the bleeding. An excellent way of preventing this flow of latex is to coagulate a blob over the cut surface by heating *gently*. Then rest cutting for a week and then pot up into slightly moist compost. Never waterlog the soil as this usually rots them. Raising from seed is fairly easy as the seeds are of considerable size and can be pressed into the potting medium and *not* covered. Germinate at 70–80°F. Malathion liquid deters pests from these, but care should be given, because close spraying marks the skin or leaves. As an alternative I can recommend Malathion dust.

REVIEWS

I have received a copy of "Flowering Cacti" by H. Rose from Ward Lock & Co. Ltd., 116 Baker Street, London, W.1, (price 9/6 nett). It is not clear whether it is an original contribution or from a foreign published book as it is stated to be translated by A. H. Walton. It consists of 37 coloured plates of cacti and succulents and the remaining 26 pages are devoted to comments and hints on cultivation. The 37 coloured plates are also faced with pages of letterpress shortly describing the coloured plate opposite. It is unfortunate that the letterpress contains some rather careless statements such as "succulent plants are represented by more than four hundred species belonging to some twenty families" and later "The Cactaceae, whose number of genera exceed 125, representing more than 2,000 species". When we realise that there are about 5,000 cacti and over 10,000 different other succulents, it will be seen why I say careless. I do not think the coloured plates justify the subject. Some, of course, are good, but many are incorrect from a colour point of view and are hazy. I do not know of the author and his ability to write on the subject, but it would be only fair to say that while the book has its faults there are many good points in it. Might I suggest that illustrations are used for identity purposes and many of those in this booklet hardly fill that purpose.

Miss M. J. Martin has drawn my attention to the illustration of *Euphorbia clandestina* in the April, 1961 issue of this Journal. It, obviously, should be *Euphorbia globosa*.

WHY ALTER PLANT NAMES?

By E. SHURLY

Since it first appeared, I have subscribed to "Die Kakteen" published by Hans Krainz, the Curator of the Zurich Cactus Gardens. It is produced with the help of Professor Dr. F. Buxbaum and W. Andreae. Mr. Krainz and Professor Buxbaum are well known to me and I have the highest possible regard for both of them. With Mr. Krainz I have never had any cause for difference. I have had plenty of difference with Professor Buxbaum on *Mammillarias*, but because I differ from him on one subject it does not prevent me from having the highest regard for him. I respect the knowledge and experience of both of these gentlemen and because of this I looked on "Die Kakteen" as a reference publication that is beyond reproach, but the 16th issue, just received, has given me quite a jolt.

On page C VIIIc (23) it deals with a pseudo *Mammillaria schwarzii* and as I described the genuine species, I naturally, took a personal interest, but I found an extraordinary amount of errors, to such an extent that I cannot believe it was written by such responsible people and makes me wonder how many other mistakes have been made. In fact, since I first started this enquiry my attention has been drawn to another lot of errors.

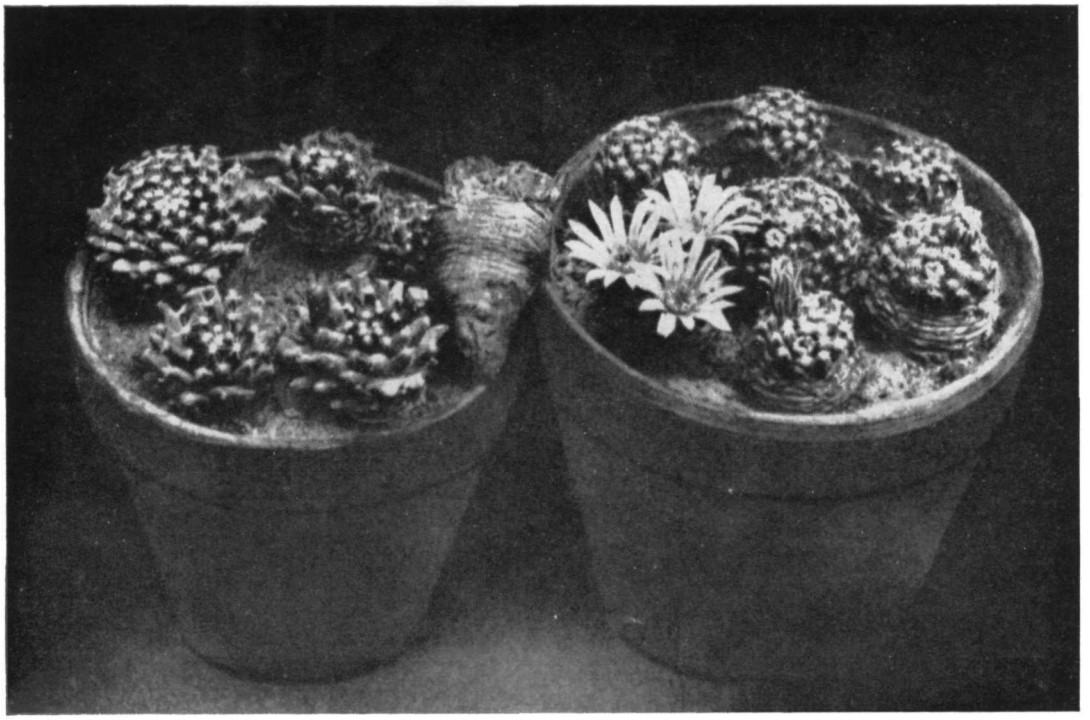
First, it refers to *Porfiria* as a subgenus of *Mammillaria*. It gives as references, Boedeker (Zeitschrift fur Sukkulentenkunde 1926: 210) where *Porfiria* was first described as a genus, together with its sole species, then it gives Dr. Reid Moran (Gentes Herbarum 1953: 324) as officially transferring *Porfiria* to *Mammillaria* as a subgenus. If one refers to Dr. Reid Moran it will be found that he expresses some doubt as to the correctness of Professor Buxbaum's conclusions, but he does transfer *Porfiria* as a subgenus to *Mammillaria*, notwithstanding his remark "if his views of phylogeny are correct". Other aspects of this I will deal with later, but I must deal with *Porifiria* as a genus in its own right and as a subgenus of *Mammillaria*.

In "Kakteen und andere Sukkulenten" 1956: 6-7, Professor Buxbaum refers to Profiria (obviously a missprint for *Porfiria*) as being transferred as a subgenus to *Mammillaria*. No details were given. At the Monaco Congress of the I.O.S., Professor Buxbaum gave a lecture "The proposed Reunion of the Genus Mammillaria" in which he mainly repeated the article in "Kakteen und andere Sukkulenten" and refers again to *Profiria* in the sentence "while *Profiria with its hooked spines* is much closed (not my error—obviously closer) to Subgen. *Ancistracantha*". In the illustration pages of this Journal will be found a reproduction of the two photos that appeared with Boedeker's original description and it will be seen that *Porfiria coahuilensis* Boedeker had no hooked central spines at all! Boedeker's detailed description confirms this. Obviously, Professor Buxbaum is referring to an entirely different plant from Boedeker's *P. coahuilensis*. Consequently, it is fair to say that as Boedeker's plant and Professor Buxbaum's plant are so totally different his reference to *Porfiria* as a subgenus of *Mammillaria* and Dr. Reid Moran's actual transference are invalid and that the genus *Porfiria* remains intact. Whatever the plant was to which Preofessor Buxbaum refers, it was definitely not Boedeker's *Porfiria*.

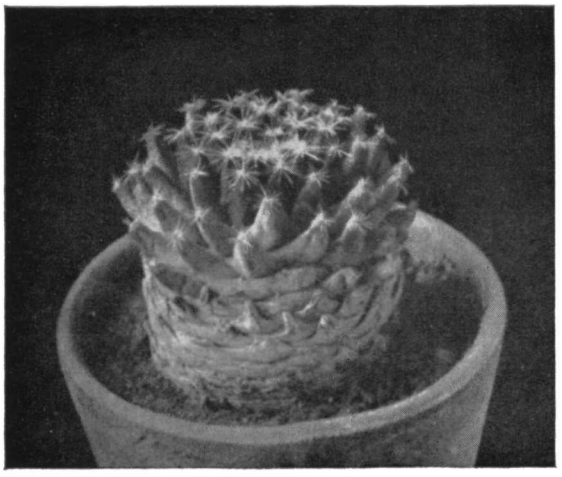
If this was all it would not amount to much although the refutation of the new subgenus would be botanically important and has a bearing on the title of this article. But the next thing in "Die Kakteen" is an illustration of the plant that is purported to be Boedeker's *Porfiria coahuilensis* which, I repeat, has not the slightest resemblance to Boedeker's species. Under the illustration is given the "new" name of *Mammillaria schwarzii* (Boedeker) Moran. It is doubtful whether Professor Buxbaum has even seen Dr. Reid Moran's contribution in Gentes Herbarum. If he had he would see that it was:—

Mammillaria coahuilensis (Boed.) Moran, trans, nov.

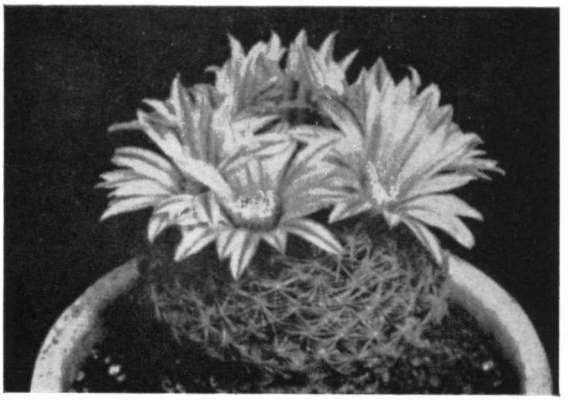
Consequently, it is an error to ascribe the name *schwarzii* to Moran. Incidentally, Dr. Reid Moran specifically states that his transfer was not my own *M. schwarzii*. If it is desired to make use of the transference by Dr. Reid Moran, it should have been *Mammillaria coahuilensis* (Boed.) Moran, but, if the plant really had been that of Boedeker, the specific name would be unchanged, viz., *M. schwartzii*, but I appreciate Dr. Reid Moran's desire not to create the confusion that would arise if two *Mammillaria* species were named *schwartzii* and *schwarzii*. To make sure that I am not being mistaken in the plants with which Professor Buxbaum was dealing, he gives the synonym as *Haagea schwarzii* Fric and *Porfiria coahuilensis* Boedeker. There can be no question of any misunderstanding on my part that *P. coahuilensis* is the plant that Professor Buxbaum tries to rename *M. schwarzii*. He then states that as *P. schwarzii* has been transferred to *Mammillaria*, my own *M. schwarzii* must be re-named and becomes *M. shurlyi* F. Buxb. nomen novum! ! ! In any circumstances this would not be possible under nomenclature regulations as my *M. schwarzii* was validly named in 1949 and that name stands. Professor Buxbaum obviously overlooked *M. shurliana*, named for me by Howard Gates, and if the existence of shurlyi could be justified it would become hopelessly confused with shurliana, something that should be avoided for obvious reasons, especially as the plants



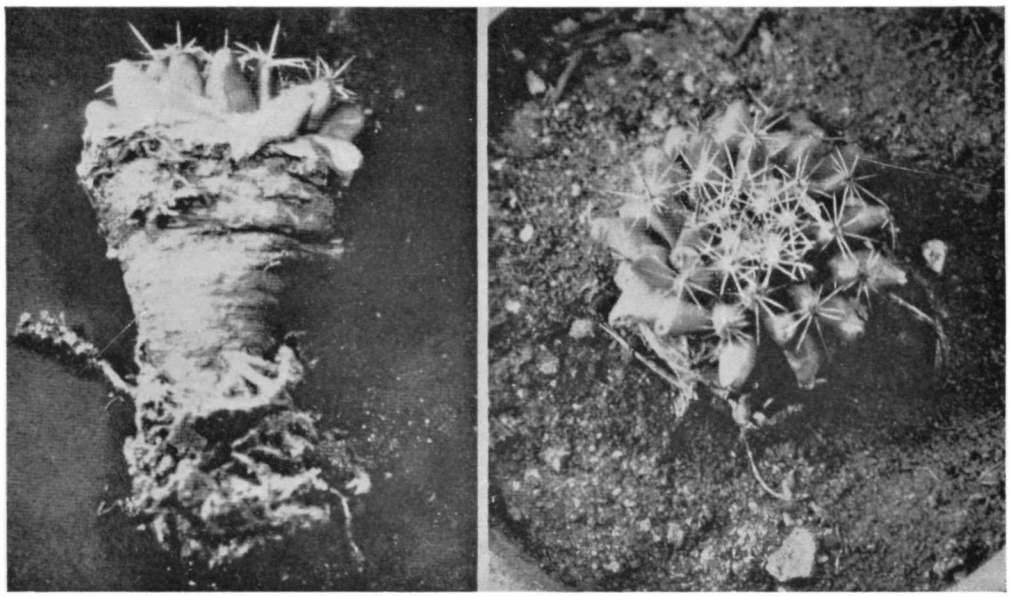
Original illustration of Boedeker's *Porfiria coahuilensis* (Zeitschrift fur Sukkulentenkunde 1926: 210 & 211)



Original illustration of Boedeker's *Porfiria coahuilensis*
(Zeitschrift fur Sukkulentenkunde 1926: 210 & 211)

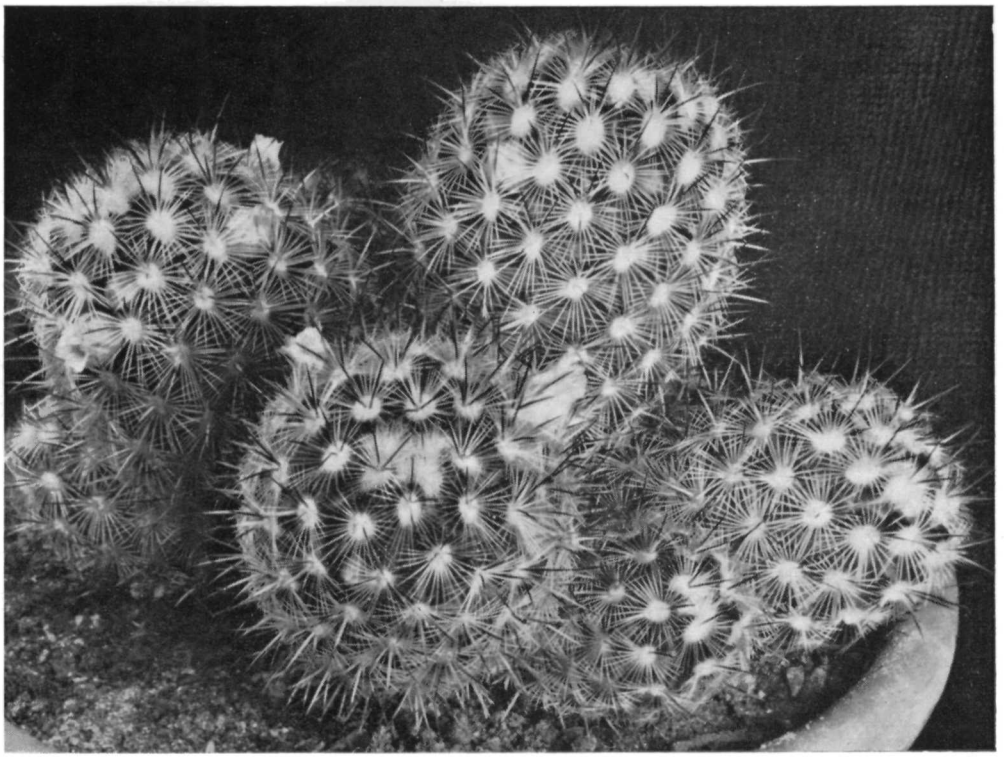


Boedeker's *Mammillaria schwarzii* (Boedeker) Moran
(Die Kakteen 1961 : C VIIIc (23)

