

Species List - Neopterianae

The list below is intended to provide a ready reference for names of species in the Neopterianae group. This is arranged on the Backeburg system for convenience of reference to that work, also because many continental nurseries offering supplies of these plants base their names on this system.

The additional letters: P = *Pyrrhocactus*, H = *Horridocactus*, Np = *Neopterianae*, Nc = *Neochilenia/Nichelia*, Ch = *Chileorebutia*, indicate where the species may be labelled under an alternative genus. Common current synonyms are also included.

## Neochilenia

aerocarpa	Ch	FR.498			
aerocarpa v. fulva	Ch	FR.500			
andreaeana					
aricensis	Ch P	FR.268			
aspillagai	Np P	FR.237			
atra					
calderana	H P	FR.496			
carneoflora					
chilensis	N P				
chilensis v albidiflora	P	FR.599			
chilensis v australis					
chilensis v borealis					
chilensis v confinis	P				
chorosensis	P	FR.489			
confinis	P	FR.494			
deherdtiana					
dimorpha	P	FR.707			
duripulpa	Ch	FR.1056			
eriocephala					
eriosyziodes	H P	FR.484			
esmeraldana	Ch	FR.518			
esmeraldana v brevispina					
floccasa	P	FR.545			
fobeana	N				
= P occultus	(K Sch non Phil)				
fusca	Ch				
glaucensens	P	FR.538			
gracilis	P	FR.495			
hankeana					
= N ebenacantha					
hankeana v minor					
hankeana v taltalensis	H	FR.212			
= H taltalensis v flavispinus		FR.212a			
= H taltalensis v densispinus		FR.212c			
huascensis	P	FR.260			
imitans					
= Ch odierii		FR.499			
intermedia		FR.213c			
= P rupicolus v intermedius					
iquiquensis	Ch P	FR.201			
jussieui	Np				
kleugii					
kraussii	Ch	FR.502			
kunzei	Np P	FR.220			
= H. copiapensis					
lembckii	Ch				
malleolata	Ch	FR.517			
malleolata v solitaria	Ch	FR.517a			
mebbsii					
= Nc odieri v mebbsii					
mebbsii v centrispina					
mitis		FR.710			
= Nc napina v mitis					
= Ch glabrescens					
monte - amargensis					
multicephala					
napina	Np Ch	FR.249			
napina v spinosior	Np				
napina v larrigera	Np				
neofusca		FR.252b			
= Ch jussieui v spinosior					
nigricans	H Np	FR.222			
nigricans v grandifloris	H	FR.222b			
nigriscoparia					
occulta	Np	FR.267			
odieri	Np				
odoriflora		FR.470			
paucicostata	P H	FR.521			
paucicostata v viridis	H	FR.521a			
pilispinga	P	FR.217			
pseudoreichei					
pulchella	P H	FR.520			
pygmaea	P	FR.519			
recondita	P	FR.204			
reichei	Np Ch	FR.501			
residua	P	FR.203			
residua v grandiflora	P	FR.203a			
robusta	H	FR.239a			

robusta v vegasanus H FR. 239a  
 rostrata FR. 224  
 = Np subgibbosa  
 = Np acutissima  
 = Np exculpta  
 rupicola P H FR. 213  
 saxifraga Ch FR. 712  
 scoparia P FR. 1085  
 setosiflora H P FR. 708  
 setosiflora v intermedia P FR. 708a  
 simulans H P FR. 488  
 taltalensis Np  
 non H taltalensis Ritt  
 tototalensis P FR. 492  
 transitensis P FR. 485  
 trapichensis H Ch FR. 252c  
 = Nc fusca v trapichensis  
 wagenknechtii P FR. 487  
 woutersiana  
 = Delaetia woutersiana

#### Reicheocactus

floribundus  
 neoreichei Nc  
 pseudoreicheanus  
 = Lobivia famatimensis FR. 459

