

THE GENUS REBUTIA

1895—1981



REBUTIA MUSCULA

No. 2 of a series of illustrated guide books by:-
Brian Fearn and Leslie Percy

Published by Abbey Brook Cactus Nursery

*Published by: Abbey Brook Cactus Nursery,
Old Hackney Lane,
Matlock, Derbyshire.*

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*Printed in Great Britain by:
Higham Press Ltd., Shirland, Derby., DE5 6BP*

THE GENUS REBUTIA

1895-1981



An up to date check list of the genus **Rebutia** and related groups including **Aylostera**, **Mediolobivia** and **Digitorebutia** together with photographs and descriptions of 20 of the more notable species.

Brian Fearn



Leslie Pearcy

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Preface

'The Genus **Rebutia** 1895-1981' is the second in a planned series of publications by Abbey Brook Cactus Nursery. The first booklet '50 Choice **Mammillarias**' has been well received and the 1st edition has sold well and is now out of print. Two years have passed since its introduction and we apologise for the delay in the production of the 2nd booklet. The original intention was to produce a new booklet each year. In the meantime another booklet '**Lithops**' by Brian Fearn has been published by the National Cactus and Succulent Society and so the new booklet is really the 3rd that has been produced by Abbey Brook. We are thus still on target.

There seems to be no end to the publication of new general books on Cacti and other Succulent plants but our intention of producing inexpensive booklets with detailed information for the serious collector is as relevant now as it was when booklet No. 1 was published.

Brian Fearn and Leslie Pearcy
Matlock 1981



REBUTIA FLAVISTYLA

Fig. 1 A superb species discovered by Friedrich Ritter and described in 1978 (FR756). Beautiful light orange flowers freely produced.

Introduction

The genus **Rebutia** is one of the most widely cultivated groups of plants which belong to the family **Cactaceae**. Their ease of cultivation and free flowering nature endears them to all cactophiles. They are plants of the Andean mountain chain in South America occurring in northern Argentina and Bolivia. One of the reasons for their popularity is their ease of cultivation and adaptability to neglect. They do not exactly thrive on neglect, but nevertheless they will still produce their beautiful flowers in the spring, provided cool, dry conditions have been given during the winter months. As these are plants from the high Andes, they have the added ability to survive in an unheated greenhouse or porch when winter temperatures could fall to well below 0°C (32°F).

Nearly all the species are small growing plants, rarely needing more than a 3½" pot, with a range of body form from globular to short cylindrical stems. The spination is very varied and often very colourful. Some plants have snow white spines, others golden yellow. The flowers are often very large for the size of the plant. In the majority of cases the flower colours are vivid oranges, reds, yellows and purple but occasionally bicoloured flowers are produced. There are also a few white flowered species. These plants are of great horticultural value and no collection of cacti is complete without some representatives of this genus.



REBUTIA FUSCA

Fig. 2 Described by Friednch Ritter in 1977 (FR940). It produces beautiful dark red flowers and is probably closely related to **R. spegazziniana** Backbg.

Nomenclature and Classification

It is doubtful if two people will ever agree on the taxonomy of the genus **Rebutia** and as a result the nomenclature is a veritable minefield. This genus has suffered more than most from the over-enthusiastic naming of new species, revisions, and changes in names and status. This has resulted in a bewildering array of possible names and combinations of names. To be quite honest, far too many **Rebutia** species have been described because of the demand and commercial pressures. Consequently there is considerable confusion in this genus in trying to establish clear relationships between the many taxa. The result of all this activity has been an unwarranted cluttering of the synonymy of the group. Over 800 possible names and combinations have been found in a search of the literature and we are sure that there are many more that we have not found. One really begins to wonder when **Rebutia beryllioides** has been described as a species, as a variety of 2 different species, a subspecies and finally as a form of a third species. Is it any wonder that professional taxonomists rarely work on a group of plants that are of horticultural value? With apologies to the late Professor C. D. Darlington the following misquotation springs to mind 'cactus taxonomy is the pursuit of the impossible by the incompetent'.

We believe that the main cause of this confusion is that the genus **Rebutia** s.l. is in an active state of evolution. This possibility does not appear to have been grasped by the many individuals who have worked on the genus. It would account for the fact that although on paper there appear to be 4 main sections which can further be subdivided into 8 or more subsections, there are nevertheless some plants which cross the boundaries, having characteristics which are intermediate between two or more sections or subsections. The knowledge of the existence of these plants is largely due to the field work of Friedrich Ritter who has found and introduced a large number of new plants, some of which have intermediate characters. This makes the reduction from a multigeneric group to a single genus desirable. A further complication is the fact that many species are self fertile and inbreeding, so that the occurrence of local races and inbred lines is highly likely.

The activities in the field by Ritter, Rausch, Lau, Knize, Vasques and others have all helped in the proliferation of names. Although not all are to blame for the subsequent naming of their introductions, they have all collected in the same areas, often following in each others footsteps. The consequence of this has been the introduction of many 'new' species with the great possibility that there has been considerable duplication. Every hilltop or slope seems to be inhabited by yet another 'different' species which has been described at the earliest opportunity. Some of these plants have never been validly described but have been distributed with field numbers and/or tentative names. What has made this situation worse has been the careless subsequent propagation of some of this material. As a result there is a distinct possibility that the plants when distributed are frequently wrongly identified or wrongly numbered which renders them scientifically worthless.

It is with all this in mind that we have had a long hard cold look at the group as a whole and have come to certain conclusions which represent our own current thoughts on the taxonomy of the genus. It is not our intention to further clutter up the synonymy, and so in the main we use the original scheme proposed by Bertrand in 1951 together with a number of refinements. We accept the view of Donald (1975) that **Sulcorebutia** together with **Weingartia** have evolved from a separate evolutionary line and are thus excluded from **Rebutia**.

In proposing the following arrangement we realise that whatever scheme we propose it will not be universally accepted. We have not slavishly followed any one particular system but have attempted to amalgamate the best of a number of different arrangements. One of the criteria we have used is the breeding system, i.e. whether a species is self sterile or self fertile. This neatly divides the Section IV **Rebutia** into two workable subsections. It also divides the large Backeberg genus **Mediolobivia** into two distinct sections, Section II **Mediolobivia** and Section III **Digitorebutia**. There will always be a problem with those plants which bridge the gap between the different sections (being neither wholly self fertile, nor wholly self sterile), but we believe that ours is the most workable scheme to date.

The following is an attempt at producing a description for the whole genus and is based on Buxbaum (1958).

Rebutia K. Sch. emend Buining & Donald.

Dwarf, globular or slightly cylindrical plants usually making offshoots from the base. Tubercles often distinct, spirally arranged and sometimes formed into distinct ribs. Spines very variable in length and colour; sometimes short, stiff and bristle-like but often long and flexuous. Flowers always produced from old areoles, usually appearing crowded at the base and very large in relation to the size of the plant. The flowers are brilliantly coloured, red, yellow, purple and occasionally white, campanulate or funnel-shaped. The receptacular scales are sometimes naked but in others with copious hairs and bristles. Stamens are produced from the funnel part of the flower never from a ring in the throat. Occasionally the style is united to the receptacle wall. The fruit is a small capsule which opens by a circular split so that the lower half which remains on the plant is like a shallow bowl in which some of the seeds remain. Seeds small, black and shining but also dull and earth coloured in some species.

Classification of the genus **Rebutia**

Rebutia K. Sch. emend. Buining & Donald Type species **Rebutia minuscula** K. Sch.

Section I **Aylosteria** (type **Rebutia deminuta** (Web.) Br. & R.)

Section II **Mediolobivia** (type **Rebutia aureiflora** Backbg.)

Subsection I **Setirebutiae**

Subsection II **Cylindrorebutiae**

Section III **Digitorebutia** (type **Rebutia pygmaea** (R. E. Fries) Br. & R.)

Subsection I **Pygmaeae**

Subsection II **Euanthemae**

Section IV **Rebutia** (type **Rebutia minuscula** K. Sch.)

Subsection I **Rebutiae**

Subsection II **Mediorebutiae**

Lists of the species which belong to a particular Section or Subsection, together with distribution maps and locational data, are given in the chapter devoted to geographical distribution.

Analytical key to the *Rebutia* Sections

For reasons which have been explained, this key will not separate those species which bridge the gap between the different sections i.e. those species with intermediate characters. It should nevertheless help to delimit the majority of species. It is based on a key published by Krainz (1967) and amended by B. Fearn.

- A Body globular or cylindrical with the tubercles arranged on distinct ribs, which may be vertical or spirally arranged. Body often suffused with amethyst particularly during the winter months.
 - B Body cylindrical, flowers broad funnel-shaped to campanulate. Flowers self sterile. **Section II *Mediolobivia* Subsection II *Cylindrorebutia***
 - BB Body globular or short cylindrical, flowers narrow funnel shaped, lower part of receptacle usually fused with the base of style. Flowers self fertile. **Section III *Digitorebutia***
 - C Body obviously cylindrical, spines less than 5mm long, strongly appressed, areoles arranged in vertical rows. **Section III *Digitorebutia* Subsection I *Pygmaeae***
 - CC Body globular, spines 5mm. or longer, always slightly erect never appressed, areoles arranged spirally, occasionally in vertical rows. **Section III *Digitorebutia* Subsection II *Euanthema***
- AA Body globular to flattened globular, with indistinct ribs. Body green. Plants usually densely spined.
 - C Receptacular scales with hairs and bristles, seeds \pm earth coloured.
 - D Style not fused to the base of the receptacle. **Section II *Mediolobivia* Subsection I *Setirebutia***
 - DD Basal portion of style usually fused with the lower portion of the receptacle. **Section I *Aylostera***
 - CC Receptacular scales naked (i.e. without hairs and bristles). Seeds black and glossy, dome shaped usually with a prominent white basal hylum area. **Section IV *Rebutia***
 - E Flowers self fertile. **Subsection I *Rebutia***
 - EE Flowers self sterile. **Subsection II *Mediorebutia***

It is beyond the scope of this booklet to include a workable species key.

Flowers

All species in the genus *Rebutia* are day flowering and insect pollinated. Most species are self fertile with the notable exception of 2 groups - Section II *Mediolobivia* and Section IV Subsection II *Mediorebutia*.

In Europe, *Rebutias* flower in late spring usually during the months of April and May. The first species to flower is *Rebutia marsoneri* which usually flowers at the end of February and beginning of March. It is thus one of the heralds of Spring. Occasionally it flowers much earlier than this and on one notable occasion a plant of this species was in flower at Abbey Brook on Christmas Day morning. The last plants to flower are some members of Section I *Aylostera* such as *R. deminuta*, *R. pseudodemina* and *R. fiebrigii*. There appears to be a distinct sequence in the flowering of these plants. This time sequence may be of great biological significance because in habitat it would maintain biological isolation even when the plants were growing in close proximity to each other.

In cultivation it is possible to change the flowering times of these plants by the extension of cool temperatures. This has the effect of delaying the flowering time until late May or June. Flowering time can also be altered by increasing the minimum temperature during February thus shortening the winter period. This has the effect of making the plants flower in March.

Although it is possible to alter the timing of flowering, there is one overall requirement in the successful cultivation of these plants which appears to determine whether the plants actually produce or do not produce flowers. In our experience this is the winter rest period. It appears to be essential for the temperature to fall near to or below freezing for some considerable time. Having due regard to the high altitudes in the Andes of the natural habitats of these plants 1500-4000 metres altitude (4900-13,000ft.) it is not really surprising that this is the case. At Abbey Brook we now keep all our **Rebutia** plants in a cold unheated glasshouse during the winter together with two other genera **Lobivia** and **Oreocereus**.

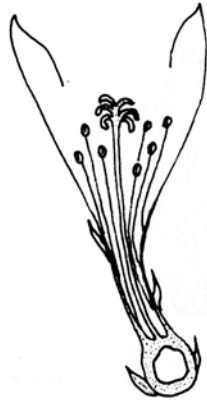
The cold requirement may well account for the poor flowering of these plants in Southern California and the total lack of flower production in the tropics. We have already suggested to our friends in the tropics that these plants should be wrapped in newspaper and placed in a refrigerator (not a deep freeze) for some weeks. We have not yet received the results of these experiments.

Floral Structure

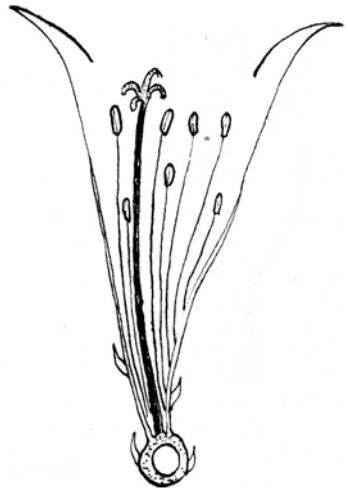
The floral structure of the genus **Rebutia** has in the past been used to justify splitting the single genus *Rebutia* into a number of separate genera. It is now appreciated that such a split cannot be justified on the basis of floral structure alone, as it has been observed that there are plants with a floral structure which is intermediate between the different sections.

For example, the genus **Aylostera** was separated from the rest of **Rebutia** on the observation that the base of the style was fused to the base of the corolla. In other groups for example **Mediolobivia** and **Rebutia** the style is completely free from the base of the corolla. **Digitorebutia** was an intermediate group in which the style was only partially free. It is now recognised that these differences are not exhibited by all the related species of a section and cannot therefore be used to justify the maintenance of a number of separate genera.

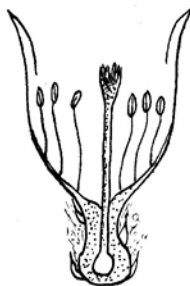
Similarly the presence or absence of hairs and bristles in the axils of the receptacle scales is again not a good universal character for splitting up the genus. It has been found that there are a number of species which bridge the gap between the previously recognised generic units. A number of fine illustrations of the floral characters of the genus have been published Krainz (1967), and Brederoo (Donald & Brederoo, 1978). The drawings in this booklet are by Brian Fearn and have not been published previously.



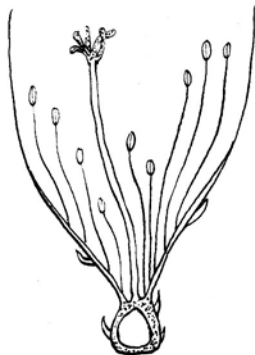
***Rebutia senilis* f. *stuemeri* nat. size**



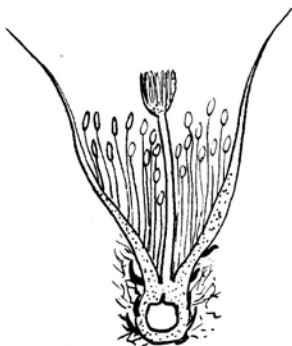
***Rebutia minuscula* f. *grandiflora* nat size**



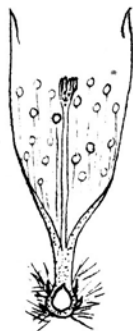
Rebutia pygmaea nat. size



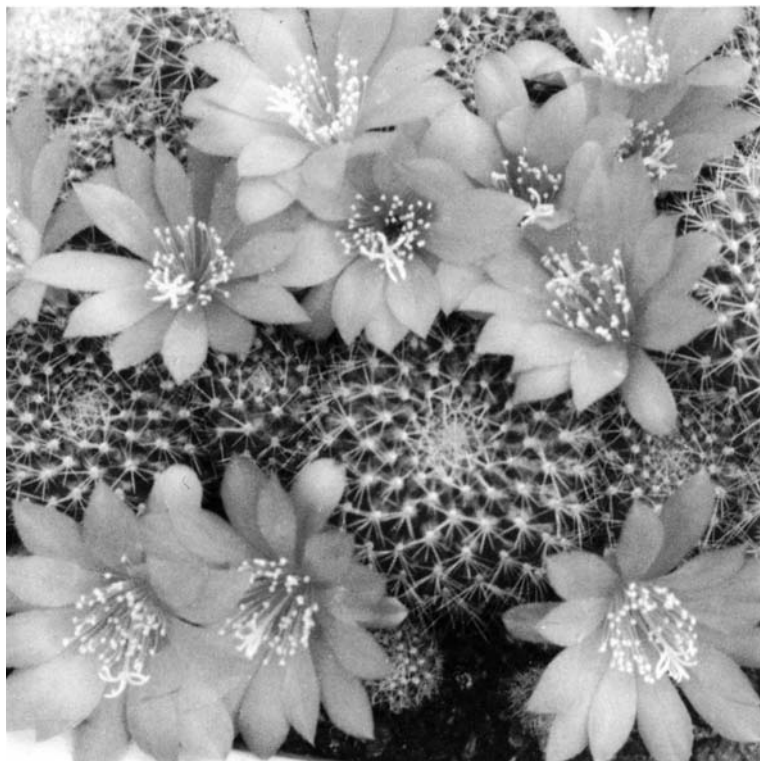
Rebutia marsoneri nat. size



***Rebutia einsteinii* f. *schmiedcheniana* nat. size**



***Rebutia muscula* nat. size**



REBUTIA CHRYSACANTHA

Fig. 3 Beautiful large flowered species closely related to *R. senilis*.

The Geographical Distribution of the genus *Rebutia*

The geographical distribution of the genus *Rebutia* occurs in North West Argentina and the southern provinces of Bolivia on the eastern side of the Andes. The altitude varies between 1500-4000 metres (4,900-13,000ft. above sea level). The genus can be split into four main taxonomic sections. Although these sections do not fall into distinct geographical groupings, certain trends can be detected. Map No. 1 shows the important place names and country boundaries and Maps 2-4 the geographical distribution of *Rebutia* species.

Section I *Aylostera* (Map No. 4)

This section has a very extensive distribution in Argentina and Bolivia. It occurs from Tuome Province in the south, throughout Salta and Jujuy provinces in Argentina to Tarija, Potosi, Chuquisaca and Santa Cruz Departments of Bolivia.

- a) *Rebutia deminuta* Weber and allied species. *Rebutia deminuta* is the most southerly member of this group coming from Trancas, Tucuman province Argentina. The closely related form *Rebutia pseudominuscula* occurs over an extensive area from central Salta province through Jujuy province and into Tarija.
- b) *Rebutia pseudodeminuta* Backbg. and allied species. *Rebutia pseudodeminuta* is widely distributed from south Salta to central Tarija and into Chuquisaca and Potosi. Many of the recently described 'species' of Ritter, Rausch and Lau represent geographical forms of *R. pseudodeminuta*. (e.g. *R. maxima* FR755, *R. albiareolata* FR761, *R. tamboensis* FR1142 from Tarija and *R. nitida* FR769 from Chuquisaca.)
- c) *Rebutia kupperiana* Böd. and allied species. *Rebutia kupperiana* is restricted in habitat to an area around Narvaez in Tarija department Bolivia although several other related Ritter 'species' belonging to this group have been described as coming from south Chuquisaca. (e.g. *R. tuberosa* Ritt., and *R. rubiginosa* Ritt.)
- d) *Rebutia fiebrigii* (Guerke) Br. & R. and allied species. The *Rebutia fiebrigii* complex occurs over an extensive area of southern Bolivia and northern Argentina. The main area of distribution occurs from Tarija and Chuquisaca in Bolivia to northern Salta in Argentina. There is an outlier of distribution in Santa Cruz department where *Rebutia ithyacantha* (Card.) Diers, *R. donaldiana* Lau and Rowley and *R. vallegrandensis* Card. occur. *Rebutia spinosissima* has a very extensive distribution from north Salta in Argentina through Tarija and into south Chuquisaca in Bolivia.
Rebutia fiebrigii itself has by far the largest distribution area of any member of this group occurring from La Quiaca in Jujuy province in Argentina to central Chuquisaca in Bolivia.
- e) *Rebutia spegazziniana* Backbg. and allied species. This species is found in Salta province near to the border with Bolivia and into Tarija department from Padcaya to Tarija. The closely related 'species' *R. fusca* Ritt., *R. vulpina* Ritt., and *R. tarvitaensis* Ritt., are all found in Chuquisaca department, Bolivia.
- f) *Rebutia heliosa* Rausch. This species has a limited distribution area near Narvaez in Tarija department, Bolivia. There are a number of 'species' closely related to *R. heliosa* apart from var. *cajasensis* and var. *conderensis*, these are *R. perplexa* and *R. espinosa*. Both of these are found in Tarija near to *R. heliosa* and at Southern Cinti *R. albopectinata* occurs.

Section II *Mediolobivia*

This series has a very limited distribution occurring only in Argentina in an area of north Salta and south Jujuy provinces.

Subsection I *Setirebutiae*. Plants in this section all occur near to the Salta - Jujuy border around Quebrada del Toro. ***Rebutia aureiflora* var. *elegans*** and related forms have the most southerly distribution of this group occurring around Quebrada Escoipe.

Subsection II *Cylindrorebutiae*. There is probably only a single species which belongs in this section - ***R. einsteinii***. The myriad of different names appear to refer to geographical variants. These plants have been found in either Salta or Jujuy provinces.

Section in *Digitorebutia*. (Map No. 2)

This section has a very extensive distribution from Salta and Jujuy provinces in Argentina in the south to the Bolivian departments of Tarija, Chuquisaca, Potosi and Oruro in the north.

There appear to be several separate centres of distribution where a number of named species occur in close proximity. It is here suggested that these 'species' should be subjected to an intensive ecological investigation to determine whether these populations are biologically isolated, by pollination vectors and flowering times. Admittedly members of this series are all self fertile, but their highly coloured flowers would attract pollinating insects. Gene flow between populations would occur if the populations which were in close proximity flowered at the same time.

We have determined that there are 5 separate areas of distribution for the majority of members of this Section.

- a) Argentina - Bolivia border areas, Jujuy province.
e.g. ***R. eos*** Rausch, ***R. costata*** Werd., ***R. pygmaea*** (R. E. Fries) Br. & R.
- b) Mendez province, Tarija, Bolivia.
e.g. ***R. brunneoradicata*** Ritt., ***R. colorea*** Ritt.
- c) Camargo - Culpina region, Cinti province, Chuquisaca, Bolivia,
e.g. ***R. diersiana*** Rausch, ***R. mixta*** Ritt.
- d) South Chichas province, Potosi, Bolivia,
e.g. ***R. iridescens*** Ritt., ***R. rosalbiflora*** Ritt.
- e) Environs of Potosi City, Potosi, Bolivia.
e.g. ***R. pygmaea***, ***R. costata* f. *pilifera*** Buin. & Donald.

The species found in Oruro also belong here. The proliferation of names which is particularly true of section III, are at best, geographical variants of very few species.

Section IV *Rebutia* (Map No. 3)

Subsection I *Rebutiae*.

This subsection contains three species complexes. These are ***R. minuscula***, ***R. senilis*** and ***R. xanthocarpa***. The ***R. minuscula*** complex includes ***R. grandiflora*** Backbg., ***R. violaciflora*** Backbg. and ***R. kariusiana***. The group is totally Argentinian in distribution ranging from the north Tucuman to Salta and Jujuy provinces. The area is bounded by Tucuman City, Quebrada Escoipe, Cachipampa and Quebrada del Toro. ***R. minuscula*** occurs throughout this region apparently remaining

morphologically constant until reaching the northern limit of its distribution where it appears to intergrade with **R. violaciflora**.