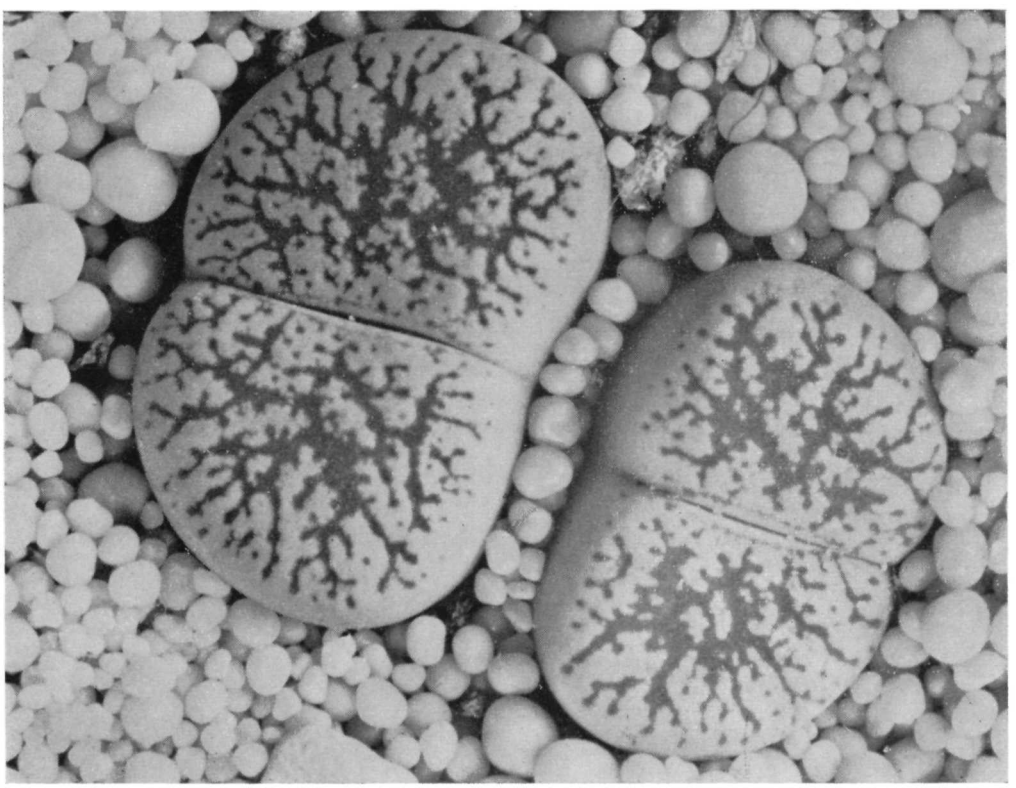


Craig's *Mammillaria dawsonii* (American Journal 1936: 61)

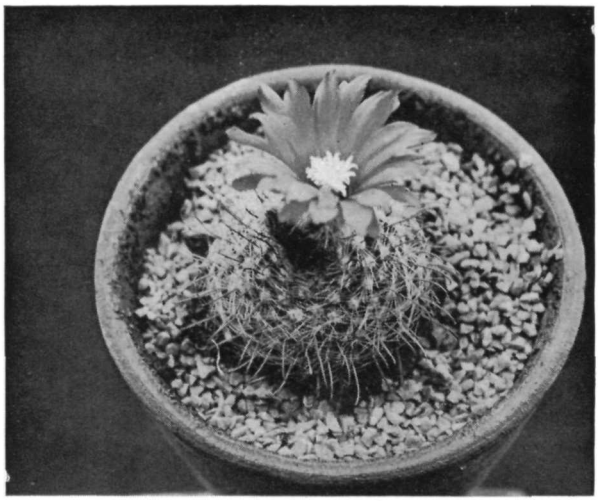
Dinteranthus vanzijlii Miss M. J. Martin



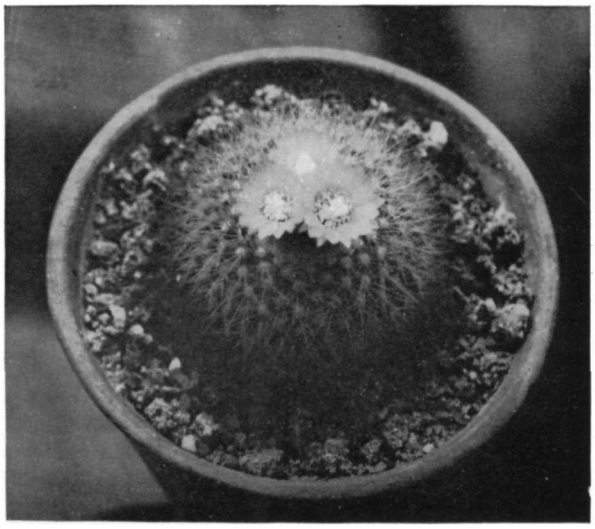
Mammillaria microheliopsis Miss M. J. Martin



