

### PART III THE SPECIES - PROBLEMATIC IDENTIFICATIONS

The early confusion over the identity of *Echinocactus cumingii* Salm-Dyck non Hopffer has been resolved and Backeberg's new name *Weingartia neocumingii* Back. must be accepted as the correct name for this plant. However there are other possible synonyms which continue the confusion and several new species have been described that probably can be encompassed by the original Salm-Dyck concept of *E.cumingii*. Cardenàs probably unaware that Backeberg had resolved the name problem in 1950 (Kakt. u.a.Sukk. Jan. 1950, No. 2, p.2. 'Über *Echinocactus cumingii* und eine neue *Weingartia*') wished to describe some plants discovered in 1949 by Annibal Corro near Pulquina on the borders of Cochabamba and Santa Cruz Departments in Bolivia. Cardenàs was aware of their similarity to the cultivated '*W.cumingii*' and compared his plants favourably with that illustrated by Backeberg in Blätt.f.Kakt.f. 1935-12 as '*Spegazzinia cumingii*'. However in Cardenàs' opinion there were some differences and in view of the unprovable identity (due to lack of a type specimen) of the original *E.cumingii* Salm-Dyck non Hopffer, it would be better to give these new plants a new name, i.e. *Weingartia pulquinensis* Card. At the same time Cardenàs described a variety v. *corroana* which he subsequently raised to specific rank *Weingartia corroana* Card. (Cactus Fr. 82:49: 1964). Backeberg in his Die Cactaceae 3:1792, 1957 was firmly of the opinion that *W.pulquinensis* could only be considered a synonym of *W.neocumingii* but that the v. *corroana* was justified as *Weingartia neocumingii* v. *corroana* (Card.) Back. There will always remain a doubt due to the obscurity of the original plant now known as *W.neocumingii* for which we do not have even a neotype. Personally I have no personal doubts as to the plant Backeberg believed to be the modern descendant of the original Salm-Dyck plant in cultivation. I have an old example from a pre-war (1937) collection of this plant and have observed others in the Marnier collection (ex-Backeberg) and that at Le Jardin Exotique de Monte Carlo (exBackeberg). It is superficially different from *W.pulquinensis* and from those plants subsequently collected over the whole area bounded by Comarapa to Mairana in the north to Aiquile and Quiroga in the south on both sides of the Rio Mizque and north of the Rio Grande. The question is whether the difference observed today is due to isolation from the gene pool in the wild for the cultivated plant or not? Grown side-by-side in my collection for many years, the original pre-war Backeberg plant and those received from Prof. Cardenàs at the time of description as *W.pulquinensis* remain easily separable.

*W.neocumingii* ex-Backeberg is a short cylindrical plant with fairly stiff short radial and central spines and areoles that are oval and raised but not particularly well endowed with wool even when flowering. The flowers are quite short tubed and orange in colour -rarely are they pure yellow or white. *W.pulquinensis* on the other hand remains a globular to flattened cylindrical plant with a wider body than *W.neocumingii* with longer and thinner spines, and copiously woolly broad oval areoles. The flowers are normally bright yellow, occasionally orange-margined, with conspicuous green scales on the tube, while the original *neocumingii* has yellow-brown to occasionally crimson scales. The flowers of *W.pulquinensis* are usually longer and wider than those of *W.neocumingii*. A good article on *W.pulquinensis* by Karl Augustin is found in Kakt.u.a.Sukk. 27:5; 97/8, May 1976. From a cultural point of view both plants are quite separate entities. It is disappointing to find that the original type of *neocumingii* appears not to have been recollected or perhaps has gone unrecognised. One of the nearest to it that I have seen is the recently described *Weingartia trollii* Oeser (Kakt.u.a.Sukk. 29:6; 129-131, June 1978) collected near Tulma south west from Sucre City. Wolfgang Krahn also collected plants near here, which are even nearer in possessing the typical orange flower rather than the orange-scarlet of

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trollii. A habitat for *neocumingii* near Sucre is just as, if not more than, likely than near Cochabamba considering Thomas Bridges' travels.

The other distinctly '*cumingii*' type comes from Quiroga to Aiquile and Catarire between the Rio Mizque and Rio Grande from where Ritter described his *Weingartia erinacea* and its variety *catarirensis*.