Subsection II **Mediorebutiae**.

This subsection contains two species complexes. These are **R. wessneriana** and **R. marsoneri**. It appears that this subsection has a much wider distribution than Subsection I **Rebutiae**, ranging from south Salta province in Argentina e.g. **R. wessneriana** Bew. to Huari-Huari, Potosi department, Bolivia e.g. **R. binnewaldiana** W. Heinr. and **R. fiebigiana** W. Heinr. Some doubt has been raised as to the authenticity of the last two species. The habitat data may be incorrect. Seed distributed from these habitats has produced plants that resemble species of Series I **Aylostera** (Donald, *Ashingtonia* 2 67). If this is correct then the distribution is restricted to Jujuy and Salta provinces of Argentina and into Tarija department Bolivia where **R. wessneriana** is also found. The **R. marsoneri** complex is distributed throughout northern Jujuy province, Argentina.

Distribution maps and locational data

The following is a list of the species together with locational data which have been used in preparing the distribution maps. It is interesting to note that often species belonging to the same **Rebutia** section (i.e. closely related) have often been collected at the same place. The altitude at the different sites may vary, but the vital information on genetic isolation is not available. Without this, together with ecological and experimental taxonomic data the suspicion is that these different 'species' are identical merely representing the range of species variation. For example the following species numbers 18, 20, 22, 24, 40, 41, 44, 45 have the same location - Mal Paso, Sth. Chichas, Potosi, Bolivia. Also species numbers 4, 12, 16, 26, 36, 46 occur at - Camargo - Culpina, Chuquisaca, Bolivia.

Rebutia Section III **Digitorebutia** (See Map No. 2)

- 1 *brachyantha* (Wessn.) Buin. & Donald. Tarija, Tarija, Bolivia.
- 2 *brunescens* Rausch. Huari-Huari, Potosi, Bolivia.
- 3 *brunneoradicata* Ritter. San Antonio, Mendez, Tarija, Bolivia.
- 4 *canacruzensis* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
- 5 *carmeniana* Rausch. Caspala, Jujuy, Argentina.
- 6 *cinninata* Rausch. Potosi, Potosi, Bolivia.
- 7 *colorea* Ritter. San Antonio, Mendez, Tarija, Bolivia.
- 8 *costata* (Werd.) Krainz. La Quiaca, Jujuy, Argentina.
- 9 *costata* f. *eucalyptana* (Backbg.) Buin. & Donald. Eucaliptos, La Paz, Bolivia.
- 10 *costata* f. *pilifera* Buin. & Donald Potosi, Potosi, Bolivia.
- 11 *densispectinata* Ritter nomen nudum. Jucanas, Tarija, Bolivia.
- 12 *diersiana* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
- 13 *eos* Rausch. Tafna, Jujuy, Argentina.

- 14 *euanthema* (Backbg.) Buin. & Donald. Quebrada de Humahuaca, Jujuy,
Argentina.
- 15 *euanthema* f. *oculata* (Werd.) Buin. & Donald. Humahuaca, Jujuy, Argentina.
- 16 *friedrichiana* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
- 17 *graciliflora* Backbg. Chichas, Potosi, Bolivia.
- 18 *gracilispina* Ritter. Mal Paso, Sth. Chichas, Potosi, Bolivia.
- 19 *hirsutissima* Card. Buetto, Villaserrano, Chuquisaca, Bolivia.
- 20 *iridescens* Ritter. Mal Paso, Sth. Chichas, Potosi, Bolivia.
- 21 *iscayachensis* Rausch. Iscayachi, Tarija, Bolivia.
- 22 *lanosiflora* Ritter. Mal Paso, Sth. Chichas, Potosi, Bolivia.
- 23 *minutissima* Ritter. Tarija, Tarija, Bolivia.
- 24 *mixta* Ritter. Mal Paso, Sth. Chichas, Potosi, Bolivia.
- 25 *mixticolor* Ritter. San Antonio, Mendez, Tarija, Bolivia.
- 26 *mudanensis* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
- 27 *odontopetala* Ritter. Cueva, Sth. Cinti, Chuquisaca, Bolivia.
- 28 *patericalyx* Ritter. Cueva, Sth. Cinti, Chuquisaca, Bolivia.
- 29 *pauciareolata* Ritter. San Antonio, Mendez, Tarija, Bolivia.
- 30 *paucicostata* Ritter. San Antonio, Mendez, Tarija, Bolivia.
- 31 *poecilantha* Ritter. North Cinti, Chuquisaca, Bolivia.
- 32 *potosina* Ritter. Potosi, Potosi, Bolivia.
- 33 *pseudopygmaea* Ritter nomen nudum. San Antonio, Mendez, Tarija, Bolivia.
- 34 *pygmaea* (R. E. Fries) Br. & R. Yavi, Jujuy, Argentina., Potosi, Potosi, Bolivia.
- 35 *pygmaea* f. *haefneriana* (Cullm.) Buin. & Donald. Oruro, Oruro, Bolivia, Iturbe,
Argentina, Chichas, Potosi, Bolivia.
- 36 *raulii* Rausch Camargo-Culpina, Chuquisaca, Bolivia.
- 37 *rauschii* Zecher. Huari-Huari, Potosi, Bolivia.
- 38 *ritteri* (Wessn.) Buin. & Donald, Iscayachi, Tarija, Bolivia.
- 39 *ritteri* f. *nigricans* (Wessn.) Buin. & Donald. Quebrada del Toro, Salta,
Argentina.
- 40 *rosalbiflora* Ritter. Mal Paso, Sth. Chichas Province, Bolivia.
- 41 *rutiliflora* Ritter. Mal Paso, Sth. Chichas Province, Bolivia.
- 42 *salpingantha* Ritter. Villazon, Potosi, Bolivia.
- 43 *tarvitaensis* Ritter. Tarvita, Azurduy, Chuquisaca, Bolivia.
- 44 *torquata* Ritter. Mal Paso, Sth. Chichas Province, Bolivia.
- 45 *tropaeoliptica* Ritter. Mal Paso, Sth. Chichas Province, Bolivia.
- 46 *violascens* Ritter. Camargo, Cinti, Chuquisaca, Bolivia.

Rebutia Section II Medioloribia Subsection I Setirebutiae (See Map No. 2)

- 55 *R. aureiflora* Backbg. Quebrada del Toro, Salta, Argentina.
- 56 *R. aureiflora* f. *rubelliflora* (Backbg.) Buin. & Donald. Quebrada del Toro,
Salta, Argentina.
- 57 *R. aureiflora* f. *duursmaiana* (Backbg.) Buin. & Donald. Yacones, Salta,
Argentina.
- 58 *R. aureiflora* f. *boedeckeriana* (Backbg.) Buin. & Donald. Nr. Chani Volcano,
Jujuy, Argentina.
- 59 *R. aureiflora* v. *elegans* (Backbg.) Buin. & Donald. Quebrada Escoipe, Salta,
Argentina.

Rebutia Section IV Rebutia Subsection I Rebutiae (See Map No. 3)

- 60 *fabrisii* Rausch. Valle Grande, Salta, Argentina.
61 *minuscula* K. Sch. Tucuman, Tucuman Prov., Argentina.
62 *minuscula* var. *grandiflora* (Backbg.) Buin. & Donald. Quebrada Escoipe,
Salta, Argentina.
63 *minuscula* var. *violaciflora* (Backbg.) Buin. & Donald. Quebrada Escoipe,
Salta, Argentina.
64 *margarethae* Rausch. Iruya, Santa Victoria, Salta, Argentina.
65 *padcayensis* Rausch. Padcaya, Tarija, Bolivia.
66 *senilis* Backbg. Quebrada Escoipe, Salta, Argentina.
67 *xanthocarpa* Backbg. Quebrada del Toro, Salta, Argentina.

Rebutia Section IV Rebutia Subsection II Mediorebutiae (See Map No. 3)

- 68 *binnewaldiana* W. Heinr. Huari-Huari, Potosi, Bolivia.
69 *fieligiana* W. Heinr. Huari-Huari, Potosi, Bolivia.
70 *krinziana* Kess. Yavi, Jujuy, Argentina.
71 *marsoneri* Werd. North Jujuy, Argentina.
72 *marsoneri* f. *sieperdaiana* (Buin.) Buin. & Donald. Salta, Salta, Argentina.
74 *wessneriana* Bewg. Quebrada de Humahuaca, Jujuy, Argentina; Salta,
Salta, Argentina; Tarija, Bolivia and Guachipas, Escoipe, Salta, Argentina.

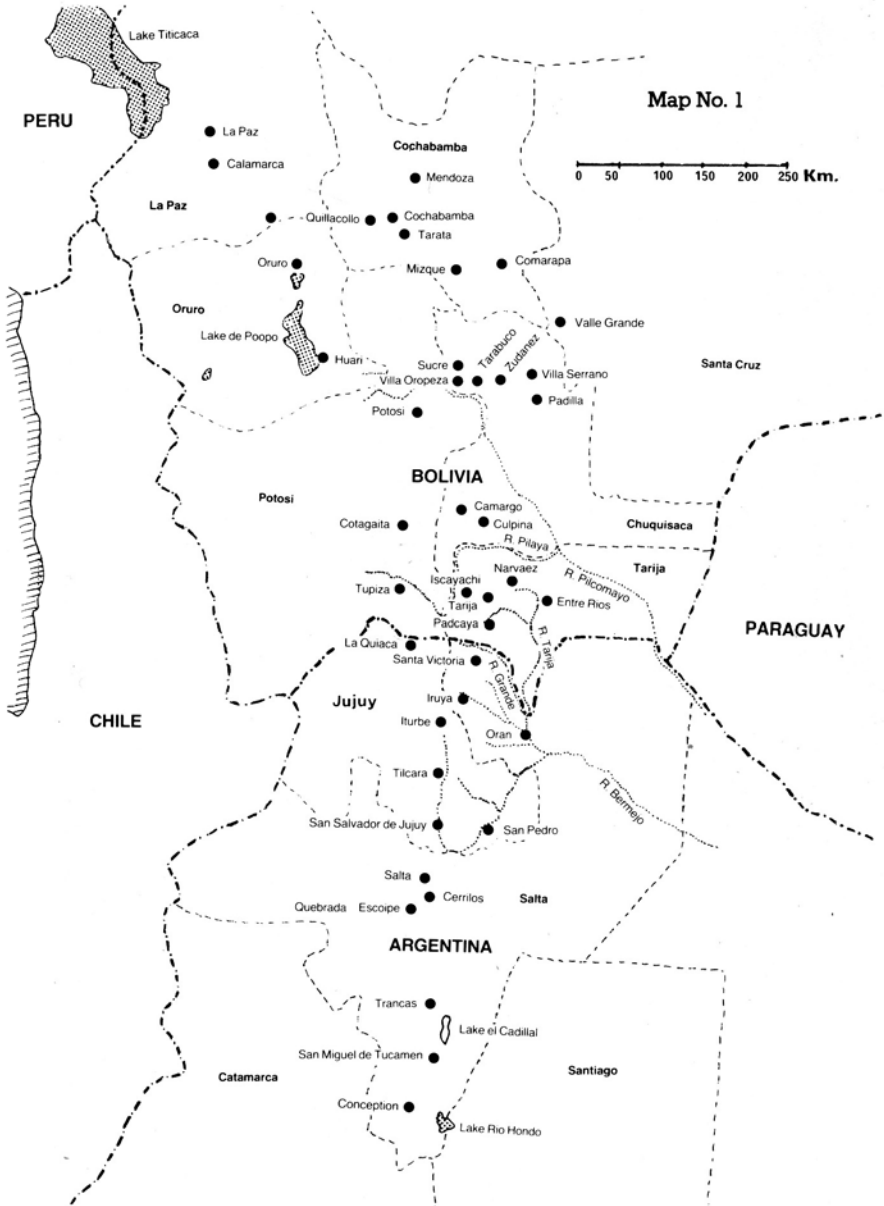
Rebutia Section I Aylostera (See Map No. 4)

- 76 *albiflora* Ritter & Buin. Rio Pilaya, North East Tarija, Bolivia.
77 *alpipilosa* Ritter. Narvaez, Tarija, Bolivia.
78 *albiareolata* Ritter. Padcaya, Arce, Tarija, Bolivia.
79 *albopectinata* Rausch. Culpina, Chuquisaca, Bolivia.
80 *aureispina* Knize nomen nudum. Jucanas, Tarija, Bolivia.
81 *buiningiana* Rausch. Nr. Iruya, Salta, Argentina.
82 *camargoensis* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
83 *cajasensis* Ritter. Tarija, Tarija, Bolivia.
84 *cintiensis* Ritter. Camargo, Sth. Cinti, Chuquisaca, Bolivia.
85 *deminuta* (Weber.) Br. & R. Trancas, Tucuman, Argentina.
86 *donaldiana* Lau & Rowley. Pucara, Vallegrande, Santa Cruz, Bolivia.
87 *fieligii* (Guerke) Br. & R. Iscayachi, Tarija, Bolivia.
88 *flavistyla* Ritter. Tarija, Tarija, Bolivia.
89 *froehlichiana* Rausch. Yuquina, Cinti, Chuquisaca, Bolivia.
90 *fulviseta* Rausch. Padcaya, Arce, Tarija, Bolivia.
91 *fusca* Ritter. Cinti Chuquisaca, Bolivia.
92 *heliosa* Rausch. Road to Narvaez, Tarija, Bolivia.
93 *hoffmannii* Rausch. Santa Victoria, Salta, Argentina.
94 *huasiensis* Rausch. Inca Huasi, Cinti, Chuquisaca, Bolivia.
95 *ithyacantha* (Card.) Diers. North Comarapa, Valle Grande, Santa Cruz, Bolivia.
96 *jujuyana* Rausch. Quebrada de Humahuaca, Jujuy, Argentina.
97 *jujuyensis* Lau. Santa Victoria, Salta, Argentina.
98 *kieslingii* Rausch. Caspala, Jujuy, Argentina.
99 *kupperiana* Böd. Narvaez, Tarija, Bolivia.

- 100 *lauii* Donald. Cajas Pass, Tarija, Bolivia.
 101 *leucanthera* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
 102 *mamillosa* Rausch. Camargo, Chuquisaca, Bolivia.
 103 *muscula* Ritter & Thiele. Narvaez, Tarija, Bolivia.
 104 *napina* Ritter. South Cinti, Bolivia.
 105 *nitida* Ritter. Tarvita Azurduy, Chuquisaca, Bolivia.
 106 *nogalensis* Ritter. Tarvita Azurduy, Chuquisaca, Bolivia.
 107 *pseudodeminuta* Backbg. South Salta, Argentina - to - Chuquisaca, Bolivia.
 108 *deminuta* f. *pseudominuscula* (Speg.) Buin. & Donald. Cachi, Salta, Argentina.
 109 *pulchella* Rausch. North of Padilla, Chuquisaca, Bolivia.
 110 *pulvinosa* Ritter & Buin. Narvaez, Tarija, Bolivia.
 111 *robustispina* Ritter. Tarija, Tarija, Bolivia.
 112 *rubiginosa* Ritter. South Cinti, Chuquisaca, Bolivia.
 113 *schatzliana* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
 114 *spgazziniana* Backbg. Salta, Victoria - to - Tarija, Bolivia.
 115 *sphaerica* Ritter. Tarija, Tarija, Bolivia.
 116 *spinosissima* Backbg. Santa Victoria, Salta, Argentina.
 117 *supthutiana* Rausch. Camargo-Culpina, Chuquisaca, Bolivia.
 119 *tarijensis* Rausch. Tarija, Tarija, Bolivia.
 120 *tarvitaensis* Ritter. Tarvita, Azurduy, Chuquisaca, Bolivia.
 121 *tuberosa* Ritter. South Cinti, Chuquisaca, Bolivia.
 122 *vallegrandensis* Card. Candellaria, Valle Grande, Santa Cruz, Bolivia.
 123 *vulpina* Ritter. Cinti, Chuquisaca, Bolivia.
 124 *zecheri* Rausch. Iscayachi, Tarija, Bolivia.

Rebutia Section II Mediobolivia Subsection II Cylindrorebutiae (See Map No. 4)

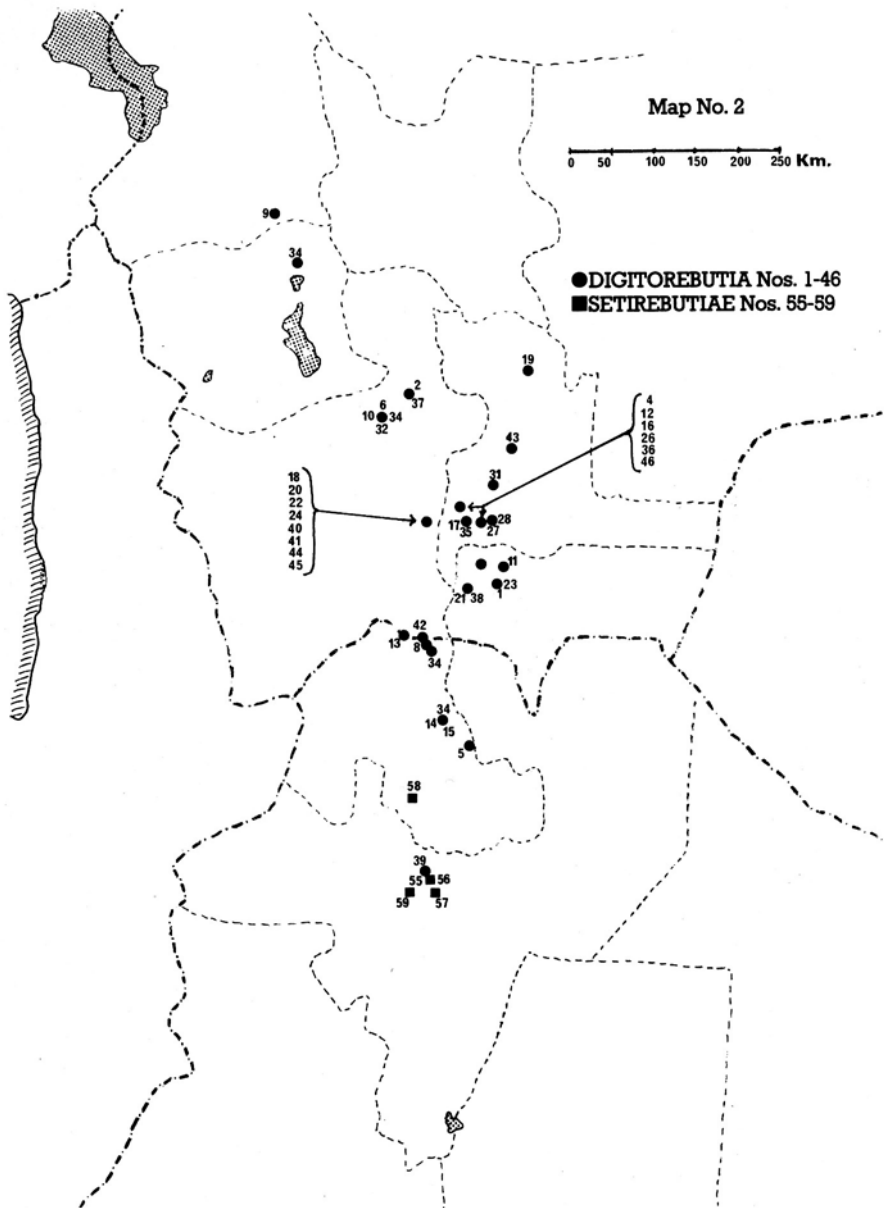
- 125 *einsteinii* Frič ex Backbg. La Quiaca, Jujuy, Argentina.
 127 *einsteinii* var. *gonjianii* (Kies.) Donald. Tilcara, Jujuy, Argentina.
 128 *einsteinii* f. *schmiedcheniana* (Kohl.) Buin. & Donald. Chani Volcano, Jujuy,
 Argentina.
 129 *einsteinii* f. *rubriviridis* (Frič & Kreuzgr. ex. Backbg.) Donald.
 Quebrada del Toro, Salta, Argentina.
 130 *einsteinii* f. *conoidea* (Wessn.) Buin. & Donald. Cham Volcano, Jujuy, Argentina.



Map No. 2

0 50 100 150 200 250 Km.

● DIGITOREBUTIA Nos. 1-46
■ SETIREBUTIAE Nos. 55-59

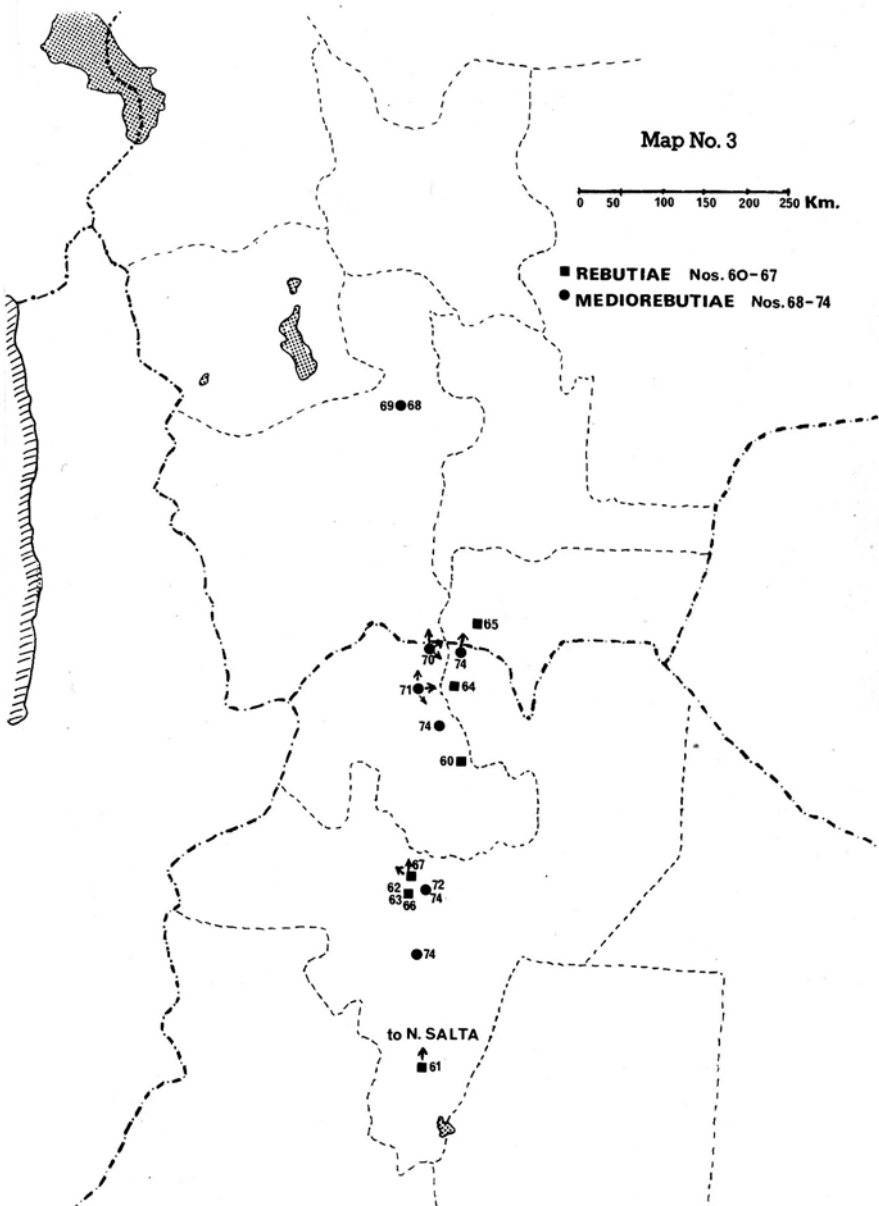


Map No. 3

0 50 100 150 200 250 Km.