#### Horridocactus

aconcaguensis P FR. 542  
 aconcaguensis v orientalis FR. 542a  
 andicolus FR. 468  
 andicolus v descendens FR. 468b  
 andicolus v mollensis FR. 468c  
 andicolus v robustus FR. 468d  
 armatus P FR. 449  
 atroviridis FR. 475  
 carrizalensis P FR. 493  
 cententeris  
 choapensis P FR. 238  
 crispus P FR. 491  
 curvispinus P FR. 225  
 curvispinus v santiagensis FR. 225a  
 curvispinus v felipensis FR. 225b  
 curvispinus v cimbarbalensis FR. 225c  
 curvispinus v petorcensis FR. 225e  
 curvispinus v nidulans FR. 225f  
 curvispinus v tilamensis FR. 225g  
 curvispinus v varicolor Np  
 echinus P FR. 537  
 echinus v minor FR. 537a  
 engleri FR. 235  
 engleri v kraussii  
 froelichianus P FR. 471  
 froelichianus v vegasanus FR. 471b

garaventi FR. 467  
 geisei  
 geisei v albicans  
 grandiflorus P FR. 469  
 heinrichianus  
 kesselringianus Np FR. 222a  
 kesselringianus v subaqueilis  
 lissocarpus P FR. 466  
 lissocarpus v gracilis FR. 466a  
 marksianus P FR. 234  
 marksianus v tunensis FR. 234a  
 tubersulcatus P FR. 223  
 = horridus  
 tubersulcatus v minor FR. 223a  
 vallenarensis P FR. 486

#### Pyrrhocactus

atrospinosus  
 bulbocalyx FR. 965  
 catamarcensis  
 dubius  
 griseus  
 melanacanthus  
 sanjuanensis  
 setiflorus  
 = P setosiflorus Bkbg non Ritt  
 strausianus  
 subaianus  
 umadeave FR. 32  
 umadeave v marayesensis  
 vollianus  
 vollianus v breviaristatus

#### Neoporteria

atrispinosa FR. 259  
 castanea FR. 236  
 castanea v tunensis FR. 236a  
 castanoides FR. 218  
 cephalophora  
 clavata FR. 482  
 clavata v procera FR. 716  
 clavata v parriflora FR. 482b  
 clavata v grandiflora FR. 482a  
 coimasensis FR. 473  
 coquimbana FR. 218  
 = Np nigrihorrida v coquimbana  
 crassispina FR. 481  
 = Np nigrihorrida v crassispina  
 densispina  
 heteracantha FR. 224a  
 = Np subgibbosa v intermedia  
 laniceps FR. 483  
 Np planiceps n.n.

<i>litoralis</i>	FR. 219	<i>robusta</i>	
<i>litoralis</i> v <i>intermedia</i>		<i>senilis</i>	FR. 474
<i>mammillaroides</i>		= <i>Np gerocephala</i>	
<i>microsperma</i>	FR. 535	<i>sociabilis</i>	FR. 655
<i>microsperma</i> v <i>serenana</i>	FR. 716a	<i>sociabilis</i> v <i>napina</i>	FR. 655a
<i>multicolor</i>	FR. 243	<i>subcylindrica</i>	
<i>nidus</i>	FR. 221 & FR. 474a	<i>thiebautiana</i>	
<i>nigrihorrida</i>	FR. 258	<i>villosa</i>	FR. 250
<i>nigrihorrida</i> v <i>major</i>		<i>villosa</i> v <i>polyraphis</i>	
<i>nigrihorrida</i> v <i>minor</i>		= <i>Np polyraphis</i>	
<i>rapifera</i>	FR. 714	<i>wagenknechtii</i>	FR. 715
		<i>wagenknechtii</i> v <i>napina</i>	FR. 715a

In issue No. 1 of this bulletin, a general guide was given to the flower characteristics of these species. The observations in that article on a clear division of botanical characteristics as a prerequisite for the separation of two genera, without an indistinct transition from one to another, could apply equally to the separation of species within any one genus.

The not infrequent occurrence of "*v. intermedia*" in the list above would suggest that such transition does exist between species, so greatly weakening the case for retention of two specific names.

The varietal forms of specific names, especially those with Ritter field numbers, are indicative of the habitat response of the species to small changes in climate (altitude exposure, soil, degree and direction of slope) which occur in all plants, not only in cacti. E. F. Lloyd (New Zealand) refers to species grown from Ritter's seed having distinctly variable spine characteristics, e. g. *N. rapifera*, *N. microsperma*, *N. multicolor*. None of these have been given varietal status. Conversely, J. D. Donald refers to *H. taltalensis*, FR. 212 and its varieties FR. 212a and FR. 212B "comparing these plants, now 4" high, *flaviflorus* is not really any more yellow than the type, *densispinus* possibly has a few more spines and longer, but not markedly so". This is merely the variation to be expected within a polymorphic species.

We can therefore expect that many of the above varieties and species will have to be reduced to synonymy. The following comments, from observations in habitat, may help to explain why even the generic divisions listed in our first issue are in dispute.

#### THE SCOPE OF THE GENUS PYRRHOCACTUS BERGER.

by Friedrich Ritter.

