

The Cactician



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Curt Backeberg: A history and evaluation of his work on cacti

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Summary

The life and work of Max Ferdinand Heinrich Curt BACKEBERG (1894-1966) is presented.

b. Lüneburg, 45 km SE of Hamburg, 2 Aug 1894; d. Volksdorf, Hamburg, c.15km NE of the city centre, 14 Jan 1966.

In common with many other cactus specialists of his time, his very characteristic style caused him to be regarded with both admiration and revulsion in almost equal measure. Nevertheless, his unique legacy was a body of work that was energetic and informative, and as a student and classifier of cacti he dominated the popular press on the subject for almost forty years until his sudden death in 1966, just when he was about to witness the publication and reap the rewards of what proved to be his most popular work.

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Photography by Backeberg except where stated.

No new names are proposed in this paper, but note that the correct name for *Haageocereus pacalaensis* is *H. tapacalaensis* (see p. 34).

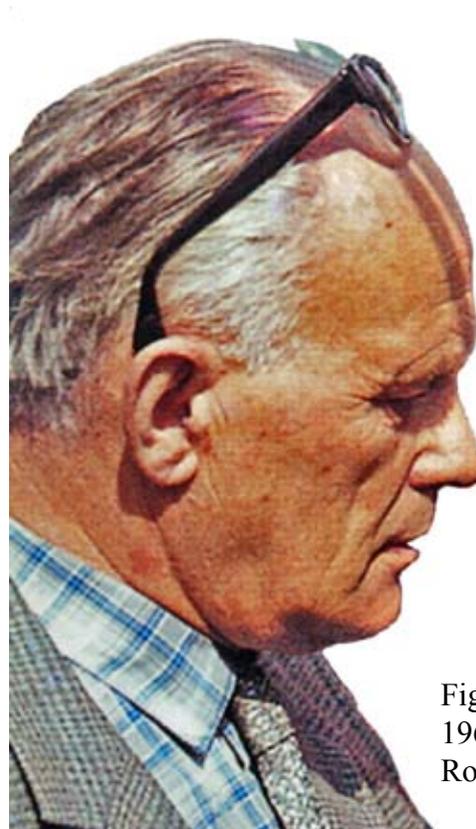


Fig. 1 Portrait in 1965 by Gordon Rowley

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Curt Backeberg: A history and evaluation of his work on cacti

“The advantage of photo-type-material is: It cannot be lost by any accident, because it is printed in a great number of issues. It is easily available all over the world, shows the living plant and is much more than dead material.”

Backeberg to Pitcher, pers. comm. 2 Aug 1965.

The above quotation epitomises the problem that Backeberg had with the world of professional botany. Botanists have a tradition of working with preserved specimens, with illustration providing what is perceived as a relatively minor backup role. This is a legacy of a time when specimens were the only sensible means of permanently recording the features of plants before illustration became dominated by skilful accurate portrayal by professional artists, and later by precision photography.

Photography was a powerful influence on Backeberg, and his home country of Germany was a market leader in developing this new technology. Many have accused him of not preserving specimens, but that was not completely true. He was well tutored in the techniques, especially by Erich Werdermann working in Berlin, and it was at Berlin that his specimens were unfortunately located. The complete loss of these during WW2 caused Backeberg to consider such preservation as being much too ephemeral compared with the printed image that had no chance of ever being damaged or lost.

He would have been even more delighted today to see the rise of digital photography, and the means of communicating words and images instantaneously around the globe. The science of botany has been slow to realise the importance and potential of these new tools, and the need to now re-evaluate how visual data should be used as a means of scientific recording.

Backeberg had been absolutely correct in his logic, but, being ahead of his time, he was dismissed by the old specimen-based botanists as merely an interfering amateur.

Backeberg has also often been erroneously accused of ignoring the provisions of the Codes of Nomenclature (*ICN*). The third edition of the *Code* where the rule was introduced requiring a Latin description appeared in Mar 1935, just when his seminal work, coauthored with F. M. Knuth, *Kaktus-ABC* was nearing publication (Fig. 2). As soon as he became aware of the new rule, he set about adding an Appendix of Latin descriptions which delayed publication by some 6 weeks.

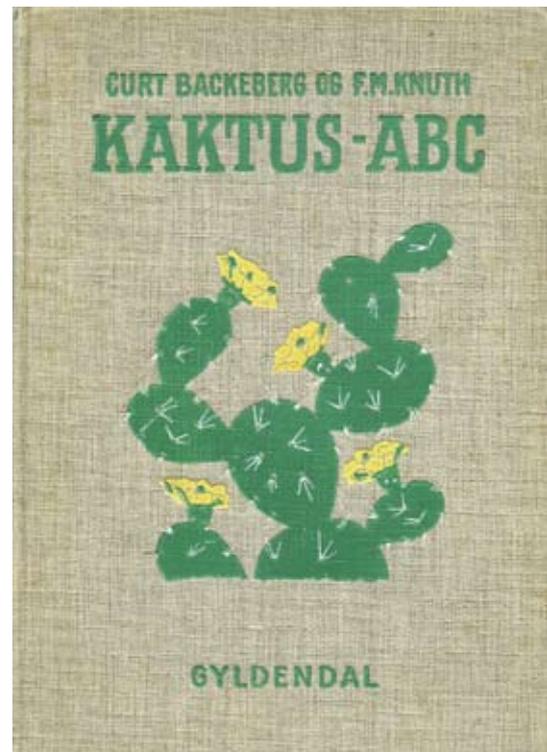


Fig. 2 *Kaktus-ABC* dated 31 Dec 1935 but publication was delayed by changes to the Code until 12 Feb 1936.