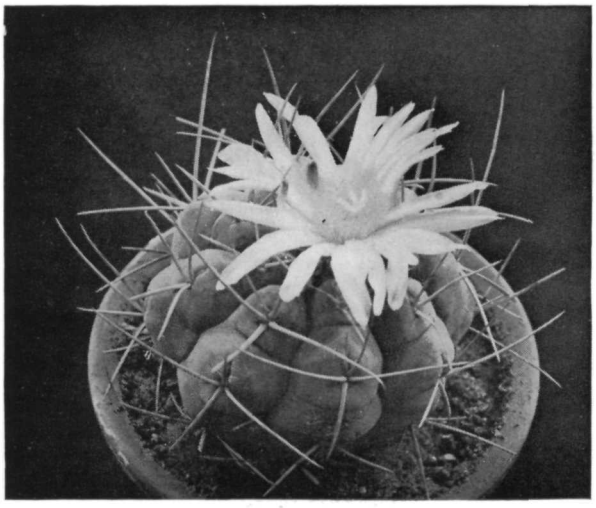
Lithops venteri Miss M. J. Martin



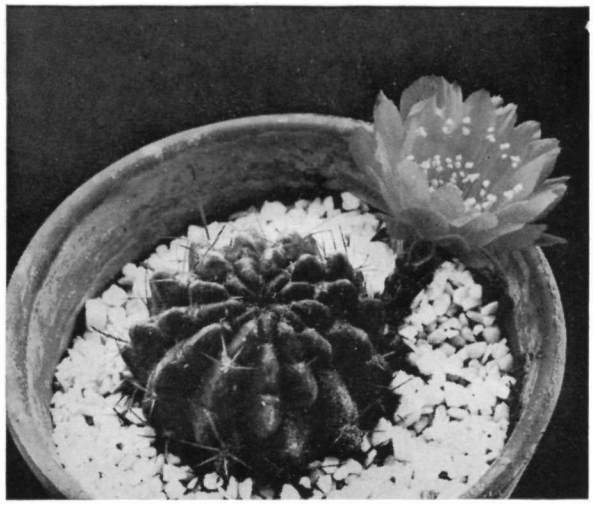
Parodia erythrantha



Parodia chrysacanthion

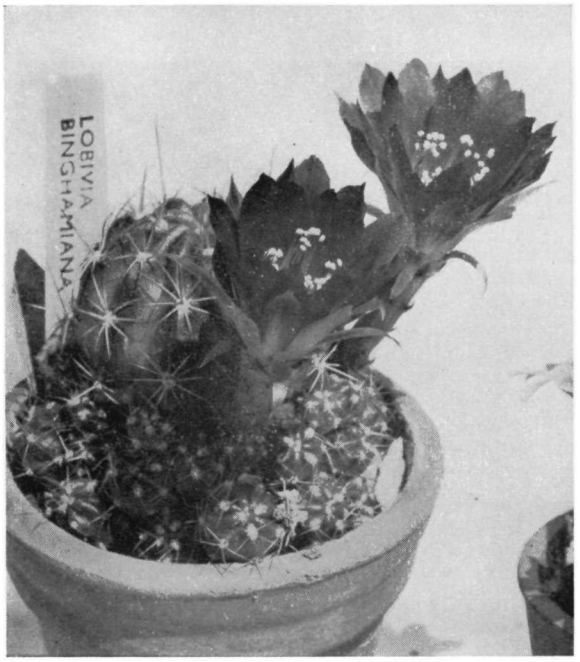


Thelocactus hexaedrophorus major

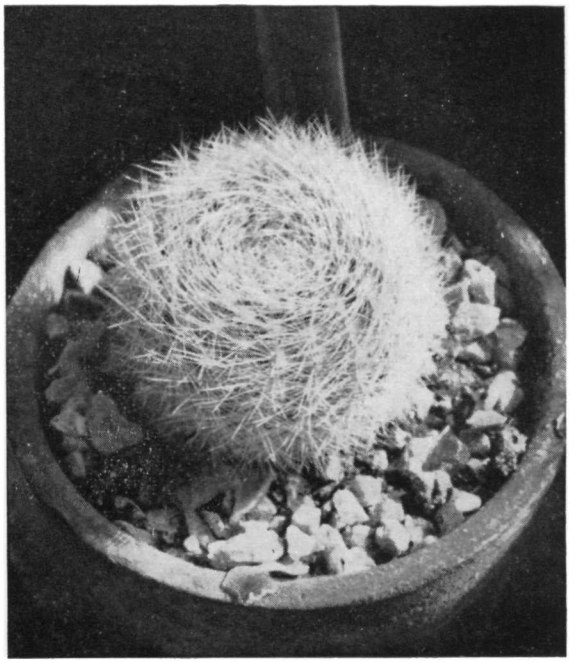


Lobivia pentlandii

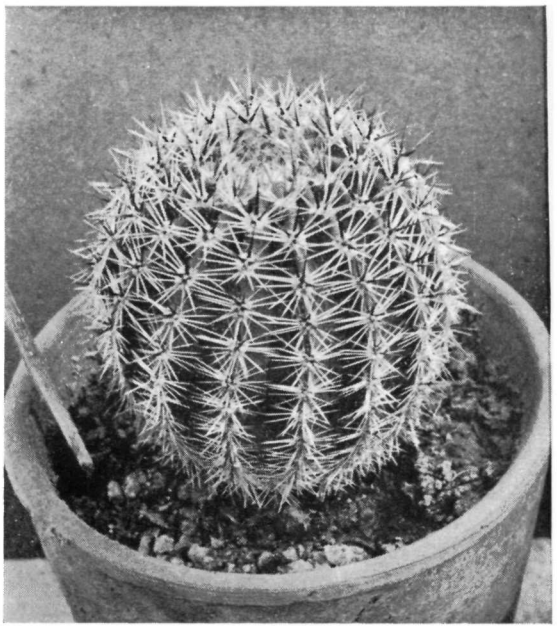
Four photographs by W. Beeson



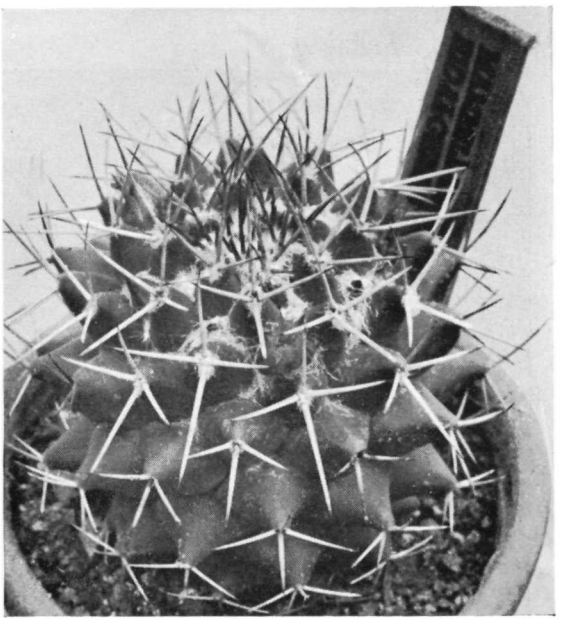
Lobivia binghamiana



Lobivia leucomalia

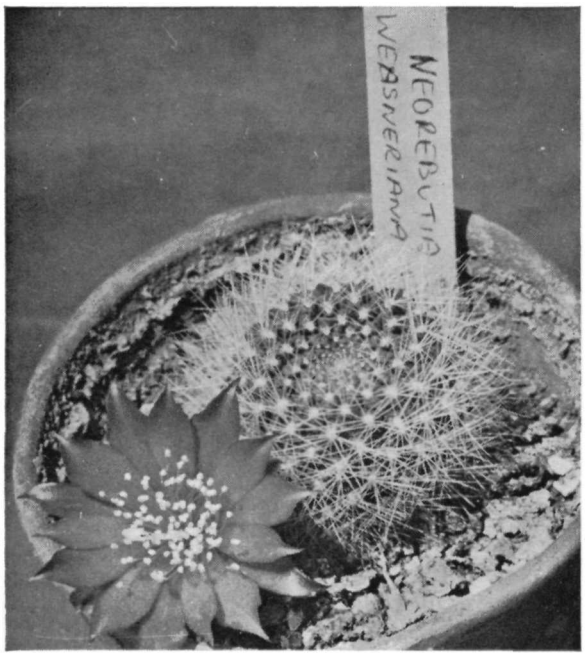


Lobivia aurea



Mammillaria hidalgensis

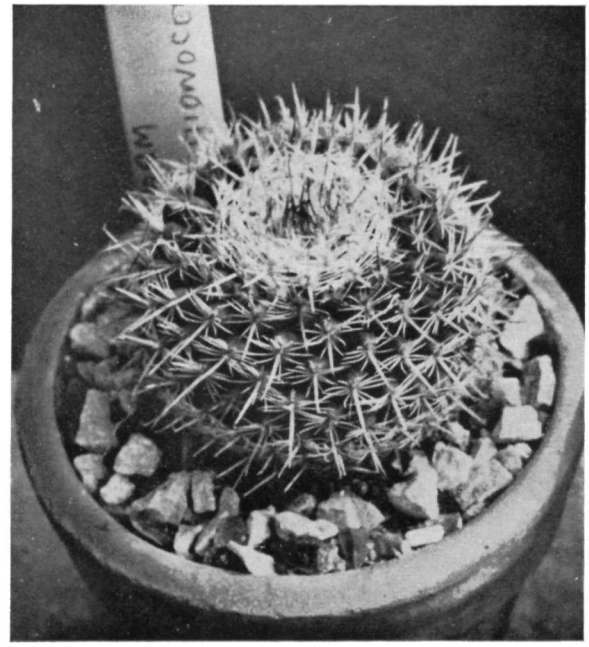
Four photographs by G. A. Burton



Neorebutia weasneriana

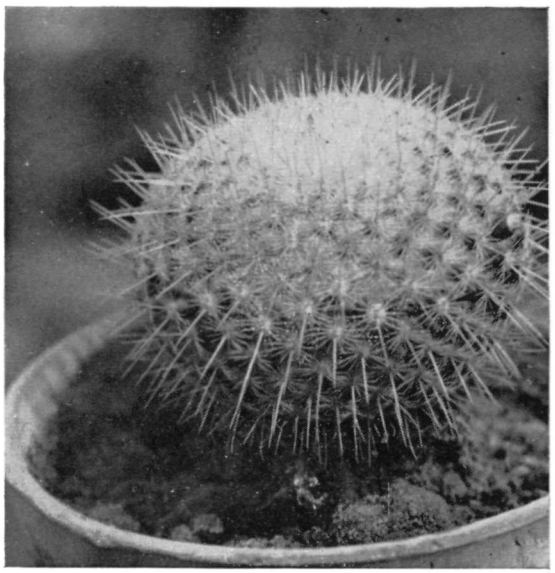
Rebutia miniscula

Mammillaria ortiz rubiona

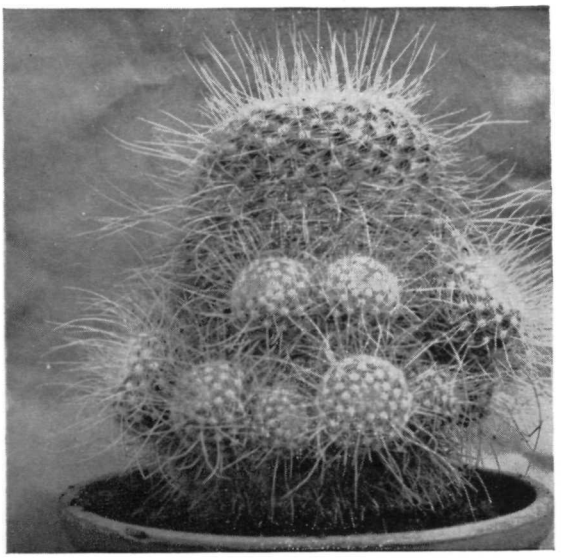


Mammillaria chionocephala

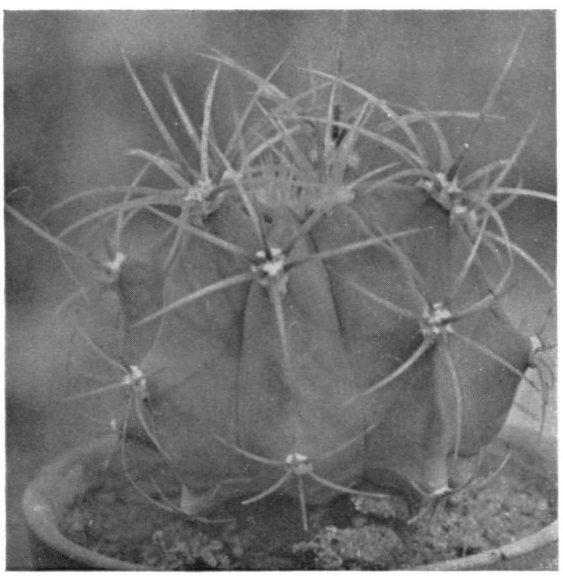
Four photographs by G. A. Burton



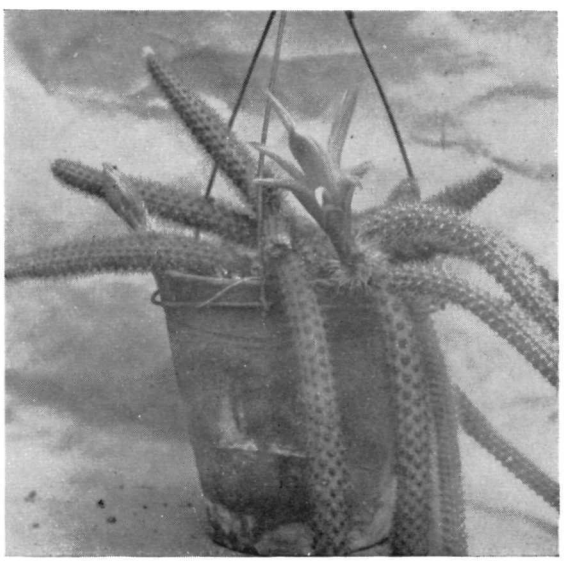
Mammillaria fuauxiana



Mammillaria geminispina



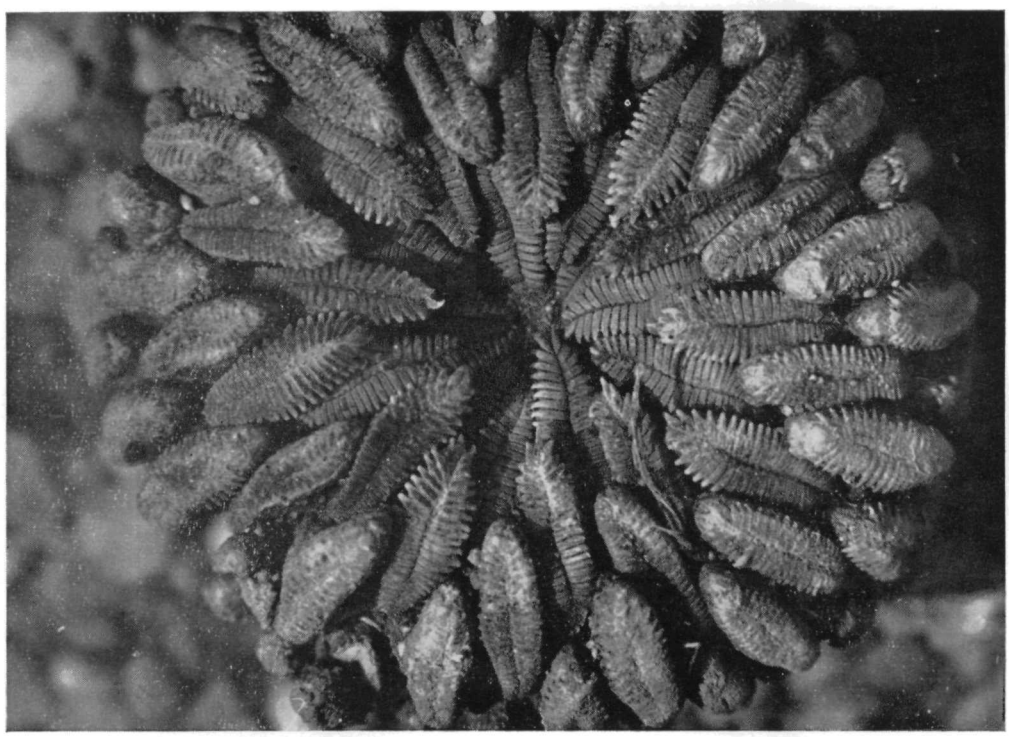
Ferocactus melocactiformis



Aporocactus flagelliformis

Four photographs by Trecastle Nurseries

Lithops herrei



Pelecephora quelliformis (? Ed.)

Photographs by P. C. Ryan

are so very different. To complete the mess, he gives my own *M. schwarzii* as a synonym of his *M. schwarzii*! He obviously thought that my *schwarzii* was a *Porfiria*, which it definitely is not and has no relationship or similarity to *P. schwartzii*.

The present position must be that *Haagea schwarzii* and *Porfiria coahuilensis* must be eliminated and *Porfiria schwartzii* must stand; my own *M. schwarzii* and Gates' *M. shurliana* must also stand. Buxbaum's *M. schwarzii* (Boedeker) Moran, his *M. shurlyi* and Dr. Reid Moran's *M. coahuilensis* are completely invalid.

Having dealt with "Die Kakteen" let us look at the history of the species involved. The plant *Porfiria coahuilensis* was first described as *Haagea schwarzii* by Fric in Zivot v Prirode 1925: 29 (I have not got Fric's article, but I must presume his description of *Haagea schwarzii* was complete as other authors more recent to Boedeker seem to have accepted the fact of complete description). The name of the genus was invalid as *Haagea* had already been given to a genus in the Begonia tribe. The rules forbid two or more genera being given the same name otherwise it would create confusion. Consequently, when Boedeker in Zeitschrift fur Sukkulentenkunde 1926: 210 came to deal with the plant he pointed out this irregularity and named the genus *Porfiria* and the species *coahuilensis* and did not, as he should, retain the specific name. In Zeitschrift fur Sukkulentenkunde 1927: 39, Boedeker wrote that Dr. Rose, the collector of the plant, had drawn his attention to the fact that he, Dr. Rose, had referred to this plant in his M.S.S. under the specific name of *schwartzii* in honour of Dr. Schwartz. Consequently, Boedeker proposed a new combination and the plant became *Porfiria schwartzii*. The plant has become variously known as *P. coahuilensis* and *P. schwartzii*, but the proper name is now definitely *Porfiria schwartzii*.

The next step was by Professor Buxbaum in "Die Kakteen" with which I have already dealt by proving that Boedeker's original description and illustrations were of a plant that was entirely different to his *M. schwarzii* (Boed.) Moran and had no hooked central-spines. Therefore, Professor Buxbaum's effort to transfer the plant to a subgenus of *Mammillaria* was totally invalid. I have also already referred to the illustration in "Die Kakteen" which confirms what I have said as it is nothing like Boedeker's original plant.

Here comes a very interesting point. Mr. Curt Backeberg reported to me that he had one of my own *M. schwarzii* with hooked central spines. He stated that these hooked centrals appeared later on a species that had, up to then, only straight centrals. I expressed my doubt as to this and I finally received a specimen of the species with hooked central spines. Although the plants were somewhat similar there was sufficient difference between them to justify considering them as separate species. It is also of interest to note that Professor Buxbaum's illustration in "Die Kakteen" does not have hooked central spines. What really is the species illustrated in "Die Kakteen" ? Like the supposed "hooked" *schwarzii* this illustration does appear to somewhat resemble my own *schwarzii*.

The next step is, of course, Dr. Reid Moran's transfer in Gentes Herbarum 1952/323/4. I believe I have established my conclusions in regard to Professor Buxbaum's plant on which Dr. Reid Moran based his transfer, consequently, I am sorry to say that his transfer must also be invalid as the plant in question has nothing to do with *Porfiria* and because Professor Buxbaum's naming is completely invalid.

I have never claimed to be a botanist and I would not consider myself competent to be the last word on nomenclature, so when I came across this situation I referred the matter to our good friend, Gordon Rowley and much of the substance I have referred to above was put in order by him. I am very grateful for his help in the matter and in confirming my own opinions and, in fact, extending the confirmation by points brought out by him.

I now wish to chance my arm and probably collect a lot of criticism, but I am used to that! From the very first time I started to investigate this matter I was struck by the extraordinary similarity between *Porfiria schwartzii* and Dr. Houghton's *Mammillaria dawsonii*. A very interesting fact reveals itself immediately, viz., that *Porfiria coahuilensis*' habitat is San Pedro, Coahuila, while the habitat of *Mammillaria dawsonii* is Punta Prieta, Lower California, 700 miles away! ! In addition to the illustrations already mentioned, you will find in this issue reproductions of two illustrations of *M. dawsonii* given as from Dr. Craig in the American Journal 1936/7: 61. You cannot escape the close similarity between the two plants. Is it possible that they are one and the same plant? If it is, is it a case of deliberate or unintentional introduction to the other habitat? Man could have deliberately or unintentionally introduced it, or it could have been introduced by a flying bird or a migrating animal, but 700 miles! A further theory might be that long ago the plant was very wide spread with its central habitat somewhere between the present two habitats. The centre might have experienced some change that caused the plant to become extinct everywhere except at the two present habitats. Such a situation some authors state has been experienced in South Africa with some of their native succulent plants.

While there are some differences (they might be considered vital), the descriptions of the salient characteristics tally so much that they confirm the similarity of the illustrations to such an extent that I wonder if there is not some sound basis for my theorising.

Continued on page 70

SOME SEED RAISING EXPERIENCES

By J. W. MARTIN

Although a seed raiser of only five years standing and, therefore, barely out of the beginner stage, I hope this article may help those members who have not yet taken the plunge into this fascinating branch of Cacticulture.

My first seeds were the usual "Mixed Cactus" and were sown in ordinary compost and placed in the airing cupboard, they failed completely. A second sowing later the same spring—again in ordinary compost—was put in a derelict greenhouse heated only by the sun. These germinated, but only patchily as I had the usual exaggerated beginner's fear of overwatering cacti and gave no water until the pan had dried out completely, fatal to success as I later found out.

The seedlings were mostly *Opuntias* and *Cerei*, including a *Pachycereus pringlei*. I still have several of them, quite large now, and though common enough I value them as my first successful effort. After this I realised that some sort of propagator was necessary for reasonably consistent germination and evolved the method I still use, with a few modifications. A box, about 2 ft. x 2 ft. x 6 in., with a sheet of iron for a bottom, was placed on two upended concrete building blocks, leaving enough space underneath to take a small paraffin heater. I use the type with a large round oil container and a tall chimney. When this is lit and with a sheet of polythene over the box, a temperature of 70° F. can be maintained with ease, even on the coldest night. The mouth of the chimney is from three to five inches from the metal bottom, according to the severity of the weather, an inch or so makes a considerable difference. The heater is part of my normal winter heating arrangement and except for the fact that it has to be left on in the daytime, entails no additional expense.

I had an excellent germination the first time I used it, but lost many seedlings (named sorts by this time) through damping off, choking by moss, etc. Apart from this, the compost required tedious mixing and sterilising before use. About this time I heard of vermiculite and decided to give it a try next time. The first seeds to arrive the next February were sown in pure vermiculite, they germinated well, but with the settling of the medium, cavities appeared, seedlings, ungerminated seed and vermiculite mingled hopelessly in the pans. I had to cut my losses by transplanting such as were up and as it was still early March, most of the plantlets were lost. Fortunately, a second consignment of seeds had been sown in a 50/50 mixture of coarse sand and vermiculite, this had the "body" while still retaining the virtues of the vermiculite, water retention, lack of consolidation and an open, aerated, sterile sowing medium. Apart from the settling of the pure vermiculite, I consider the granules to be too coarse for cacti seed, some are $\frac{1}{8}$" or more across. Also the pans (7" half pots usually) had a two-inch layer of peat at the bottom, this prevented the medium from washing out when watering by immersion and, more important, provided a reservoir of moisture underneath the surface, which tends to dry out rather sooner than I have read, but not as easily as more orthodox composts.

I have used this mixture, plus a layer of peat, ever since and find it ideal. My seedlings remain in it for 12 to 15 months till the next spring, fed regularly with liquid fertiliser and develop magnificent roots deep into the peat. Where overcrowding makes early transplanting necessary the surplus seedlings are put into empty places in other pans, or in ordinary cactus compost if there is no room for them. I can find not a ha'porth of difference in the ones moved and those untouched, except that I always lost a percentage of the transplants, particularly those in ordinary cactus compost. As many of the rarer sorts have less than ten seeds to the packet, not all of which germinate, there is no margin for even normal transplanting losses, especially as the greatest rarities are not always easy to come by a second time.

For those who may contemplate using my method, here are a few tips. Never place a pan directly over the heater, it is rather too hot. Place one or two sticks over the top to lay the polythene on, to prevent sagging when moisture collects underneath. Spray regularly with Chinosol and liquid fertiliser (I use an ordinary household fly spray) until the top firms enough to allow overhead application. Applying these by immersion is too expensive and the solutions probably become too weak after passing up the pan to be really effective.

On very cold nights, a sheet of crumpled paper laid over the polythene, with a second sheet of polythene on top, keeps more heat in.

The seedlings can be overwintered by again placing them in the propagator, but without the polythene. A temperature appreciably higher than the rest of the greenhouse is kept up and guards against losses from sudden frosts, or prolonged cold spells. By the time the propagator is wanted for more seeds, the end of February with me, the worst of the cold should be over.

As for results, as well as plants of most of the commoner genera, I have such plants as *Leuchtenbergia principis*, *Arequipa rettigii*, *Copiapoa haseltoniana* and various *Haageocerei*, *Weberbauerocerei* (*Floresia*) and *Espostoa* in $2\frac{1}{2}$" pots already, while this time I have germinated such rarities as *Obregonia denegrii*, *Turbinicarpus lophophorioides*,

Blossfeldia liliputana (well named, the seedlings are almost invisible), *Melocactus maxonii* and *Wilcoxia* sp. s. Bola, whatever that might be. Although whether they will grow on all right is, of course, another question. I was particularly pleased to see several different *Espostoas* come through this winter (1959-60), so I am hoping the *Melocactus* will do the same.

Lithops, the only other species I raise from seed, do particularly well, coming through the winter bone dry and with hardly a loss. I find *Lithops* much easier in every way than cacti and am rather annoyed that I never tried them until two years ago, believing them to be difficult, and prefering to wait until I had a little more experience.

The number of changes these seedlings go through in the course of a year I find extraordinary. Apart from the dome shaped body that rises from the cotyledon and the *Lithops* proper which grows out of that, which in turn splits open in autumn to reveal the new body, some of my seedlings went on producing new bodies again and again, some of them three times, pushing up between the old bodies before they had finished absorbing the previous ones. I had always believed, until this, that it was fatal to water a *Lithops* while this absorption was going on, but as some of the plants were obviously wanting water I gave the whole pan a good soak in mid April. In spite of the availability of unlimited moisture, the plants still going through the absorbing stages suffered not at all, carrying on at the same pace. At the time of writing (mid May) some of them are only just completing the final, I hope, stages. This is an example of what I once read, that more is learnt growing from seed than growing any number of adult plants.

It was very observable that while *Lithops peersii*, *summitatum* and *salicola* went through the normal adult change once only, *Lithops karasmontana*, *rugosa* and *olivacea* mostly, but not entirely, went through the "abnormal" number of changes. Several of these plants, when in the "dome-shaped" stage, were mutilated by a bird, which pecked V-shaped notches from the centres. Most were only superficially wounded and produced the *Lithops* body normally, those more deeply pecked died. One, however, a *Lithops summitatum*, produced a smaller body at the side on splitting, exactly as other plants do after flowering. Perhaps, Mrs. Stillwell can tell us if this was the effect of the damaged top, or whether these plants do occasionally divide when young? This raises the interesting question of whether *Lithops* can be induced to divide by interfering with the growing tip in the same way as some non-grouping cacti will occasionally produce offsets when the top is damaged. I shall certainly not mutilate any of mine to find out though!

I took up *Lithops* for my 1960 free seed issue and apart from one species, *Lithops framesii*, they germinated like mustard and cress. The failure of this one species out of ten must, therefore, be put down to bad seed, a cause of quite a few of my failures, as an example; of two packets each of *Echinocactus grandis* and *Copiapoa columna alba*, from the same supplier, one germinated quite well and the other poorly, in the case of the second *Copiapoa*, not at all. Nor did a third packet of *Echinocactus grandis*, but from another supplier. I could quote many other examples. Apart from cases like these, if any species germinate badly or is very liable to damping off, winter loss, etc., it is invariably a species of great rarity. I thought at first that this was just my luck, or a coincidence, but I now realise thas this is just the reason why they are rare and that other, more experienced seed raisers must suffer in the same way, or these species would be offered in catalogues much more freely than they are now.

Fresh seed from such of my plants as have produced it germinates freely, a mat of seedlings grew round a *Rebutia* just where they fell from the split open seedpods without benefit of Chinosol, shading or anything. Several seeds found in the wool of my *Ariocarpus kotschoubeyanus* germinated in the propagator much quicker than several species of bought *Ariocarpus* seed, with no seed failing to produce its seedling. This seems usually to be the case.

I quite like the crested form of fasciated growth, but as yet none of my seedlings have exhibited it, although I have raised several *Cereus peruvianus* and *Cereus jamacaru* showing different forms of ordinary monstrosity. I have, however, an extremely interesting *Opuntia microdasys rufida* which has bright pink young growth, which, unfortunately, turns the normal green in age. Young pads remain pink until the size of a sixpence before becoming green, except at the growing edge which stays pink on quite large pads.