Translated by Mrs. J. Hobart.

In his book "Kakteen" A. Berger in 1929 described the subgenus *Pyrrhocactus* which, together with other subgenera, he gathered into a "Collective Genus" (his own expression) *Echinocactus* Link 1827. Berger now treated all combined subgenera which he included in the *Echinocactus* as genera; for example, "*Echinocactus strausianus* K. Sch. 1901 - *Pyrrhocactus* Berger", without pointing out that *Pyrrhocactus* was meant to be a different rank. On the same page we read, for example: "*Echinocactus cinerascens* Salm 1845 - *Copiapoa* Br. et R." But here *Copiapoa* was the genus and accordingly we must accept the *strausianus* in relation to *Pyrrhocactus* Berger also as a change of genus. On dividing the collective genus *Echinocactus* later on, Berger was credited with being the originator of the genus *Pyrrhocactus*. We shall adhere to this.

Berger gives the following diagnosis of "Pyrrhocactus" in German: "indented ribs, large areoles, with many awlshaped stiff spines, reddish-yellow blossoms; seed-bud scaly with white woolly tufts and sometimes with bristles". At that time a Latin description was fortunately not yet necessary. Berger does not specify a new genus here, but in first place he puts *Echinocactus strausianus* K. Sch. 1901, and accordingly Byles dictionary of 1957 names this genus as *Pyrrhocactus* Berger.

Later on, Backeberg (Bulletin of Cactus Research 1936 - 8) split the genus *Horridocactus* from *Pyrrhocactus*, describing it as follows: "Rather large flowers, round like a wheel and wide open, seed-bud without spines, and without bristles, a little wool at the very small scales - Chile. Type, *Cactus Horridus Colla*". It is not correct to call the flower round like a wheel, it is rather funnel-shaped. Furthermore the description given by Backeberg also fits the *Pyrrhocactus* occasionally. Apparently Backeberg himself noticed this fact. In 1956 he published a new and better description of *Pyrrhocactus*: "Plants spherical or elongated; spines never bent, usually longer and turned upwards; flowers urn or bell-shaped, short funnel, seed-bud scaly and woolly, often with spines, (often not only in the upper part of the funnel); pistil never red; fruit woolly or sometimes with bristles". Country of origin Argentine, while *Horridocactus* and *Neochilenia* Backbg are exclusively reserved for Chilean species.

The definition "but usually longer" makes no sense as the opposite of "never like a hook". And this "spines never like a hook" does not apply to the seedlings of the more southern species which have spines like a hook in the center; to the North this characteristic disappears, as it is also missing from the Chilean species. In contrast to his diagnosis, the flowers change from urn-shaped to bell-shaped to funnel-shaped, which fact Backeberg later admits himself. ("Cactus", June 1965, page 78). In that way the appearance of the flowers is in no way different from the *Horridocactus*. On two of the Argentinian kind of *Pyrrhocactus* I saw flowers which already belied Backeberg's observation of never possessing a red pistil. On *P. catamarcensis* I saw flowers with yellow as well as with light-red pistil, (I made copious notes about the flowers). On *P. bulbocalyx* I had found two flowers, one with a white, the other with pink pistil. On the other hand there are quite a number of non-red pistils among the Chilean species, which Backeberg numbers among the *Horridocactus*, for example, I found the pistil of the species *engleri* Ritter only greenish-white, the species *marksianus* Ritter light yellow (five flowers of different sorts). To name one of the characteristics of *Pyrrhocactus* (sensu Backeberg) 'never to possess a red pistil' is therefore due to a lack of knowledge of this genus.

Only the more southern species of the *Pyrrhocactus* in the Argentine have flowers bristly in a special way; to the North this characteristic is lost and the bristles are rather similar to some Chilean species. For instance, *Pyrrhocactus bulbocalyx* (Werd). Backbg. from the province La Rioja possesses only a few very fine short hairlike bristles on the upper rim of the seed-bud, while they are almost completely lacking from the northernmost representative *Pyrrhocactus umadeave* (Fric) Backbg. from the province of Salta, or there may be only a very few smallish bristles at the upper rim. On the other hand, some Chilean species possess bristles on the seed-bud. I want to mention here particularly the species *garaventai* Ritter which often has bristles on the seed-bud; the funnel is covered in bristles. Backeberg was sent this genus by Mr. Francisco Kraus in Santiago, but did not recognise that it was my *garaventai* and described this cactus as *Pyrrhocactus subaianus* Backbg. in the third volume of his work - a new species. Though this cactus came from the Chilean coastal zone, he attributed it to the species which before he had thought restricted to the Argentine, solely because of the large amount of bristles. But this genus belongs to the species of the South-Chilean genera, which Backeberg defines as *Horridocactus*; *garaventai* originated in Chile as we can prove by analysing the different characteristics, which would lead us here. The Argentinian species belong to a group which developed differently, but are too closely related to the Chilean to warrant describing them as a new genus.