■ REBUTIAE Nos. 60-67

● MEDIATEBUTIAE Nos. 68-74



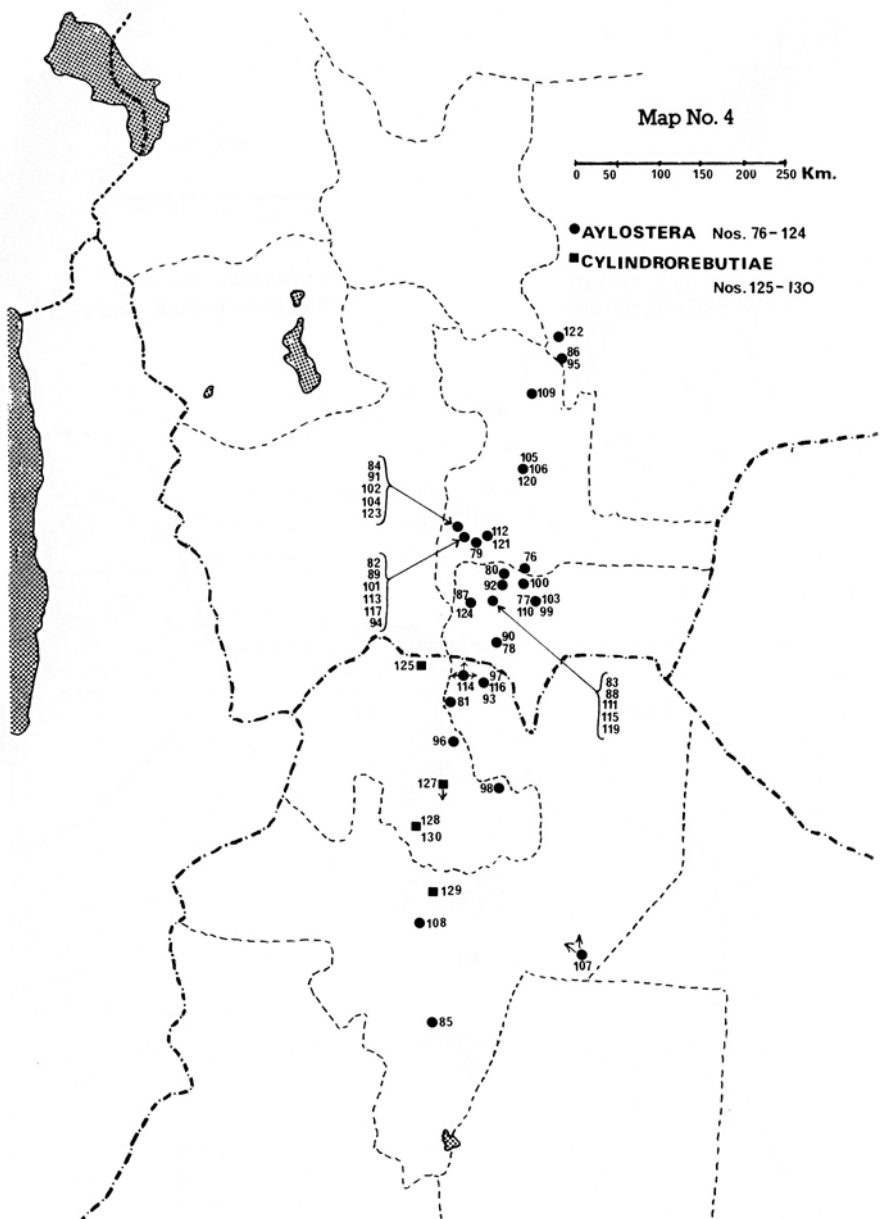
Map No. 4

0 50 100 150 200 250 Km.

● **AYLOSTERA** Nos. 76-124

■ **CYLINDROREBUTIAE**

Nos. 125-130



Cultivation

Cultivation of the majority of species should present no real problems. In the growing season (March-October) they need a considerable amount of water. This may mean watering 2 or 3 times a week in hot sunny weather but normally once a week should be sufficient. Try not to get the soil soaking wet which leads to bloated plants which are very susceptible to soft rot. Wet soil also encourages Sciara Fly which can also lead to loss of plants. In the winter (October-March) the watering requirements are completely different as the plants are not growing. For successful flower production it appears to be essential for the temperature to fall near to or below freezing point for some considerable time. During this period the plants must be kept absolutely dry and you will then be rewarded by the production in early spring of the superb, brightly coloured flowers produced by all members of this genus.

All **Rebutia** species need plenty of light and a good sunny position is essential. Although these plants can be successfully grown on the window sill, a greenhouse or conservatory is a better place especially if you wish the plants to flower. We have found from long experience that plants that are watered and kept warm 7°C (45°F) or above in the winter are very shy flowering.

We can recommend the following compost although **Rebutias** can be grown successfully in virtually any mixture:- 3 or 4 parts of Fisons Levington Potting Compost and 1 part of coarse lime-free sand.

We grow the majority of our plants in this mixture. It has also been found beneficial to feed the plants during the growing season with a low nitrogen, high potash fertiliser such as Fisons Tomorite. We normally feed the plants 3 times during the growing season i.e. once every 6 weeks using the recommended strength fertilizer. Repotting is only necessary when the plants have outgrown the container they are growing in. Repotting is usually done at the beginning of the growing season. If regular feeding is given as recommended, repotting once in 2 or 3 years may be all that is necessary, particularly with the slower growing species.

Vegetative Propagation. **Rebutias** can be propagated by removing and rooting offsets but it is not a recommended practice as the plants are so easy to grow from seed. **R. albiflora** is the only real exception and this species is usually propagated by rooting offsets as seed is rarely available. Grafting is also sometimes used to propagate the slower growing species such as **R. aureiflora**, **R. einsteinii** and **R. heliosa** but it is not really necessary as the plants grow well on their own roots.

Growing from seed. **Rebutias** are best propagated from seed. If you are collecting your own seed it is best to collect the fruits when they are fully ripe at the end of the growing season. Many species produce copious quantities of seed, others have only a few seeds in each capsule. Carefully separate the seeds from any adhering capsule wall or debris. They can then be stored or sown immediately.

To be successful you must try to imitate the conditions in which the plants grow naturally. Cacti are nearly always found under scrub or small bushes, on rocky slopes or on level ground where the soil is porous. This is because:-

- (1) The slope and porous soil provide adequate drainage.
- (2) The scrub provides shade for the seedlings and young plants.
- (3) The rocks radiate warmth at night and the crevices between them trap pockets of humid air.

When to sow. If you do not have a heated propagator, the best time to sow is in Spring. i.e. from March until the end of May. Do not sow later than this as the seedlings will not be large enough to withstand the following winter.

If you have a heated propagator or a warm window sill (**Do not use the airing cupboard**) you can sow at any time of the year, but January and February are the best months.

Compost. We can recommend the following composts.

Either:

- (1) Equal parts of Fisons Levington potting compost and coarse lime-free sand.
- or (2) One part John Innes No. 1 or 2 and ¼ part lime-free sand.

Sowing. Fill the seed trays or shallow pots to within ¼" of the top with compost and level the surface, removing any large lumps. Water with a watering can fitted with a fine hose. Scatter the seed thinly on the surface of the damp compost. Seeds can be spaced out and lightly pressed level with the surface using a pencil. Cactus seed need light before they will germinate, so do not cover the seeds with compost and do not put the containers in a dark cupboard.

Temperature. Temperatures of 12-22°C (55-70°F) are best for germination. Once the seedlings are 2-3 weeks old normal growing temperatures are adequate.

Germination. The percentage of seeds that germinate depends on the species, age of the seed and temperature, but there should be signs of germination within 2-3 weeks. A few seeds may be slow to germinate, and seedlings may not appear until 2-3 months after sowing.

Watering. If possible, water with a fine mist spray, or place the container in a saucer and water from below. Never let the compost dry out, particularly before germination has taken place, or the germinating seeds will be killed. Conversely, do not allow the compost to become waterlogged either, else the seeds will rot. After germination keep soil moist - not too wet, not too dry. During the first winter the seedlings can be kept completely dry in a minimum temperature of 2°C (35°F).

Care of the young seedlings. Keep the container in an airy place to prevent 'damping off'. Shade the seedlings with a single thickness of tissue or newspaper for the first two months, then avoid direct sunlight for a further 6 months. After that time treat as adult plants. Try to ensure the seedlings remain a healthy deep green (or occasionally brownish) colour - a bright red colour indicates that too much light has been given, thin spindly pale green seedlings results from too little light.

Transplanting. Do not transplant seedlings until they begin to touch one another in the container - this will depend on the rate of growth of individual species. If in doubt, leave the seedlings in the same container for 1 year, and do not transplant until the spring of the second year. They will not come to any harm even if they look overcrowded.

Detailed germination studies on **Rebutia xanthocarpa f. salmonea** have been made Fearn (1974). It was found that no seed germinated below 9°C or above 26°C It was found that this species when compared with other species from South America e.g. **Gymnocalycium spagazzinii**, **Frailea pumila** and **Helianthocereus pasacana** has a very restricted temperature range. At least 50% germination occurred between 11.5°C and 22.8°C (52°F - 70°F) a range of 11.3°C.

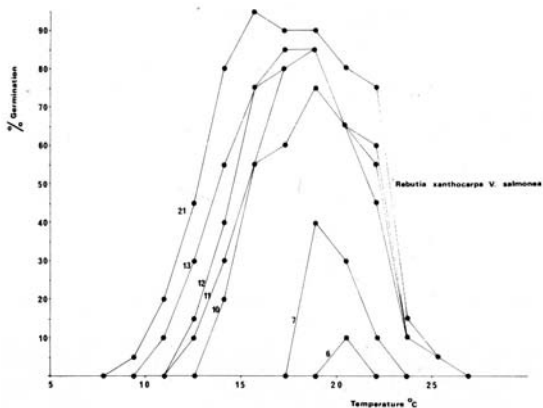


Fig. 4 The germination of *R. xanthocarpa* f. *salmonea* has been plotted on a day to day basis and the figures on the graph indicate the number of days incubated.

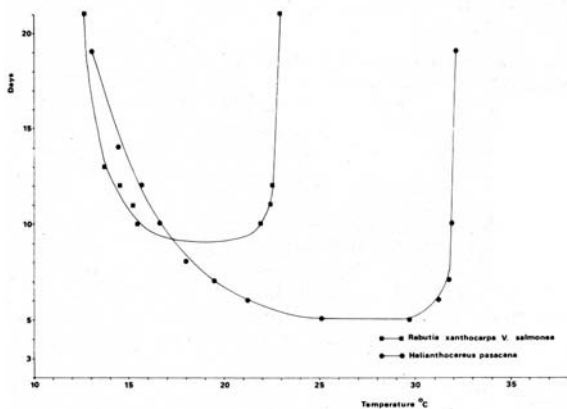


Fig. 5 The curves obtained for *H. pasacana* and *R. xanthocarpa* f. *salmonea* are shown. On successive days the maximum and minimum temperatures at which 50% of maximum germination was obtained. The resulting U shaped curves reflect the temperature span over which 50% germination occurred, the rate of germination at different temperatures and the position of maximum and minimum temperature at which 50% of maximum germination was reached.

Pests and Diseases

Mealy Bugs are the most common pests of cacti. They look a bit like tiny wood lice but with a white waxy coat. They usually aggregate in areas which are not affected by overhead watering, e.g. in the axis of the tubercles and around the base of the plant. Spraying with Malathion or a combination with Dimethoate will eradicate them.

Root Mealy Bugs usually remain unseen until the plants are repotted. They occur as white woolly colonies which feed on the roots. Watering with a systemic insecticide such as Dimethoate should eradicate them. Repeat the dose after seven or ten days.

Red Spider Mite can be a serious pest. Its presence may remain undetected until the plants have become severely disfigured with a reddish-brown area on the epidermis. It is a very tiny reddish creature just visible to the naked eye. Water or spray the plants with a contact or systemic insecticide. Repeat the dose after ten days.

Sciara Fly is a relative newcomer as far as pests of Cacti are concerned. The first warning may be the presence of a few tiny black flies near the plants. The real pest is the larvae which lives just under the soil surface and can cause damage and rot the base of the plants. Total collapse of the plant may result. Watering with a systemic insecticide should eradicate the larvae.

Aphids are not an important pest in the cactus collection. They occasionally occur on flower buds and on young growth and any standard insecticide should deal with them.



REBUTIA XANTHOCARPA f. VIOLACIFLORA

A charming plant with delicate lilac-rose coloured flowers

Rebutia Descriptions

We have selected the following 20 species as representatives of the range of variation exhibited by the genus **Rebutia**. It includes plants from all the Sections and many of them are old favourites having been in cultivation for some considerable time e.g. *R. kupperiana*, and *R. minuscula*. Other species which have been included such as *R. albiflora*, *R. muscula* and *R. heliosa*, are among the best of recent introductions.



REBUTIA ALBIFLORA

Fig. 6 A very distinctive and beautiful species with white flowers.

REBUTIA ALBIFLORA

Rebutia albiflora Ritt. & Buin. Taxon (1963) 12 29

- Synonyms** *Aylostera albiflora* (Ritt. & Buin.) Backbg.
- Classification** Section I *Aylostera*
- Body** Individual heads up to 25mm. in diameter but usually much smaller than this. Plants freely offsetting from the base and eventually forming large clumps. Epidermis grey-green.
- Areoles** tiny, more or less circular, pure white
- Spines** differentiated into approximately 15 radials and 5 centrals, up to 5mm. long, straight and glassy white.
- Flowers** inner petals white, outer petals often with a pronounced pink mid-line, 25mm. wide and 30mm. long. The tube is pink and has short white bristles at the base.
- Fruit** small, 3-4mm. in diameter, reddish-pink and contains few seeds.
- Seed** small, matt black.
- Type** locality Rio Pilaya, N.E. Tarija, Bolivia. Map 4, No. 76.
- Discovered by** Friedrich Ritter (FR766a)

- Notes** A very distinctive and beautiful species. It is unusual in both habitat and flower for a *Rebutia* species. The free clumping nature of this species produces beautiful small mounds of white heads. The white flowers are small, but the unusual colour makes the plant a real gem.
- The majority of plants in cultivation appear to be self sterile and from the apparent lack of different clones, seed is rare. We believe that most of the plants in cultivation have been propagated vegetatively from the clone originally introduced by H. Winter of West Germany in the late 1950's.
- Recently, an interesting hybrid has been produced with **R. heliosa**. The plants have the body form of **R. heliosa** but with white flowers. Kakt. u. a. Sukk. (1978) 29 184.

REBUTIA ALBIPILOSA

Rebutia albipilosa Ritter Taxon (1963) 12 29

- Synonyms** *Aylostera albipilosa* (Ritt.) Backbg.
- Classification** Section I *Aylostera*.
- Body** up to 40mm. in diameter becoming caespitose with age. Epidermis dark green.
- Areoles** elliptical, with white wool, raised on short tubercles and arranged on ribs.
- Spines** c. 20 in number, strongly differentiated in centrals and radials, mostly 7-10mm. long. However, a few spines become extremely long especially at the base of the plant. These spines are often 30-40mm. long. All spines are white, the longest ones having dark brown tips.

- Flowers** 45mm. long and 30mm. wide, petals orange-red in colour often with a darker red midstripe. Tube and ovary with hairs and bristles. Filaments and style white with a 6 lobed cream coloured stigma. Self fertile.
- Fruit** 5mm. in diameter, brownish-green and covered with hair and bristles.
- Seeds** dome shaped, dull black.
- Type locality** Narvaez, Department Tarcia, Bolivia. Map 4, No. 77.
- Notes** This is another of the **Rebutia** species found by Friedrich Ritter (FR754) in the early 1960's. It is a very variable species particularly with reference to the length of the spines. Several other 'species' are probably referable here for example **R. vulpina** (FR939) and **R. robustispina** (FR763). The original plant depicted by Ritter with very long and dense white spines appears to be an extreme form. Nobody has yet recollected or seen another comparable plant. Donald (Ashingtonia 2 180) has speculated that Ritter's **R. flavistyla** (FR756) is the true **R. albopilosa**. If this is correct and confirmed by Ritter it calls into question a whole series of descriptions and relationships. It is interesting to note that Ritter found and described both species, (see colour plate and fig. 1.).



REBUTIA AUREIFLORA

Fig. 7 An uncommon, slow growing species with very large flowers.

REBUTIA AUREIFLORA

Rebutia aureiflora Backbg. D. Kaktrfd. (1932) 124

Synonyms

Mediolobivia aureiflora (Backbg.) Backbg.

Mediolobivia aureiflora var. *albiseta* Backbg.

Mediolobivia aureiflora var. *albilongiseta* Backbg.

Mediolobivia aureiflora var. *albispina* Backbg. nomen nudum

Mediolobivia spiraliseipala Schutz

Rebutia aureiflora var. *albilongiseta* (Backbg.) Marshall & Bock, comb. nud.

Rebutia aureiflora var. *albiseta* (Backbg.) Marshall & Bock. comb, nud.

Rebutia aureiflora var. *longiseta* (Backbg.) Marshall & Bock. comb. nud.

Rebutia aureiflora var. *densispina* Borg nomen nudum

Rebutia aureiflora subspec. *aureiflora* (Backbg.) Donald

Classification

Section II **Mediolobivia** Subsection II **Setirebutiae**

Body

40mm. in diameter becoming caespitose from the base, eventually forming clumps 100mm. in diameter.

Areoles

elliptical with white wool

Spines

c. 20, extremely variable not strongly differentiated into centrals and radials. Seedlings and offshoots on older plants with short spines 6-8mm. long yellowish at first, becoming all white and tipped yellowish-brown. Older plants with extremely long thin flexuous spines 50mm. or more in length, white tipped yellowish-brown.

Flowers

very large, 50mm. long and 45mm. in diameter, orange-yellow petals, throat white, tube light brownish-orange with small greenish-brown scales long thin flexuous hair and bristles are produced up to 10mm. long. Stigma yellow, style and filaments white, self sterile.

Fruit

large, 8mm. in diameter brownish-orange densely covered with long hairs.

Seeds

dull brownish-black

Type locality

Quebrada del Toro, Salta, Argentina. Map 2, No. 55.

Notes

This species belongs to a group of slow growing plants which are self sterile. Plants are rarely offered for sale mainly because what seed is available germinates very erratically. In our experience 10% germination is all that can be expected. There are fourteen described varieties and in all probability they can all be included within the variation of the one species. For example var. **albilongiseta** has long pure white bristles, var. **albiseta** has 10mm. long white spines, var. **boedeckeriana** has 11-12 thin radial spines and pale orange flowers, var. **rubelliflora** with orange-red flowers, var. **rubriflora** with red flowers. In our opinion these differences do not justify varietal status.



REBUTIA COSTATA

Fig. 8 A rare and slow growing species that is shy flowering. The plant in the photograph has been in cultivation at Abbey Brook for over 20 years.

REBUTIA COSTATA

Rebutia costata Werd. Notizbl. Bot. Gart. u. Mus. Berlin (1934) 12 25

Synonyms

Lobivia costata (Werd.) Wessn.
Digitorebutia costata (Werd.) Buin.
Mediolobivia costata (Werd.) Krainz.

Classification

Section III Digitorebutia Sub Section II **Euanthemae**

Body

up to 25mm. in diameter simple at first but becoming caespitose with age. Epidermis deep bluish-green.

Areoles

elliptical with brownish wool, raised on tubercles arranged in 8-10 distinct ribs.

- Spines** centrals 0 (old areoles may have 1-2), radials 9-12 (14), pectinate and strongly projecting up to 7mm. long. White becoming yellowish-brown at the base.
- Flowers** up to 35mm. long and 30mm. in diameter, deep orange, white throat buds green, tube greenish-brown with olive green scales and copiously hairy with a few long white bristles. Stigma cone shaped 5 lobed, greenish-yellow style greenish filaments lavender pink.
- Seeds** brownish.
- Type locality** The type locality is unknown. It has recently been recollected by W. Rausch at La Quiaca, Jujuy, Argentina (R508).
- Notes** This is a rare, slow growing species - the plant depicted in fig. 8 has been in cultivation for over 20 years and is still in a 3ins. pot. It is shy flowering and rarely sets seed.



REBUTIA DEMINUTA

Fig. 9 An easily flowered and widely grown species that was one of the first species to be discovered and described.

REBUTIA DEMINUTA

Rebutia deminuta (Web.) Br. & R.

- Synonyms** *Echinopsis deminuta* Web. Bull. Mus. Hist. Nat. Paris (1904) 386
Echinocactus deminutus (Web.) Gürke
echinorebutia deminuta (Web.) Frič & Krzgr.
Aylostera deminuta (Web.) Backbg.
- Classification** Section I **Aylostera**
- Body** individual heads about 50-60mm. high, dark green. Plants freely offsetting from the base and eventually forming large clumps more than 120mm. in diameter.
- Areoles** elliptical, light brownish.
- Spines** 10-12, not strongly differentiated into centrals and radials. Spines white tipped brown and 5-6mm. long. Central when present usually all brown.
- Flowers** very free flowering, flowers up to 40mm. long and 30mm. broad. Petals deep orange-red with pink filaments and an 8 lobed white stigma. Small greenish scales and white hairs present on flower tube. Self fertile.
- Fruit** 5mm. in diameter, greenish-red in colour and covered with bristles.
- Seeds** small, matt black.
- Type locality** Trancas, Tucuman State, N. Argentina. Map 4, No. 85.
- Notes** Easily flowered and widely grown species.
f. **pseudominuscula** (Speg.) Buin. & Donald body grey-green, heads slightly smaller than the type, spines 7-14, longer, up to 8-9mm., yellowish white, brown at base and tip. Flowers as in the type.