I hope this account has interested and I hope informed those non seed raisers amongst us. It shows what can be achieved with quite primitive apparatus, but I am afraid unlimited attention and careful observation is required. This is why I shall, some time in the future, think seriously of investing in a proper electrically heated propagator, thermostatically controlled, for the freedom from attention it gives. Apart from the method of heating, I would not contemplate any radical change in my methods without very strong reasons for it. Although as each year has seen some slight modification and as no human being can ever leave well alone, I shall, doubtless, be giving a very different account in another five years' time!

Mr. Tilley of Leytonstone points out that in my review in the January Journal of Mr. Huxley's book, I referred to Picture Book No. 2, whereas it should have been No. 11. A confusion between Roman and Latin numbers. No. 2 is on Roses.

RECENT ADDITIONS TO THE LIBRARY

BACKEBERG, C.	Cactaceae. Vols. 1, 2, 3 and 4, in German.
BELVAINES, M.	Exotic Plants of the World.
BENSON, L.	The Cacti of Arizona. 1950.
BERTRAND, A. & GUILLAUMIN, A.	Cacti. 1955.
BOISSEVAIN, C. H. & DAVIDSON	Colorado Cacti. 1940.
BLOOM, E.	Collector's Cacti. 1960.
BROWN, J. R.	Unusual Plants. 1954.
BUXBAUM, F.	Cactus Culture. 1958.
CHIDAMAIN, C.	Cacti and other Succulents.
HASELTON SCOTT, E.	Epiphyllum Handbook. 1951.
	Succulents for the Amateur. 1955.
HIGGINS, Mrs. V.	The Study of Cacti.
HOUGHTON, A. D.	The Cactus Book.
HUXLEY, A.	Cacti and Succulents.
JACOBSEN, H.	Handbuch der Sukkulenten Pflanzen 1956. 3 vols. in German and English.
KUPPER, W.	Das Kakteenbuch in German and English.
LAMB, E.	Cacti from Seed. 1960.
LEESE, Sir O.	Desert Plants. 1960.
LUCKOFF, C. A.	The Stapelieae of Southern Africa. 1952.
MARSDEN, C.	Mammillaria.
REYNOLDS, G. W.	The Aloes of South Africa. 1950.
ROWLEY, G.	Flowering Succulents.
SCOTT, S. H.	The Observers Book of Cacti and Succulents.
SHURLY, E.	Cacti.

Withdrawals from the Library:

Blanc	Hints on Cacti.	Griffiths, D.	Behaviour of Opuntia.
Haage	Cacti in the House.	Haage	Culture of Cacti in Rooms.
Stafford	Cactaceae of N.E. and Central Mexico.		

WHY ALTER PLANT NAMES ?—*Continued from page 67*

coahuilensis	*dawsonii*
milky sap.	milky sap.
areole: woolly, bare in age.	woolly, bare in age.
radials: 16, grey white.	6–8, horn, brown tip.
central 1, tip brownish.	1, light brown, darker tip.
axils: slightly woolly.	slightly woolly.
outer petals: rose, brown stripe.	tan base, margin greenish yellow, reddish brown stripe.
inner petals: white, rose stripe.	green yellow, brown green stripe.
filaments: white.	white to cream.
anthers: yellow.	yellow.
style: soft rose.	greenish yellow.
stigma 5: green yellow.	green yellow.
fruit: scarlet.	light pink above, white below. (immature ? E.S.)
seed: brown, pitted.	dull red.

Compare the illustrations given in the appropriate pages and then consider the characteristics above. It is quite possible that the distance between the two habitats, the passage of time and the differing conditions might have caused even the slight differences. These differences are mainly those of colour which are fugitive at the best of times. I do not place too much importance on the spine count, but it is interesting to note how near even they appear to be if it is considered that different environments could cause "doubling". The appearances of the two plants, especially the similar spine formation and the extraordinarily large rootstock in both, give cause for thought. I feel that we, in Europe, can only point out the differences and the similarities. The real deciding factor must be observation in the field and our American friends can contribute greatly to solve these matters. There is more than enough confusion with the naming of cactus species and I feel it is the duty of everyone to do what they can to clear up points as they arise and that, more than substantially, involves Americans concerned with our subject as the plants are their own natives and they are best able to investigate and, possibly, decide.

Meeting Place : New Hall, Royal Horticultural Society, Vincent Square, London, S.W.1. 6 p.m. for 6.30 p.m.

Annual Subscription—21/-

SOCIETY NEWS

1961		*Subject*	*Lecturer*	*Table Show*
July	11	Euphorbias	Mr. A. S. Jones	One Euphorbia.
Aug.	15	Notocactus, Gymnocalycium and Malacocarpus	Mr. F. Clare	One Notocactus, Gymnocalycium or Malacocarpus.
Sept.	12	(SHOW). Stapeliads	Mr. G. L. R. Hedges	One Stapeliad.
Oct.	10	Mammillarias (Slides)	Mr. A. Boarder	One Mammillaria.

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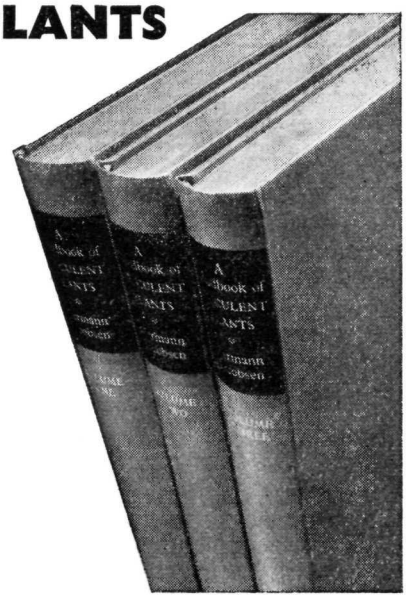
Hermann Jacobsen



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SPECIAL NOTICES

CHANGE OF ADDRESS

On and after 17th October, 1961, the address of the Journal and the editor will be:

E. SHURLY,
6 COLINDALE AVENUE,
ST. ALBANS.

Telephone No. St. Albans 50435

CHANGE OF PUBLICATION DATES

In future the Journal will be published in

FEBRUARY, MAY, AUGUST and NOVEMBER

In the past difficulty has been met with publication of seed distribution information with the January issue, so it has been decided that publication dates should be advanced one month.

ANNUAL DINNER. Unfortunately, this year we are unable to book a date closer than the 2nd December, 1961. It will be held as usual, at the Shaftesbury Hotel, Monmouth Street, London, W.C.2, the time—6.30 p.m. for 7 p.m. Owing to increase in costs the price will be 25/– and application for tickets should be made as quickly as possible to the organiser and treasurer, Mr. E. W. Young, 35 Castle Drive, Ilford, Essex. Those who have attended the dinners in the past will know the excellent cuisine of the Shaftesbury. Afterwards we hope to present to you a film show, on our subject, of course, but if this cannot be arranged (I am writing this two months before) alternative entertainment of a kind you will enjoy will be provided.

CACTUS CULTURAL NOTES

By A. BOARDER

At a recent lecture to our Society a new formula for a cactus compost was proposed. The lecturer stated that he had good results from a mixture of equal parts peat and sand. After the lecture I have no doubt many members hurried home to change their composts to the one recommended. I have not used this compost and do not intend to do so, but shall keep to the one I have found most convenient for all purposes. How this cactus compost changes over the years. When I first grew cacti I used soil from the garden and had fair success. Soon after 1920 I obtained the book "Cactus Culture for Amateurs", by Watson, and there found a compost for cacti made of loam which has a good proportion of fibre in it with sand and brick rubble added. The suggested ratio being six parts of loam to one part each of the sand and rubble. I used this mixture for some years and found it quite good.

Then in the early thirties Mr. Endean of Laindon startled everyone with his potting compost of burnt clay. Practically every member changed to this compost at once, myself included. I found that it was a great success for growing root bug if nothing else and I soon discarded this medium. For some years we had various mixtures recommended but the biggest change came from another lecturer who stated that he used a large proportion of broken breeze slabs. Once again the bewildered amateur growers rushed to builders' yards to obtain the necessary breeze slabs, with what results I do not know.

It seems that every few years a fresh mixture has to be introduced either to satisfy someone's whim or to try to get new interest going. What does it all mean when we consider what the effects are on our plants? I suggest that the chief lesson we can learn is that most cacti are long suffering and will put up with almost any kind of soil or treatment. That I still have the plant which started me on this precarious hobby (started in 1905) is not a memorial to my skill as a grower but rather as a sign that at least this cactus plant can put up with and grow on various diets as tried over the last 56 years.

I suppose that after all this it is necessary for me to give my own mixture and I do so not with any intention to presume that this is the best, but it is one I find most satisfactory for all purposes. The compost is: Two parts good loam, one part granulated peat and one part washed river grit. To each bushel is added: three-quarters ounce of sulphate of potash and the same amount of ground chalk, an ounce and a half of hoof and horn grist and the same of superphosphate.

Looking back through Watson's book it is interesting to note that much of what he wrote then is still applicable to growing cacti today and the first edition was published in 1889. There was a good cactus society soon after this and a very good journal was published. The society faded out and it was not until 1931, when our Society was formed that any major change took place in the cactus growing world. It seems the common belief today amongst newcomers that the growing of cacti in this country is something new and that they are pioneers of a movement, but the hobby has been in vogue with varying numbers of adherents for many years. The old timers have perhaps enjoyed their hobby without shouting about it from the roof-tops whereas many newcomers appear not to be satisfied unless they are telling everyone, the local press included, of their wonderful and unique collection.

I have been wondering lately where all the spare time has gone this year. Each year I find that I get more behind with my work in the greenhouse and garden. I suppose that one of the reasons is that as I get older so I get slower and there must be a lot in that but when I look through my engagement book I find another and more important reason and that is that I am spending too much time away from my own interests to help others. During the past ten years I have given over 500 lectures on cacti and aquatic matters, judged over 150 major shows and at least 200 table shows. Added to this I have spent 50 days judging canal lock gardens. My correspondence has to be seen to be believed, one part is concerned with answering questions for an Aquarist magazine and so far I have answered one thousand, eight hundred letters, to say little of those for a leading pet food manufacturers. Then of course there are the many queries from people who forget to enclose a stamp and envelope. I almost forgot the time I spent writing many thousands of words for articles on cacti and also on fishy matters. Should I mention my many callers? perhaps not as this may stop them from coming. Did someone say retire and take it easy? I started to repot all my cacti in April this year and so far have managed to deal with almost a sixth of them. Then I commenced pricking out my this year's seedlings and so far I have done 51 boxes of about 130 in each box, but I still have many pans of seedlings to be pricked out and I do not know when this task will be completed.

There have been many flowers on the cacti this year although we have not had a good summer as far as the

weather is concerned. It does not seem to make a lot of difference whether the plants in the greenhouse get plenty of sun or not. As long as they get plenty of light and air it seems enough. I have shaded many of my plants from the afternoon sun and they still provide me with plenty of flowers. On August 28th (today), I counted sixty *Mammillarias* in flower. The *M. rhodanthas* are especially handsome with their magenta flowers and with so many fruit pods formed and coloured there is still plenty to catch the eye. I commenced pricking out this year's seedlings in May and some of those which were dealt with early have made quite nice size plants already. It is strange however what a difference there is in the rate of growth of the various *Mammillarias*. Some grow fairly rapidly whilst others are very slow and difficult to grow. Those which are most difficult are also the kinds which are so easily lost when they are older plants, that is if they last olng enough to become old plants.

Seedlings of *M. pennispinosa* and *M. guelzowiana* are always tricky and will damp off over-night if given too much moisture. Many others are also very difficult but an occasional watering with a fairly strong solution of permanganate of potash will help to keep this disease at bay. For all that it is surprising why there should be such a difference in the rate of growth among differing species of *Mams*. Other very difficult ones to raise from seed are the *Thelocactus* and *Ferocactus*. Providing all goes well with these kinds they grow quickly but they are very liable to damp off and the slightest suggestion of over-watering will mean a rotting off at the collar of the plant. Once a small brown spot of decay appears at the base of one of these seedlings it is impossible to save the plant. They are too small to sustain the cutting away of the diseased portion and if left in damp soil the plant will rot away in a short space of time.

It was interesting to note that at the summer show of the Society there were several new names among the winners. This is most encouraging as the committee have been trying for years to get more members to exhibit at our shows. I know the difficulty of transport but if one looks at the addresses of some of the exhibitors it will be seen that some come from long distances. As I have often said "Where there's a will there's a way". Our Autumn show is yet to come as I write these notes and so I shall have to wait and see what the future brings. We have often asked for suggestions for fresh classes which would encourage fresh exhibitors to have a go but when any have been suggested it has been found that no entries have been made in these classes which were specially provided to fulfil a supposed need.

The butter muslin blind I installed in my greenhouse has been a success. It is six feet long and can be run down to cover a section of my staging where I have placed those plants I know can be damaged by scorch. The shade is provided against the early afternoon sun which always did the damage previously. The blind is on the inside of the house so that the warmth from the sun is not shut out. Strands of strong wire prevent the blind from sagging in the middle, and being fixed to a long round piece of timber can be rolled up easily and quickly.

Part of the glass of the greenhouse which is not protected by the blind has been slightly shaded with "Summer Cloud", but this has only been put on that part of the glass which is near to the plants. The top part of the house, well away from the plants is still unshaded. My frame which houses all the seedlings up to second year plants is also shaded with butter muslin under the glass, which again lets in all the warmth but excludes the strong rays of the sun on the fairly tender plants. I notice that my *Testitudinaria elephantipes* has just started to grow again yet I have kept this plant fairly well watered all the year, it would not however make any attempt to grow until the near autumn, which of course corresponds to the spring in South Africa, its native home.

I experimented with some seeds this year to see if they germinated any better if left in the light but the two pans I tried with equal numbers of seeds of *Euphorbia obesa* showed no appreciable difference, one pan had ten up while the other had nine, each had been sown with eighteen seeds, so the experiment was inconclusive, one pan was shaded only.

Mr. Gordon Rowley is very well known and liked by us all and I am sure that readers will welcome the news and heartily congratulate him on his new appointment as Botany Lecturer at the Reading University. We all extend to him our heartiest wishes and our hope that this appointment will be the forerunner of further promotion and success in the future.

CULTIVATION OF SUCCULENTS

By Mrs. M. STILLWELL

Although the month of October often has the nip of autumn in the air, it also has its compensations, for it is now that most of the South African succulents are looking their best. The cacti lovers are watching their plants preparing for the long winter rest, while many of ours are just starting to enjoy their growing period. This does not mean that regardless of the weather they should be given daily waterings to obtain large plants. It should be realised that this country is not South Africa and we can never hope to have anything like that climate over here, so one has to watch their plants and treat them carefully, and in the case particularly of the mimicry plants, individually. Try to glance round your plants at least once every day and in the case of the stemless *Mesembryanthemums* if they look nice and plump and healthy pass them by and only water when they look in need or slightly shrivelled. If you can water from the base it is an added advantage; but if you have a large collection that has to be watered from the top do not spray but water carefully around each plant, so that the water does not settle in the crevices. As I have said before, with these plants it is safer to have about half an inch or more, according to the size of the plant, of very coarse sand and if you like a few pebbles on the surface of the soil round the actual neck of the plant, so that only the roots are in the moist compost. If you feel like taking this extra bit of trouble when you are repotting, I am sure you will find it pays, and also adds a nice clean look to the collection, particularly if you get matching pebbles for your *lithops*, etc. The experienced grower can usually tell by looking, when a plant needs water, but for the less experienced, if the pot feels heavy it does not need water, or if the bottom of the pot is still damp. It is a good idea when the *Mesem.* flowers fade to twist the petals together between your thumb and finger so that they do not stick to the body of the plant and perhaps mark it. Where the plants do not appreciate spraying with water they should be carefully brushed over occasionally to remove any dust that may collect. Where plants are kept on the dry side, often red spider appears and with *Mesems.* it is better at the first sign to wash it off with clean water and a brush rather than to use strong insecticides, unless you let it get out of hand. Watch the plants carefully through the months of November and December. *Gibbaeums* will still need some water on fine days, *Pleiospilos* that have made a new pair of leaves in the centre should not require any more water; *Lithops* that have finished flowering will probably start to shrivel a little and should have the water gradually withheld. *Conophytums* will probably appreciate a little water through November, before they show signs of going to rest. *Argyrodermas* that have made their new bodies in the centre must be kept dry, *Ophthalmophyllums* will not need much water after flowering, *Glottiphyllums* need just enough to keep them plump as they will often go on flowering well into the winter.

Monilarias produce their soft glossy papillate leaves in August when they should be well watered and then given enough to keep the leaves erect until they start to turn yellow and fade about February. They are then kept dry until the following August. There are other dwarf *Mesems.* that rest during the summer when the outer skin dries up to a papery sheath and protects the delicate new growth inside. In particular I am thinking of *Ruschia evoluta, Ruschia pygmaea* and *Cheiridopsis meyeri.* To the beginner these plants will appear quite dead and I am sure many people would throw them away, but they miraculously come to life again about August time or even later, according to the weather and then they can be well watered and treated in the usual way. Nothing will induce these plants to grow until they are ready to do so and one just has to have patience and wait.