How little this overemphasized significance of the amount of bristles on the flower - as far as these groups of cacti are concerned - means in reality, is demonstrated by the wholly Chilean genus *Chileorebutia*, developed by me from *Pyrrhocactus*, amongst which, for example, the genus *aerocarpa* Ritter shows the bristliest flower (including the entire seed-bud) found in the entire group of genera (*Pyrrhocactus* - *Chileorebutia* - *Neoporteria* - *Islaya*, and including *Horridocactus* Backbg and *Neochilenia* Backbg). The closely related species *fulva* Ritter possesses a seed-bud without bristles. Backeberg thinks this *fulva* is only a variety of *aerocarpa*. Backeberg apparently knew nothing about the flower when writing in his book: "undoubtedly only a variety (of *aerocarpa*)".

In "Kakteenkunde" 1939, volume 3, page 82, Backeberg divided off another genus under the name *Chilenia* Backbg. with a Latin definition. The type plant is *Echinocactus jussieui* Monv. The name of the genus *Chilenia* was changed to *Neochilenia* Backbg. according to the annual "Cactaceae" of June 1942, page 39. The only diagnostic characteristic of any importance different from *Horridocactus* is the very hairy seed-bud and funnel with bristles in the upper scales of the funnel (we find the same characteristic also in *Horridocactus*). In reality this difference in hairiness appears gradually and cannot be made a characteristic of the genus. The hairiness of the flowers increases in Chile according to the desert-like climate from the South (small woolly curls) to the North (big woolly curls) as a protection against the sun and to prevent the drying out of the growing seed-buds; while bristles on the flower can be found within these same genera *Horridocactus* and *Neochilenia* or sometimes be missing in both. The genus *Neochilenia* is therefore untenable and cannot even be acknowledged as a sub-genus.

All in all there remains the fact that none of the characteristics of *Horridocactus* or *Neochilenia* can be described as generic. The same applies to the outer characteristics of the seeds which we have not discussed here. Apart from seeds which look like some seeds of the Chilean *Pyrrhocactus*, we find in the Argentine seeds so different-looking (for example *Bulbocalyx*), that one can hardly believe this to be the same species but for the fact that all the other characteristics prove that it is the same genus. However, one finds similarly differently formed seeds amongst the genera of the closely related Genus *Chileorebutia* Ritter. The original species of *Pyrrhocactus* grow in the province of Mendoza, I did not find any other *Pyrrhocactus* further South. The genus must have spread from here to the North. The Chilean species follow the northern Argentinian species, which is understandable; because of a milder climate it is easier to cross the Andes here than in the South. Variations have developed particularly richly according to the different areas in Chile, with separate developments like *Chileorebutia*, *Neoporteria*, and *Islaya*, of the latter only the southernmost kind is to be found in Chile. Another related genus of this group is *Eriocyce*, only to be found in Chile, which we could possibly also derive from *Pyrrhocactus*.

*Copiapoa* is - on the other hand - not related at all to *Pyrrhocactus*; the origin of this genus is a puzzle. This genus grows only near the coast and near moderately warm zones and is never found in the Andes or in the far North and has therefore probably not been imported from a neighbouring country, but has a long history of development in Chile which we cannot reconstruct since we have not been able to find cacti related to this genus. Adapted from articles in "Succulenta" October 1959 and "Kakteen" May 1966.

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. . . and yet another view. An abstract from "Chilean cacti and their homeland" by Hans Lembcke of Santiago. (Kakteen, March 1958).

"The coast by Los Villos is the northernmost habitat of *Neoporteria subgibbosa*. Here the plants are darker and more ugly. In addition, there is in one locality plants which are very similar to the common *Neoporteria subgibbosa*, but which possess entirely different blooms. The large flowers are perfectly opened, of clear yellow, in places almost white in colour.

Especially as they wither the colour can become rather reddish. Whoever appreciates the genus *Neochilenia* must, I suppose, count these plants with it. This interesting type grows on the coast mixed with *Neoporteria Subgibbosa*, penetrating therefrom into the hinterland."