REBUTIA EINSTEINII f. SCHMIEDCHENIANA

Rebutia einsteinii f. **schmiedcheniana** (Köhler) Buin. & Donald

- Synonyms** *Lobivia schmiedcheniana* Köhler Beitr. z. Skde. u. pflge, (1939) 37
Cylindrorebutia schmiedcheniana (Köhler) Donald
Mediolobivia schmiedcheniana (Köhler) Krainz.
Rebutia schmiedickenana (Köhler) Marsh & Bock comb. nud. (should be Köhler and schmiedcheniana).

- Classification** Section II **Mediolobivia** Sub Section II **Cylindrorebutiae**
- Body** up to 35mm. in diameter becoming cylindrical with age. Some plants become caespitose but this is not always so. The epidermis is a dark brownish-green often tinged deep purple particularly during the winter.
- Areoles** elliptical with sparse brownish wool raised on short tubercles spirally arranged.

- Spines** slightly differentiated into two series, 15 radials appressed, pectinate, 12 up to 75mm. long, greyish-white, brownish at the base, upper 3 longer up to 18mm. and projecting. 1 (2) central spines to the upper three radials. Upper spines and centrals light brownish.
- Flowers** 45mm. long and 35-40mm. in diameter, outer petals and sepals deep golden yellow. Stigma, style and filaments pale yellow tipped dark brownish yellow. Ovary and tube with copious white hair and long white bristles.
- Fruit** large, 7mm, self fertile. Green tinged purple.
- Seed** large, dome shaped, brownish.
- Type locality** Cham volcano, Salta, N. Argentina. Map 4, No. 128.
- Notes** This species has a very large underground tuberous root system and for this reason needs a gritty porous compost. Plants are most often seen grafted but this is unnecessary with careful cultivation.



REBUTIA EINSTEINII f. SCHMIEDCHENIANUM

Fig. 10 An uncommon species with a very large tuberous root system and large golden yellow flowers



REBUTIA EUANTHEMA

Fig. 11 An easily grown popular species with very showy flowers.

REBUTIA EUANTHEMA

Rebutia euanthema (Backbg.) Buin. & Donald

Synonyms

Lobivia euanthema Backbg. Blatt. f. Kakt. (1934) 2

Mediolobivia euanthema (Backbg.) Krainz.

Acantholobivia euanthema (Backbg.) Y. Ito

Digitorebutia euanthema (Backbg.) Buin.

Echinolobivia euanthema (Backbg.) Y. Ito

Classification

Section III *Digitorebutia* Subsection II **Euanthemae**

Body

heads 30mm. in diameter, grey-green often tinged amethyst, freely offsetting from the base and forming clumps 70-80mm. in diameter.

Areoles

elliptical, light brownish in colour.

Spines

often pectinate, about 10 radials, centrals absent Up to 10mm long, white tipped brown. Spines always slightly erect never appressed. This is one of the distinguishing features of Subsection II from subsection I **Pygmaeae**. (see analytical key to the Rebutia section)

- Flowers** very free flowering, 45mm. long and 30mm. wide with orange-red petals. Flower tube very hairy with occasional bristles. Stigma and style greenish-yellow, 6-lobed, filaments lavender pink.
- Fruit** brownish-red, densely covered with white hairs.
- Seeds** dull brownish-black.
- Type locality** given by Backeberg as South Bolivia - North Argentina. This species has recently been recollected by W. Rausch at Quebrada de Humahuaca Jujuy, Argentina (R214).
- Notes** this is an easily grown popular species with very showy flowers. It is very closely related to a number of other species belonging to subsection II namely **R. brachyantha** and **R. ritteri** (see colour plate).



REBUTIA FIEBRIGII

Fig. 12 This photograph depicts Abbey Brook species No. CF2630 originally collected at Hacienda Rellini and having pure white spines and orange flowers.

REBUTIA FIEBRIGII

Rebutia fiebrigii (Guerke) Br. & R.

- Synonyms** *Echinocactus fiebrigii* Guerke: Notizbl. Bot. Gart. u. Mus. Berlin (1905)4,183
Echinorebutia fiebrigii (Guerke) Frič & Kreuzgr.
Aylostera fiebrigii (Guerke) Backbg.
Rebutia nivosa Ritter nomen nudum
Rebutia fiebrigii f. *densiseta* Cullm.
Rebutia fiebrigii var. *densiseta* (Cullm.) Oeser

- Classification** Section I **Aylostera**
- Body** spherical becoming cylindrical with age, often 60mm. in diameter and 100- 120mm. high. Older plants offsetting from the base.
- Areoles** prominent, elliptical, whitish in colour.
- Spines** 30-40 bristle like radial white spines and 2-5 stiff centrals up to 20mm. or more long, white tipped brown, sometimes pure white.
- Flowers** 35mm. long and 30mm. broad, flame red with white stamens. Stigma 6 lobed pale yellow. Ovary and tube scaly with a few white hairs and bristles.
- Seed** small, matt black.
- Type** locality Iscayache, Bolivia 3600m. Map 4, No. 87.
- Notes** Distinctive species and one of the first to be discovered and cultivated. Several recently described 'species' are probably referable here e.g. **R. jujuyana**, **R. pulchella**.

R. fiebrigii, f. *densiseta* Cullm. (FR390) a form in which the spines are thinner and denser, spines tipped yellowish-brown, flowers orange. Originally collected at Hacienda Hura Khathalla ad Estancia Chujchi, Bolivia. Abbey Brook species No. CF2630, is a plant originally collected at Hacienda Rellini, Sucre by Gerhard Frank with longer spines than in the type, softer and all pure white, flowers clear orange. Attempts have been made to distinguish between the snow white populations and others having brown tipped spines. As Donald has pointed out, the original description by Guerke suggests an almost wholly white spined plant, but it could accommodate both white spined and the more commonly seen brown tipped spined plants.

REBUTIA HELIOSA

Rebutia heliosa Rausch (1970) Kakt. u. a. Sukk. 21 30

- Synonyms** *Aylostera heliosa* Rausch comb. nud.
- Classification** Section I **Aylostera**
- Body** solitary at first then offsetting profusely, 20mm. high and 25mm. in diameter.
- Areoles** 0-5mm. wide, 1mm. long, light brown, felty.

- Spines** radials 24-26, 1mm. long, flattened against tubercles, diverted downwards, silvery-white, thickened and darker below. No central spines.
- Flowers** 50mm. long and 25mm. in diameter, pale orange outer petals with purplish mid-stripe. The flowers have a very long thin tube (2mm. in diameter and 20mm. long) making the flower stand away from the plant body. Tube purplish, filaments white, stigma 6 lobed and style yellowish.
- Fruit** tiny 3mm. in diameter with few seeds, (10-20) in each fruit, greenish later turning violet. Fruit covered with white hair like bristles.
- Seed** black, spherical to helmet shaped with a papillate testa.
- Type locality** Road between Tarija City and Narvaez at 2400-2500m., Bolivia. Map 4, No. 92.



REBUTIA HELIOSA

Fig. 13 One of the most beautiful, distinctive and unusual **Rebutia** species.

Varieties

Rebutia heliosa var. **cajasensis** Lau 405

Rebutia heliosa var. **condorensis** Lau 401 (Syn. **R. solisioides** Knize nomen nudum)

Rebutia heliosa x **Rebutia albiflora**. An interesting new hybrid, (see under **R. albiflora**)

Notes

One of the most beautiful and unusual **Rebutia** species, very distinctive. The plant seems to grow well on its own roots but plants are most often seen grafted which does tend to make the plants elongated and proliferate.

Several 'species' are referable here, namely, **supthutiana**, **albopectinata**, **perplexa**, **schatzliana** and **densipectinata**. For an explanation of the confusion amongst these species an article in *Ashingtonia* (1979) 3 by John Donald helps to sort out the situation.



REBUTIA KRAINZIANA

Fig. 14 This is a superb and distinctive plant with very large flowers.

REBUTIA KRAINZIANA

Rebutia krainziana Kesselring: Sukkulantenkunde (1948) II, 23-24

- Synonyms** *Rebutia calliantha* var. *densisetata* Bew. nomen nudum
Rebutia calliantha var. *krainziana* (Kess.) Buin. & Donald
Rebutia wessneriana var. *densisetata* nomen nudum
Rebutia wessneriana var. *krainziana* (Kess.) Buin. & Donald
- Classification** Section IV **Rebutia** Subsection II **Mediorebutiae**
- Body** up to 50mm. in diameter and becoming caespitose with age forming large clumps 100mm. or more in diameter.
- Areoles** very prominent, elliptical and with white felt.
- Spines** pectinate, adpressed, up to 12 radials pure white, centrals absent.
- Flowers** very large and beautiful, 40mm. long and 40mm. wide. Usually dark red but there is a form (f. *brevisetata*) with clear orange flowers. 5 lobed stigma, style white, filaments yellow. Self sterile.
- Fruit** large, 8mm. in diameter with small brownish red scales.
- Seeds** black shiny, dome-shaped with white basal hylum area. Testa near hylum reticulate but becoming tuberculate at the apex.
- Type locality** is unknown. It has recently been recollected at Yavi, Jujuy, Argentina. Map 3, No. 70
- Notes** This is a superb and striking plant with very large beautiful flowers. When not in flower the plant is one of the most attractive species. **R. krainziana** f. *brevisetata* with orange flowers may be a hybrid between **R. krainziana** and **R. marsoneri**. The following combinations also belong with this taxa.
- R. krainziana* var. *brevisetata* (Backbg.) Donald
R. krainziana f. *brevisetata* (Backbg.) Krainz & Haarm.
R. senilis v. *brevisetata* Backbg.
R. senilis f. *brevisetata* (Backbg.) Backbg.

REBUTIA KUPPERIANA

Rebutia kupperiana Böd.: Monatss. D.K.G. (1932) 276-277

- Synonyms** *Aylosteria kupperiana* (Böd.) Backbg.
Echinorebutia kupperiana (Böd.) Frič & Krzgr.
- Classification** Section I **Aylosteria**
- Body** up to 40mm. in diameter and becoming caespitose with age. Epidermis very dark brownish-green.
- Areoles** circular with brownish wool, raised on short tubercles.
- Spines** strongly differentiated into centrals and radials. Centrals 2, upper 12-15mm. long, lower 20mm. long at first dark chocolate brown in age becoming greyish with a blackish tip. Radials 10-12, strongly projecting, 6-12mm. long, somewhat flexuous, white with dark brown tips.

- Flowers** very large and beautiful 50mm. long and 40mm. in diameter, dark orange-red. Tube 15mm. long greenish with long bristles. Stigma 6 lobed, filaments and style white.
- Fruit** greenish, 5mm. in diameter.
- Seeds** greyish black.
- Type locality** near Tarija at 2500m. altitude, Bolivia. Map 4, No. 99.
- Notes** This is yet another magnificent species discovered by Friedrich Ritter in 1931.
- Varieties** ***Rebutia kupperiana* var. *spiniflora*** Ritter (FR762b)



REBUTIA KUPPERIANA

Fig. 15 This is yet another magnificent species discovered by Friedrich Ritter. It has dark brown spines and very large dark orange-red flowers.



REBUTIA MARSONERI

Fig. 16 Another superb species with golden yellow flowers

REBUTIA MARSONERI

Rebutia marsoneri Werdermann: Kakteenkunde (1937) 2

Synonyms

Rebutia marsoneri var. *albescens* hort. nomen nudum
Rebutia marsoneri var. *brevisetata* hort. nomen nudum
Rebutia marsoneri var. *brevispina* Donald nomen nudum
Rebutia marsoneri var. *grandiflora* Donald nomen nudum
Rebutia marsoneri var. *spathulata* Donald nomen nudum
Rebutia marsoneri f. *spathulata* Donald nomen nudum
Rebutia marsoneri var. *vatteri* Donald nomen nudum
Rebutia peruviana hort. nomen nudum

Classification

Section IV Rebutia Subsection II **Mediorebutiae**

Body

up to 70mm. in diameter becoming caespitose with age.

- Areoles** elliptical with dense white wool.
- Spines** very variable in size and number, c. 10 undifferentiated into centrals and radials, up to 15mm. long, whitish or tinged yellow. In *f. brevispina* all the spines are pectinate, white and less than 5mm. long.
- Flowers** large, 40mm. long and 35mm. in diameter. Usually golden yellow but sometimes lighter yellow, sometimes orange-yellow. Stigma 5-10 lobed, style and filaments golden yellow. The buds are variable in colour sometimes red and sometimes strikingly bright green.
- Fruit** large, 8mm. in diameter.
- Seeds** black, shiny, dome-shaped with white basal hylum area.
- Type** locality North Jujuy, Argentina. Map 3, No. 71.
- Notes** A superb species named after Oreste Marsoner, an Italian who has collected extensively in Argentina. This species is relatively rare in cultivation because it is self sterile and seed is not as readily available as self fertile species. There are a number of varieties and forms most of which are insufficiently different to warrant separate classification, (see colour plate).



REBUTIA MINUSCULA

Fig. 17 This is one of the easiest and most widely grown of all species of Cacti.

REBUTIA MINUSCULA

Rebutia minuscula K. Sch.: Monats. f. Kakt. (1895) 5, 102

- Synonyms** *Echinopsis minuscula* Web.
Echinocactus minuscula Web.
Rebutia minuscula v. *multiflora* Frič nomen nudum
Rebutia petersonii Hort. nomen nudum
- Classification** Section IV *Rebutia* Subsection I **Rebutiae**
- Body** up to 50mm. in diameter and becoming strongly caespitose with age soon forming large clumps 150mm. or more in diameter. Epidermis deep green.
- Areoles** circular with sparse white wool.
- Spines** numerous, c. 40, undifferentiated into radials and centrals and arranged like needles on a pin cushion. Spines up to 5mm. long, whitish, sometimes becoming brownish at the base.
- Flowers** large, up to 40mm. long and 35mm. in diameter, bright red. 6 lobed stigma, style pinkish, filaments golden yellow.
- Fruit** 6mm. in diameter, orange-red.
- Seeds** black, shining.
- Type locality** Tucuman, N. Argentina. Map 3, No. 61.
- Notes** One of the easiest and most widely grown of all species of Cacti. It can be flowered when only 1 year old from seed. It was the first species of **Rebutia** to be described.
There is a form in cultivation **R. minuscula** f. **grandiflora** which has a very elongated flower tube making the flower 70mm. long. Consult the section on flowers and floral structure.

REBUTIA MUSCULA

Rebutia muscula Ritter & Thiele: Taxon (1963) 12,29

- Synonyms** *Aylostera muscula* (Ritter & Thiele) Backbg.
Rebutia nivosa Ritter nomen nudum
Rebutia muscula v. *nivosa* Knize comb. nud.
- Classification** Section I **Aylostera**
- Body** up to 5cm. in diameter becoming caespitose with age, individual heads becoming elongated.
- Areoles** circular with white wool.
- Spines** pure white, soft bristle like, centrals indistinguishable from the radials. 6mm. long, 50-55 in number.

- Flowers** 40mm. long and 25mm. in diameter, sepals greenish-orange, petals flame orange, throat white. Stigma very pale green, style white, filaments white. Flower tube and ovary with very small scales. Very thin flexuous white hairs up to 8mm. long produced from the axils of the scales.
- Seeds** small, dull black, dome shaped.
- Type locality** Narvaez, Dept. Tarija, Bolivia. Map 4, No. 103.
- Notes** Beautiful pure white spined species with gorgeous clear orange flowers. Flowers are often produced at odd times during the year but the main flowering time is at the end of May beginning of June. Plants labelled as **R. nivosa** are referable here, there is no distinct difference and it was found at the same locality. (see illustration on front cover)

REBUTIA PSEUDODEMINUTA

Rebutia pseudodeminuta Backbg. non Frič (1933) D.K.F. 7

- Synonyms** *Aylostera pseudodeminuta* (Backbg.) Backbg.
- Classification** Section I **Aylostera**
- Body** globular up to 10cm. high, 5-6cm. wide, light green in colour, offsetting grousely at first but later forming large clumps 100mm. or more in diameter.
- Areoles** small with sparse light brown wool.
- Spines** radials ten or more, 3-7mm. long, glossy white. Centrals 2-3, yellowish-white at first later turning brown-tipped, up to 15mm. long.
- Flowers** 30mm. long and 30mm. wide, petals red, buds dark red. Style and filaments white united with the tube, 5 lobed stigma.
- Fruit** round, small with many bristles.
- Seed** very small, matt black.
- Habitat** Salta, N. Argentina. Map 4, No. 107.
- Varieties** f. *albiseta* (Backbg.) Buin. & Donald. Central spines entirely white.
f. *grandiflora* (Backbg.) Buin. & Donald. Flower 4cm. wide and 40mm. long.
f. *schneideriana* (Backbg.) Buin. & Donald. Central spines up to 35mm. long, dark tipped.
f. *schumanniana* (Backbg.) Buin. & Donald. Central spines golden brown, about 12mm. long.
- Notes** Another of the 'original' **Rebutias**, quite distinct with its prominent tubercles and spination.



REBUTIA PYGMAEA

Fig. 18 A distinctive species with pectinate spines. It has very large flowers when compared to the size of the plants.

REBUTIA PYGMAEA

Rebutia pygmaea (R. E. Fries) Br. & R.

Synonyms

Echinopsis pygmaea R. E. Fries Nov. Act. Soc. Sci. Upsala (1905) IV 120

Acantholobivia haagei (Frič & Schelle) Y. Ito.

Digitorebutia digitiformis (Backbg.) Buin.

Digitorebutia haagei (Frič & Schelle) Frič

Digitorebutia haagei var. *digitiformis* (Backbg.) Donald

Digitorebutia haagei var. *orurensis* (Backbg.) Donald

Digitorebutia haagei var. *pectinata* (Backbg.) Donald

Digitorebutia orurensis (Backbg.) Buin.

Digitorebutia pectinata (Backbg.) Buin.
Digitorebutia pygmaea (R. E. Fries) Donald
Digitorebutia steinmannii sensu Buin.
Echinobivia haagei (Frič & Schelle) Y. Ito.
Lobivia neo-haageana Backbg.
Lobivia pygmaea (R. E. Fries) Backbg.
Mediolobivia haagei (Frič & Schelle) Backbg.
Mediolobivia haagei var. *digitiformis* (Backbg.) Donald
Mediolobivia haagei var. *orurensis* (Backbg.) Donald
Mediolobivia haagei var. *pectinata* (Backbg.) Donald
Mediolobivia haageana Borg nomen nudum
Mediolobivia orurensis (Backbg.) Backbg.
Mediolobivia pygmaea (R. E. Fries) Backbg.
Mediolobivia pectinata (Backbg.) Backbg. non Frič
Mediolobivia pectinata var. *digitiformis* (Backbg.) Backbg.
Mediolobivia pectinata var. *orurensis* (Backbg.) Backbg.
Mediolobivia pectinata var. *neosteinmannii* Backbg.
Pygmaeolobivia odierata Hort. nomen nudum
Pygmaeolobivia pygmaea (R. E. Fries)
Rebutia haagei Frič & Schelle
Rebutia orurensis Backbg.
Rebutia pectinata Backbg.
Rebutia pectinata var. *digitiformis* Backbg.
Rebutia pectinata var. *orurensis* Backbg.

- Classification** Section III **Digitorebutia** Subsection I **Pygmaeae**
- Body** up to 25mm. in diameter, simple at first but becoming caespitose with age. The epidermis bluish-green often tinged deep purple particularly during the winter.
- Areoles** elliptical with sparse greyish-brown wool, raised in the tubercles.
- Spines** arranged in 12 distinct ribs. Centrals absent, radials strongly pectinate and adpressed, up to 12 in number, 4mm. long, greyish-white, brownish at the base.
- Flowers** very variable, pink to salmon often bicoloured, 25mm. long and 20mm. in diameter with a white throat. Stigma 6 lobed green, style green, filaments white or pinkish. Tube brownish-green with green scales with copious white wool.
- Fruit** dull brownish-black, dome shaped, testa finely pitted.
- Seed** large, 7mm. in diameter, greenish-brown covered with white wool.
- Type locality** Yavi, Jujuy Province, N. Argentina. Map 2, No. 35.
- Notes** This species has a very wide geographical range and a large number of minor variations occur. Many of these minor variations have been described as 'new' species or varieties. There are for example a very large number of flower colour variants and also spine colour variants. It is indeed possible that this species could include 90% of all the species ascribed to the subsection **Pygmaeae!**

REBUTIA SENILIS f. STUEMERI

Rebutia senilis f. **stuemeri** (Backbg.) Buin. & Donald

- Synonyms** *Rebutia senilis* v. *stuemeri* Backbg. D. Kakt. frd. (1932) 131
Rebutia senilis v. *stuemericiana* Backbg.
- Classification** Section IV *Rebutia* Subsection I **Rebutiae**
- Body** up to 60mm. in diameter and becoming caespitose with age.
- Areoles** elliptical with white wool.
- Spines** pure white, stiff bristle like, centrals hardly distinguishable from the radials. 15-30 in number, size is variable - at the top of the plant spines up to 18mm. long. Older areoles at the base of the plant produce longer spines up to 25mm. long.
- Flowers** 50mm. long and 40mm. in diameter, clear red with a yellowish throat. Stigma 5 lobed, style and filaments golden yellow. Self fertile.
- Fruit** yellowish, 7mm. in diameter.
- Seed** black, shiny, elongated dome-shaped with a white basal hylum area. Testa near hylum more or less reticulate but becoming tuberculate at the apex.
- Type locality** Quebrada Escoipe, Salta, Argentina. Map 3, No. 66.
- Notes** *R. almeiyeri* W. Heinr. probably belongs here. In Backbg. (1977) it is described as a self fertile species with orange-red flowers with a yellowish throat and a yellow style, locality unknown.

REBUTIA SPINOSISSIMA

Rebutia spinosissima Backbg. (1935) Kaktus ABC., 275

- Synonyms** *Aylostera spinosissima* (Backbg.) Backbg.
Aylostera spinosissima var. *brunispina* Backbg. nomen nudum
- Classification** Section I **Aylostera**
- Body** up to 35mm. in diameter becoming caespitose with age eventually forming large clumps.
- Areoles** circular to elliptical with greyish wool.
- Spines** soft and bristle like, about 20, not strongly differentiated into centrals and radials. 'Radial' spines up to 6mm. long, all white, 'centrals' at first yellow tipped brown later all brown.
- Flowers** 40mm. long and 30mm. in diameter. Petals orange-red, tube greenish, 8 lobed stigma, filaments and style white.
- Fruit** greenish brown 4mm. in diameter with white hairs and bristles.
- Seeds** elongated dome shaped, dull brownish black.
- Type locality** Salta Province, N. Argentina. Map 4, No. 116.
- Notes** This is a beautiful species with soft bristle like spines and orange flowers. It is slow growing and an asset to any **Rebutia** collection. Closely related to **R. muscula** and **R. fiebrigii**



REBUTIA SPINOSISSIMA

Fig. 19 A slow growing species with soft bristle-like spines and orange flowers.