Those people who do not consider they have a good collection until they have some large plants in it, would do well to concentrate on the more leafy type of succulent such as *Cotyledons, Echeverias, Kalanchoes, Aloes, Agaves,* etc. With these plants it is possible to have a fine colourful collection in about two years, particularly if you have a conservatory adjoining the house, and like your plants mainly for decoration. A series of shelves built like steps, one above the other, fitted if possible with some form of trays so that the water does not pour through onto the plants below is the ideal arrangement. As a background I would suggest such plants as *Aloe arborescens, Aloe ciliaris* (the climbing *Aloe*), *Aloe distans, Crassula argentea, Kalanchoe granata* (beautiful red and green leaves), *Aeonium arboreum var. atro-purpureum* (choc. brown leaves), *Euphorbia milii var. splendens* (crown of thorns). On the next shelf down such plants as *Kalanchoe tomentosa* (grey hairy leaves), *Cotyledon orbiculata, Crassula arborescens, Echeveria harmsii, Rochea falcata, Senecio tomentosa.* Along the front such plants as *Echeveria elegans, Echeveria derenbergii, Haworthia attenuata, Haworthia caespitosa, Sedum pachyphyllum, Aloe brevifolia, Aloe variegata, Gasteria marmorata, Crassula perforata, Crassula justi-corderoyi, Crassula anomala.* The above have been mentioned especially for the raw beginner, who should have no difficulty in presenting this list to any good cacti and succulent nursery and being able to obtain these plants on the spot. They are all quite easy to grow and all have roughly the same

watering and resting periods. It is better to learn with some easy plants than to waste a lot of money on the more difficult ones, in fact many of the above, can be obtained as cuttings from collectors who are usually only too glad to help beginners.

As the winter approaches be ruthless and throw away all unhealthy and diseased plants or save a good cutting or offset only, as during the winter our plants do not always get quite so much attention and that is where the danger lies.

My *Stapeliads* have made good growth this year planted in the Eclipse 'no soil' compost with the addition of about a third sharp sand. The only difficulty is that it dries out very quickly. You will find you need to water much more frequently with this medium and the best way is from the base so that the plant can take up the moisture slowly. I still get trouble with a form of mealy bug on these plants that just settles on the surface of the soil at the base of the plants. It makes a tremendous amount of white woolly substance. To keep them really clean it seems necessary to repot several times during the season. I have had several buds on my *Tavaresia grandiflora* this year as yet, not one has reached maturity. I am still hoping. The *Trichocaulon flavum* has a number of its tiny brown and yellow flowers round the crown. This year's seedlings of the *Stapelia* family should now have reached quite sizeable plants and can be treated as adults from now on, particularly if sown early in the spring.

If your greenhouse has been shaded for the summer do remove it at once to allow the plants to get really ripened off for the winter. I personally have never shaded anything at any time of the year, but I do grow such plants as *Haworthias, Aloes and* Epiphytes under the staging where there is glass to the ground and they seem to do very well.

Watch out for the early frosts that often catch us unawares and those people who rely solely on electricity would be wise to have an oil heater standing by in case of an unexpected power failure. It also comes in very useful too if the weather gets very severe, as a booster and does help to maintain the required temperature. I like to aim at 45 degrees during the winter which I hope will be as kind to us as it was last year.

1962 PROGRAMME

1962	*Subject*	*Lecturer*	*Table Show*
January 9th	Plants in my collection. Colour slides.	Mr. W. A. Grounsell	One succulent in flower.
February 6th	ANNUAL GENERAL MEETING. 7.0 p.m.		
March 6th Old Hall Restaurant.	Raising plants from seed.	Mr. A. Boarder	1961 Seedlings.
April 4th Wednesday.	Plant Exchanges.		
May 1st Old Hall Restaurant.	Epiphytes.	Mr. C. G. Innes	One Epiphyte.
June 6th Wednesday.	Pests and Diseases.	Mr. A. S. Jones	One Mammillaria in flower.
July 3rd Old Hall Restaurant.	**SHOW.** Succulents in the Home.	Miss A. M. Pilcher	One window-cill Succulent.
August 14th		Ladies Panel	One Lobivia
September 11th Old Hall Restaurant.	**SHOW.** Succulents.	Mrs. M. Stillwell	One Stemless Mesembryanthemum.
October 9th	Heating	Discussion	One plant in fruit.
November 27th	Collectors and Collections. Colour slides.	Mrs. G. Sharman	One Conophytum.
December 11th	Members' slides.		Best picture shown.

Sherman Hoyt Competition arranged by R.H.S. June 19th/20th.

Meeting in Lecture Hall unless otherwise stated.

REPORT OF MEETING

9th May, 1961. Mr. B. Makin. Adromischus

Mr. Makin opened his talk by saying that most members were familiar with five or six species in this genus.

The genus was remarkable for the diversity and variation in the naming of the species and he would try to settle the commonest of the misconceptions.

The six best known were *Adromischus maculata, A. hemisphaericus, A. mammilaris, A. cooperi, A. cristatus* and *A. festivus.* These names, however, are frequently misapplied, for instance, the green leaved low clustering plant widely known as *A. hemisphaericus* is in fact *A. vanderheydenii*, the real *A. hemisphaericus* being a different looking plant with ascending stems. Also the stemless "chocolate-drop" *Adromischus* widely known in collections and in the nursery trade as *A. maculatus* is, in fact, one of the forms of *A. rupicola.* The true *A. maculatus* is quite different and in most forms is a tall, ascending plant with large leaves belonging to a different section of the genus.

There were probably a hundred good species, some of which were not yet named.

In 1852 Lemaire took from the genus *Cotyledon* to the new genus *Adromischus*, eleven species, most of which were valid transfers and are still named as then. Two or three, however, were in fact good *Cotyledons* and are now returned.

The main, obvious, point of difference between the two genera lies in the placing of the leaves about the stem. In *Adromischus* the leaves are placed spirally and in the non-deciduous *Cotyledons* they are opposite .No *Adromischus* is deciduous. In addition the flowers of most *Cotyledons* hang down in umbels whereas those of *Adromischus* spiral round a single stem or rachis and are upright to nearly horizontal.

Most of the identification keys fall far short of perfection. This is emphasised by the strong influence of cultivation on individual plants and also by the fact that the genus is polymorphic (many forms for the same species).

Cultivation is not difficult. In nature they grow in the protective association of little shrubs or in rock crevices.

The majority do not need deep pots.

They do not make heavy demands for soil mixtures. John Innes No. 1 with sand is quite sufficient. A little leafmould (Mr. Makin prefers the slightly acid oak leafmould) can be included. The pot can, with advantage, be topped with sharp grit.

The usual method of propagation is by leaf cuttings. They root readily if the leaves are laid on a dry board, in shade, in a greenhouse, and kept dry.

The colour of the plants is strongly influenced by the incidence of sunlight, even in this country. Mr. Makin favoured placing his plants in an open cold-frame from June to September. Most leaf growth is made in spring and autumn with flowering in the summer.

Seeds should be collected when the capsule opens at the tip. Any dust-like seeds should be ignored. These are not fertile. The seeds should be quite fat.

The plantlets look just like young *Lithops*. The leaves grow from the base below the *cotyledons* which are subsequently absorbed.

Do not use Malathion (except as a soil soak) on these plants.

The nectar from the flowers may fall on other plants and invite the growth of black mould. This can, with care, be washed off with a camel-hair brush but it is obviously better to avoid damage or bother by more careful siting.

Repotting is not urgent and can be done at two- to three-year intervals.

Mr. Makin then proceeded to emphasise fully and justify his enthusiasm for the genus with a series of excellent coloured slides covering all the plants he had mentioned—and many others—supported by a most informative commentary.

There is no doubt that the evening provided by an enthusiast with the ability to communicate his feelings and knowledge was greatly enjoyed and appreciated by those present and did much for a genus which does not always receive the attention it deserves.

It is general common knowledge that our booklets have been sold all over the world (sales are nearing the 80,000 mark). The United States is one of the countries that sell quantities of the booklets and it is interesting to learn that the Fitzpatrick Cactus Gardens, of Edinburg, Texas, list the booklet as "World's best small book"! Such is fame!

SEED RAISING (Hot Wire Method)

By P. BENT

The following method of seed raising can be carried out if the following oddments are available.

COMPOST. Good John Innes No. 1 mixed with sharp sand should do well. Although this compost is usually sterilised, it will be well to sterilise again to be certain that no pests are present. This can be carried out admirably by placing pot and compost in an oven (200 deg. F.) for ten minutes. A too high temperature would ruin the organic make up of it. Some members use vermiculite. I personally do not like this on account of its water holding properties. Secondly, it is not any good to keep seedlings in owing to the fact that it does not contain nutriment, therefore, potting on would have to take place early. It has one advantage inasmuch as it is sterile and free from weed seeds.

BOWLS or POTS? The question of what to put the compost in always crops up. Really it does not matter what type of bowl is used as long as a few things are taken into consideration. 1. Shallow bowls (less than two inches) are useless. 2. If non-porous pots are used put plenty of crocks at bottom to prevent sogging. 3. Choose suitable container for the particular plants, e.g., *Lithops*, *Euphorbia obesa*, *E. meloformis* have long roots; deep pots should be used (this, of course, does not matter if early pricking out is envisaged). I find that four inch half pots are as good as any. Any insulated resistance wire will do, as long as it is not thick. "Eureka" wire obtained from Surplus (Government) stores will do well. Garden wire, obtainable at Woolworth's for about 1/6d. will also do. Copper or brass wires are useless. The amount of wire to use will depend on the current, but a heat of about 100 deg. F. should be aimed at. Trial and error are the best method for finding this.

TRANSFORMER. A transformer giving anything from 3 to 12 volts at 3 amp. will do. Transformers with less current (amps) would not be able to take the load and so burn out after a short while. Car battery chargers giving over 3 amps would do well.

THERMOMETER. Mercury or spirit thermometer would be found handy for checking temperature of compost, etc.

FILLING POTS. Fill pot to quarter of height with crocks and add compost to within one inch of top. The resistance wire can now be laid over the surface. Finally top up with compost. If the compost is moist, the wire will not spring up. Lead the two ends of the wire over the pot to the transformer. Put the seeds in, cover with glass (smoked) and put in saucer of hot water. Never water with water over 150 deg. F. unless put in saucer to soak up.

CURRENT USED. The cost of the current used would be little, amounting to perhaps a few coppers a week.

CARE OF SEEDLINGS. After germination, loop another length of resistance wire so it remains just above the soil, but not touching the plants, in parallel. Place a pot or glass bowl, something which lets in some light, over this to keep in heat. Temperature should be around 85 deg. F. In the middle of summer all this extra heating would be unnecessary.

AFTER CARE OF SEEDLINGS. After they have reached a decent size and taken on their normal shape, they can be transplanted into another bowl of fresh compost. Number 2 compost can be used for fast growers. By this time they should be able to stand full sunshine.

SOME TIPS. If mildew occurs, spray with a strong solution of potassium permanganate. Remove any seeds covered in mould as they are most likely to be dead! Seed husks sown by mistake also cause this mould. Seed pans should not dry out as this generally retards growth. Of course, never go to the extreme and overwater. If pests should show themselves, spray or water with Chinosol, mixed to maker's instructions. The voltage used is always low, never try high, as this could be *extremely dangerous*. Always earth one output wire by connecting it via a wire to a water tap or earth pin or plug. High voltage cables can be bought, but only as far as I know for large areas. If more heat should be needed, link in another length of wire, but never overload.

CONCLUSION. This method of seed raising enables root growth to develop more fully than usual. Stem growth is promoted by the top heat. The germination rate is also much quicker and certain. Many modifications can be put to this idea, such as joining a thermostat in series to prevent waste of current, etc.

Photographs have been appearing in the Journal in the past as from Dr. L. Bolus. Mr. Harry Hall now informs me that these photographs were taken by him and not by Dr. Bolus.

MAMMILLARIAS I HAVE GROWN *(continued)*

By A. BOARDER

M. elegans is one of the easiest plants to grow and yet one of the most attractive. It is so hardy and looks so neat with its heavy clothing of fine short spines. The pink flowers give an added attraction and these are followed by many bright red fruits. I had a plant of this species from the London Garden stores in 1928, and my present plants are from seed from this original plant.

M. elegans var. schmolli I will deal with under *M. schmolli* as I do not agree with some specialists that this plant is a variety. The true *M. elegans* is not a very good branching type yet *schmolli* is very caespitose, making quite a large group.

M. elegans supertexta is about the most handsome of all the *Mams.*, as it is so closely covered with short white spines that the body is completely hidden. Added to this the plant has many small black central spines pointing upward, in all a lovely species. I find no trouble growing this plant. Many seed pods formed last year and I have some nice seedling plants already showing the adult formation. I raised my plants of this species in 1951, from seed obtained from Winter.

M. elegans major is somewhat similar to the *M. elegans* but has much longer spines, it flowers well with pink flowers and remains single. This plant is also from seed sown in 1946.

M. elegans v. nigra is a species I obtained many years ago and it has many longish black spines, very similar to *M. schmolli*, but it does not branch or make off-sets like this plant. I cannot trace where this plant came from originally.

M. elongata is one of my favourite plants as there are so many differing varieties going through all shades of spine colour from almost white, cream, pale brown, dark brown, to red. The spines vary considerably in length and shape, some fairly short, others long, some straight and others bent. Some varieties have no centrals whilst others have quite strong ones. In all a handsome group and as these pants are all very caespitose it is not long before fine large groups are formed. I had my first plant in 1905, bought from a small florists in a London suburb. I think I have part of the original plant, propagated from an off-set. I do not trouble very much to raise this plant from seed as it is so easy to get rooted cuttings.

M. elongata v. echinata, a fine type with strong central spines of a bright yellow hue. I obtained my plant in 1928.

M. elongata v. rufescens is as its name implies a red spined variety, the plant I like best is very red indeed and never fails to attract the attention of visitors. I had my first plant from Hollis in 1929.

M. elongata v. rufocrocea is a stouter spined variety than the foregoing plant with larger bunches of reddish-brown spines. This came from a cutting many years ago.

M. elongata v. rufispina is a named type I raised from seed and it bears a close resemblance to *rufescens*.

M. elongata v. straminea has rather large yellow spines and thick stems. It is very handsome and one I raised from seed from de Laet in 1924.

M. elongata v. minimi is, as its name indicates a very small type but none the less a very attractive one. This came from an off-set from the collection of the late Mr. Green, of Ruislip, in 1923.

There are a few more varied types or variations in my collection which have varied coloured and lengthy spines. Many of my groups are in 7½ inch pans and look very fine. They all flower freely and make a few seed pods each year.

M. esseriana is a pretty plant something like a short chubby *M. microhelia*. It is caespitose and one of my favourite plants. I raised my plant from seed in 1948.

M. essauseri is a yellowish spined plant but not a very strong grower, at least with me. I raised this one from seed in 1950 and it is still rather small.

M. ebenacantha is a simple rather flattened type, fairly open with a few strong spines. I obtained my plant from seed in 1948 and have found it rather slow growing, but not particularly difficult once it gets out of the seedling stage.

M. erythrsperm v. similis was raised from seed from de Laet in 1923 and has bright pink flowers.

M. erythrosperma is a descendant from a plant I had in 1910. Although it grows fairly rapidly it can also rot off over-night for no apparent reason. I have known many people who have had a flourishing plant one day and a mass of rot the next. I find that this is one of the types which should be mound-grown, that is the plant is kept up on soil higher in the centre of the pot than that on the outside edge. This enables most of the surplus moisture

to run away from the base of the plant. I have had one of these plants for many years but have lost one or two in the past before I tried my present method of growing.

M. erectrohamata was raised from seed from Winter in 1933 and is a caespitose type with hooked centrals.

M. eriacantha is another seedling from de Laet in 1930. Its attraction lies in the greenish-yellow body and spines. I have not found this plant an easy one to flower.

M. echinaria is probably a variety of *M. elongata*, but in some works it is given specific naming. Another Winter's seedling and one I find very attractive, it is making a fine group.

M. euthele is a plant I did not know pre-war, but one I find very handsome. The seedlings I raised were interesting from the start but now they have made larger plants the long black central spines show up very well, a grand plant.

M. eichlamii is another of fairly recent introduction but it looks a very interesting plant and one well worth growing.

M. evermanniana I raised from seed in 1950 and find it rather slow growing but quite handsome. It is simple so far and appears rather like a stunted *M. elegans* with white wool at the growing centre and longish black spines as centrals.

M. egregia, one of the difficult gems which I have had several goes at raising from seed. I find this is a difficult plant although a very pretty one. For some years now I have raised some from seed but they do not appear to thrive. There is positively something they need which I have not given them so far, but hope springs eternal, another of those tricky subjects which present a challenge to me.