The description of *W.erinacea* would certainly encompass that given by Backeberg for the Saim-Dyck plant now known as *Weingartia neocumingii* but with a rather more woolly crown, a hemispherical body even in age, green scales on the receptacle rather than red or orange-brown would appear to be the only differentia from *neocumingii*. The woolly crown and green receptacle scales suggest a tendency towards *W.pulquinensis*. Ritter's var. *catarirensis* is remarkably like *W.pulquinensis* even down to the much finer porrect spination of the latter. I would suggest that *W.erinacea* v. *catarirensis* Ritt. and *W.pulquinensis* v. *corroana* Card. (i.e. *W.corroana*) are identical and synonymous. Rausch has found an almost white flowered form of *W.erinacea*. Lau has also collected *W.erinacea* v. *catarirensis* Lau 983 east of Catirira and south of Perez. The plants found by Lau, Lau 958 near Mairana are particularly beautiful with their golden to brown spines, bright orange yellow flowers and crimson receptacle scales are closer to *W.pulquinensis* than to *W.neocumingii* although Lau distributed them under the latter name. Ritter's FR816 also is a beautiful plant with similar flowers, which show a remarkable convergence with Ritter's *Sulcorebutia glomeriseta* form Narenjito in Ayopaya Province some 250km west of Mairana but also to *Sulcorebutia krahni* Rausch from Tiraque some 150km west of Mairana. There is little doubt that these latter plants clearly form a link of *Sulcorebutia* with *Weingartia*. FR816 in body form and spination though is closer to his FR372 *W.multispina* from Aiquile which, in my opinion, represents a western extension of the *pulquinensis* forms. The flower of *multispina* is close to that of *pulquinensis* in colour, but the spines are far more numerous and of even length up to 12mm long and even coloured yellow or orange-brown, and evenly distributed; it is a good form. Ritter's FR370 seems to be the typical *W.pulquinensis* from the Saipina area. Ritter, Lau, Knize, Rausch and Van Vliet collected *Weingartias* north of Saipina around Comarapa FR811, Lau 342 (220m), KK833, WR278. All these Comarapa forms appear to be close to *W.corroana* Card., from Perez, i.e. yellow flowers with green scaled receptacles, somewhat fewer and stiffer spines, and quite distinct from the thin spined, red scaled receptacle form to the east around Mairana. *Weingartia hajekiana* Knize nom.nud. KK1156 appears to be the latter and similar to Lau 958 if not quite so beautiful, with a rather more untidy spine display, but the flowers are almost identical but with greenish rather than red scales. D. van Vliet also collected plants between Comarapa and Mairana that corresponds with KK1156. Brandt's *W.knizei* Frankf.Kakt.Frd. 4:6, Jan. 1977 is a synonym of these plants.

Ritter's FR953 *Weingartia sucrensis* also would appear closer to *W.neocumingii* than to *W.pulquinensis*, although the flowers of *W.sucrensis* are pure yellow not orange; the latter still shows little tendency to abundant areolar wool production. *W.sucrensis*, as distributed under the field numbers FR953, KK865, Lau 987, WR286, all collected near Cuesta del Desmeador (Cuesta de Meadro), shows little variation in its globular or applanate dark green body and numerous short stiff radial spines varying in colour from yellow, brown, red to black. FR954 *W.gracilispina* is not known to me. Abundant wool production is a characteristic of those *Weingartias* found south of the Rio Grande and north of Sucre City especially along the Rio Chico in Chuquisaca department, i.e. *W.lanata* Ritt., *W.longigibba* Ritt., *W.riograndensis* Ritt. Those north of the Rio Grande, i.e. *W.multispina* Ritt., *W.erinacea* Ritt., *W.pulquinensis* Card., *W.hajekiana* Knize nom.nud., *W.knizei* Brandt, and *W.sp.* FR816 show less wool but more than *W.neocumingii*. All these *Weingartias* produce several flowers from one areole.



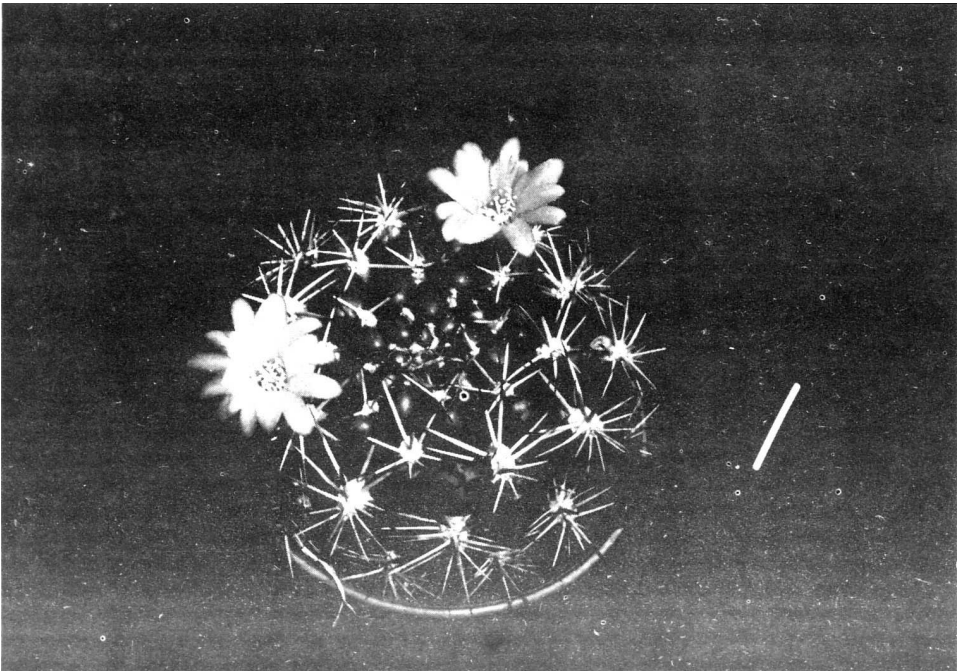
38. *Weingartia neocumingii* var. *corroana* (Card.) Back.  
(*W. erinacea* Ritt. FR812 original)