REBUTIA WESSNERIANA

Rebutia wessneriana Bew. Sukkulentenkunde Jahrb. Schweiz. Kakt. Ges. (1948)2 24

Synonyms

Rebutia calliantha Bew.
Rebutia hyalacantha (Backbg.) Backbg.
Rebutia senilis var. *hyalacantha* Backbg.
Rebutia senilis f. *hyalacantha* (Backbg.) ex Simon
Rebutia wessneriana var. *calliantha* (Bew.) Krainz
Rebutia wessneriana var. *permutata* (Heinr.) Buin. & Donald
Rebutia wessneriana subspec. *wessneriana* f. *calliantha* (Bew.)
 Buin. & Donald



REBUTIA WESSNERIANA

Fig. 20 A superb large growing, large flowering species

Rebutia wessneriana subsp. *wessneriana* var. *gokrausei* (Heinr.)
Donald

Rebutia wessneriana subsp. *wessneriana* var. *gokrausei* f.
permutata (Heinr.) Donald

Classification

Section IV **Rebutia** Subsection II **Mediorebutiae**

Body

large, up to 100m. in diameter, caespitose and forming large clumps with age

Areoles

elliptical raised up on tubercles with white wool

Spines

not differentiated into centrals

- Flowers** very large, 45mm. long and 40mm. in diameter. Petals dark red, buds dark purplish-red. Stigma 6 lobed, style yellowish-white, filaments orange. Self sterile.
- Fruit** large, 8mm. in diameter, yellowish
- Seed** black, shiny, dome shaped with white basal hylum area.
- Type locality** Quebrada de Humahuaca, Jujuy, Arg.? Map 3, No. 74.
- Notes** A superb large growing large flowered species which is uncommon in collections because the plant is self sterile and seed is therefore not readily available. Originally **R. wessneriana** was separated from **R. calliantha** by flower colour, scarlet in **calliantha** and bluish-red in **wessneriana**, and on the observation that the spines cover the stem apex in **calliantha** but did not hide the stem apex in **wessneriana**. Such minor differences are not sustained and are only observed in extreme plants and are not exhibited by the population as a whole. (see colour plate).

REBUTIA XANTHOCARPA f. SALMONEA

Rebutia xanthocarpa f. **salmonea** (Frič ex Backbg.) Buin. & Donald

- Synonyms** *Rebutia xanthocarpa* var. *salmonea* Frič ex Backbg. (1951) Cact. Succ. J. Amer. 23 83
Rebutia salmonea Frič non Backbg. nomen nudum
Rebutia senilis var. *salmonea* (Backbg.) Marsh.

- Classification** Section IV **Rebutia** Subsection I **Rebutiae**
- Body** 40mm. in diameter, very slowly becoming caespitose with age.
- Areoles** elliptical with greyish brown felt.
- Spines** not differentiated into centrals and radials, c. 15. Short stiff and bristle like, 2mm. long occasionally 4mm., white tinged yellow.
- Flowers** small, 15mm. long and 15mm. in diameter. A beautiful salmon pink. Tube yellow with greenish yellow scales. Stigma 6 lobed, yellowish white. Style and filaments white.
- Fruit** large 7mm. in diameter, golden yellow, (not pale red, Backbg. Lexicon P. 439)
- Seeds** small, black shining with white basal hylum area.
- Habitat** unknown, but probably Salta area, Argentina. Map 3, No. 67.
- Notes** An easily grown and flowered plant with a very characteristic and distinctive flower colour. (see colour plate).

Check list of Genera, Subgenera and Sections

The following is a list of the more important genera to which members of the genus **Rebutia** have been assigned. There are in addition to the following list a number of additional generic names which have not been published in accordance with the code of Botanical Nomenclature and which are probably best forgotten. The correct **Rebutia** section for the plants which were originally placed under these names is indicated in brackets after the name. It follows the taxonomic arrangement used in this booklet. The original publication and date is given for the most important of these generic names.

- Acantholobivia** Y. Ito. non Backbg. (**Rebutia** Section III) (1957) Expl. Diagr. 130
Aylostera Speg. (**Rebutia** Section I) (1923) An. Soc. Cient. Argent. 96 75
Cylindrorebutia Frič & Kreuzgr. nomen nudum (**Rebutia** Section II) (1938) Succulenta 20 55 & 71
Cylindrorebutia Buin. & Donald pro. sect. (**Rebutia** Section II) (1963) Sukkulantenkunde Jb. Schweiz Kakt. Ges. 8 98
Digitorebutia Frič & Kreuzgr. nomen nudum (**Rebutia** Section III) (1938) Succulenta 20 54
Digitorebutia Frič & Kreuzgr. ex. Buin. (**Rebutia** Section III) (1940) Succulenta 22 51
Digitorebutia Buin. & Donald pro. sect. (**Rebutia** Section III) (1963) Sukkulantenkunde Jb. Schweiz Kakt. Ges. 8 98
Echinocactus Link & Otto (**Rebutia** Section 1, 11 and IV) (1827) Verh. Ver. Beford. Gartenb. 3 420
Echinocactus Weber, ex K. Sch. (**Rebutia** Section 1, 11 and IV) (1898) Gesamtbeschr. Kakt. 396
Echinolobivia Y. Ito. (**Rebutia** Section III) (1957) Expl. Diagr.
Echinopsis Zucc. (**Rebutia** Section 1, 11 and IV) (1837) Abh. Bayer. Akad. Wiss. München 2 675
Echinorebutia Frič & Kreuzgr. nomen nudum (**Rebutia** Section I) (1935) Verzeichnis 26
Lobivia Br. & R. (**Rebutia** Section 11 and III) (1922) The Cactaceae III 49
Lobivia subgen. **Pygmaeolobivia** Backbg. nomen nudum (**Rebutia** Section II) (1934) Blatt. f. Kakteenf.
Mediolobivia Backbg. (**Rebutia** Section I, II and III) (1934) Blatt. f. Kakteenf.
Mediolobivia subgen. **Eumediolobivia** Backbg. (**Rebutia** Section II) (1942) Cact. Jb. D.K.G. 1135
Mediolobivia subgen. **Pygmaeolobivia** Backbg. (**Rebutia** Section III) (1941) Cact. Jb. D.K.G.
Mediorebutia hort. nomen nudum (**Rebutia** Section IV)
Mediorebutia Buin. & Donald pro. sect. (**Rebutia** Section IV)
Rebulobivia Frič & Kreuzgr. (**Rebutia** Section II) (1936) Succulenta 18 104
Rebutia K. Sch. (1895) Monatsschr. f. Kakteenfreunde 5 102
Rebutia K. Sch. emend Buin. & Donald (1963) Sukkulantenkunde 7 96
Rebutia subgen. **Eurebutia** Backbg. non Frič. (**Rebutia** Section IV) (1934) Blatt. f. Kakteenf.
Rebutia subgen. **Neorebutia** Bew. (**Rebutia** Section IV) (1949) Sukkulantenkunde Jb. Schweiz Kakt. Ges. 3 54
Setirebutia Frič & Kreuzgr. nomen nudum (**Rebutia** Section II) (1935) Verzeichnis 26

Setirebutia Frič & Kreuzgr. (**Rebutia** Section II) (1938) Succulenta 20 53

Setirebutia Buin. & Donald pro. sect. (**Rebutia** Section II) (1963) Sukkulenterkunde Jb. Schweiz Kakt. Ges. 7 98

Check list of Genus *Aylostera* Speg.

- albiareolata* Ritter comb. nud. = **R. albiareolata**
albiflora (Ritt. & Buin.) Backbg. = **R. albiflora**
albipilosa (Ritt.) Backbg. = **R. albipilosa**
albopectinata Rausch comb. nud. = **R. albopectinata**
buiningiana Rausch comb. nud. = **R. buiningiana**
buiningiana Ritter nomen nudum (not *R. buiningiana* Rausch) = **R. spinosissima**
caespitosa Frič nomen nudum = ?
camarguensis Rausch comb. nud. = **R. camarguensis**
deminuta = **R. deminuta**
deminuta var. *pseudominuscula* = **R. deminuta** f. *pseudominuscula*
densipectinata Ritter comb. nud. = **R. densipectinata**
diersiana Rausch comb. nud. = **R. diersiana**
fiebrigii (Guerke) Backbg. = **R. fiebrigii**
fiebrigii var. *castanea* Rausch nomen nudum = **R. fiebrigii**
fiebrigii var. *densiseta* Cullm. = **R. fiebrigii** f. *densiseta*
fiebrigii var. *spiniosior* nomen nudum = **R. fiebrigii**
flavistyla Ritter comb. nud. = **R. flavistyla**
fulviseta Rausch comb. nud. = **R. fulviseta**
fulviseta var. *albispina* Rausch nomen nudum
graciliflora (Backbg.) Rausch comb. nud. = **R. graciliflora**
grandiflora Frič nomen nudum = ? **R. pseudodeminuta** f. *grandiflora*
heliosa Rausch nomen comb. = **R. heliosa**
hoffmannii Diers. et Rausch comb. nud. = **R. hoffmannii**
huasiensis Rausch comb. nud. = **R. huasiensis**
ithyacantha Card. = **R. ithyacantha**
jujuyana Rausch comb. nud. = **R. jujuyana**
kieslingii Rausch comb. nud. = **R. kieslingii**
kruegerii Card. = **Sulcorebutia kruegerii**
kupperiana (Böd.) Backbg. = **R. kupperiana**
lampromeliana Rausch nomen nudum = **R. pulchella**
leucanthema Rausch comb. nud. = **R. leucanthema**
mamillosa Rausch comb. nud. = **R. mamillosa**
maxima Ritter nomen nudum = ?
muscula (Ritt. & Thiele) Backbg. = **R. muscula**
narvaecense Card. = **R. narvaecense**
odontopetala Ritter comb. nud. = **R. odontopetala**
padcayensis Rausch comb. nud. = **R. padcayensis**
patericalyx Ritter comb. nud. = **R. patericalyx**
pectinata Frič nomen nudum = **R. pygmaea**
pseudodeminuta (Backbg.) Backbg. = **R. pseudodeminuta**
pseudodeminuta var. *albiseta* Backbg. = **R. pseudodeminuta** f. *albiseta*
pseudodeminuta var. *grandiflora* Backbg. = **R. pseudodeminuta** f. *grandiflora*

- pseudodeminuta* f. *rubrifilamentosa* Buin. & Donald comb. nud. =
R. pseudodeminuta f. **rubrifilamentosa**
- pseudodeminuta* var. *schneideriana* Backbg. = **R. pseudodeminuta** f. **schneideriana**
- pseudodeminuta* var. *schumanniana* (Backbg.) Backbg. =
R. pseudodeminuta f. **schumanniana**
- pseudominuscula* (Speg.) Speg. = **R. deminuta** f. **pseudominuscula**
- pulchella* Rausch comb. nud. = **R. pulchella**
- pulvinosa* (Ritt. & Buin.) Backbg. = **R. pulvinosa**
- robustiflora* Frič = ?
- robustispina* (Ritt.) Backbg. = **R. robustispina**
- rubiginosa* (Ritt.) Backbg. = **R. rubiginosa**
- sanguinea* Ritter comb. nud. = **R. sanguinea**
- schatzliana* Rausch comb. nud. = **R. schatzliana**
- sordida* Rausch nomen nudum. = ?
- spgazziniana* (Backbg.) Backbg. = **R. spgazziniana**
- spgazziniana* var. *atroviridis* Backbg. = **R. spgazziniana** var. **atroviridis**
- spgazziniana* var. *waltheriana* Backbg. nomen nudum = **R. spgazziniana**
- spinosissima* (Backbg.) Backbg. = **R. spinosissima**
- spinosissima* var. *aurea* Rausch nomen nudum = **R. spinosissima**
- spinosissima* var. *brunispina* = **R. spinosissima**
- spinosissima* var. *buiningiana* Ritter nomen nudum = **R. spinosissima**
- steinmannii* (Solms-Laub.) Backbg. = **R. steinmannii**
 [not *R. pygmaea* (R. E. Fries) Br. & R.!]
- supthutiana* Rausch comb. nud. = **R. supthutiana**
- tarijensis* Rausch comb. nud. = **R. tarijensis**
- tuberosa* (Ritter) Backbg. = **R. tuberosa**
- umbraculiforma* Rausch nomen nudum = **R. camarguensis**
- vallegrandensis* Card. = **R. vallegrandensis**
- waltheriana* (Backbg.) Y. Ito. = ? **R. spgazziniana**
- zavaletae* Card. = **Sulcorebutia zavaletae** (Card.) Backbg.

Check list of Genus *Digitorebutia* Frič. Kreuzgr. Buin.

- albopectinata* Rausch comb. nud. = **R. albopectinata**
- atrovirens* (Backbg.) = **R. pygmaea** var. **atrovirens**
- brachyantha* (Wessn.) Buin. = **R. brachyantha**
- brachyantha* var. *ritteri* (Wessn.) Donald = **R. ritteri**
- brunescens* Rausch comb. nud. = **R. brunescens**
- canacruzensis* Rausch comb. nud. = **R. canacruzensis**
- christinae* Rausch comb. nud. = **R. christinae**
- cinnata* Rausch comb. nud. = **R. cinnata**
- costata* (Werd.) Buin. = **R. costata**
- costata* var. *eucalyptana* (Backbg.) Donald = **R. costata** f. **eucalyptana**
- diersiana* Rausch comb. nud. = **R. diersiana**
- diersiana* var. *atrovirens* Rausch comb. nud. = **R. diersiana** v. **atrovirens**
- digitiformis* (Backbg.) Buin. = **R. pygmaea**
- donaldiana* Rausch nomen nudum = **R. steinmannii** v. **cinnata**
 Rausch nomen nudum (R300)

eucalyptana (Backbg.) Buin. = **R. costata** f. *eucalyptana*
euanthema (Backbg.) Buin. = **R. euanthema**
euanthema var. *friciana* Donald & Cullm. comb. nud. = **R. euanthema** f. *fricii*
euanthema var. *longispina* (Backbg.) Donald comb. nud. = **R. euanthema**
euanthema var. *oculata* (Werd.) Donald = **R. euanthema** f. *oculata*
haagei (Frič & Schelle) Frič = **R. pygmaea**
haagei var. *digitiformis* (Backbg.) Donald = **R. pygmaea**
haagei var. *atrovirens* (Backbg.) Donald = **R. pygmaea** v. *atrovirens*
haagei var. *orurensis* (Backbg.) Donald = **R. pygmaea**
haagei var. *pectinata* (Backbg.) Donald = **R. pygmaea**
haefneriana (Cullm.) Donald = **R. pygmaea** f. *haefneriana*
mudanensis Rausch comb. nud. = **R. mudanensis**
nazarenoensis Rausch (1979) Succulenta 58 185.
nigricans (Wessn.) Buin. = **R. ritteri** var. *nigricans*
orurensis (Backbg.) Buin. = **R. pygmaea**
oculata (Werd.) Buin. = **R. euanthema** f. *oculata*
oculata var. *friciana* Donald & Cullm. = **R. euanthema** f. *fricii*
pectinata (Backbg.) Buin. = **R. pygmaea**
peterseimii (Frič & Kreuzgr.) Donald comb. nud. =
R. ritteri var. *nigricans* f. *peterseimii*
pygmaea (R. E. Fries) Donald = **R. pygmaea**
rauschii Zecher comb. nud. = **R. rauschii**
ritteri (Wessn.) Buin. = **R. ritteri**
steinmannii sensu Buin. = **R. pygmaea**
c.v. 'A. V. Frič' Donald & Cullm. = **R. euanthema** f. *fricii*

Check list of Genus *Mediolobivia* Backbg.

albilongiseta nomen nudum = **R. aureiflora**
albinidulans Frič nomen nudum = ?
albiscoparia Frič nomen nudum = ?
albiseta Frič nomen nudum = **R. aureiflora**
albiseta var. *aureiflora* Frič nomen nudum = **R. aureiflora**
albiseta var. *rubriflora* Frič nomen nudum = **R. aureiflora** f. *rubriflora*
albispina Frič nomen nudum = ? **R. aureiflora**
albopectinata Rausch = **R. albopectinata**
antarctica Hort. nomen nudum = ?
apricusioides Frič nomen nudum = ?
auranitida (Wessn.) Krainz = **R. auranitida**
auranitida var. *flaviflora* Backbg. = **R. auranitida**
auranitida var. *gracilis* (Wessn.) Backbg. = **R. auranitida** f. *gracilis*
aureiflora (Backbg.) Backbg. = **R. aureiflora**
aureiflora var. *albiseta* Backbg. = **R. aureiflora**
aureiflora var. *albi-longiseta* Backbg. = **R. aureiflora**
aureiflora var. *albispina* Backbg. nomen nudum = **R. aureiflora**
aureiflora var. *boedeckeriana* (Backbg.) Backbg. = **R. aureiflora** f. *boedeckeriana*
aureiflora var. *brevispina* Backbg. nomen nudum = **R. aureiflora**

aureiflora var. *duursmaiana* (Backbg.) Backbg. = **R. aureiflora** f. **duursmaiana**
aureiflora var. *haertlingiana* hort. nomen nudum = **R. aureiflora** f. **rubriflora**
aureiflora var. *leucolutea* Backbg. nomen nudum = **R. aureiflora**
aureiflora var. *lilacinostoma* Backbg. nomen nudum = **R. aureiflora**
aureiflora var. *longiseta* Backbg. nomen nudum = **R. aureiflora**
aureiflora var. *longispina* Wenzel nomen nudum = **R. aureiflora**
aureiflora var. *rubelliflora* (Backbg.) Backbg. = **R. aureiflora** f. **rubelliflora**
aureiflora var. *robustior* Backbg. nomen nudum = **R. aureiflora**
aureiflora var. *rubriflora* (Backbg.) Backbg. = **R. aureiflora** f. **rubriflora**
aureiflora var. *rubriflora* f. *kesselringiana* (Cullm.) Köhler = **R. aureiflora** f. **rubriflora**
aureiflora var. *sarothroides* (Werd.) Backbg. = **R. aureiflora** f. **sarothroides**
aureiflora var. *variegata* Backbg. nomen nudum = **R. aureiflora**
aureiflora subvar. *leucolutea* (Backbg.) Backbg. = **R. aureiflora**
aureiflora subvar. *lilacinostoma* (Backbg.) Backbg. = **R. aureiflora**
atrovirens (Backbg.) Backbg. = **R. pygmaea** f. **atrovirens**
atrovirens hort. (catalogue 1974 Uhlig) U1396 = ?
blossfeldii (Werd.) Buin. = **R. aureiflora** f. **rubriflora**
blossfeldii var. *compactiflora* Wessn. = **R. aureiflora** f. **rubriflora**
blossfeldii var. *nigrilongiseta* Wessn. = **R. aureiflora** f. **rubriflora**
boedeckeriana Backbg. = **R. aureiflora** f. **boedeckeriana**
brachyantha (Wessn.) Krainz = **R. brachyantha**
breviseta Frič nomen nudum = ?
brunescens (Rausch) Backbg. comb. nud. = **R. brunescens**
bruneoradicata Ritter comb. nud. = **R. bruneoradicata**
brunicentra Frič nomen nudum = ?
brunicentra var. *roseiflora* Frič nomen nudum = ?
bruniscoparia Frič nomen nudum = ?
bruniscoparia var. *chata* Frič nomen nudum = ?
bulbispina hort. (catalogue 1974 Uhlig) U2250 = ?
cachiensis Frič nomen nudum = ?
cajasensis (Ritter) Backbg. comb. nud. = **R. cajasensis**
calenduliflora Frič nomen nudum = ?
calva Frič nomen nudum = ?
calva var. *similis* Frič nomen nudum = ?
carminata Backbg. ex Krainz nomen nudum = **R. aureiflora** f. **rubriflora**
citriaurata Frič nomen nudum = ?
columnaris (Wessn.) Krainz. = **R. einsteinii** f. **columnaris**
columnaris Frič nomen nudum = ? **R. einsteinii** f. **columnaris**
conoidea (Wessn.) Krainz. = **R. einsteinii** f. **conoidea**
conoidea var. *columnaris* (Wessn.) Backbg. = **R. einsteinii** f. **columnaris**
costata (Werd.) Krainz = **R. costata**
costata var. *brachyantha* (Wessn.) Donald nomen nudum = **R. brachyantha**
costata var. *eucalyptana* (Backbg.) Donald comb. nud. = **R. costata** f. **eucalyptana**
cupreata Frič nomen nudum = ?
diersiana Rausch comb. nud. = **R. diersiana**
digitiformis (Backbg.) Backbg. = **R. pygmaea**
disciformis Frič nomen nudum = ?
duursmaiana Backbg. = **R. aureiflora** f. **duursmaiana**

einsteinii = **R. einsteinii**
einsteinii var. *atrovirens* = ? **R. einsteinii** f. *rubriviridis*
elegans Backbg. = **R. aureiflora** v. *elegans*
elegans var. *gracilis* Backbg. nomen nudum = **R. aureiflora** v. *elegans*
eos Rausch comb. nud. = **R. eos**
eos var. *roseiflora* Rausch comb. nud. = **R. eos**
erythrantha Backbg. nomen nudum = **R. aureiflora** f. *rubriflora*
escayachensis Knize nomen nudum KK1686
euanthema (Backbg.) Krainz = **R. euanthema**
euanthema var. *fricii* (Hort.) Backbg. = **R. euanthema** f. *fricii*
euanthema var. *pygmaea* (Backbg.) Donald comb. nud. =
R. euanthema f. *neopygmaea*
euanthema var. *ritteri* (Wessn.) Donald comb. nud. = **R. ritteri**
eucalyptana (Backbg.) Krainz = **R. costata** f. *eucalyptana*
fricii hort. = **R. euanthema** f. *fricii*
friedrichiana Rausch comb. nud. = **R. friedrichiana**
fuauxiana Backbg. = **R. fuauxiana**
grandiflora Frič nomen nudum = ?
haageana Borg nomen nudum = ? **R. pygmaea**
haagei (Frič & Schelle) Backbg. = **R. pygmaea**
haagei var. *atrovirens* (Backbg.) Donald comb. nud. = **R. pygmaea** f. *atrovirens*
haagei var. *chamaeleon* Frič nomen nudum = **R. pygmaea** f. *flavovirens*
haagei var. *digitiformis* (Backbg.) Donald comb. nud. = **R. pygmaea**
haagei var. *flavovirens* (Backbg.) Backbg. = **R. pygmaea** f. *flavovirens*
haagei var. *flavovirens* Frič nomen nudum = **R. pygmaea** f. *flavovirens*
haagei var. *orurensis* (Backbg.) Donald comb. nud. = **R. pygmaea**
haagei var. *pectinata* (Backbg.) Donald comb. nud. = **R. pygmaea**
haagei var. *salmonea* Frič nomen nudum = **R. pygmaea** f. *flavovirens*
haagei var. *tricolor* Frič nomen nudum = **R. pygmaea** f. *flavovirens*
haefneriana Cullm. = **R. pygmaea** var. *haefneriana*
hartlingiana Borg = ?
hirsutissima Card. = **R. hirsutissima**
iscayachensis Rausch comb. nud. = **R. iscayachensis**
ithyacantha Card. = **R. ithyacantha**
kesselringiana Cullm. = **R. aureiflora** f. *rubriflora*
longiflora Frič nomen nudum = ?
longiseta Backbg. nomen nudum = **R. aureiflora**
mammillata Frič nomen nudum = ?
mammilosa = ?
melanotricha Frič nomen nudum = ?
miniflora Frič nomen nudum = ?
minimiflora Frič nomen nudum = ?
morenoensis Rausch nomen nudum = ?
mudanensis Rausch comb. nud. = **R. mudanensis**
multiflora Frič nomen nudum = ?
neopygmaea Backbg. = **R. euanthema** f. *neopygmaea*
neosteimannii (catalogue 1974 Uhlig) U1845 = **R. pygmaea** v. *neosteimannii*
nidulans Frič = ?