LISTS RECEIVED

R. Blossfeld, Luebeck, Germany: Printed lists of cactus and other succulents as well as seeds which are supplied in packets with coloured illustrations in front.

Ault Potteries Ltd., Swadlincote, *nr. Burton on Trent:* A printed list of various containers including "Cacti Trays" in 6-in, 8-in, 10-in. and 12-in.

REVIEW

Another new book just to hand is "Das praktische Kakteenbuch" dealing with cacti and also other succulents. It is by Walter Haage, the author well known for his really wonderful books. This book is a little different to his previous works. It is a book of 285 pages, in German, with 223 colour plates nearly all of them each of single species. There are also numerous drawings in the text illustrating the points brought out in the letterpress. Eighty-five pages are devoted to the cultivation of cacti and other succulents and I find them very comprehensive and an extremely good guide. The rest of the book is devoted to descriptions of the various species in the different genera of both cacti and the other succulents. These descriptions go beyond the pure botanical description and contain much material of interest. The book is well and attractively bound and inside the covers are maps. The book is published by Neumann Verlag, Radebeul 1, Dr Schmincke Allee 19, Germany, but can be obtained from booksellers advertising in this issue of the Journal. The book was kindly sent to me as a complimentary copy by Mr. Haage and I have not had the time to obtain the price of the book and it is not shown in the book itself.

A BEGINNER'S TRIALS AND ERRORS

By C. JACKSON

It is only nineteen months since I became a member of the Society, but the pleasure I have had from membership has far exceeded my expectations. I have eagerly awaited the arrival of each issue of the Journal and have enjoyed, among other things, the articles written by beginners on how they started. When I last wrote to Mr. Heathcote some twelve months ago, I was the only adult member in this part of the country and there was only one junior member. I am convinced I did the correct thing in joining our Society. After all, Borg dedicated his "Cacti" to us and I notice that Green in his "Cacti and Succulents" refers to both societies, but gives particulars only of ours.

My interest started a number of years ago and came to a head in 1953 when I spent a few days with an old friend in Bristol. During a visit to one of the "locals" I came across a cactus in flower. It was so exotic that I felt there and then that I must grow some flowers like it. I asked the name of the plant, but no one knew and, after several years, I found it was one of the *Echinopsis* family.

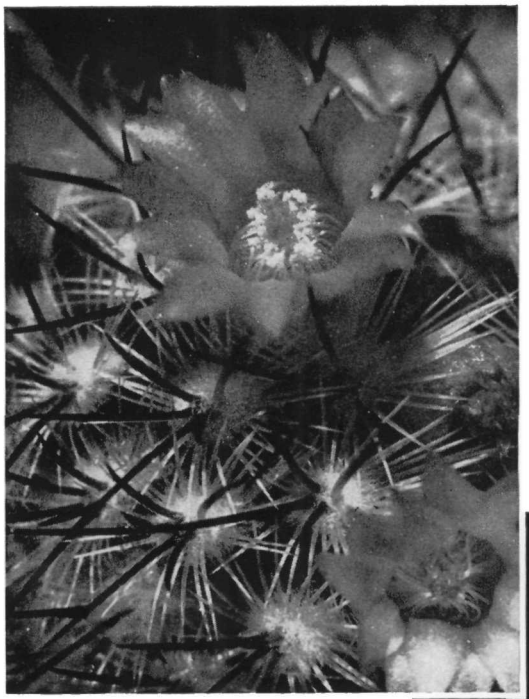
On returning home I started searching for a shop which sold cacti and I immediately made my first purchase of two unnamed plants, little dreaming how many varieties there are. These two, *Opuntia microdasys* and *Opuntia cylindrica* were held in high regard and, as they grew, further purchases were made including some of the other succulents.

During the summer of 1957 I had my first flower on *Faucaria felina* and I was delighted to find that such plants would flower indoors. Summer of 1958 brought my second success with a flower on *Aloe aristata*. Nothing to excite an expert, but I was a novice and very pleased with my progress. By the summer of 1958 when I joined the society, I had some seventy to eighty specimens. Something had to be done quickly as the plants were beginning to lose some of their popularity around the house, so I ordered a 10 ft. by 6 ft. cedarwood greenhouse. This arrived in January, 1959 and the plants spent most of last winter in the house. During that winter I was struggling to save the seedlings from my 1958 free issue which were sown in pans and left on the window sill. Some twenty-five germinated, but I lost them one by one until I only had *Nananthus malherbei* which by summer 1959 was some four inches across. I feel I lost some of the seedlings because I left them too long without watering and others damped off because I watered in the evening and the night air did a good job. Now, the *Nananthus* is looking very yellow and I am wondering if it is now in its rest period and would shrivel in the same manner as *Cheiridopsis* if I withheld water altogether. Through watering late in the evening during the late autumn of 1958 I caused *Faucaria felina* to rot at the neck. I was fortunate enough to save some small pieces and I am pleased that one of the pieces flowered last autumn.

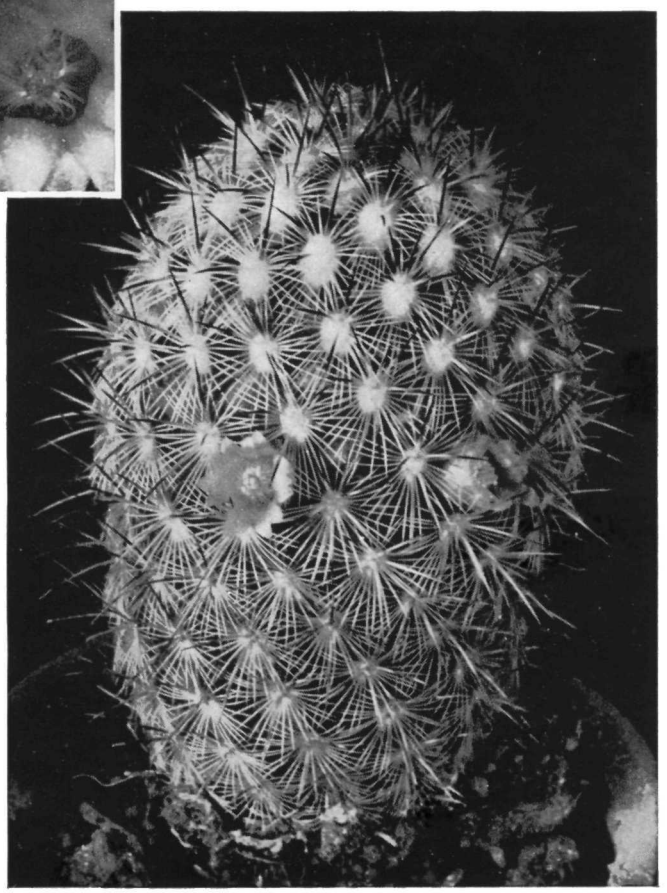
Last year, in addition to the free seed distribution, I purchased seeds from other sources. Out of some sixty varieties set, approximately forty germinated. Some of the seedlings were lost during the winter as water was probably withheld too long during the wet weeks of December. A few damped off, however, when I have been careless during watering.

As to the varieties which failed to germinate I think the failure was due to covering them too deeply. In my endeavour to keep the greenhouse temperature over 40°F., I fitted a complete lining of polythene inside the glass, draped over a central spar fixed to the apex and then fixed to the wooden spars with drawing pins. Separate pieces were fitted to the end glass and door. I used an Eltex Oil Heater fitted with two one-inch wicks, this being the correct one for the size of the greenhouse. One morning I was greatly surprised to find the flames almost extinguished. I turned up the wicks, but the flames would not increase in size, the polythene was doing too good a job and most of the oxygen had been used up. I tried various means of getting a correct air flow and found the best result was to place a match stick under each side of the roof window. This was satisfactory on all except foggy or perfectly calm nights when air did not escape quickly enough, but the temperature does keep over 40°F. The lowest temperature recorded was 38°F., but usually keeps to the lower 40s. During the day, the polythene traps the heat and well over 70° has been recorded. This is obviously too high for the winter as on a few occasions the cold plants have suffered from condensation, causing the loss of a few *Opuntia* pads which were new growth last summer. Next year I propose fitting polythene on wooden frames which will not be such a perfect insulation and should permit a steady flow of air through the overlapping glass.

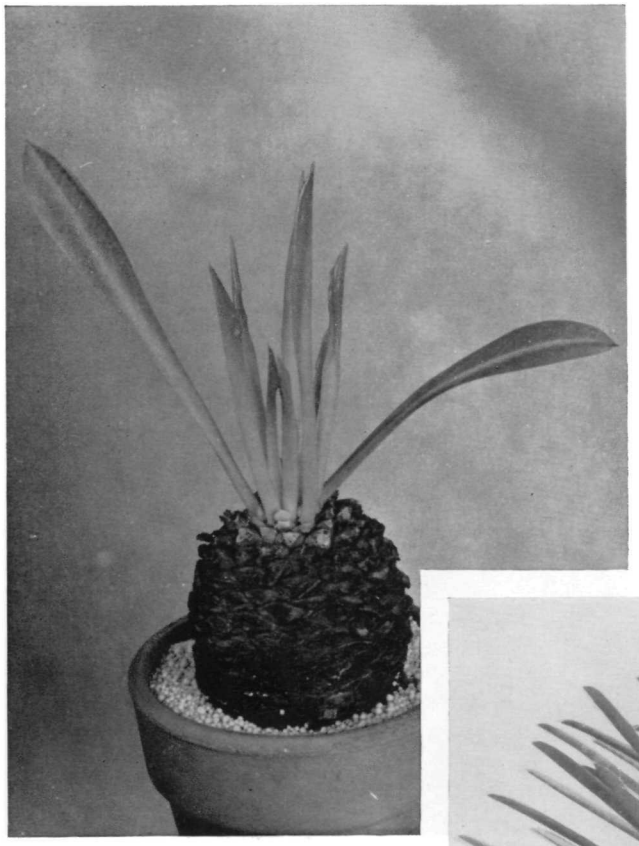
In all I have had the following plants flower : *Zygocactus truncatus*, *Schlumbergera gaertneri*, *Aloe aristata*, *Faucaria felina*, *F. tigrina*, *Mammillaria wildii*, *M. bocasana*, *M. prolifera*, *Rebutia miniscula*, *Othonna carnosa*, *Lithops karasmontana* and *Euphorbia mammillarias*. Whilst not a high percentage of some two hundred plants, I feel quite satisfied for my first year and am looking forward with great anticipation to the coming season.



M. microheliopsis P.C. Ryan



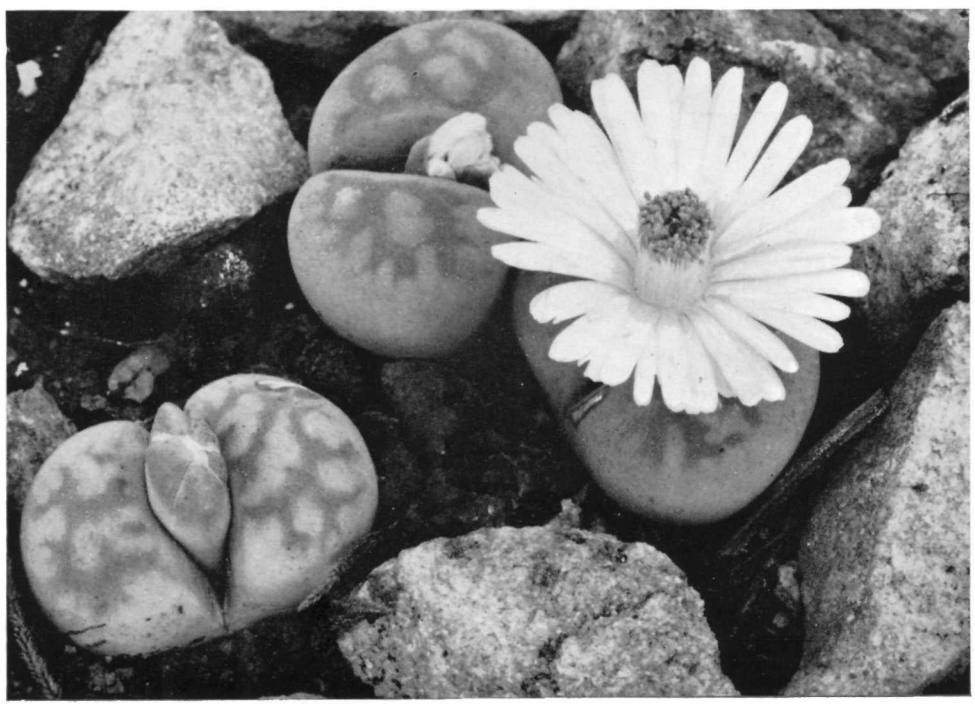
M. microhelia Miss M. J. Martin



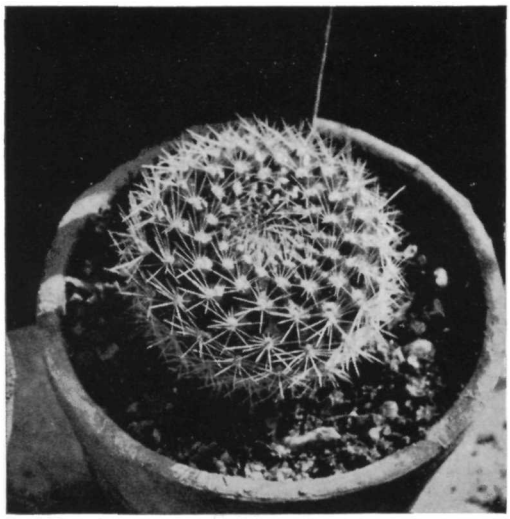
Euphorbia bupleurifolia Miss M. J. Martin

Euphorbia clandestina Miss M. J. Martin

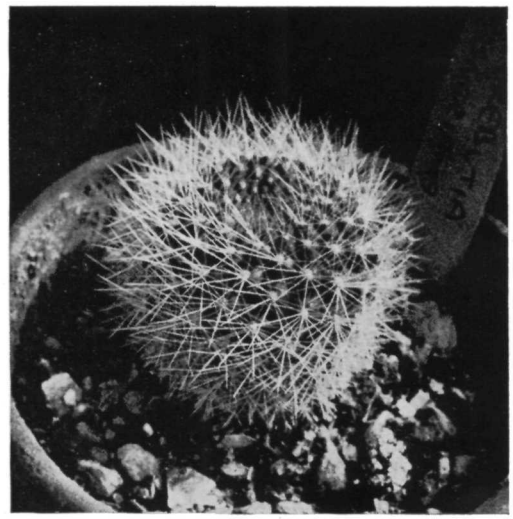
Lithops erniana W. Beeson



Lithops lericheana (?) M. Klapwyk



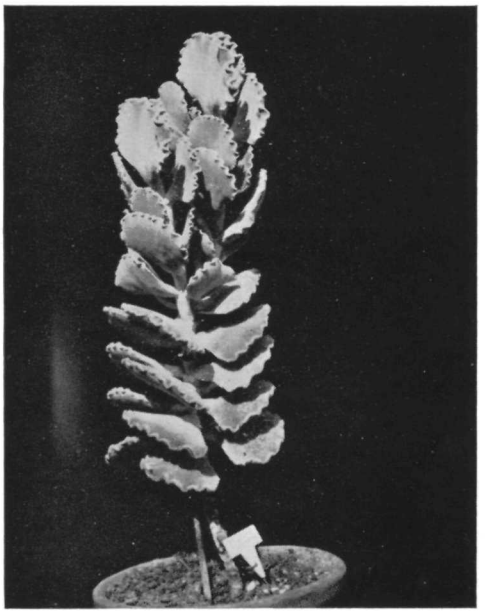
Rebutia calliantha bewerunge G. A. Burton