A similar population of very woolly *Weingartias* exists south of Sucre on the Rio Pilcomayo in the Department of Potosi in the area Millares, Otuyo, Sotormayor, Puente Pilcomayu, i.e. Cardenàs *W.pilcomayensis* and *W.platygona*. Just north of the Rio Pilcomayo and well south of Sucre lies Betanzos (Huari-Huari) from whence comes Backeberg's *Weingartia hediniana* although at the time of its description Backeberg did not appreciate this fact. *W.hediniana* has since been eagerly resought in the area south of Sucre and north of the Rio Pilcomayo leading to the discovery of the red flowered *W.trollii* Oeser mentioned above, FR817 by Ritter, and R292 by Walter Rausch, both the latter are claimed to be the true *W.hediniana*. Karl Augustin has written two excellent articles on the plants FR817 and R292 and draws a telling comparison with Ritter's *W.lanata* FR814 and Cardenàs' *W.platygona*. (Kakt.u.a.Sukk. 28.5; 120/121, May 1971 and 1.c. 29:8; 194/5, August 1978). Certainly I agree with him that these four plants FR817, R292, *W.lanata* and *W.platygona* have much in common, probably along with *W.longigibba* FR815 and *W.riograndensis* Ritt. FR813, and are probably all just phenotypes of a single widely distributed species. But are these plants the true *W.hediniana* Back? Are in fact FR817 and R292 really *W.hediniana*? I have some reservations. The original plants of *W.hediniana* Back. are still in the Backeberg collection at the Jardin Exotique. I had also examined it earlier with Curt Backeberg at Les Cedres. The plants there were short cylindrical in habit similar to *W.neocumingii* but with fewer and broader ribs with prominent chins, rather longer and comparatively larger areoles with substantial wool present giving a woollier crown than for *W.neocumingii* and fewer but even stronger curved radial and central spines. The flowers were a rich yellow in colour with reddish edged scales. The fruit was red. FR817 and R292 are more globular and wider in habit than *W.hediniana*, the areoles are more dense woolled and very similar in this respect to *W.lanata* and *W.platygona*, the flowers yellow with green scales. Nol Brederoo has looked at the seeds of both the original Backeberg form of *W.hediniana* and of FR817 / R292 and

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he finds them significantly different. There is a close relationship between FR817, R292, *W.pilcomayensis* and *W.platygona* but *W.hediniana* ex-Backeberg and also KK1308 with their distinctly different seed form are not part of the same population. The separations are sufficient to signify a true genetic isolation of each group, if not at specific level then certainly at subspecific level, but it is still my belief that the true *hediniana* belongs to the *neocumingii* group. Cardenàs' original variety of *W.pulquinensis* was raised by him to specific rank as *Weingartia corroana* (Card.)Card. (Cactus Fr. 82:49,1950). Here he states that Annibal Corro gave him incorrect details regarding the habitat, which should be Perez rather than Saipina, Florida Prov. in the Dept. of Santa Cruz. It is a short cylindrical phenotype of *W.pulquinensis* with identical flowers and not deserving of specific status.

In the article New Bolivian Cactaceae 14 (Cact. & Succ. J. Amer. 43:6; 244/5, Dec. 1971) Cardenàs describes a *Rebutia corroana* from Cuesta de Meadro 2720m Prov. Oropeza Dept. of Chuquisaca. This plant is in fact a *Weingartia* (not a *Sulcorebutia* as inadvertently transferred under my name in Succulenta 52:10; 192,1973). The plant has been found by Walter Rausch, who considers it to be the same as his R292. Knize has also found the same plant at Chuquichuqui KK866 which he has distributed confusingly as *W.hediniana* Back. Certainly KK866 corresponds to WR292 and in this sense agrees with the Rausch identification of *W.hediniana* but does not therefore in my opinion correspond to the true Backeberg *W.hediniana* of which KK1308 is the closest recollection I have observed.



39. *Weingartia neocumingii* var. *corroana* (Card.) Back.  
(*W. erinacea* v. *catarirensis* Ritt.) Lau 983

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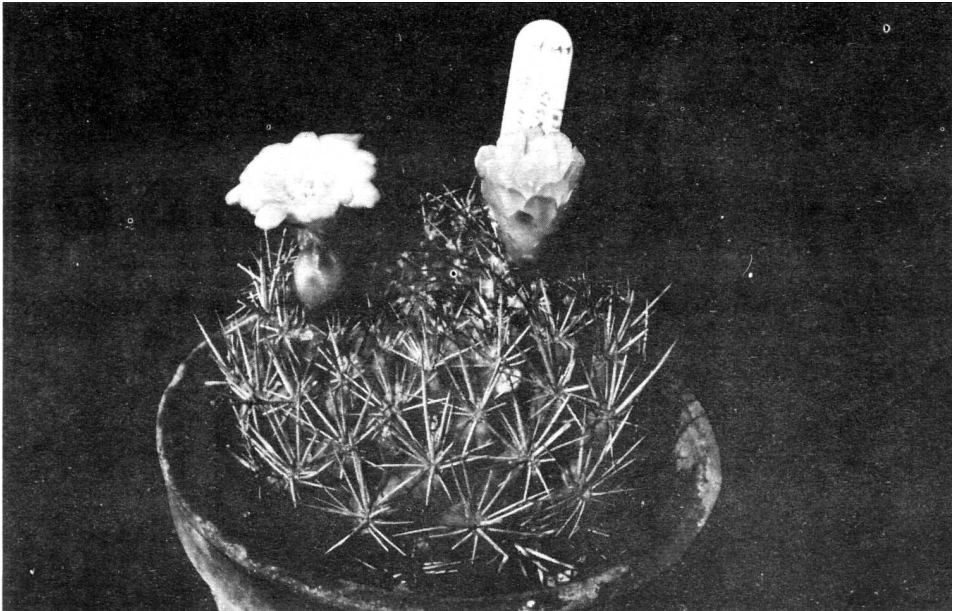
Cardenàs sent me plants as *Weingartia chuquichuquiensis*' nom.nud. before he published his *Rebutia corroana*. These plants from Cardenàs are very similar indeed to R292 and KK866. Lau also collected the same plant at Chuquichuqui, Lau 986, but identified it as *W.lanata* Ritt. The type locality given by Ritter for his FR814 and 371, *W.lanata* is indeed Chuquichuqui on the east bank of the Rio Chico north of Sucre. It would seem therefore logical to assume that '*W.hediniana*' WR292 and KK866, *Rebutia corroana* Card., *Weingartia chuquichuquiensis*' Card. are part of the same population as *W.lanata* Ritt. FR814 and FR371, WR468, and Lau 986 and all should be called *W. lanata* Ritt. *W.pilcomayensis* is probably very closely related to *W.lanata* but is not part of the population around Chuquichuqui, coming from Puente Pilcomayo on the Rio Pilcomayo due south of Sucre. A new combination *W.lanata* subsp. *pilcomayensis* (Card.) Don. would seem to be justified. The habitat of the true *W.hediniana* Back. lies south west of Sucre on the route to Potosi (not north of Sucre) by Betanzos and the plants must be related to *W.sucrensis* rather than to *W.lanata*.