nigra Frič nomen nudum = ?
nigricans (Wessn.) Krainz. = **R. ritteri** var. **nigricans**
nigricans var. *peterseimii* Frič = **R. ritteri** f. **peterseimii**
nigriticentra Frič nomen nudum = ?
orurensis (Backbg.) Backbg. = **R. pygmaea**
padcayensis Rausch comb. nud. = **R. pygmaea**
patericalyx Ritter comb. nud. = **R. patericalyx**
patericalyx var. *odontopetala* Ritter comb. nud. = **R. patericalyx**
paucipetala Frič nomen nudum = ?
pectinata (Backbg.) Backbg. non Frič = **R. pygmaea**
pectinata var. *atrovirens* (Backbg.) Backbg. = **R. pygmaea** v. **atrovirens**
pectinata var. *digitiformis* (Backbg.) Backbg. = **R. pygmaea**
pectinata var. *gracilis* Knize nomen nudum (KK970)
pectinata var. *neosteinnmannii* Backbg. = **R. pygmaea**
pectinata var. *paznaensis* Knize nomen nudum (KK969)
pectinata var. *orurensis* (Backbg.) Backbg. = **R. pygmaea**
permutata Knize nomen nudum KK1046
pygmaea (R. E. Fries) Krainz = **R. pygmaea**
pygmaea var. *flavovirens* (Backbg.) Backbg. = **R. pygmaea** f. **flavovirens**
pygmaea var. *longispina* nomen nudum
puchella Frič nomen nudum = ?
pumilla Frič nomen nudum = ?
pyramidalis Frič nomen nudum = ?
rauschii Zecher comb. nud. = **R. rauschii**
reichii Borg = **Neoporteria reichii**
raulii Rausch comb. nud. = **R. raulii**
ritteri (Wessn.) Krainz = **R. ritteri**
ritteri var. *pilifera* (Frič) Backbg. = **R. ritteri**
robusta Hort. nomen nudum = ?
rosalbiflora Ritter comb. nud. = **R. rosalbiflora**
roseiaurata Frič nomen nudum = ?
rubelliflora Backbg. = reddish-orange flowering plant, may be a natural hybrid
between the red flowered **R. aureiflora** f. **rubriflora** and the yellow flowered
R. aureiflora = **R. aureiflora** f. **rubelliflora**
rubriflora Backbg. = **R. aureiflora** f. **rubriflora**
rubriflora var. *blossfeldii* (Werd.) Krainz = **R. aureiflora** f. **rubriflora**
rubriflora var. *nigrilongiseta* (Wessn.) Krainz = **R. aureiflora** f. **rubriflora**
sarothroides Werd. = **R. aureiflora** f. **sarothroides**
schmiedcheniana (Kohl.) Krainz. = **R. einsteinii** f. **schmiedcheniana**
schmiedcheniana var. *einsteinii* (Frič) Backbg. = **R. einsteinii**
schmiedcheniana var. *karreri* (Frič) Backbg. = **R. einsteinii**
schmiedcheniana var. *rubriviridis* Frič & Kreuzgr. ex Backbg. =
R. einsteinii f. **rubriviridis**
schmiedcheniana var. *steineckeii* Frič & Kreuzgr. ex Backbg. =
R. einsteinii f. **steineckeii**
scoparia Frič nomen nudum = ?
scoparia var. *cylindrica* Frič nomen nudum = ?
semicolumnaris Frič nomen nudum = ?
spiralispala Schutz = cultivated form of **R. aureiflora**

spiralisepala Jajo ex Brederoo nomen nudum
steinmannii (Solms-Laub.) Krainz = **R. steinmannii**
steinmannii var. *complanata* Rausch nomen nudum
steinmannii var. *rotundiseta* Rausch nomen nudum
steinmannii var. *rubriflora* Rausch nomen nudum
stellata Frič nomen nudum = ?
struwelpeter Frič nomen nudum = ?
sulcomammillata Frič nomen nudum = ?
tarvitaensis Ritter comb. nud. = **R. tarvitaensis**
tarvitensis = **R. tarvitaensis**
turbiniiformis Frič nomen nudum = ?
uniclaricentra Frič nomen nudum = ?
uninigricentra Frič nomen nudum = ?
waltheriana Borg = **R. spegazziniana**

Check list of *Rebutia* species

The following is a list of specific and varietal names which have been used in connection with the genus **Rebutia**. A large number of these names are invalid, unfortunately many of them are still in use and have therefore been included. Please realise that this is not a complete check list as we are sure there are many other names and combinations which have appeared in obscure publications and which are not included. Nursery catalogues are a fruitful source of misnames and invalid combinations. As it is, the list already contains nearly 800 names and combinations.

We do not pretend to know what are all the correct current names for many of the names in the following list for a variety of reasons.

- a) often living plants of many of the named 'species' are not in cultivation and in addition were sometimes inadequately described without photographs. This means that accurate assessment as to status or indeed relationship to a currently accepted name is extremely difficult and often impossible.
- b) names have sometimes been given to plants which after further field work appear to have been described from extreme geographical forms. They have never been recollected and probably never will be again (e.g. **R. albipilosa**)
- c) many of the names are names in the literature described without full description and so referral to the correct name is often impossible.
- d) a number of the names have not been published in accordance with the code of Botanical Nomenclature and have therefore to be excluded.

The complex and superfluous nature of the names in this genus is admirably illustrated by the example of **Rebutia senilis**, where there are no less than 50 possible combinations.

- I Starred * names have accurate locational data and have been used in the compilation of the distribution maps.
- II The accepted species together with the names of plants which are reasonably distinct and identifiable are set in bold type.
- III All other names are set in italic type.

Check list of *Rebutia* Sensu Lato

- c.v.* 'alabaster' (hybrid *R. minuscula* v. *violaciflora* f. *kariusiana* x *R. c.v. stirnaldel's meisterstück*.)
- ***albiareolata** Ritter (FR761) (1977) Kakt. u. a. Sukk. **28** 78
- ***albiflora** Ritter & Buin. (FR766a) (1963) Taxon **12** 29
- ***alpipilosa** Ritter (FR754) (1963) Taxon **12** 29
- albiseta** Graessn. nomen nudum = ? **aureiflora**
- ***albopectinata** Rausch (1972) Kakt. u. a. Sukk. **23** 236
- allegraiana* Borg nomen nudum = **senilis** var. **elegans**
- almeyeri* W. Heinr. = ? **senilis** f. **stuemeri**
- archibuingiana** Ritter (1978) *Ashingtonia* **3** 14
- arenacea* Card. = **Sulcorebutia arenacea** (Card.) Ritter
- auranitida** (Wessn.) Buin. & Donald (1937) Kakt. u. a. Sukk. **9** 130
- " var. *flaviflora* Backbg. = **auranitida**
- " var. *gracilis* (Wessn.) Donald = **auranitida** f. **gracilis**
- " f. *gracilis* (Wessn.) Buin. & Donald (1937) Kakt. u. a. Sukk. **9** 130
- aurantiaca* hort. (catalogue 1974 Uhlig) U1343 = ? U1343
- ***aureiflora** Backbg. (1932) *Deutsch Kakteenfreunde* 124
- " var. *albilongiseta* (Backbg.) Marshall & Bock. comb. nud. = **aureiflora**
- " var. *albiseta* (Backbg.) Marshall & Bock. comb. nud. = **aureiflora**
- " f. **boedeckeriana** (Backbg.) Buin. & Donald (1934) Blatt. f. Kakteenf. 2
- " var. *densispina* Borg nomen nudum = **aureiflora**
- * " var. **elegans** (Backbg.) Buin. & Donald (1934) Blatt. f. Kakteenf. 9
- * " f. **duursmaiana** (Backbg.) Buin. & Donald (1934) Blatt. f. Kakteenf. 9
- " f. *kesselringiana* (Cullm.) Köhler = **aureiflora** f. **rubriflora**
- " var. *longiseta* (Backbg.) Marshall & Bock. comb. nud. = **aureiflora**
- " f. **rubelliflora** (Backbg.) Buin. & Donald (1935) *Kaktus ABC*. 247
- " var. *rubriflora* (Backbg.) Buin. & Donald
- * " f. **rubriflora** (Backbg.) Buin. & Donald (1935) *Kaktus ABC*. 247
- " var. **sarothroides** (Werd.) Buin. & Donald (1936) Blüh. Sukk. f. 106
- " var. **sarothroides** (Werd.) Buin. & Donald (1936) Blüh. Sukk. f. 106
- " var. subspec. *aureiflora* (Backbg.) Donald = **aureiflora**
- " var. subspec. *aureiflora* var. *Blossfeldii* (Werd.) Donald = **aureiflora** f. **rubriflora**
- " var. subspec. *elegans* (Backbg.) Donald = **aureiflora** var. **elegans**
- " var. subspec. *elegans* var. *sarothroides* (Werd.) Donald = **aureiflora** f. **sarothroides**
- aurescens* hort. (catalogue 1974 Uhlig) U1344 = ?
- aureicantha* hort. (catalogue 1974 Uhlig) U1756 = ?
- **aureispina* Knize nomen nudum KK843 (also KK1694)
- beryllioides* Donald nomen nudum = **wessneriana** var. **beryllioides**
- " var. *densiseta* nomen nudum = **wessneriana** var. **beryllioides**
- " var. *longiseta* nomen nudum = **wessneriana** var. **beryllioides**
- **binnewaldiana* W. Heinr. = ? **wessneriana**

- binghamiana* Borg nomen nudum = **Lobivia binghamiana**
blossfeldii Werd. = **aureiflora f. rubriflora**
blossfeldiana Werd. ex Backbg. nomen nudum = ? **aureiflora f. rubriflora**
boedeckeriana (Backbg.) Marshall & Bock, nomen nudum =
aureiflora f. boedeckeriana
- boliviensis* hort. (catalogue 1974 Köhres) = ?
- ***brachyantha** (Wessn.) Buin. & Donald (1937) Kakt. u. a. Sukk. 207
brachyantha Card. = **Sulcorebutia breviflora** (Card.) Backbg.
breviflora Card. nomen illeg. = **Sulcorebutia breviflora** (Card.) Backbg.
- ***brunescens** Rausch (R480) (1972) Kakt. u. a. Sukk. 23 235
- ***brunneoradicata** Ritter (FR1109) Kakt. u. a. Sukk. 23 98
- buiningiana* Ritter nomen nudum = ? **spinossissima**
- ***buiningiana** Rausch (R511) (1972) Kakt. u. a. Sukk. 23 98
cabratai Borg nomen nudum = **Lobivia densispina**
caineana Card. = **Sulcorebutia caineana** (Card.) Donald
cajasensis Ritter (FR1141) (1977) Succulenta 56 64
calliantha Bew. nomen nudum
calliantha Wessn. = **wessneriana**
- " var. *brevisetata* Backbg. = **wessneriana**
- " var. *beryllioides* Buin. & Donald = **wessneriana** var. **beryllioides**
- " var. *beryllioides f. breviseta* (Backbg.) Buin. & Donald = **wessneriana**
- " f. *hyalacantha* Buin. & Donald = **wessneriana**
- " var. *densisetata* Bew. nomen nudum = **krainziana**
- " var. *kariusiana* Buin. & Donald = **minuscula** var. **violaciflora f. kariusiana**
- " var. *krainziana* (Kess.) Buin. & Donald = **krainziana**
- ***camarguensis** Rausch (R311) (1976) Succulenta 55 42
- ***canacruzensis** Rausch (1976) Kakt. u. a. Sukk. 27 49 = a form of *pygmaea*
canaletas Knize nomen nudum KK1565
candiae Card. = **Sulcorebutia candiae** (Card.) Buin. & Donald
canigueralii Card. = **Sulcorebutia canigueralii** (Card.) Buin. & Donald
caracarensis Card. = **Sulcorebutia caracarensis** (Card.) Donald.
- ***carmeniana** Rausch (1978) Kakt. u. a. Sukk. 29 105
carminea Buin. = **minuscula** var. **violaciflora**
christinae Rausch (R492a) (1975) Kakt. u. a. Sukk. 26 145
chrysacantha Backbg. (1935) Kaktus ABC, 416
- " var. *densispina* nomen nudum
- " var. *elegans* (Backbg.) Backbg. = **senilis** var. **elegans**
- " var. *iseliniana* (Krainz) Donald comb. nud. =
senilis var. **iseliniana**
- " var. *kesselringiana* (Bew.) Donald comb. nud. =
senilis var. **kesselringiana**
- ***cinninata** Rausch (R300) (1976) Kakt. u. a. Sukk. 27 4
- ***cintiopsis** Ritter (FR938) (1978) *Ashingtonia* 2 206
citricarpa Frič & Backbg. = **xanthocarpa f. citricarpa**
- " var. *salmonea* Frič nomen nudum = **xanthocarpa f. salmonea**
- ***colorea** Ritter (FR1106?) (1977) Kakt. u. a. Sukk. 28 78
conoidea Wessn. = **einsteinii f. conoidea**
- " var. *columnaris* Wessn. = **einsteinii f. columnaris**
corroana Card. = **Sulcorebutia corroana** (Card.) Don. & Bred.

- ***costata** Werd. (1934) Notizbl. Bot. Gait. u. Mus. Berlin 12 25
- * " f. **eucalyptana** (Backbg.) Buin. & Donald (1935) Kaktus ABC, 414
- " f. **pilifera** Buin. & Donald (1965) Cact. Succ. J. Gt. Brit. 27 40
- dasyphrissa** Werd. = **xanthocarpa** f. **dasyphrissa**
- ***deminuta** (Web.) Br. & R. (1904) Bull. Mus. Hist. Nat. Paris, 386
- * " f. **pseudominuscula** (Speg.) Buin. & Donald (1905) Anal Mus. Nac. Buenos Aires Ser. III, 488
- ***densipectinata** Ritter (FR758) nomen nudum = ? form of **R. albopectinata**
- ***diersiana** Rausch (R631) (1975) Kakt. u. a. Sukk. 26 25
- " var. **atrovirens** Rausch (R633) (1975) Kakt. u. a. Sukk. 26 26
- " var. **minor** Rausch nomen nudum
- donaldiana** Lau & Rowley (Lau 348) (1974) Ashingtonia 1 76
- durispina** Frič nomen nudum = ?
- " var. **violrosea** Frič nomen nudum = ?
- duursmaiana** (Backbg.) Marshall & Bock. comb. nud. = **aureiflora** f. **duursmaiana**
- ***einsteinii** Frič ex Backbg. (1956) Descr. Cact. Nov. 30
- " var. **atrovirens** Frič = ? **einsteinii** f. **rubriviridis**
- " var. **columnaris** (Wessn.) Buin. & Donald = **einsteinii** f. **columnaris**
- " f. **karreri** (Backbg.) Buin. & Donald = **einsteinii**
- " var. **columnaris** f. **conoidea** (Wessn.) Buin. & Donald = **einsteinii** f. **conoidea**
- * " f. **columnaris** (Wessn.) Buin. & Donald (1940) Beitr. Sukk. u. pflege 4
- " var. **conoidea** (Wessn.) Buin. & Donald = **einsteinii** f. **conoidea**
- " f. **conoidea** (Wessn.) Buin. & Donald (1940) Beitr. Sukk. u. pflege 3
- * " var. **gonjianii** (Kies.) Donald (1973) Bol. Soc. Argentina Bot. 15 132
- " var. **rubriviridis** (Frič & Kreuzgr. ex Backbg.) Buin. & Donald = **einsteinii** f. **rubriviridis**
- " f. **rubriviridis** (Frič & Kreuzgr. ex Backbg.) Donald (1956) Descr. Cact. Nov. 30
- * " f. **schmiedcheniana** (Kohl.) Buin. & Donald (1939) Beitr. Sukk. u. pflege 37
- " var. **steineckeii** (Frič & Kreuzgr. ex Backbg.) Buin. & Donald = **einsteinii** f. **steineckeii**
- " f. **steineckeii** (Frič & Kreuzgr. ex Backbg.) Buin. & Donald (1956) Descr. Cact. Nov. 30
- elegans** Backbg. = **aureiflora** var. **elegans**
- " var. **gracilis** Backbg. = **aureiflora**
- ***eos** Rausch (R333) (1972) Succulenta 51 2
- " var. **roseiflora** Rausch nomen nudum (R333a)
- espinosae** Knize nomen nudum KK1518 = **R. narvaesensis**
- euanthema** (Backbg.) Buin. & Donald (1956) Backbg. Descr. Cact. Nov. 30
- " f. **fricii** (Backbg.) Buin. & Donald (1956) Backbg. Descr. Cact. Nov. 30
- " f. **neopygmaea** (Backbg.) Buin. & Donald (1956) Backbg. Descr. Cact. Nov. 30
- " f. **oculata** (Werd.) Buin. & Donald (1935) Blüh. Kakt. u. a. Sukk. 99
- eucalyptana** (Backbg.) Donald = **costata** f. **eucalyptana** (Backbg.) Buin. & Donald
- ***fabrisii** Rausch (R688) (1977) Kakt. und Sukk. 28 52
- " var. **aureiflora** Rausch (R687) (1977) Kakt. u. a. Sukk. 28 53
- famatimensis** (Speg.) Speg. = **Lobivia densispina**

- **fieligiana* W. Heinr. = ? **wessneriana**
- ***fieligii** (Guerke) Br. & R. (1905) Notizbl. Bot. Gart. u. Mus. Berlin **4** 183
 " var. *densiseta* (Cullm.) Oeser = **fieligii** f. *densiseta*
 " var. *densiseta* Cullm.
- ***flavistyla** Ritter (FR756) (1978) *Ashingtonia* **3** 12
fricana Donald & Cullm. nomen nudum = **euanthema** f. *fricii*
fricii (Hort.) Backbg. nomen nudum = **euanthema** f. *fricii*
- ***friedrichiana** Rausch (R630) (R642) (1976) *Succulenta* **55** 101
- ***froehlichiana** Rausch (R649) (1975) *Succulenta* **54** 225
fuauxiana (Backbg.) Backbg. = **R. pygmaea** f. *fuauxiana*
- ***fulviseta** Rausch (R583) (R319) (1970) *Kakt. u. a. Sukk.* **21** 29
 " var. *albispina* Rausch nomen nudum (R495)
- ***fusca** Ritter (FR940) (1977) *Kakt. u. a. Sukk.* **28** 78
fusca Hort. nomen nudum
gibbulosa Knize nomen nudum KK1563
glanduliflora Card. nom. prov. = **Sulcorebutia spec.**?
glaucescens Backbg. nomen nudum = ?
glomeriseta Card. = **Sulcorebutia glomeriseta** (Card.) Ritter
glomeriseta Card. = **Sulcorebutia glomeriseta** (Card.) Buin. & Donald
gonjianii Kiesl. = **einsteinii** var. *gonjianii*
- ***graciliflora** Backbg. (1963) *Descr. Cact. Nov.* **3** 13
graciliflora var. *borealis* Ritter nomen nudum FR341a
gracilis Borg nomen nudum Hybrid - intermediate form between *R. senilis* and
R. xanthocarpa
- ***gracilispina** Ritter (FR1118) (1977) *Kakt. u. a. Sukk.* **28** 76
graessneri Frič nomen nudum = **minuscula** var. *violaciflora*
grandiflora Backbg. non Frič = **minuscula** var. *grandiflora*
x grandilacea Johnson hybrid (*grandiflora* x *violaciflora*)
haageana Frič ex Backbg. = **R. pygmaea**
haagei Frič & Schelle (1930) *Kaktusar* 88 = **R. pygmaea**
haefneriana Cullm. = **pygmaea** f. *haefneriana*
hahniana Werd. = ? *ritteri* var. *nigricans* f. *hahniana*
hahnii Werd. = ?
hahnii Frič. nomen nudum = ?
haseltonii Card. = **Sulcorebutia haseltonii** (Card.) Donald
heinrichiana hort. nomen nudum (catalogue 1977 Uhlig) = ?
- ***heliosa** Rausch (R314) (1970) *Kakt. und Sukk.* **21** 30
 " var. *cajasensis* Donald (Lau401) (1979) *Ashingtonia* **5** 144
 " var. *condorensis* Donald (Lau405) (1979) *Ashingtonia* **5** 143
heliosa x *albiflora* An interesting new hybrid
hertrichiana comb. nud. = **Lobivia hertrichiana**
- ***hirsutissima** Card. (1971) *Cact. Succ. J. Am.* **43** 244
- ***hoffmannii** Diers & Rausch (R521a) (1977) *Kakt. u. a. Sukk.* **28** 105
- ***huasiensis** Rausch (R313) (1977) *Kakt. u. a. Sukk.* **28** 25
hyalacantha (Backbg.) Backbg. = **wessneriana**
inflexiseta Card. = **Sulcorebutia inflexiseta** (Card.) Donald
- ***iridescens** Ritter (FR1434) (1977) *Kakt. u. a. Sukk.* **28** 76
- ***iscayachensis** Rausch (R335b) (1977) *Succulenta* **56** 1
- ***ithyacantha** (Card.) Diers. (1972) *Kakt. u. a. Sukk.* **23** 12

- ***jujuyana** Rausch (R220) (1973) Kakt. u. a. Sukk. **24** 147
kariusiana Wessn. Locality unknown - selected from 200 field collected plants of
R. senilis and **R. marsoneri** imported by Uebelmann. (1963) Kakt. u. a. Sukk. **14** 149 =
minuscula v. **violaciflora** f. **kariusiana**
- ***kieslingii** Rausch (R694) (1977) Kakt. u. a. Sukk. **28** 177
knuthiana Backbg. (1935) Kaktus ABC 416 = **minuscula** var. **violaciflora** f. **knuthiana**
- ***krainziana** Kesselring (1948) Sukkulentenkunde II Jb. Schweiz Kakt. Ges. 23
 " var. *brevisetata* (Backbg.) Donald (1935) = ? Hybrid
krainziana x *marsoneri* Kaktus ABC 416
- " f. **brevisetata** (Backbg.) Krainz & Haarm.
 " var. *brevisetata* f. *beryllioides* (Buin. & Donald) Krainz & Haarm. =
wessneriana var. **beryllioides**
- " var. *hyalacantha* (Backbg.) Buchheim = **wessneriana**
 " var. *longisetata* nomen nudum = **wessneriana**
 " var. *wessneriana* (Bew.) Krainz & Haarm. = **wessneriana**
 " var. *wessneriana* f. *calliantha* (Bew.) Krainz & Haarm. = **wessneriana**
- kruegeri* (Card.) Backbg. = **Sulcorebutia kruegeri** (Card.) Ritter
- ***kupperiana** Bod (1932) Monats. D. K. Gesell. 276
- ***kupperiana** var. **spiniflora** Ritter (FR762b) (1977) Kakt. u. a. Sukk. **28** 78
- ***lanosiflora** Ritter (FR1116) (1977) Kakt. u. a. Sukk. **28** 77
lasseniana hort. nomen nudum = ?
- ***lauii** Donald (Lau416)
lateritia Knize nomen nudum KK1519
- ***leucanthema** Rausch (R305) (1975) Kakt. u. a. Sukk. **26** 125
 " var. *coccinifera* Ritter (1977) Succulenta **56** 63
longiflora Frič nomen nudum = ?
longispina Frič nomen nudum = ?
lucida Frič nomen nudum = ?
- ***mamillosa** Rausch R302 (1972) Succulenta **51** 69
 " var. **australis** Rausch (1977) Kakt. u. a. Sukk. 28 77 = ? var. or form of
R. fulviseta
- " var. **orientalis** Ritter (1977) Kakt. u. a. Sukk. 28 77 = ? var. or form of
R. spegazziniana
- maresii* Borg nomen nudum = **Lobivia densispina**
- ***margarethae** Rausch (R521) (1972) Kakt. und Sukk. **23** 4
- ***marsoneri** Werd. (1937) Kakteenkunde 2
 " var. *albescens* hort. nomen nudum
 " var. *brevisetata* hort. nomen nudum
 " var. *brevispina* Donald nomen nudum
 " var. *grandiflora* Donald nomen nudum
 " var. *sieperdaiana* (Buin.) Donald = **marsoneri** f. **sieperdaiana**
- *
 " f. **sieperdaiana** (Buin.) Buin. & Donald (1941) Succulenta **23** 15
 " var. *spathulata* hort. nomen nudum
 " f. *spathulata* Donald nomen nudum
 " c.v. *spatula* Donald
 " var. *vatteri* Donald nomen nudum
- maximiflora* Frič nomen nudum = ?
 c.v. **meisterstuck** Hort. White flowered hybrid produced by Stirnadel.
Rebutia spec x **Echinopsis** spec (polyancistra?)