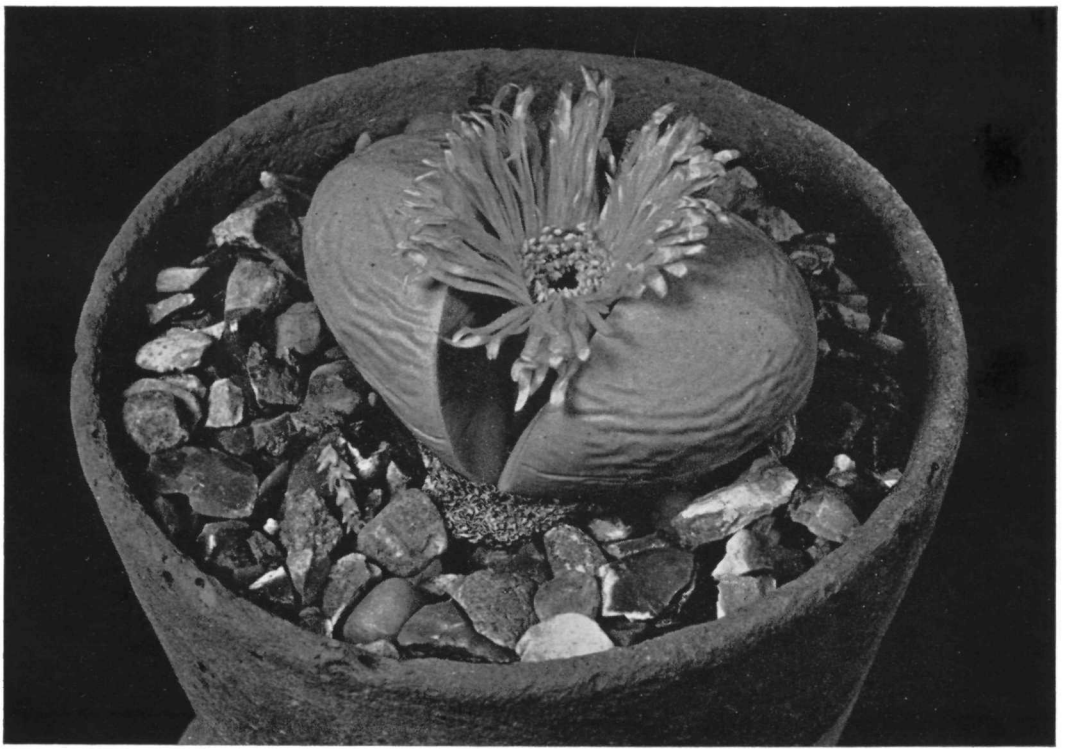
Neorebutia weasneriana G. A. Burton

Rebutia pseudodeminuta and *Rebutia deminuta* G. A. Burton

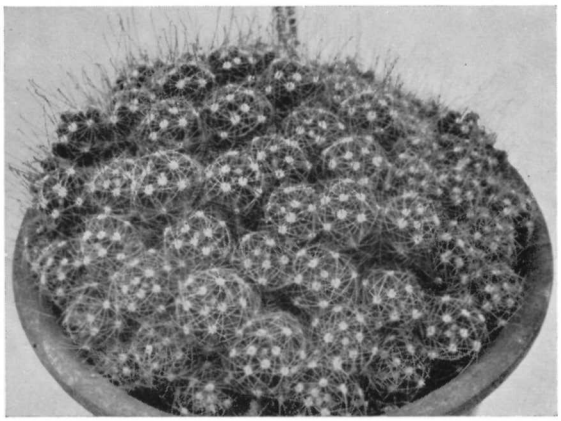
Echeveria gigantea A. S. Jones



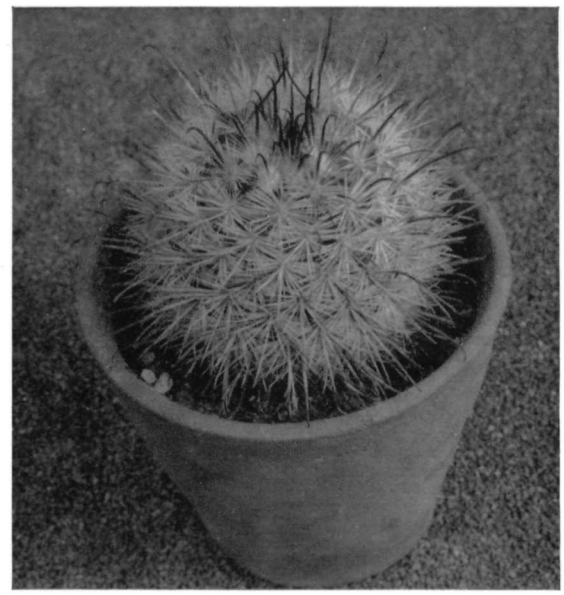
Cotyledon undulata A. S. Jones



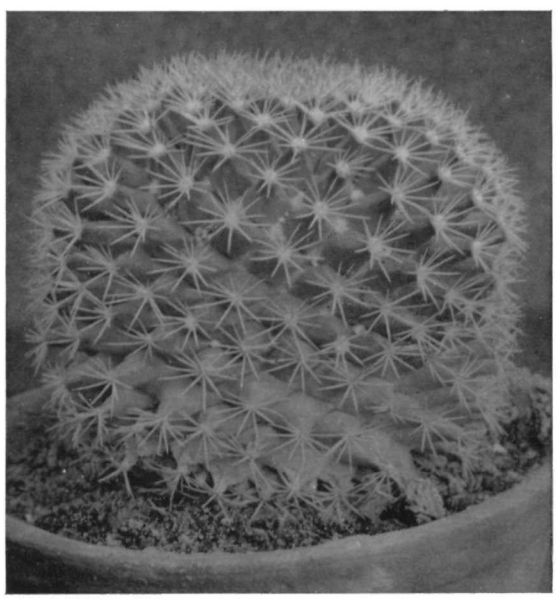
Argyroderma octophyllum R. H. Shepherd



Mammillaria surculosa G. A. Burton

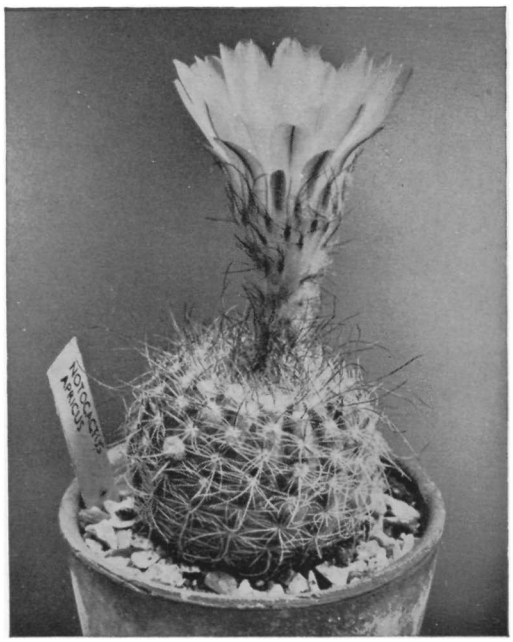


Mammillaria cowperae A. S. Jones



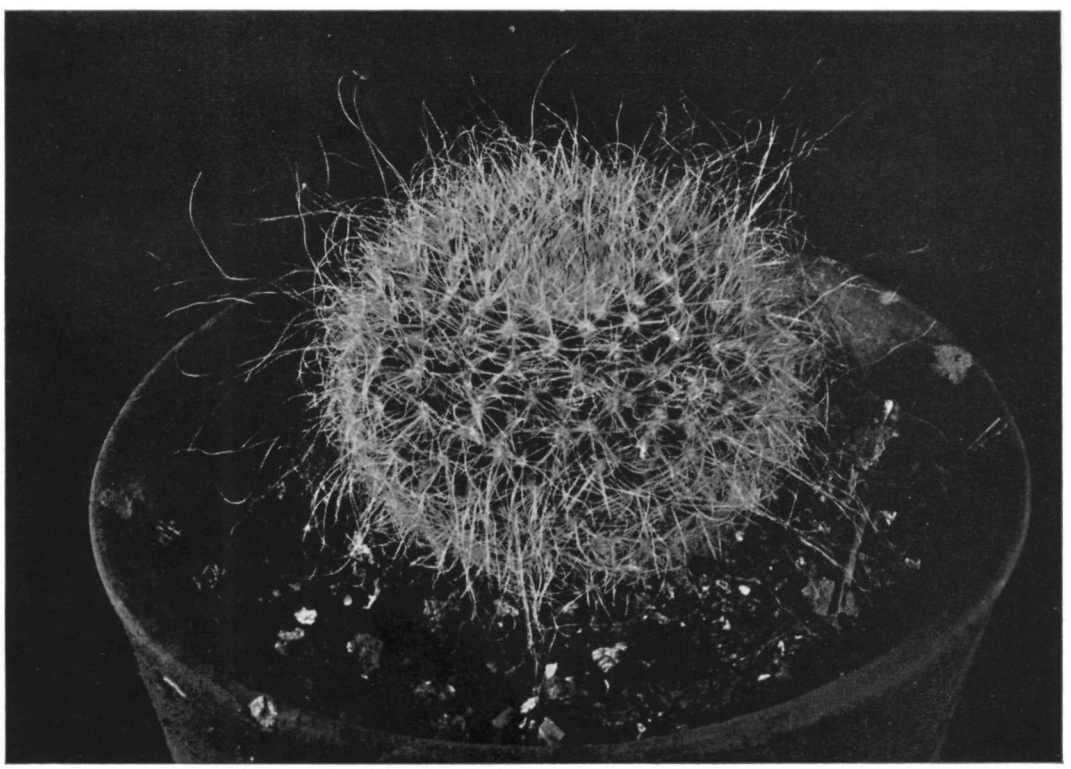
Mammillaria mexicensis A. S. Jones

Mammillaria zeyeriana A. S. Jones

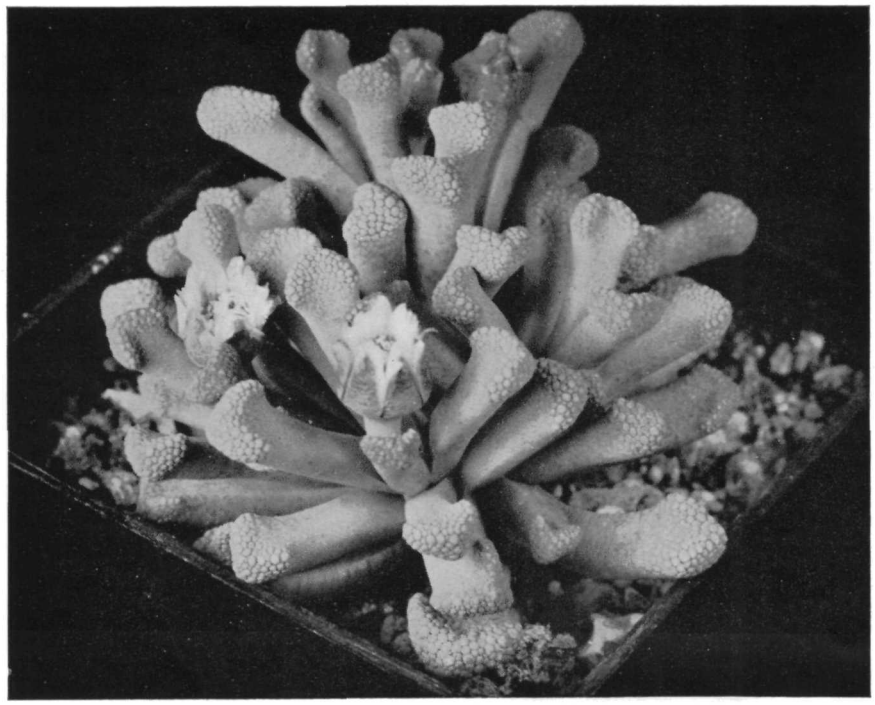


Notocactus apricus G. A. Burton

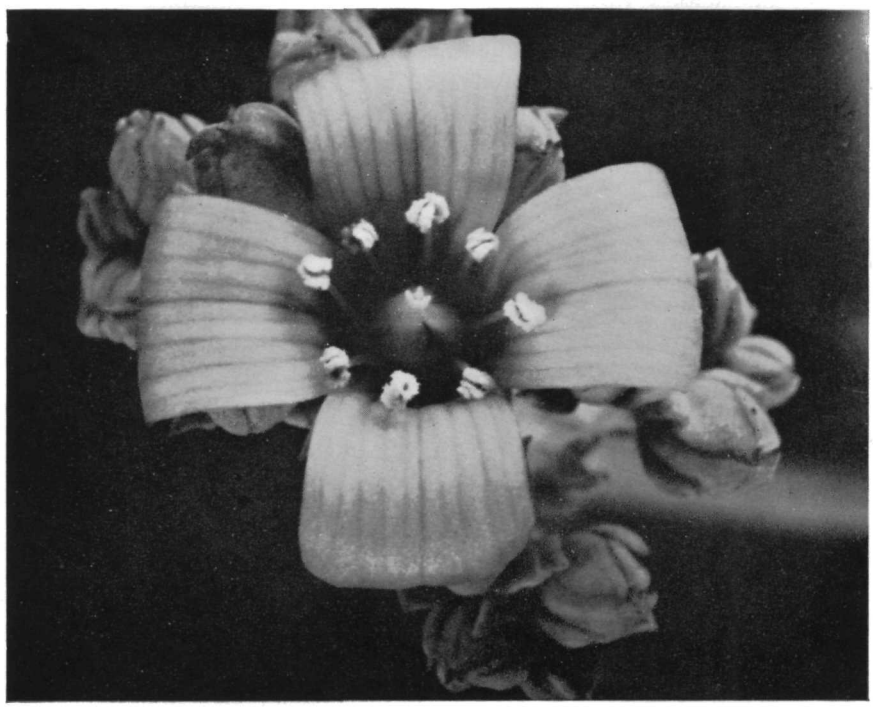
Gymnocalycium lafaldense G. A. Burton



Mammillaria hahniana R. H. Shepherd



Titanopsis luderitzii Miss M. J. Martin



Kalanchoe pumila Miss M. J. Martin

MAMMILLARIA NOTES

By E. SHURLY

With reference to my article "Why alter plant names" in the last issue of the Journal I had hoped to be able to print the views of Dr. Reid Moran. I sent him an advance copy of my article and I received a long letter from him in which he largely agreed with me, but differed on some points, mainly on the question of which plant was a *Porfiria*. I felt that nobody could accept Professor Dr. Buxbaum's plant as any kind of *Porfiria* and I was not sure whether Dr. Reid Moran had seen the illustration. I wrote him on the 22nd July dealing with the various points and suggested that he should await the delivery of the July Journal which I was certain would clear up any doubts in his mind as the illustration reproductions would explain everything. Unfortunately I have not heard from him up to the time of writing this article, so I must leave the matter for the time being, if it is necessary at all to refer to it again.

An interesting conclusion to this article is a letter from Mr. Curt Backeberg, in which he joins Mr. Rowley in supporting the views I gave in my last article. Mr. Backeberg goes a little further. He suggests that the illustration of Dr. Buxbaum which he showed with his incorrect description of *M. schwarzii* is really *M. albiarmata*. Fr. Boedeker first described this plant in the German Jahrbuch and "Die Kakteen". That which appeared in the German Jahrbuch was not in flower, but there can be no question that the two illustrations are identical and I informed Mr. Backeberg that I completely agreed with his suggestion. Therefore, another mystery has been cleared up and we are all saved the confusion which Dr. Buxbaum would have placed us. It would be very helpful and a great assistance to clearing up these mysteries if everyone able to do so would deal with these points as they appear and get them published. The Mammillaria Journal is doing good work in this direction and this publication is always read by me with a great deal of interest.

In the same letter Mr. Backeberg gave his opinion that the new species, *Mammillaria magneticola*, which was published recently in the Mexican Journal is really the well known *M. vetula*. Unfortunately, the illustration of the new species was very badly reproduced, at least in my copy of the Mexican Journal, and it is not easy to be sure of the plant, but I wrote to Mr. Backeberg that I did not agree with him. Without the actual plant of the new species it is difficult to be certain that the description is accurate, but Dr. Meyran is a well known and thoroughly competent botanist and I have no personal doubt that his description is incorrect in any detail. If that is so, then I feel sure that the two plants are different. The radial spine count of *vetula*, according to the describer, Martius, is 25/30, *magneticola* 38/45. It is notorious that in the same colony of a certain species that one can meet plants with slight differences, sometimes much greater, but the difference in the radial spine count between the two species is too great to be accounted for in this way. But I think the central spine count is a very much more important factor. With *vetula* the count is one, with *magneticola* 4-7. I cannot possibly believe that normal variations can account for such a difference. I have *M. vetula* in my collection and it agrees with the description of Martius. There are other differences, of course, but I think the spine counts are too definite to go into other factors. Unfortunately, Martius' illustration is a badly drawn illustration of this plant, but, even so, it does conform reasonably well with the plants we have today.

In the same letter from Mr. Backeberg, he makes the suggestion that *Mammillaria dawsonii* first described by Dr. Houghton is really *M. glareosa*, first described by Boedeker in his "Ein Mammillarien Vergleichs Schlussel" 1933: 59. Unfortunately, this little book is not illustrated and we cannot be absolutely sure of the plant except from the description. On page 3472 of Mr. Backeberg's fifth volume there is an illustration of what he claims to be *M. glareosa* and this illustration agrees with the description given both by Boedeker and by Mr. Backeberg. I, therefore, informed Mr. Backeberg that I had very carefully compared the two and that I agreed with him that *M. dawsonii* was the same as *glareosa*. One more confusion eliminated!