Basionym *W.lanata* Ritt. Nat. Cact. & Succ. J. 16:1; 7/8, March 1961.

*W.pilcomayensis* Card, Cactus (Fr.) 82; 44/45, 1964.

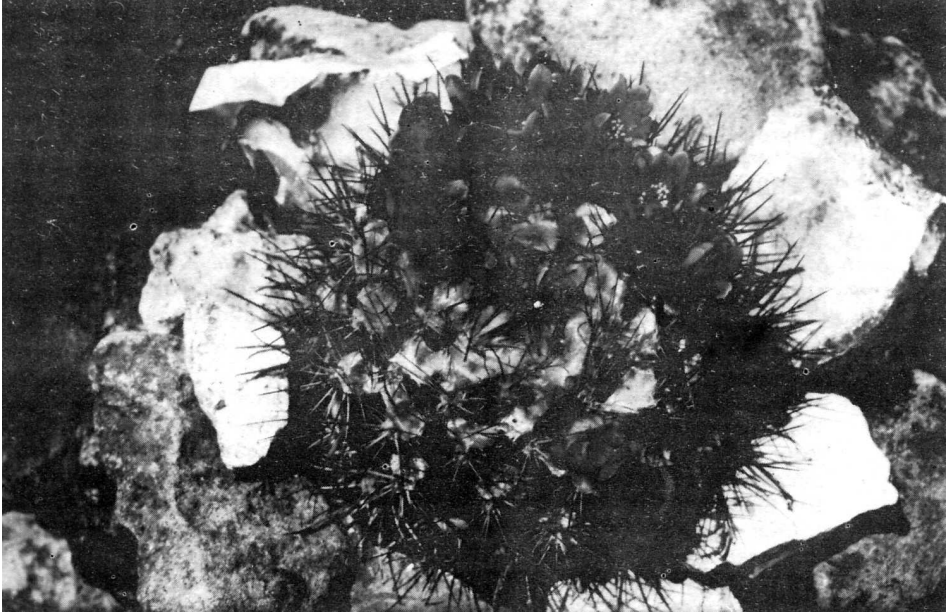
*Weingartia platygona* would appear to be an elongated phenotype of the *pilcomayensis* population only occurring by Millares a few kilometers from the habitat of the latter. If exact synonymity is not deserved then only the former category should be involved as *Weingartia lanata* subsp. *pilcomayensis forma platygona* (Card.) Don.Comb.nov.

Basionym *W.platygona* Card, Cactus (Fr.) 82; 50/51, 1964.



40. *Weingartia neocumingii* subsp. *sucrensis* (Ritt.) Don.  
(*W. sucrensis* Ritt. ex Cardenas)

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42. *Weingartia lanata* subsp. *piliomayensis* (Card.) Don.



43. *Weingartia lanata* subsp. *riograndensis* (Ritt.) Don.  
plant ex Cardenas

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44. *Weingartia chuquichuquiensis* Cárđ. nom. nud. plant ex Cardenas  
= *R. corroana* Cárđ.



45. FR817 *Weingartia lanata* Ritt.

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Ritter's *Weingartia longigibba* FR815 and *Weingartia riograndensis* FR813 are closely related plants in themselves and to *W.lanata* FR814. The two former would appear again to be a northern extension of the Chuquichuqui population on the Rio Chico to its conjunction with the Rio Grande at Puente Arce. *W.riograndensis* occurs around Puente Arce, *W.longigibba* somewhat further south on the Rio Chico in a sandstone area with the *lanata* populations at Chuquichuqui roughly half way to Sucre City from Puente Arce. Culturally all three are easily distinguished by their rib and tubercle formation. As the name suggests *W.longigibba* has the largest and most pronounced tubercles and fewest ribs. *W.riograndensis* has less prominent but as large tubercles and rather more ribs, whilst *W.lanata* has generally more ribs and again less pronounced smaller tubercles. It produces rather more wool than the other two species on the flowering areoles and crown. *W.longigibba* in age becomes elongated rather like *W.platygonia*, while the other two remain globular or even applanate. All form basal offsets, by *W.riograndensis* in abundance, less for *W.longigibba* and *W.lanata*. Both should be considered as subspecies of *W.lanata*. *W.lanata* subsp. *longigibba* (Ritt.) Don. nov. comb. *W.lanata* subsp. *riograndensis* (Ritt.) Don. nov. comb. Basionym *W.lanata* Ritt. loc. cit. supra. *W.longigibba* Ritt. Cact. & Succ. J. Gt. Brit. 23:1,8,1961. *W.riograndensis* Ritt. Cact. & Succ. J. Gt. Brit. 23:1; 10/11, 1961.