Much interesting information on other South American genera has come to light in the course of scouring sources for material for the Chileans. Enquiries indicate that this additional information could well be of interest to you: we are therefore adding a supplement to this issue and would appreciate your views on a continuance of this feature. We particularly extend an invitation to other South American study groups to use this supplement for placing on record some of their work, thus enabling more of our Society Members to add to the knowledge and enjoyment of their hobby.

### An introduction to *Sulcorebutia*

*Rebutia Steinbachii* was first described by Werderman in 1931, who remarked upon the peculiar combination of *Lobivia* - like vegetative characteristics with a *Rebutia* - like flower.

In 1951 Backeberg established his genus *Sulcorebutia* based upon this plant; his description referred to the elongated areole appearing to arise from a cut-like groove above each tubercle. The groove around each areole is quite sharply incised, so that on the newer growth the sides of the tubercles appear to be in contact just above the base of the groove. The areole is set askew on the tubercle (usually offset clockwise) and extends into the groove.

In 1951 Cardenas described two further plants, species *arenacea* and *glomeriseta*, which Ritter subsequently placed in *Sulcorebutia*; the species *tiraquensis*, *totorensis*, and *kruegeri* were described by Cardenas in 1957 and also placed in *Sulcorebutia* by Ritter. Backeberg, however, prefers to leave *arenacea* in *Rebutia*.

A review of *Sulcorebutia*, translated by J.D. Donald, appeared in the N.C. & S.S. Jnl of December 1961, illustrated by *S. tiraquensis*, *kruegeri*, *steinbachii*, and F.R. 369 - later named *lepida* - this species being illustrated again in the March 1962 N.C. & S.S. Jnl, together with *S. verticillacantha*. In this latter article both the F.R. numbers quoted under the illustrations are incorrect.

In the May 1964 issues of *Kakteen*, W. Rausch described and illustrated *S. tarabucoensis* and *S. canigueralii*, both collected by Cardenas. Rausch refers to a *S. Sucrensis* Ritter seen in Winter's collection, which he considered identical to *S. canigueralii*.

Whereas Book VI of *Die Cactaceae*, published in 1962, lists only three *Sulcorebutia*, the 1966 Lexicon lists nineteen species and illustrates four in black and white; in colour there is *S. candiae* (yellow flower), *taratensis* (deep pink), *tiraquensis* (pinkish red) and *v. electracantha* (orange red), *xanthoantha* (lemon yellow).

All these plants come from central Bolivia, from the vicinity of Chocabamba, south-east for about 250 miles to Lagunillas (on the border of Chuquisaca and Santa Cruz provinces); they are found mainly in the dry valleys cut in the Eastern flank of the Andes, ranging from about 6,000 ft altitude i.e. above the tree line, up to almost 12,000 ft. Those species which grow in the upper parts of this altitude range will be subjected to several degrees of frost for many of the July and August nights; such rainfall as they receive will be mainly in the months November to February.

B. Fearn has three plants of *S. tiraquensis*, one with deep reddish-brown spines, one with mixed white and brown spines, and one with pale yellowy-brown spines; seed off any one plant will produce all these varieties. J.W.P. Mullard observes that this variation in spine pigmentation is not uncommon amongst cacti - *Mammillaria spinosissima* is a typical example of variable spine pigmentation. Subscribers who have grown *Neopterteria* from Winter's seed report similar characteristics in *N. rapifera*, *microperma* and *multicolor*.

#### News and views

We have received further reports on plants obtained from overseas nurseries:-

Su-ka-flor, Switzerland. (W. Uebelmann). When plants are ordered, one receives a list - usually within a few days - of those species available and their price. When the nursery receives the payment, the plants are despatched promptly. This system avoids purchasers receiving unwanted substitutes. All plants were clean and free from damage. The seedlings may appear to be slightly on the small side for the price, but the catalogue does include quite a number of species not widely available. All plants were well packed both individually and collectively. Typical postage charge 4.50 Sf on a 70 Sf order. (Two correspondents)

Karlheinz Uhlig, Stuttgart. A high proportion of the plants offered are imported from habitat, many being larger than average. Most of those received have started to establish some root system in Europe. Apart from the greyish or corky condition of older growth - common to many imported specimens - plants are in good condition, with surprisingly little damage to long spines. Immediate packing is usually excellent, but external packaging commonly badly battered. Bearing in mind size and condition, prices of larger plants considered reasonable. (Five correspondents)

#### Neopterterianae Round Robin

We now have a most welcome number of subscribers, but these very numbers pose a problem in the extended time required to circulate the Robin. Any ideas and suggestions for solutions to this problem will be gratefully received.

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