- melachlora* Ritter & Buin. nomen nudum = **leucanthea** v. **cocciniflora**
melanea Borg nomen nudum = **Lobivia densispina** ?
- * **minuscula** K. Schum. (1895) Monatsschte Kakteenkde. 5 102
 " f. *brunneo-aurantiaca* Simon nom. prov. = **minuscula**
 " var. *citricarpa* (Frič) Simon = **xanthocarpa** f. *citricarpa*
 " var. *coerulescens* (Backbg.) Simon = **xanthocarpa** f. *coerulescens*
 " var. *grandiflora* Krainz nomen nudum
 " var. *grandiflora* Marsh. nom. prov.
 * " var. *grandiflora* (Backbg.) Buin. & Donald
 " var. subspec. *grandiflora* (Backbg.) Donald = **minuscula** var. **grandiflora**
 " f. *knuthiana* (Backbg.) Buin. & Donald = **minuscula** var.
violaciflora f. **knuthiana**
 " var. *multiflora* Frič nomen nudum = **minuscula**
 " f. *kariusiana* (Wessn.) Buin. & Donald = **minuscula** var.
violaciflora f. **kariusiana**
 " var. *salmonea* (Frič) Simon = **xanthocarpa** f. *salmonea*
 " var. *senilis* (Backbg.) Simon = **senilis**
 " f. *violaciflora* (Backbg.) Buin. & Donald = **minuscula** var. **violaciflora**
 * " var. **violaciflora** (Backbg.) Buin. & Donald (1935) Blatt. f. Kakt. 8
 " var. **violaciflora** f. **kariusiana** (Wessn.) Donald (1963) u. a. Sukk. 14 149
 " var. *violaciflora* f. *rosiflora* nom. prov.
 " var. **violaciflora** f. **knuthiana** (Backbg.) Buin. & Donald (1935) Kaktus
ABC 277 & 416
 " var. subspec. *violaciflora* (Backbg.) Donald = **minuscula** var. **violaciflora**
 " var. subspec. *violaciflora* f. *kariusiana* (Wessn.) Donald = **minuscula** var.
violaciflora f. **kariusiana**
- * **minutissima** Ritter (FR1124) (1977) Kakt. u. a. Sukk. 28 78
 * **mixta** Ritter (FR1429) (1977) Kakt. u. a. Sukk. 28 76
 * **mixticolor** Ritter (FR1108) (1977) Kakt. u. a. Sukk. 27 169
 * **mudanensis** Rausch (R689) (1976) Kakt. u. a. Sukk. 27 169
multicolor Ritter nomen nudum (FR1108)
multiplex (Pfeiff.) v. Roeder (1938) Kakteenkunde 124 = ? **Echinopsis multiplex**
multicostata hort. nomen nudum = ?
muricata Frič nomen nudum = **minuscula** var. **violaciflora**
 * **muscula** Ritter & Thiele (FR753) (1963) Taxon 12 29
 " var. *nivosa* Knize comb. nud. KK1301
- * **napina** Ritter (FR942) nomen nudum (nom. prov.)
 * **narvaecensis** (Card.) Donald (1971) Cact. & Succ. J. Am. 43 245
neopygmaea Backbg. = **euanthema** f. **neopygmaea**
nicolaii Frič nomen nudum = ? (1932) Mollers Deutsch. Gartnerzeit. 47 422
nidulans Borg nomen nudum = ?
nigra Frič nomen nudum = ?
nigricans (Wessn.) Backbg. = **ritteri** var. **nigricans**
 * **nitida** Ritter (FR769) (1978) Ashingtonia 3 14
nivea nomen nudum = ? **muscula**
nivosa Ritter nomen nudum = ? **muscula**
 * **nogalensis** Ritter (FR768) (1977) Kakt. und Sukk. 28 78
oculata Werd. (1935) Blüh. Kakt. u. a. Sukk. 99 = **euanthema** f. **oculata**
 * **odontopetala** Ritter (FR757a) (1977) Kakt. u. a. Sukk. 28 76

- oderata* Hort. nomen nudum = **wessneriana**
orurensis Backbg. = **pygmaea**
- ***padcayensis** Rausch (R322) Succulenta 56 233
pallida Rausch (1977) Succulenta 56 233
- ***patericalyx** Ritter (FR757) (1977) Kakt. u. a. Sukk. 28 74
 " var. *odontopetala* Ritter nomen nudum
- ***pauciareolata** Ritter (FR1121) (1977) Kakt. u. a. Sukk. 28 77
 ***paucicostata** Ritter (FR936) (1977) Kakt. u. a. Sukk. 28 77
- pectinata* Backbg. = **pygmaea**
 " var. *atrovirens* = **pygmaea** var. **atrovirens**
 " var. *digitiformis* Backbg. = **pygmaea**
 " var. *neosteinmannii* Backbg. = **pygmaea** f. **neosteinmannii**
 " var. *orurensis* Backbg. = **pygmaea**
- periferia* hort. nomen nudum = **xanthocarpa** (f. *salmonea*?)
permutata Heinr. = **wessneriana**
 " var. *gokrausei* Heinr. = **wessneriana**
- peruviana* hort. nomen nudum = **marsoneri**
perplexa Donald (Lau 329a) (not **narvaecense** (Card. Donald) (1979)
 Ashingtonia 3 150
- petersainii* Borg nomen nudum = **ritteri**
petersonii hort. nomen nudum = **minuscula**
pilayensis Knize nomen nudum (KK863)
pilifera (Buin. & Donald) Rausch nomen nudum = **costata** f. **pilifera**
pilosa Knize nomen nudum (KK858)
polymorpha Card. = **Sulcorebutia polymorpha** (Card.) Backbg.
- ***potosina** Ritter (FR1428) (1977) Kakt. u. a. Sukk. 28 77
prolifera Rausch nomen nudum = **fabrisii**
pseudodeminuta Backbg. non Frič (1933) D.K.F. 7
 " f. **albiseta** (Backbg.) Buin. & Donald (1951) Cact. Succ. J. Amer. 23 82
 " var. *longiseta* nomen nudum
 " f. **grandiflora** (Backbg.) Buin. & Donald (1951) Cact. Succ. J. Amer. 23 82
 " f. **rubrifilamentosa** Buin. & Donald (1963) Sukkulantenkunde 7 102
 " f. **schneideriana** (Backbg.) Buin. & Donald (1951)
 Cact. Succ. J. Amer. 23 82
 " f. *schumanniana* (Backbg.) Buin. & Donald (1933) Der Kakteenfr. 7
- pseudoheliosa* nomen nudum = **albopectinata** (Lau 401)
pseudokrainziana nomen nudum
pseudominuscula (Speg.) Br. & R. = **deminuta** f. **pseudominuscula**
- ***pseudopygmaea** Ritter (FR1122) nomen nudum
 ***pulchella** Rausch (1972) Kakt. u. a. Sukk. 23 340
pulchera Card. = **Sulcorebutia pulchera** (Card.) Donald
 ***pulvinosa** Ritter & Buin. (FR766) (1963) Taxon 12 29
pulvispina Knize nomen nudum KK1568
pseudograessneri hort. (catalogue 1974 Uhlig) U844 = ?
- ***pygmaea** (R. E. Fries) Br. & R. (1905) Nov. Act. Soc. Sci. Upsala IV 120
 " f. **atrovirens** (Backbg.) Buin. & Donald (1935) Kaktus ABC 242
 " f. **flavovirens** (Backbg.) Buin. & Donald (1935) Kaktus ABC 243
 " f. **fuauxiana** (Backbg.) Buin. & Donald (1956) Descr. Cact. Nov. 131
 * " f. **haefneriana** (Cullm.) Buin. & Donald (1955) Kakt. u. a. Sukk. 6

- " f. **neosteinmannii** (Backbg.) Buin. & Donald (1956) Descr. Cact. Nov. 130
 " var. **tupizensis** Rausch nomen nudum (R676)
- ***raulii** Rausch (R485) (1980) Kakt. u. a. Sukk. **31** 170
- ***rauschii** Zecher (R297) (1977) Kakt. u. a. Sukk. **28** 73
reichii Borg nomen nudum = ? *Neoporteria reichii*
residua Knize nomen nudum (KK1517)
rigidispina Frič nomen nudum = ?
- ***ritteri** (Wessn.) Buin. & Donald (1938) Beitr. z. Skde. u. pflege 3
- * " var. **nigricans** (Wessn.) Buin. & Donald (1938) Beitr. z. Sukk. u. Pfl. 51
 " var. **nigricans** f. **hahniana** Buin. & Donald (1965) Cact. Succ. J. Gt. Brit. **27** 40
 " var. **nigricans** f. **peterseimii** Buin. & Donald (1965)
 Cact. Succ. J. Gt. Brit. **27** 40
 " f. *peterseimii* Buin. & Donald = **ritteri** var. **nigricans** f. **peterseimii**
 " f. *hahniana* Buin. & Donald = **ritteri** var. **nigricans** f. **hahniana**
ritteriana hort. (catalogue 1974 Andreae) = ? **ritteri**
- ***robustispina** Ritter (FR618) (1977) Succulenta **56** 64
 " var. *minor* Ritter nomen nudum
- ***rosalbiflora** Ritter (FR1115) (1977) Kakt. u. a. Sukk. **28** 76
 " var. *amblypetala* Ritter (FR1119) (1977) Kakt. u. a. Sukk. **28** 76
rubelliflora (Backbg.) Marshall & Bock. comb. nud. = **aureiflora** f. **rubelliflora**
- ***rubiginosa** Ritter (FR767) (1963) Taxon **12** 29
rubispina Graessner nomen nudum = ?
rubrispina Backbg. = ?
rubriflora (Backbg.) Marshall & Bock. comb. nud. = **aureiflora** f. **rubriflora**
- ***rutiliflora** Ritter (FR1113) (1977) Kakt. u. a. Sukk. **28** 76
sieperdaiana Buin. = **marsoneri** f. **sieperdaiana**
- ***salpingantha** Ritter (FR937) (1977) Kakt. u. a. Sukk. **28** 77
salmonea Frič non Backbg. nomen nudum catalogue name = ?
sanguinea Ritter (1977) Succulenta **56** 65
 " var. *minor* Ritter nomen nudum
sarothroides Werd. = **aureiflora** f. **sarothroides**
scarlatea Frič nomen nudum = **minuscula**
 " var. *brevispina* Frič nomen nudum = **minuscula**
- ***schatzliana** Rausch (R640) Kakt. u. a. Sukk. **26** 244
schmiedickeana (Kohl) Marsh. & Bock. comb. nud. = **einsteinii** f. **schmiedcheniana**
- schmiedcheniana* var. *karreri* Backbg. = **einsteinii**
 " var. *rubriviridis* Frič = **einsteinii** f. **rubriviridis**
 " var. *steinecke* Frič = **einsteinii** f. **steinecke**
- ***senilis** Backbg. (1932) D. Kaktfrd. 123
 " f. subspec. *senilis* Backbg. = **senilis**
 " f. subspec. *senilis* f. *lilacinorosea* (Backbg.) Buin. & Donald =
senilis f. **lilacinorosea**
 " f. subspec. *senilis* f. *stuemeri* (Backbg.) Buin. & Donald =
senilis f. **stuemeri**
 " f. subspec. *chrysacantha* (Backbg.) Donald = **chrysacantha**

- " f. subspec. *chrysacantha* f. *iseliniana* (Krainz) Buin. & Donald =
senilis var. **iseliniana**
- " f. subspec. *chrysacantha* f. *kesselringiana* (Backbg.) Buin. & Donald =
senilis var. **kesselringiana**
- " f. subspec. *chrysacantha* f. *elegans* (Backbg.) Buin. & Donald =
senilis var. **elegans**
- " var. *aurescens* Backbg. = ? This taxon probably belongs with
R. wessneriana rather than with **R. senilis**. In our experience
it is self sterile and fits better with Subsection II rather than Subsection I.
- " f. *blossfeldii* nomen nudum = **senilis**
- " var. *breviseta* Backbg. = **krainziana**
- " f. *breviseta* Backbg. = **krainziana**
- " var. *calva* Frič nomen nudum = ?
- " var. *cana* Borg nomen nudum = ?
- " var. *cana* Backbg. = **senilis**
- " f. *cana* Backbg. ex Simon. = **senilis**
- " var. *chrysacantha* (Backbg.) Donald comb. nud. = **chrysacantha**
- " var. *chrysacantha* f. *elegans* (Backbg.) Buin. & Donald =
senilis var. **elegans**
- " var. *chrysacantha* f. *iseliniana* (Krainz) Buin. & Donald =
senilis var. **iseliniana**
- " var. *chrysacantha* f. *kesselringiana* (Bew.) Buin. & Donald =
senilis var. **kesselringiana**
- " var. *citricarpa* (Frič) Marsh = **xanthocarpa** f. **citricarpa**
- " var. *colinsii* hort. (catalogue 1974 Uhlig) U2667 = ?
- " var. *dasyphrissa* (Werd.) Marshall & Bock. comb. nud. =
xanthocarpa f. **dasyphrissa**
- " var. *dasyphrissa* (Werd.) Donald = **xanthocarpa** f. **dasyphrissa**
- " var. *gracilis* nomen nudum = ?
- " var. **elegans** (Backbg.) Backbg. (1951) Cact. Succ. J. Amer. 23 83
- " var. *erecta* hort. nomen nudum = ?
- " var. *hyalacantha* Backbg. (Backbg.) Donald = **wessneriana**
- " var. *hyalacantha* f. *hyalacantha* (Backbg.) ex Simon = **wessneriana**
- " var. *hyalacantha* f. *blossfeldiana* Köhler nomen nudum = ?
- " var. **iseliniana** Krainz (1946) Schweizer Garten 284
- " var. *iseliniana* f. *chrysacantha* (Backbg.) Buin. & Donald = **chrysacantha**
- " var. *iseliniana* f. *elegans* (Backbg.) Buin. & Donald = **senilis** var. **elegans**
- " var. *iseliniana* f. *kesselringiana* (Bew.) Buin. & Donald =
senilis var. **kesselringiana**
- " var. **kesselringiana** Bew. (1947) Sukkulentenkunde 19
- " f. **lilacinrosea** (Backbg.) Buin. & Donald (1935) Kaktus ABC 416
- " var. *lilacinrosea* Backbg. = **senilis** f. **lilacinrosea**
- " var. *longiflora* nomen nudum = ?
- " var. *longispina* Frič nomen nudum = ?
- " var. *luteirosea* (Backbg.) Marsh = **xanthocarpa** var. **luteirosea**
- " var. *pallidior* (Backbg.) Donald nomen comb. subnud. = ?
- " var. *pallidior* (Backbg.) Donald comb. nud. = ? **xanthocarpa**
- " var. *sieperdaiana* (Buin.) Backbg. = **marsoneri** f. **sieperdaiana**

- " var. *schieliana* Bew. = **senilis** f. **schieliana**
 " f. **schieliana** (Bew.) Donald (1957) Kakt. u. a. Sukk. **8** 105
 " var. *semperflorens* Poind. = ?
 " var. *stuemeri* Backbg. = **senilis** f. **stuemeri**
 " f. **stuemeri** (Backbg.) Buin. & Donald (1932) Deutsch Kakt. frd. 131
 " var. *stuemeri* Backbg. = **senilis** f. **stuemeri**
 " var. *violaciflora* Backbg. nomen nudum = ?
 " var. *xanthocarpa* (Backbg.) Marsh = **xanthocarpa**
singularis Ritter FR1423 (1978) Ashingtonia **3** 12
solisioides Knize nomen nudum = **heliosa** var. **condorensis**
 ***spgazziniana** Backbg. (1934) Blätter, f. Kakteen forschg. 2
 " **atroviridis** (Backbg.) Backbg. (1951) Cact. Succ. J. Am. **23** 82
 ***sphaerica** Ritter (FR1140) nomen nudum
 ***spinosissima** Backbg. (1935) Blatt. f. Kakteenf. 1935-8
 " var. *brunispina* Backbg. nomen nudum = **spinosissima**
 " var. *aurea* Rausch nomen nudum (R318)
 " var. *similis* Frič nomen nudum = **spinosissima**
spiralisepala Jajo nomen nudum
 ***steinmannii** (Solms-Laub.) Br. & R. (1907) Bt. Zeit. 65 153 (Section I **Aylostera!**)
 " var. *cincinnata* Rausch nomen nudum (R300) = ?
 " var. *nigricans* Wessn. = **ritteri** var. **nigricans**
 " var. *pilifera* (Buin. & Donald) Rausch comb. nud. = **costata** f. **pilifera**
 ***supthutiana** Rausch (R629) (1976) Kakt. u. a. Sukk. **27** 121
steinbachii Werd. = **Sulcorebutia steinbachii** (Werd.) Backbg.
 " *rosiflora* Backbg. = **Sulcorebutia steinbachii** v. **rosiflora**
 " var. *violaciflora* Backbg. = **Sulcorebutia steinbachii** v. **violaciflora**
 " var. *violacifera* Backbg. = **Sulcorebutia steinbachii** v. **violacifera**
steinecke Frič nomen nudum (1932) Mollers Deutsch Gartner Zeit. **47** 422 = ?
 ***tamboensis** Ritter (FR1142) (1978) Ashingtonia **2** 207
taratensis Card. = **Sulcorebutia taratensis** (Card.) Buin. & Donald
 ***tarijensis** Rausch (R87) (1975) Kakt. u. a. Sukk. **26** 195
 ***tarvitaensis** Ritter (FR773) (1977) Kakt. u. a. Sukk. **28** 78
tiraquensis Card. = **Sulcorebutia tiraquensis** (Card.) Ritter
 " var. *longiseta* Card. = **Sulcorebutia tiraquensis** (Card.) Donald
 ***torquata** Ritter & Buin. (FR1117) (1977) Succulenta **56** 63
totorensis Card. = **Sulcorebutia totorensis** (Card.) Ritter
 ***tropaeolipicta** Ritter (FR1114) (1977) Kakt. u. a. Sukk. **28** 78
tuberculato-chrysacantha Card. = **Sulcorebutia tuberculato-chrysacantha**
 (Card.) Bred. & Donald
 ***tuberosa** Ritter (FR770) (1963) Taxon **12** 28
tunariensis Card. = **Sulcorebutia tunariensis** (Card.) Buin. & Donald
turbinata hort. nomen nudum Winter catalogue name = ? **wessneriana**
 ***vallegrandensis** Card. (1970) Cact. Succ. J. Amer. **42** 35
violacea Frič hort. nomen nudum = **xanthocarpa** var. **violaciflora**
 " var. *albispina* Frič nomen nudum = ?
 " var. *densispina* Frič nomen nudum = ?
 " var. *paucipetala* Frič nomen nudum = ?
 " var. *rosea* Frič nomen nudum = ?