Credit is due to Curt Backeberg in first pointing out the need to rationalise the *Weingartia* species in view of the wide phenotypic variations in the known populations, but he only echoes the comments of the original authors who say their species are closely related and then proceed to describe them all as new species ! Backeberg did not take the opportunity to effect any rationalisation. (The Cactus Lexicon: 508, 1978).

Cardenàs also described a *Weingartia* species from Vilcaya *W.vilcayensis*. Vilcaya lies between Cuchu Ingenio and Lecori in the Dept. of Potosi, Bolivia, some 60km as the crow flies south west of Otuyo, the last outpost of the *lanata* / *pilcomayensis* populations. In this area an entirely new species population is found based upon *W.westii* (Hutch.) Don. and *W.lecoriensis* Card. *W.vilcayensis* could reasonably have been expected to belong to this population. The plant does not appear to be in cultivation and has certainly not been collected by either Rausch, Lau nor Knize, who have been active in this area. *W.westii* and *W.lecoriensis* have on the other hand been recollected on several occasions and the plants are well known. They appear to have most affinities with the *fidaiana* group from Tupiza but do share several characteristics with the northern *neocumingii* and *lanata* groups, particularly the appearance of the flower from the shoulders of the plant as well as from the apex. Apical flowering only is typical of the plants from Tupiza and N. Cinti. In appearance *W.westii* and *W.lecoriensis* are similar in spination and rib form but differ completely in habit. *W.westii* is usually short cylindrical to quite cylindrical with a well developed taproot, while *W.lecoriensis* is usually applanate and grows to a much greater diameter than *westii* but with a more fusiform root system with a less well developed main tap root. Their flowers, fruits and seeds are virtually identical, so it would seem that they are extreme phenotypes of the same species population - however little genetic exchange appears possible now, as no intermediate populations are known except those of *W.vilcayensis*. The latter is totally different from the other two species - it is applanate like *W.lecoriensis*, but has a dense adpressed spination that is interwoven and quite hides the plant body according to Cardenàs. In *W.lecoriensis* the thin spines are porrect and do not hide the plant body but still interlace. In *W.westii* the areoles are further apart and the total spine count fewer than either the other two species so the plant has a far less spiny appearance. Cardenàs reports that the flowers of *W.lecoriensis* are zygomorphic, but I have not found this to be so in cultivation. The areoles of this group are less oval and elongated than those of the two northern groups.



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Cardenàs suggests that *W.vilcayensis* is remarkable for its long flowers- the longest of the genus 50-60mm and this certainly exceeds those of *westii lecoriensis* and *fidaiana*. The relatively small area in which these three species is found suggests to me that they have a common origin and should be treated as a single species, *W.westii*, with two isolated phenotypes of varietal status. R82, KK498, Cuchu Ingenio (*westii*), KK741 and Lau 915, Lecori (*lecoriensis*) show no variation amongst themselves.

The plants around Tupiza are in many respects quite distinct from the northern group of *Weingartias*, but they include the type species of the genus, *W.fidaiana*. They are characterised by their cylindrical habit, their relatively few ribs of very prominent tubercles, the round and raised areoles without much tomentum and bunched porrect or just porrect stiff, subulate awl-like (bodkin) spines up to 70mm long and producing flowers only from the youngest areoles in the apex. They are variable in spine colour but the epidermis remains a bright or grey-green to glaucous. Two distinct populations are known, *W.fidaiana* Back. around Tupiza and *W.cintiensis* Card. from N. Cinti in the Dept. of Chuquisaca, but they are clearly related. The N. Cinti populations have less straight but shorter spines often quite strongly curved with almost blue-white bodies that become green in cultivation. The flowers of the two populations are very similar, golden yellow, wide funnel form with very broad finger nail-like scales on the receptacles. A single species based upon *W.fidaiana* would seem reasonable with *W.cintiensis* reduced to varietal status. R212; KK1028: KK484 and Lau 908 all from Tupiza show the species to be slightly variable in spine length, number and colour, and KK722 S. Cinti at 2800m (*cintiensis*) and Lau 916 from S. Pecho, S. Cinti, R77 S. Cinti show a similar variation in the *W.cintiensis* populations.



34. *Weingartia fidaiana* subsp. *cintiensis* (Card.) Don.

Lau 916

Friedrich Ritter collected a small bright green *Weingartia* with yellow subulate besom like spines and bright yellow flowers from the plant apex, FR1102, which he proposes to call *W.pygmaea* may also belong to the *fidaiana* group.

To the north of Tupiza in the Pampa Mochara at 3500m, Rausch collected a beautiful dark bronze coloured *Weingartia* with relatively few black porrect spines and golden yellow flowers. At first sight it appeared to be a new population of *W.neumanniana* which normally occurs much further south across the border in Argentina on the Quebrada de Humahuaca in Jujuy Province. This plant though only superficially resembles *W.neumanniana* and I accept Rausch's specific rank for it. *W.neumanniana* itself is the most southerly of all *Weingartias* and occurs only on the Quebrada de Humahuaca in Jujuy Province and appears quite isolated from all other *Weingartia* populations. It is also the most *Gymnocalycium*-like in plant body. The body above ground is almost globular to rarely cylindrical, deeply bronzed mauve-green. It is separated from its enormous swollen root by a very narrow neck (not a unique feature as it is found amongst odd species in other widely separated genera). The plant body has relatively few ribs with low tubercles separated from each other by transverse grooves or ridges across the rib. The areoles, from which spring 4-6 black needle-like radial spines and 0-2 rather similar longer central spines, are quite round. The flowers arise from the apex only and are usually orange in colour, rarely yellow and occasionally much deeper in colour to deep orange or crimson especially the outer segments. Various forms were collected by Ritter under the numbers FR50, 50a, 50b, 50c and one of these FR50b was given varietal status by Backeberg as *W.neumanniana* v. *aurantia*. It is only a phenotype and does not appear to be isolated so should lapse into synonymy with the species. The plants collected by Lau at 3400m Lau 436 seem generally more cylindrical in body form than FR50 and WR42.