It will take a lot of time, but information keeps on coming through in regard to offsets of *Mammillarias*. Mr. W. Greenaway of Charlton, S.E.7 informs me that *MM. bocasana v. flavispina, longicoma, schelhasei, decipiens* and *bombycina* all have offsets in the axils between the tubercles. He also informs me that *M. camptotricha* has offsets *both* in the axils and on the tips of the tubercles. It is a great pity that it is not always possible to make sure of the actual site of an offset and the only certain time is when the offset has just appeared and without a close examination of each plant it is impossible to see these offsets. The information in regard to *M. camptotricha* is rather surprising and possibly the word should be alarming. If it is absolutely correct then we have something else to think about. Generally speaking, the site of the offsets might be taken as definite information justifying creating sub-genera.

The present position is a little too uncertain to be dogmatic about the matter, if one can at all be dogmatic in regard to *Mammillarias*, let alone other types of Cacti.

In regard to the same matter, I had a very interesting letter from Mr. Denis Cowper of the New Mexico Cacti and Succulent Research of Belen, New Mexico, U.S.A. He received our Journals and informs me that *MM. mainae* and *wrightii* both offset from the end of the nipple, while *M. mazatlanensis* (Colima form from Manzanillo) offsets in the axils between the tubercules. He appreciates that my request referred to *Mammillarias* only, but he thought it would be interesting to note others. He states that *Navajoas peeblesiana* and *maia*, *Toumeya papyracantha* all offset from the end of the tubercle, while *Coloradoa mesa verde* and *Utahia sileri* offset from old flower scars.

Mr. Cowper sent me three plants which they could not place and I was fortunate in identifying all three. I was lucky inasmuch as the three plants were rare and very welcome additions to my collection, viz., *MM. yaquensis*, a beautiful specimen of *bocensis* and a small, lovely plant of *boolii*. Incidentally, in view of the antagonistic comments on imported plants, they all came through without a single spine injured, bent or damaged. It is interesting to note that they arrived simply packed in newspaper. While Mr. Howard Gates was alive I often received some quite large parcels of plants and they also were wrapped in newspaper and I always noted the fine condition of his plants which came through without injury, even to the spines. Why newspaper should be the vehicle for perfect condition after long journeys is more than I can say. Probably it is also due to the care shown while packing, but when the parcels were received they did not seem to be packed more carefully than others I have had from other sources. Possibly the careful packers were not anxious to pack them by pressing the plants in like others who try to get as many plants into a box as they can.

Probably readers will think that this issue is rather overloaded with *Mammillaria* matter, but I have to publish material as it comes avaialble. I only wish that others who could deal with plants of other genera would contribute articles which I am sure would interest all our readers.

SHOW RESULTS—*Continued from page 93*

P. V. Collings Cup for Euphorbias—S. C. King.
R. S. Farden Bowl for Groups.—J. J. Seymour.
Mrs. E. B. Pryke Howard Cup for Six South African Succulents—S. C. King.
Mrs. J. A. Luty Wells Cup for Three Cacti—Mrs. J. Scarff.
Challenge Shield for Juniors—N. Clyne.
Denton Memorial Medal for Six Stemless Mesembryanthemums—J. D. Harding.
S. J. Pullen Cup for Miniature Garden—Mrs. T. Watt.
Mrs. A. Hedges Cup for Succulents raised from Seed—Miss A. M. Pilcher.

Mr. N. E. Wilbraham of 178 Black Road, Macclesfield, informs me that he has lists of the International Succulent Institute which he is willing to send to anybody interested. The establishment of the Institute has for its aims making available to collectors all over the world Cactus and Succulent species that are not in every collection, viz., those rather difficult to obtain, so that the list should be of great use to all.

Subscriptions. Do not let the realisation that you have **not** received the first Journal for 1962 and details of the free seed distribution be a reminder that you have not renewed your membership.

Subscriptions are due on 1st January, 1962 and should be sent to the Honorary Treasurer, Mr. E. W. Young, at 35 Castle Drive, Ilford, Essex, but if you can send before it will help.

REVIEWS

The appearance, long awaited by me, of Curt Backeberg's fifth volume of his great work "Die Cactaceae" has now been received and it is up to the expectation I had of his very fine ability. It consists of 912 pages with 737 illustrations (some in colour) and 44 plates (also some in colour). It deals with the genera *Echinocactus* to *Cochemiea*, included in which are 413 pages devoted to *Mammillaria*. I have not counted the actual number of *Mammillarias*, but there are 301 numbered species with many interspersed among the numbered ones. Also there are 42 pages with shorter descriptions of what Mr. Backeberg calls "little known species". I have, after each volume, given my appreciation of the work he has done in preparing these volumes, so I do not need to add to what I have already said in previous Journals. I have had much to do with the present volume as I have vetted the *Mammillarias* in regard to spelling, history, references, etc., but I have had no hand in the arrangement or the descriptions. Doing this work I have been able to realise the tremendous work involved and also the difficulties of preparing such books. I have been impressed deeply. But I do not wish to only state my admiration. I have had many tussles with Mr. Backeberg over various items and I have taken the strongest objection to the titling of the genus with one "m". I also think the interspersion of the unnumbered species was a mistake and very confusing. I know that Mr. Backeberg considers that it was the only way of dealing with species of which he was not all that sure, but I think numbering them would have been better. Mr. Backeberg is a man of great experience and I am perfectly aware that in preparing this book he acted according to what he considered right, but he and I were in agreement in a very large way. This volume adds to the achievement that has been gained from the previous four volumes and I am sure that this work will be accepted as the most up to date work on Cactaceae and adopted as a standard work. It can be obtained from the publishers Gustav Fischer Verlag, Jena, Germany, price 107 marks (£9 approx.), but it can be also obtained from booksellers advertising in this Journal. The sixth and final volume will appear in 1962 and will contain the index and much material that has come forward since the first volume.

Not content with the colossal work involved in preparing his "Die Cactaceae", the pen of Mr. Backeberg has produced another book "Wunderwelt Kakteen". It is published by the same publishers. It is a book of 242 pages with 176 illustrations, included in which are many in colour. It is in German, unfortunately, but deals copiously with the history of Cactus, many curious things about them, the poetry published on them, the adventure of plant hunting and so much of interest to all interested in the subject. It is not a scientific book, but full of good reading and much informative material. I can fully recommend it. It also can be obtained from booksellers advertising in this Journal, price RM 19.50 (35/- approx.).

Another splendid work that has been published since the last Journal appeared is Peter R. O. Bally's monograph "The Genus Monadenium". He describes 47 different species including 18 new ones. There are 32 plates in natural size and 88 figures and is published by Benteli, Berne. It is in English and, therefore, extremely useful to every collector in this country. The price is £2 18s. 0d. and is a remarkable production. It deals so copiously with each species and covers the descriptions by so many illustrations of each. It also deals with the Chronology, Native Names, Maps, Bibliography, etc. The 32 plates, many in colour, are printed on fine art paper and are loose, contained in a pocket at the end of the book. It has been published with the assistance of the Swiss National Science Foundation and the Georges und Antoine Claraz-Schenkung on the recommendation of the Botanical Institute and Botanical Museum of the University of Zurich. Such a wonderful book could only have been produced with such assistance. The Genus Monadenium is not very well known and monographs are notoriously hard to produce profitably. This monograph deserves all the success that its production could achieve and I can very heartily wish it the greatest success. It also can be obtained from the booksellers already mentioned.

Professor Dr. Franz Buxbaum is well known for his books and his inimitable style and I have now received a further work of his "Die Entwicklungslinien der Tribus Pachycereae". It is a paper covered book of 107 pages with 55 illustrations in the text. Included in the Pachycereae, the author includes 25 different genera, all naturally Cerei, and is a very competent scientific work that should recommend itself to all interested in the subject. The illustrations consist, in addition to some photographs, of seedlings, seeds, etc. and are of such quality that they very clearly explain the various points intended by the author to be represented. Professor Dr. Buxbaum's style is so well known that I need hardly make any explanation, but the work is invaluable to all interested in the scientific aspect of these genera. It is published by Gustav Fischer Verlag, Jena, price 15.50 marks and also can be obtained from the booksellers previously mentioned.

SHOW RESULTS, JUNE, 1961

Class 1. *Three Echinocactanae*
1st J. E. Taylor 2nd Mrs. J. Scarff 3rd W. E. Stockhausen Very Highly Commended R. H. I. Read

Class 2. *Three Coryphanthanae*
1st Mrs. J. Scarff 2nd J. E. Taylor 3rd B. G. Inglis Highly Commended H. Rider

Class 3. *Three Coryphanthanae* (for Members who have not previously won a First in any Class)
1st L. J. Reynolds 2nd J. R. Moore 3rd Miss M. J. Martin Very Highly Commended J. W. Pilbeam

Class 4. *Three Cereeanae*
1st J. E. Taylor 2nd R. H. I. Read 3rd Mrs. J. Scarff Highly Commended L. J. Reynolds

Class 5. *Three Echinocereeanae* (excluding *Rebutias* and *Lobivias*)
1st J. E. Taylor 2nd T. N. Dewey 3rd W. E. Stockhausen

Class 5*a*. *Three Rebutias* and/or *Lobivias*
1st T. N. Dewey 2nd J. E. Taylor 3rd R. H. I. Read

Class 6. *Three Cacti* (*any genera*)
1st Mrs. J. Scarff 2nd J. E. Taylor 3rd Miss M. Falcon Very Highly Commended H. Rider Commended W. Stockhausen

Class 7. *Three Cacti* (for Members who have not previously won a First in any class).
1st J. W. Pilbeam 2nd E. G. Canham 3rd W. Stockhausen
Very Highly Commended Mrs. N. Lee Smith Commended J. R. Moore

Class 8. *One Specimen Cactus*
1st B. G. Inglis 2nd Mrs. J. Scarff 3rd J. E. Taylor
Very Highly Commended Miss M. Falcon

Class 9. *One Specimen Succulent* (other than Cactus)
1st Mrs. J. Scarff 2nd W. E. Stockhausen 3rd L. J. Reynolds
Very Highly Commended Mrs. M. Halford Commended R. H. I. Read

Class 10. *Cacti raised from seed by Exhibitor* (sown on or after 1st January, 1959)
1st J. J. Seymour 2nd W. F. Maddams 3rd J. R. Moore
Very Highly Commended E. G. Canham Commended Mrs. T. Watt

Class 11. *Miniature Garden of Cacti or Succulent plants* (not mixed) to cover space not larger than 18 in. x 18 in.
1st Mrs. T. Watt 2nd Miss A. M. Pilcher 3rd N. R. Clyne

Class 12. *Three Dwarf Opuntias*
1st Mrs. T. Watt 2nd B. C. Marshall 3rd Mrs. M. Halford Commended Miss A. Dixon

Class 13. *Three Agaves, Aloes, Gasterias* and/or *Haworthias*
1st. Mrs. J. Scarff 2nd Mrs. T. Watt 3rd Mrs. M. Halford Very Highly Commended S. C. King

Class 14. *Three Euphorbias*
1st Mrs. J. Scarff 2nd S. C. King 3rd Mrs. P. V. Griggs

Class 15. *Three Succulents other than Cacti*
1st D. J. Humphryes 2nd S. C. King 3rd Miss M. Falcon
Very Highly Commended Miss A. M. Pilcher Commended Mrs. M. Halford

Class 16. *Three Succulents other than Cacti* (for Members who have not previously won a First in any Class)
1st Miss M. J. Martin 2nd J. R. Moore 3rd W. E. Stockhausen
Very Highly Commended Miss A. Dixon Commended Mrs. J. Scarff

Class 17. *Six South African Succulents* in pots not larger than 3½in. dia.
1st. S. C. King 2nd Mrs. J. Scarff 3rd D. J. Humphryes

Class 18. *Group of Cacti* and/or *Succulents* to cover table space not larger than 3 ft. x 3 ft.
1st. J. J. Seymour 2nd W. Stockhausen

Class 19. *Three Cacti* and/or other *Succulents* (for Juniors under 18 yrs.)
1st N. R. Clyne 2nd P. Bent 3rd Miss M. E. Bull

Class 20. *Branch Exhibit. Group of Cacti* and/or *Succulents* to cover space not larger than 4 ft. x 3 ft.
1st North Surrey Branch

Amateur Gardening Silver Bronze Medal—J. J. Seymour. Class 18, First.
Amateur Gardening Award of Merit—W. Stockhausen. Class 18, Second.
Amateur Gardening Diploma—B. G. Inglis. Specimen Cactus. First.

SHOW RESULTS, SEPTEMBER 12th and 13th, 1961

Class 1. *Three Echinocactanae*
1st J. C. Taylor 2nd R. H. I. Read 3rd Mrs. M. Halford
Class 2. *Three Coryphanthanae*
1st J. C. Taylor 2nd W. D. Spencer 3rd R. H. I. Read
Highly Commended Mrs. M. Halford Commended J. C. Pilbeam
Class 3. *Three Cereeanae*
1st J. C. Taylor 2nd J. J. Seymour 3rd W. White
Class 4. *Three Echinocereeanae* (including *Rebutias* and *Lobivias*)
1st J. C. Taylor 2nd V. Greenaway Commended W. White
Class 4a. *Three Rebutias* and/or *Lobivias*
1st J. C. Taylor 2nd R. H. I. Read 3rd V. Greenaway Commended Mrs. M. Halford
Class 5. *One Specimen Succulent* (excluding *Cacti*)
1st B. Makin 2nd Miss A. M. Pilcher 3rd W. White
Highly Commended R. H. I. Read Commended Mrs. T. Watt
Class 6. *Three Faucarias* and/or *Stomatiums*
1st B. Makin 2nd D. J. Humphryes 3rd Mrs. M. Halford
Class 7. *Three Euphorbias*
1st S. C. King 2nd Mrs. M. Halford 3rd W. White Highly Commended Mrs. T. Watt
Class 8. *Three Agaves, Aloes* and/or *Gasterias*
1st Mrs. M. Halford 2nd S. C. King
Class 9. *Three Haworthias*
1st Mrs. T. Watt 2nd R. H. I. Read 3rd B. Makin
Class 10. *Three Echeverias* and/or *Cotyledons*
1st no award 2nd Mrs. M. Halford
Class 11. *Six Stemless Mesembryanthemums*
1st J. D. Harding 2nd B. Makin 3rd D. J. Humphryes
Very Highly Commended E. Clarke Highly Commended S. C. King Commended Mrs. T. Watt
Class 12. *Three Stemless Mesembryanthemums* (for members who have not previously won a First in any class)
No awards. (One entry)
Class 13. *Three Succulents other than Cacti*
1st D. J. Humphryes 2nd E. A. Clarke 3rd S. C. King
Very Highly Commended Miss M. J. Martin Commended R. H. I. Read
Class 14. *Three Succulents other than Cacti* (for members who have not previously won a First in any class)
No entries.
Class 15. *Three Stapeliads*
1st D. J. Humphryes 3rd W. White
Class 16. *Succulents other than Cacti raised from seed* sown by the Exhibitor on or after 1st January, 1959
1st Miss A. M. Pilcher
Class 17. *Six South African Succulents* in pots not larger than 3½ in. inside dia.
1st B. Makin 2nd S. C. King 3rd D. J. Humphryes
Very Highly Commended J. D. Harding Commended Miss M. J. Martin
Class 18. *Group of Cacti* and/or *Succulents* to cover table space not larger than 3 ft. x 3 ft.
1st J. J. Seymour 2nd W. White
Class 19. *Three Cacti* and/or *other Succulents* (for Juniors under 18 years)
1st N. Clyne 2nd V. Greenaway 3rd B. A. Wilmer
Class 20. *Bowl of Succulents* (excluding Cacti) Not larger than 12 in. x 12 in.
1st N. Clyne 2nd J. J. Seymour 3rd Miss A. M. Pilcher
Amateur Gardening Bronze Medal—J. J. Seymour. Class 18.
Amateur Gardening Award of Merit—B. Makin. Class 17.
Amateur Gardening Diploma—J. C. Taylor. Class 2.
Sir William Lawrence Cup for Cacti—J. C. Taylor.
Evelyn Theobald Cup for Succulents—B. Makin.

Continued on page 90

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1961		*Subject*	*Lecturer*	*Table Show*
Nov.	7	Members' Slides		One Conophytum
Dec.	5	Film Show	Mr. Gordon Rowley	

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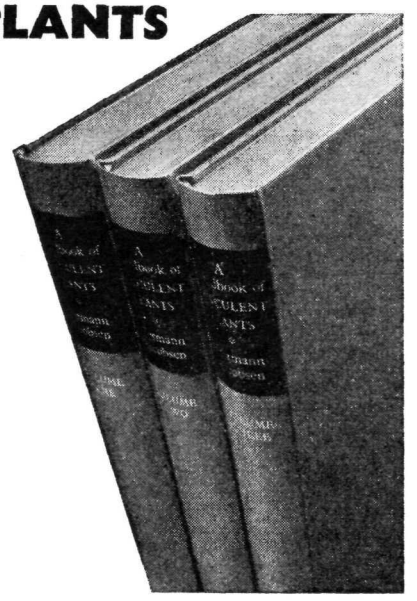

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