- " var. *stellata* Frič nomen nudum = ?
- ***violascens** Ritter (FR352) (1977) Kakt. u. a. Sukk. 28 76
violaciflora Backbg. = **minuscula** var. **violaciflora**
- " var. *brunispina* hort. (catalogue 1974 Uhlig) U1175
- " var. *carminea* (Burning) Donald = **minuscula** var. **violaciflora**
- " var. *densispina* nomen nudum = **minuscula** var. **violaciflora**
- " var. *graessneri* nomen nudum = **minuscula** var. **violaciflora**
- " var. *knuthiana* (Backbg.) Donald comb. nud. =
minuscula var. **violaciflora** f. **knuthiana**
- " var. *luteispina* (Backbg.) Borg hort. nomen nudum =
minuscula var. **violaciflora**
- " var. *rosea* hort. (catalogue 1974 Uhlig) U1173
- violbrunispina* Frič nomen nudum = ?
- violsalmonea* Frič nomen nudum = ?
- vizcarrae* Card. = **Sulcorebutia vizcarrae** (Card.) Donald
- volcanensis* hort. (1974 catalogue Andraea) = ?
- ***vulpina** Ritter (FR939) (1977) Succulenta 56 66
- waltheriana* Backbg. nomen nudum = ? **spgazziniana**
- ***wessneriana** Bew. (1948) Sukkulenterkunde Jahrb. Schweiz. Kakt. Ges. 2 24
- " var. **beryllioides** Buin. & Donald
- " var. *calliantha* (Bew.) Krainz = **wessneriana**
- " var. *densiseta* nomen nudum = **krainziana**
- " var. *krainziana* (Kess.) Buin. & Donald = **krainziana**
- " var. *permutata* (Heinr.) Buin. & Donald = **wessneriana**
- " subspec. *beryllioides* Buin. & Donald = **wessneriana** var. **beryllioides**
- " subspec. *wessneriana* f. *calliantha* (Bew.) Buin. & Donald =
wessneriana
- " subspec. *wessneriana* var. *gokrausei* (Heinr.) Donald = **wessneriana**
- " subspec. *wessneriana* var. *gokrausei* f. *permutata* (Heinr.) Donald =
wessneriana
- c.v. 'Ruby' Donald
- c.v. 'Turbine' Donald
- winterae* hort. nomen nudum = ?
- winteriana* hort. nomen nudum = ?
- ***xanthocarpa** Backbg. (1932) D.K.F 131
- " var. *citricarpa* Frič ex Backbg. = f. *citricarpa*
- " f. *citricarpa* (Frič ex Backbg.) Buin. & Donald (1951) Cact. & Succ.
J Amer. 23 83
- " var. *coerulescens* (Backbg.) Buin. & Donald = f. **coerulescens**
- " f. **coerulescens** (Backbg.) Buin. & Donald (1956) Backbg. Descr. Cact.
Nov. 31
- " var. *dasyphrissa* (Werd.) Backbg. = f. **dasyphrissa**
- " f. **dasyphrissa** (Werd.) Buin. & Donald (1935) Blüh. Kakt. u. a. Sukk. 103
- " var. *elegans* Backbg. = **senilis** var. **elegans**
- " f. **graciliflora** (Backbg.) Donald (1963) Backbg. Descr. Cact. Nov. 3 13
- " var. *kesselringiana* comb. nud. = **senilis** var. **kesselringiana**
- " var. *lilacinorosea* nomen nudum = f. **violaciflora**
- " var. *luteirosea* Backbg. (1951) Cact. Succ. J. Amer. 23 83
- " var. *magentaflora* Hort. nomen nudum = f. **violaciflora**

- " var. *pallidior* Backbg. = ? **xanthocarpa**
 " var. *ruficeps* hort. nomen nudum = ?
 " var. *salmonea* Frič ex Backbg. = f. **salmonea**
 " f. **salmonea** (Frič ex Backbg.) Buin. & Donald (1951) Cact. Succ. J. Amer. 23 83
 " f. *sanguinea* nomen nudum = ?
 " var. *violaciflora* (Backbg.) Backbg. = f. **violaciflora**
 " f. **violaciflora** (Backbg.) Buin. & Donald (1956) Backbg. Descr. Cact. Nov. 31

zavaletae Card. = **Sulcorebutia zavaletae** (Card.) Backbg.

***zecheri** Rausch (R650) (1977) Succulenta 56 29

Digitorebutia nazarenoensis Rausch. This new species was described by Walter Rausch in 1979. As it has not been described as a *Rebutia* the following combination has been made:-

Rebutia nazarenoensis (Rausch). Fearn & Percy comb. nov.
Digitorebutia nazarenoensis Rausch (1979) Succulenta 58 185.

Field Data

The following lists of field numbers are those which have been assigned to *Rebutia* plants collected by Friedrich Ritter, Walter Rausch, Alfred Lau and Karel Knize, all of whom have collected extensively in Bolivia and Argentina.

Friedrich Ritter Field Numbers

(All these field numbers are prefixed by the letters FR)

- 57 *Digitorebutia haagei*
 57a " *brachyantha* (*pygmaea*?)
 57b " *haagei* form
 58 *Rebutia calliantha*
 83 *fibrigii densisetata* (*nivosa*)
 84 " *fibrigii*
 84a " *fibrigii* var.
 84b " *fibrigii* var. *vulpes*
 337 " spec. (*brachyantha*?)
 339 *Mediolobivia orurensis*
 340 " *eucalyptana*
 341 " *haefneriana steinmannii*
 341a *Rebutia* (*mamillosa* v. *australis*) *graciliflora* v. *borealis*
 341b " *mamillosa* v. *orientalis*
 351 " *haagei steinmannii*
 352 " (*violascens*) *haefneriana*
 390 " *fibrigii* v. *densisetata*
 402 *Mediolobivia pilifera*
 404 *Aylostera spegazzinii* v. *atroviridis*
 405 *Mediolobivia sarothroides*
 406 *Rebutia euanthema*
 407 *Mediolobivia aureiflora*

618	<i>Aylostera robustispina</i>
622	" spec.
752	" <i>pseudodeminuta</i>
753	" <i>muscula</i>
754	" <i>albipilosa</i>
755	" <i>maxima</i>
756	" <i>flavistyla</i>
757	" <i>patericalyx</i>
757a	" var. <i>odontopetala</i>
758	" <i>densipectinata</i> (dark form)
759	" <i>densipectinata</i> (pale form)
760	" <i>sanguinea spegazziniana</i>
760a	" <i>sanguinea</i> var. <i>minor</i>
761	" <i>albiareolata</i>
762	<i>Rebutia kupperiana</i>
762a	" " form
762b	" " var. <i>spiniflora</i>
763	" <i>robustispina</i>
763a	" " var. <i>minor</i>
765	" spec.
766	<i>Aylostera pulvinosa</i>
766a	" <i>albiflora</i>
767	" <i>rubiginosa</i>
768	<i>Rebutia nogalensis</i>
769	" <i>nitida</i>
770	" <i>tuberosa</i>
771	" spec.
772	" spec.
773	" <i>tarvitaensis</i>
935	" <i>melachlora</i>
936	" <i>ritteri</i> v. <i>paucicostata</i>
937	" <i>salpingantha costata</i>
938	" <i>cintiensis</i>
939	" <i>vulpina</i>
939a	" <i>vulpina</i> var.
940	" <i>fusca</i>
941	" <i>senilis</i>
941a	" spec.
942	<i>Rebutia napina</i>
1101	" <i>gracilis</i>
1106	" <i>colorea</i>
1106a	" <i>colorea</i> var.
1107	" <i>pygmaea</i>
1108	" <i>mixticolor</i>
1109	" <i>brunneoradicata</i>
1110	" <i>mamillosa</i> var. <i>australis</i> - <i>grandiflora</i>
1113	" <i>rutiliflora</i>
1113a	" spec.
1114	" <i>tropaeolipicta</i>

1115	"	<i>rosalbiflora</i>
1115a	"	spec.
1116	"	<i>lanosiflora</i>
1117	"	<i>torquata</i>
1118	"	<i>gracilispina</i>
1118a	"	<i>gracilispina</i> var.
1119	"	<i>rosalbiflora</i> v. <i>amblypetala</i>
1120	"	spec.
1121	"	<i>pauciareolata</i>
1122	"	<i>pseudopygmaea</i>
1123	"	<i>ritteri</i>
1124	"	<i>minutissima</i>
1130	"	spec.
1138	"	<i>mamillosa</i> v. <i>orientalis</i>
1138a	"	<i>mamillosa</i> var.
1139	"	<i>poecilantha</i>
1140	"	<i>sphaerica</i>
1141		<i>Mediolobivia cajasensis</i>
1142		<i>Rebutia tamboensis</i>
1142a	"	<i>pseudodeminuta</i>
1142b	"	<i>pseudodeminuta</i> form
1423	"	<i>singularis</i>
1428	"	<i>potosina</i>
1429	"	<i>mixta</i>
1434	"	<i>iridescens</i>

Rebutias collected by Alfred Lau

(All these field numbers are prefixed by the word LAU)

- 323 *R. fiebrigii* forma *nova*. 2700m Mina Asientos, Cochabamba.
329 *R. fiebrigii* var. *densiseta*. 2600m Mina Asientos, Cochabamba.
329a *R. perplexa*
346 *R. fiebrigii* form, shorter and darker centrals. 2400m Pucara-La Higuera,
Santa Cruz.
346a *R. spinosissima* var. *nova*. 2400m Pucara-La Higuera, Santa Cruz.
348 *R. donaldiana*. 2500m Pucara-Vallegrande, Santa Cruz.
348a *R. fiebrigii*. 2500m Pucara-Vallegrande, Santa Cruz.
350 *R. ithyacantha*. 2600m Pucara-Vallegrande, Santa Cruz.
351 *R. vallegrandensis*. 2100m Pucara-Vallegrande, Santa Cruz.
353 *R. vallegrandensis*. 2600m Pucara-Vallegrande Pass, Santa Cruz.
383 *R. brunescens*. 3500m Tarabuco, Chuquisaca.
393 *R. fiebrigii* form. 2900m. Calle Calle Mts., Chuquisaca.
401 *R. albopectinata*. 2450m Condor Pass, Tarija.
402 *R. rubiginosa*. 1600m Narvaez, Tarija.
402a *R. fiebrigii* form. 1600m Narvaez, Tarija.
404 *R. buiningiana* Ritt. nomen nudum (*R. spinosissima*?) 2500m Cara del Diablo,
Tarija.
405 *R. albopectinata* form. 2400m Cajas Pass, Tarija.

- 407 *R. rubiginosa* form. 2400m. 10km. W. Narvaez, Tarija.
 409 *R. spec. nova*. 3500m Tarija to Iscayachi.
 410 *R. tuberosa*. 3500m Tarija to Iscayachi.
 411 *R. christinae*. Tarija to Iscayachi.
 411a *R. spegazziniana* var. *atroviridis* 3000m Tarija to Iscayachi.
 412 *R. spegazziniana* var. *nova*. Road to Cajas, Tarija.
 413 *R. padcayensis*. Cara del Diablo, Tarija.
 415 = 405 *R. albopectinata*. 3200m Iscayachi, Tarija.
 416 *R. lauii*. 2400m Cajas Pass, Tarija.
 422a *R. spec. nova*. 3350m Otavi-Camargo, Chuquisaca.
 422b *R. spec. nova*. 3350m Otavi-Camargo, Chuquisaca.
 424 *R. spec.* 3300m Camargo, Chuquisaca.
 431 *R. pygmaea*. 3800m El Aguilar, Jujuy.
 442 *R. minuscula* var. 1500m Sierra Medina, Tucuman Province,
 476 *R. einsteinii* var. *gonjianii* 3500m Quebrada del Toro, Jujuy.
 477 *R. einsteinii* var. *gonjianii* 3200m Quebrada del Toro, Jujuy.
 519 *R. haagei*. 3100m Humahuaca, Jujuy.
 520 *R. spec.* (similar to *R. costata* and *R. fuauxiana*). 3000m East of Volcan, Jujuy.
 522 *R. pseudodeminuta*. 2700m East of Volcan, Jujuy.
 533 *R. spec. nova* (possibly *R. aurantida* var. *gracilis*). 2700m above Tastil, Salta.
 541 *R. spec.* (*nigricans*?) 3800m Tafne, Jujuy.
 541a *R. spec.* (*costata*?) 3600m Tafne, Jujuy.
 541b *R. eos*. 3600m Tafne, Jujuy.
 541c *R. eos* var. *nova*? 3600m. Tafne, Jujuy.
 544 *R. margarethae*. 2100-3000m Santa Victoria, Salta.
 544a *R. margarethae*. 2400m Santa Victoria, Salta.
 545 *R. jujuyensis*. 2300m Santa Victoria, Salta.
 546 *R. spec. nova*. 2200m Santa Victoria, Salta.
 546a *R. spec. nova*. 2200m Santa Victoria, Salta.
 547 *R. spegazziniana* v. *atroviridis* 2300-3000m Santa Victoria, Salta.
 550 *R. margarethae*. 2800m Road from La Quiaca, Santa Victoria Pass, Salta.
 550a *R. pseudodeminuta* form? 2800m Road from La Quiaca, Santa Victoria Pass,
 Salta.
 554 *R. margarethae*. 3500m Road from La Quiaca, Santa Victoria Pass, Salta.
 557 *R. wessneriana* v. *beryllioides*. 2400m Leon, Jujuy Province.
 560 *R. xanthocarpa* v. *lilacinorosea*. 10km North West of Antilla, Salta.
 561 *R. pseudodeminuta* form. 10km North West of Antilla, Salta.

Walter Rausch Field Numbers

(All these field numbers are prefixed by the letter R)

- 1 *Rebutia xanthocarpa*
 11 *Aylostera pseudominuscula*
 14 *Medioblobia nigricans* var. Piedra de Molinos
 35 " *haagei*
 67 *Aylostera ithyacantha*
 71 *Medioblobia steinmannii* var.
 87 " *tarijensis* (Ritter?)

- 88 *Aylostera robustispina*
89 " *fiebrigii* v. *densiseta*
91 *Medioblobivia spec.*
158 " *aureiflora*
162 " *nigricans*
163 " *einsteinii* v. *atrovirens* (*viridis*?)
167 *Rebutia senilis*
208 *Medioblobivia steinmannii* var.
208a " *haefneriana*
210 " *orurensis*
214 " *euanthema*
220 *Aylostera sordida/jujuyana*
234 *Rebutia wessneriana*
274 *Aylostera vallegrandensis*
295 *Rebutia rosalbiflora* Potosi
295a " *spec.* Iscayache
296 *Medioblobivia steinmannii* v. *pilifera*
297 " *rauschii*
300 " *steinmannii* v. *cincinnata*
301 " *pectinata* (yellow)
302 *Rebutia mammillosa*
304 *Medioblobivia pectinata* (white)
305 *Rebutia leucanthera*
311 *Aylostera umbraculiforma* = *camarguensis*
312 *Medioblobivia albopectinata*
313 *Rebutia huasiensis*
314 *Aylostera heliosa*
317 " *spinosissima*
318 " var. *aurea?* var. *buiningiana?*
319 " *fulviseta*
320 " *lampromeliana* = *pulchella*
321 " *fiebrigii* v. *castanea*
322 " *padcayensis*
324 " *kupperiana*
333 *Medioblobivia eos*
333a " *eos* var. *roseiflora*
334 " *steinmannii* v. *rotundipetala*
335 " *pygmaea* (Villazon)
335a " *pygmaea* (Iscayachi)
335b " *iscayachensis* (Corda)
454 " *eucalyptana*
480 *Rebutia brunescens* (Tarabuco?)
484 *Medioblobivia mudanensis*
485 " *rauhii* (Rio Honda)
486 " *steinmannii* v. *complanata* (Rio Honda)
492 *Aylostera graciliflora* (Iscayachi)
492a *Rebutia christinae* (Santa Victoria)
493 " *brunescens* var.
494 *Medioblobivia steinmannii* v. *rubriflora*

- 495 *Rebutia fulviseta* v. *albispina*
 496 *Aylostera spegazziniana*
 501 *Medioblobivia haagei*
 502 " *haagei*
 503 *Aylostera fiebrigii*
 503a " *fiebrigii* f. brown spine
 506 *Medioblobivia pygmaea* var.
 507 " *haagei* var. (Santa Victoria-Purmamarca)
 507a " *haagei* var.
 508 " *costata*
 508a " *pygmaea* v. *longispina*
 509 " *einsteinii*
 511 *Rebutia buiningiana*
 515 *Medioblobivia haefneriana*
 518 *Rebutia margarethae*
 520 *Medioblobivia ritteri*
 521 *Rebutia margarethae*
 521a " *hoffmannii*
 522 *Medioblobivia morenoensis*
 576 " *pygmaea*
 577 " *nigricans*
 578 *Rebutia einsteinii* v. *gonjianii*
 579 *Medioblobivia pygmaea*
 583 *Rebutia fulviseta*
 597 " *pulchella* var.
 629 " *supthutiana*
 630 *Rebutia friedrichiana* (*pygmaea*?)
 631 " *diersiana*
 632 " *haefneriana*
 633 " *diersiana* var. *atrovirens*
 640 " *schatzliana*
 641 " *schatzliana* var.
 642 " *friedrichiana*
 643 " *spinosissima*
 644 " *steinmannii* var.
 646 *Medioblobivia friedrichiana*
 649 *Rebutia froehlichiana*
 650 *Aylostera zecheri*
 654 " *pseudominuscula* var.
 655 " *pseudominuscula*
 660 *Rebutia violascens*
 661 " *senilis*
 676 " *pygmaea* v. *tupizensis*
 679 *Aylostera pseudodeminuta* var.
 680 *Rebutia aureiflora* var. *duursmaiana*
 681 " *violaciflora*
 687 " *fabrisii* var. *aureiflora*
 688 " *fabrisii*
 689 *Medioblobivia mudanensis*

- 690 *Rebutia pseudominuscula* (*carmeniana*)
 694 " *kieslingii*
 697 " *pseudodeminuta*
 700 " *oculata*

Karel Knize Field Numbers

(All these numbers are prefixed by the letters KK)

- 597 *Rebutia senilis* f. Huahata, 2200m, Arg.
 598 " *pseudominuscula*. Catamarca, 2800m, Arg.
 637 *Medioblobia pectinata*. Oruro, 4000m, Bolivia.
 797 " *haefneriana*. Oruro, Capulla, 3000m, Bolivia.
 798 " *pectinata* var. Oruro, Machacamarca, 4000m, Bolivia.
 839 *Rebutia albipilosa*. Tarija, Tarija, 2800m, Bolivia.
 840 " *violaciflora*. Salta, Escoipe, 3100m, Arg.
 841 " *narvaecensis* f. Narvaez, Tarija, 2300m, Bolivia.
 842 " *muscula*. Piedra, Larga, 2300m, Bolivia.
 843 " *aureispina*. Jucanas, Tarija, 3000m, Bolivia.
 844 " *heliosa*. Jucanas, 3000m, Bolivia.
 845 " *senilis* f. Salta, Escoipe, 3200m, Arg.
 846 " *pseudodeminuta*. Piedra Larga, Tarija, 2800m, Bolivia,
 847 " *deminuta* f. Narvaez, Tarija, 3000m, Bolivia.
 848 " *densiseta?* Jucanas, Tarija, 3000m, Bolivia.
 849 " *densipectinata*. Jucanas, Tarija, 3000m, Bolivia
 852 " *albopectinata*. Sama, Tarija, 3800m, Bolivia.
 853 " *fiebrigii* v. *densiseta*. Iscayache, Tarija, 3500m, Bolivia.
 854 *Medioblobia conoidea*. Iscayache, Tarija, 3000m, Bolivia
 855 *Rebutia fiebrigii*. El Molle, Tarija, 3000m, Bolivia.
 856 " *spgazzinii*. Iscayache, 3500m, Bolivia.
 858 " *pilosa*. Jucanas, Las Cajas, 2800m, Bolivia.
 859 " *ritteri/tuberosa*. Sama, Tarija, 3500m, Bolivia.
 860 " *buiningiana*. Las Cajas, Tarija, 2800m, Bolivia.
 861 " *rubiginosa*. San Antonio, Iscayache, 3200m, Bolivia.
 862 " *tuberosa*. Sama, Tarija, 3500m, Bolivia.
 863 " *pilayensis*. El Nogal, Tarija, 2500m, Bolivia.
 871 *Medioblobia euanthema*. Sama, Iscayache, 4300m, Bolivia.
 872 " *aurantida?* Sama, Iscayache, 4300m, Bolivia.
 873 " *aurantida* v. *gracilis*. Sama, Tarija, 4200m, Bolivia.
 968 " *orurensis*. Oruro, Paria, 4100m, Bolivia.
 969 " *pectinata*. v. *paznaensis*. Pazna, 4100m, Bolivia.
 970 " *pectinata*. v. *gracilis*. Pazna, 4300m, Bolivia.
 971 " *eucalyptana*. Eucalyptos, 4100m, Bolivia.
 972 " *pectinata* v. *challa*. Challapata, 4000m, Bolivia.
 973 " *euanthema* v. *oculata*. Challapata, 4100m, Bolivia.
 974 " *pectinata* v. Poopo, 4200m, Bolivia.
 978 " *spec.* Huari, 4000m, Bolivia.
 1046 " *permutata?*

- 1052 *Rebutia ithyacantha*. La Cueva, Tarija, 2500m, Bolivia.
 1096 " *violaciflora* v. *knuthiana*. Salta, El Aguilar, 2800m, Arg.
 1150 " *narvaecensis*. Piedra Larga, 2500m, Bolivia.
 1151 " *muscula* v. *nivosa*. Piedra Larga, 2600m, Bolivia.
 1152 " *spec.*
 1232 *Mediolobivia ritteri*. Iscayache, 3800m, Bolivia.
 1242 *Rebutia grandiflora* f. Salta, Escoipe, 3300m, Arg.
 1243 " *senilis* f. Salta, Iscayache, 3500m, Arg.
 1244 " *xanthocarpa*. Salta, El Aguilar, 3800m, Arg.
 1301 " *muscula* v. *nivosa*. Narvaez, Tarija, 3000m, Bolivia.
 1302 " *narvaecensis*. Narvaez, Tarija, 2800m, Bolivia.
 1464 *Mediolobivia elegans*. Salta, 3800m, Arg.
 1465 " *pygmaea*. El Aguilar, 4000m, Arg.
 1466 " *nigricans*. Salta, 3800m, Arg.
 1467 " *pectinata* v. *digitiformis*. Escoipe, 3800m, Arg.
 1468 " *aurantida* var. Sierra Padjoja, 4100m, Bolivia.
 1469 " *aurantida* var. Sierra Padjoja, 4100m, Bolivia.
 1516 *Rebutia cintiensis*
 1517 " *residua*
 1518 " *espinosae*
 1519 " *lateritia*
 1563 " *gibbulosa*
 1565 " *canaletas*
 1568 " *pulvispina*
 1686 *Mediolobivia iscayachensis*
 1694 *Rebutia aureispina*
 1695 " *potosina*

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Acknowledgements

We sincerely wish to thank all the various persons who have helped in the preparation of this booklet. The descriptions are based on plants in cultivation at Abbey Brook.

For technical suggestions and helpful advice to Mr. N. Wall of Higham Press and Carol and Ann at Abbey Brook for typing the original manuscript. Also to the Librarian, Royal Botanic Gardens, Kew for the use of facilities, to Dr. Gillian Fearn for help in proof reading and to Thelma Stuart for photographic assistance.

Glossary

acicular	needle shaped.
apomixis	a biological system which can produce viable seeds by a process other than by direct fertilisation of the egg cell,
apomictic	a species which can produce seeds by the process of apomixis.
areole	a restricted area from which spines and/or flowers are produced,
bristle	hair-like spine,
caespitose	growing in clumps,
campanulate	bell-shaped,
central	spine the spine or spines arising from or near the centre of an areole, usually the largest spine or spines,
filament	the stalk upon which is borne the anther or pollen sac.
funnel-form	a flower which gradually widens from the base,
globose	shaped like a globe,
hilum	the scar at the base of the seed making the point of attachment to the funicle.
spine	a pointed more or less rigid structure which is homologous with a leaf.
stamen	the male floral organ which bears the pollen grains. It consists of a stalk called the filament and an anther or pollen sac.
stigma	the part of the flower that is the pollen receptor,
style	the stalk joining the stigma to the ovary,
type locality	the place where a type specimen was collected.

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R. euanthema ▲
R. wessneriana ▼



▲ *R. xanthocarpa* f. *salmonea*
▼ *R. albipilosa*



R. senilis v. *elegans* ▼



▼ *R. marsoneri*