F. Brandt's *Weingartia brachygraphisa* described in the Danish Cactus Club's Journal Kaktus is an error of judgement in specific conception. It is not a bona fide species, it has not been identified in the wild and is only a cultivar of the long cultivated *Weingartia neocumingii* Back. The differences in spine length and seed characters from the latter are trivial and well within any normal expected phenotypic variation that is bound to arise over a long period of cultivation and successive propagation from 'home-produced' seed. The plant has been long known as *Weingartia neocumingii* v. *brevispina* hort. Despite Brandt's statement there is no authority for the habitat quoted as Prov. Florida, Dept. Santa Cruz, Bolivia. The name is best forgotten in synonymy.

The genus *Neowerdermannia* Fric I do not consider part of *Weingartia* Werd. and I do not propose to discuss the published species proper to the former genus in this paper.



41. *Weingartia pygmaea* Ritt. nom. nud. FR1102

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36. *Weingartia westii* (Hutch.) Don.

UCBG 36.1751



35. *Weingartia westii* var. *lecoriensis* (Card.) Don.

KK741

**Rationalisation of the species**

The *neocumingii* group:

- 1.1 *Weingartia neocumingii* Back.  
 Kakt. u.a. Sukk. 1:2; 2, 1950  
 Syn. *Echinocactus cumingii* Salm-Dyck non Hopffer Cact. Hort. Dyck. Cult. 1849;174,1850  
*Echinocactus cumingii* v. *flavispinus* (Poselg.) Monats. Kakt. 14; 77, 1904  
*Lobivia cumingii* Britt. & Rose, The Cactaceae 3:59, 1922  
*Oroya cumingii* (S-D) Kreuz Kerzeichnis usw. 39, 1935  
*Gymnantha cumingii* (S-D) Ito Explan. Diag. 53, 1957  
*Gymnocalycium neocumingii* (Back.) Hutch. Cact. & Succ. J. Amer. 29: 1; 14, 1957  
*Weingartia brachygraphisa* Brandt. Kaktus (Dan.)  
*Spegazzinia cumingii* (Britt. & Rose) Sack. illeg. comb. Blätt.f.Kaktf. 1935-12  
*Spagazzinia cumingii* v. *flavescens* (Poselg.) Back. Blätt f. Kaktf. 1935-12  
*Bridgesia cumingii* Back. nom.nud. Blätt.f.Kaktf. 1934-3
- 1.2 *Weingartia neocumingii* subsp. *pulquinensis* (Card.) Don. comb. nov.  
 Basionym *Weingartia pulquinensis* Card. Revista de Agricult. Cochabamba 6: 5-7, 1951  
 Synonym *Gymnocalycium pulquinensis* (Card.) Hutch. Cact. & Succ. J. Amer. 29:1, 13, 1957  
*Weingartia knizei* Brandt. Frankf.Kakt.Frd. 4:6, Jan. 1977. J. Amer. 29:1, 13, 1957  
 leg. Card. 4571; FR370; R61.
- 1.2.2 *Weingartia neocumingii* subsp. *pulquinensis* var. *corroana* (Card.) Back.  
 Die Cactaceae 3: 1792, 1957  
 Syn. *Weingartia pulquinensis* var. *corroanus* Card. (Sic !!)  
 Revista de Agricult. Cochabamba 6:30, 1951  
*Gymnocalycium pulquinensis* var. *corroanum* (Card.) Hutch.  
 J. Cact. & Succ. Amer. 29:1: 13, 1957  
*Weingartia corroanus* (Card.) Card. (Sic !)  
 Cactus (Fr.) 82:49, 1964  
*Weingartia erinacea* Ritt. FR812, Cact. & Succ. J. Gt. Brit. 23:1; 8-10, 1961  
*Weingartia erinacea* v. *catariensis* Ritt. FR812A  
 Cact. & Succ. J. Gt. Brit. 23: 1; 10, 1961  
 leg. FR811; Lau 342; Lau 983; KK833; Card. 4572; KK1201; KK714.
- 1.2.3 *Weingartia neocumingii* subsp. *pulquinensis* var. *multispina* (Ritt.) Don. comb. nov.  
 Basionym *Weingartia multispina* Ritt. FR372  
 Nat. Cact. & Succ. J. 16: 1; 7, March 1961  
 leg. KK1200.

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1.2.4 *Weingartia neocumingii* subsp. *pulquinensis* var. *mairanensis* Don. var. nov. *Weingartia neocumingii* Back. var. *mairanensis* Donald var. nov. Differt a subspecie *pulquinensis* (Card.) Don. pro spinis paucioribus habentis, aurantiacis vel fulvis colorantis et habito brevicylindriciore. Flores aurei fulgentes squamis coccineis in receptaculo et pericarpello sunt. Inventa A. Lau. Habitat, Mairana versa Camarapa, Dept. Santa Cruz, Bolivia a 1600m. Typus in Herbario HEI sub numero Lau 958. Cotypus in Herbario K sub numero Lau 958. *Weingartia* FR816 was illustrated in colour on the front cover of *Ashingtonia* Vol. 1, No. 1, July 1973.

'Differs from the subspecies in its fewer spines, which are orange to brown in colour; its more short cylindrical habit; its bright golden yellow flowers with crimson scales on the receptacle and pericarp and its isolated habitat at Mairana, Prov, Florida, Dept. Santa Cruz, Bolivia at 1 600m.

Type Lau 958 deposited in the Herbarium at the Institute of Systematic Botany, Heidelberg HE1

"*Weingartia hajekiana*" Knize nom. nud. KK1186 from Mairana and also *Weingartia* sp. FR816 are probably synonymous with the var. *mairanensis*.

1.3 *Weingartia neocumingii* subsp. *sucrensis* (Ritt.) Don.  
Basionym *Weingartia sucrensis* Ritt. FR953  
Nat. Cact. & Succ. J. 16: 1; 8, March 1961  
leg. KK 1050; Lau 987; WR286.

1.3.2 *Weingartia neocumingii* subsp. *sucrensis* var. *trollii* (Oeser) Don. comb. nov.  
Basionym *Weingartia trollii* Deser  
Kakt. u.a. Sukk. 29:6; 129-131, June 1978

1.3.3 *Weingartia neocumingii* subsp. *sucrensis* var. *hediniana* (Back.) Don.  
Nat. Cact. & Succ. J. 13:3; 56, Sept. 1958  
Syn. *Weingartia hediniiana* Back. sensu Back.  
Kakt. u.a. Sukk. 1:2:2, Jan. 1950  
leg. KK1308.

The *lanata* group:

2.1 *Weingartia lanata* Ritt. FR814/371  
Nat. Cact. & Succ. J. 16: 1; 7-8, March 1961  
Syn. *Weingartia corroana* Card.  
Cact. & Succ. J. Amer. 43:6; 244/5, Dec. 1971  
*Weingartia chuquichuquinensis* Card. nom. nud.  
*Weingartia hediniiana*' Sensu Rausch WR292  
*Weingartia hediniiana*' Sensu Ritter FR817  
leg. also WR468; Lau 986; KK866.

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- 2.2 *Weingartia lanata* subsp. *riograndensis* (Ritt.) Don. comb.nov.  
Basionym *Weingartia riograndensis* Ritt. FR813  
Cact. & Succ. J. Gt. Brit. 23:1; 10/11, Feb. 1961  
leg. KK507; KK766; WR467.
- 2.3 *Weingartia lanwa* subsp. *longigibba* (Ritt.) Don. comb. nov.  
Basionym *Weingartia longigibba* Ritt. FR815  
Cact. & Succ. J. Gt. Brit. 23: 1; 8, Feb. 1961  
leg. Lau 985; KK867.
- 2.4 *Weingartia lanata* subsp. *pilcomayensis* (Card.) Don. comb. nov.  
Basionym *Weingartia pilcomayensis* Card. Card. 6128  
Cactus (Fr.) 82: 44/45, 1964  
leg. KK829; Lau 991.
- 2.4.1 *Weingartia lanata* subsp. *pilcomayensis* forma *platygona* (Card.) Don. comb. nov.  
Basionym *Weingartia platygona* Card. Card. 6131  
Cactus (Fr.) 82: 50/51, 1964  
leg. KK1202.
- The *westii* group:
- 3.1 *Weingartia westii* (Hutch.) Don.  
Nat. Cact. & Succ. J. 13:67, 1958  
Syn. *Gymnocalycium westii* Hutch. UCBG 36.1751  
Cact. & Succ. J. Amer. 29:1; 11-14, Jan/Feb. 1957  
leg. KK498; WR82. West 6367
- 3.1.2 *Weingartia westii* var. *lecoriensis* (Card.) Don. nov. comb.  
Basionym *Weingartia lecoriensis* Card. Card. 6130  
Cactus 19:82; 47-48, 1964  
leg. KK741; Lau 915.
- 3.1.3 *Weingartia westii* var. *vilcayensis* (Card.) Don. nov. comb.  
Basionym *Weingartia vilcayensis* Card. Card. 6129  
Cactus 19:82; 46-47, 1964  
leg. unknown.
- The *fidaiana* group:
- 4.1 *Weingartia fidaiana* (Back.) Werd.  
Kakt. kde. 2:21; 1937  
Syn. *Echinocactus fidaianus* Back.  
Kakt. freund 2:117, 1933  
*Spegazzinia fidaiana* (Back.) Back. illeg. nom.  
Blätt.f.Kaktf. 1934-4  
*Gymnocalycium fidaianum* (Back.) Hutch.  
Cact. & Succ. J. Amer. 29: 11, 1957  
leg. WR212; KK484 and 1028; Lau 908.

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- 4.2 *Weingartia fidaiana* subsp. *cintiensis* (Card.) Don. comb. nov.  
 Basionym *Weingartia cintiensis* (Card.)  
 Revista de Agricultura, Cochabamba 10, 9-10, 1958  
 Synonym *Gymnocalycium cintiensis* (Card.) Hutch  
 Nat. Cact. & Succ. J. 14:2; 38, 1959  
 leg. WR77; KK722; Lau 916.
- 5.1 *Weingartia kargliana* Rausch WR677  
 Kakt. u.a. Sukk. 30:5; 105/6, May 1979
- 6.1 *Weingartia neumanniana* (Back.) Werd.  
 Kakt.kde. 2:21, 1937  
 Syn *Echinocactus neumannianus* Back.  
 Kakt.freund 2: 90-21, 1933  
*Spegazzinia neumanniana* (Back.) Back. nom.illeg.  
 Blätt. Kaktf. 1935-12 (L. Diagnosis Kakt. ABC, 1935)  
*Gymnocalycium neumannianum* (Back.) Hutch.  
 Cact. & Succ. J. Amer. 29: 11, 1957  
*Weingartia neumanniana* var. *aurantia* Back. nom.sub.nud.  
 Descr. Cact. Nov. 3:15, Dec. 1963. FR50B  
 leg. FR50, FR50a, FR50b, FR50c; Lau 436; WR42

The following illustrations, appropriate to this review of the Genus *Weingartia* Werd., have already been published in previous issues of *Ashingtonia*.

<i>Weingartia</i> sp FR 816		Ash. 1:1; 1 (Front Cover), July 1973
<i>Weingartia purpurea</i> Don.	Lau 322	Ash. 1: 1; 6, July 1973
<i>Weingartia purpurea</i> Don.	Lau 336	Ash. 1:5; 55, Mar. 1974
<i>Weingartia torotorensis</i> Card.	Lau 327	Ash. 1: 1; 6, July 1973
<i>Sulcorehutia cylindrica</i> Don.	Lau 335	Ash. 1:5; 56, Mar. 1974
<i>Weingartia fidaiana</i> (Back.) Werd.	Lau 908	Ash. 3:3/4; Pl.27, Aug. 1978
<i>Weingartia neumanniana</i> (Back.) Werd	Lau 436	Ash. 3:3/4; Pl.28, Aug. 1978

The latter two photographs had been intended for this current issue but were inadvertently bound into the last issue. Ed.

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1. *Weingartia neocumingii* Back.



2. *Weingartia neocumingii* subsp. *pulquinensis* (Card.) Don.



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3. *Weingartia neocumingii* var. *mairanensis* Don.



4. *Weingartia neocumingii* var. *hediniana* ( Back.) Don.

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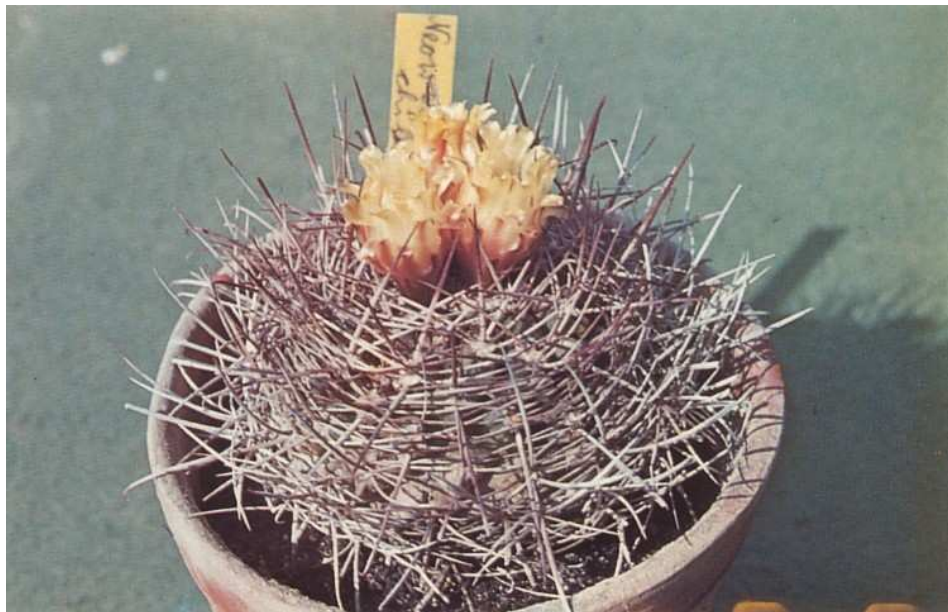


5. *Weingartia lanata* Ritt. FR814



6. *Weingartia lanata* subsp. *longigibba* (Ritt.) Don. Lau 985

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7. *Neowerdermannia chilensis* Back. FR199 (atypical cream coloured flower)

# ASHINGTONIA

## Credits

### Colour *photographs*

- |    |  |              |
|----|--|--------------|
| 1. | Weingartia neocumingii                     | J. D. Donald |
| 2. | Weingartia neocumingii subsp. pulquinensis |              |
| 3. | Weingartia neocumingii var. mairanensis    |              |
| 4. | Weingartia neocumingii var. hediniana      |              |
| 5. | Weingartia lanata subsp. longigibba FR985  |              |
| 6. | Weingartia lanata FR814                    |              |
| 7. | Neowerdermannia chilensis FR199            |              |

### Half tone *studies*

- |     |  |              |
|-----|--|--------------|
| 34. | Weingartia fidaiana subsp. cintiensis Lau 916                            | J. D. Donald |
| 35. | Weingartia westii var. lecoriensis KK741                                 |              |
| 36. | Weingartia westii UCBG 36.1751   |              |
| 38. | Weingartia erinacea FR812  |              |
| 39. | Weingartia erinacea v. catarirensis Lau 983                              |              |
| 40. | Weingartia sucrensis ex Card.  |              |
| 41. | Weingartia pygmaea nom. nud. FR1 102                                     |              |
| 42. | Weingartia lanata subsp. pilcomayensis Lau 991                           |              |
| 43. | Weingartia lanata subsp. riograndensis ex Card.                          |              |
| 44. | Weingartia chuquichuquiensis nom. nud, Card.<br>(Rebutia corroana Card.) |              |
| 45. | Weingartia lanata FR817  |              |
- 

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