His major work, *Die Cactaceae* (1958-1962) (Fig. 3), was published too late to allow for the provisions of the *ICBN* based on the 1959 Congress, not published until 1961. He was therefore unable to comply with the article which insisted on the nomination of a type specimen or illustration in the protologue.

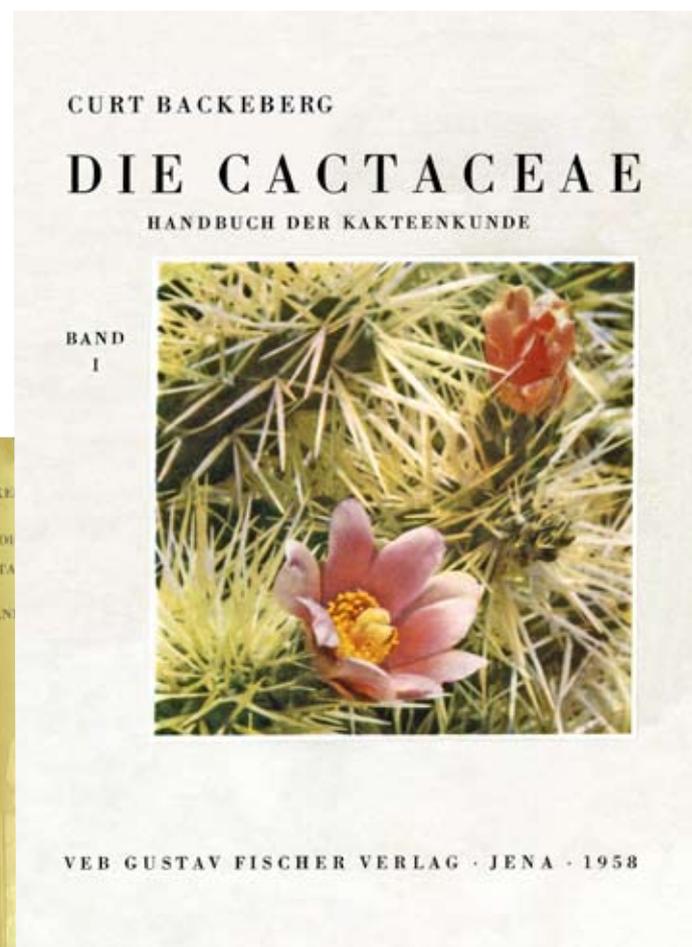
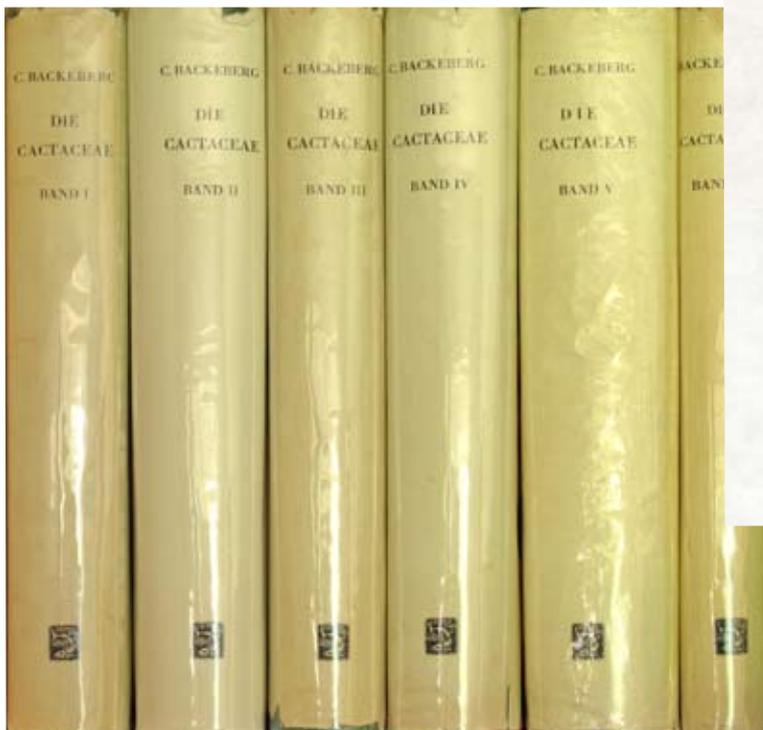


Fig. 3 *Die Cactaceae* (1958-62). A new edition of the *Code of Nomenclature* was not published until 1961, too late to be acted upon in this work.

In his final publication, *Das Kakteenlexikon* (1966) (Fig. 4), all the new names published in *Die Cactaceae* were validated by reference to his earlier Latin diagnoses, and the citation of a single illustration. So that work is the place of validation for all of his new taxa published after 1958 (Fig. 5).

Resurrecting old prejudices, the goal-posts were once again moved by the editors of the 2000 *St. Louis Code*, invalidating all new names published since 1958 based on an illustration as a type, a mistake fortunately rescinded again in the 2006 *Vienna Code* and subsequently. Today all of Backeberg's names, with very few exceptions, are validly published in accordance with the current edition of the rules of nomenclature.

Fig. 4 *Das Kakteenlexikon* (1966). Includes validations of earlier names.

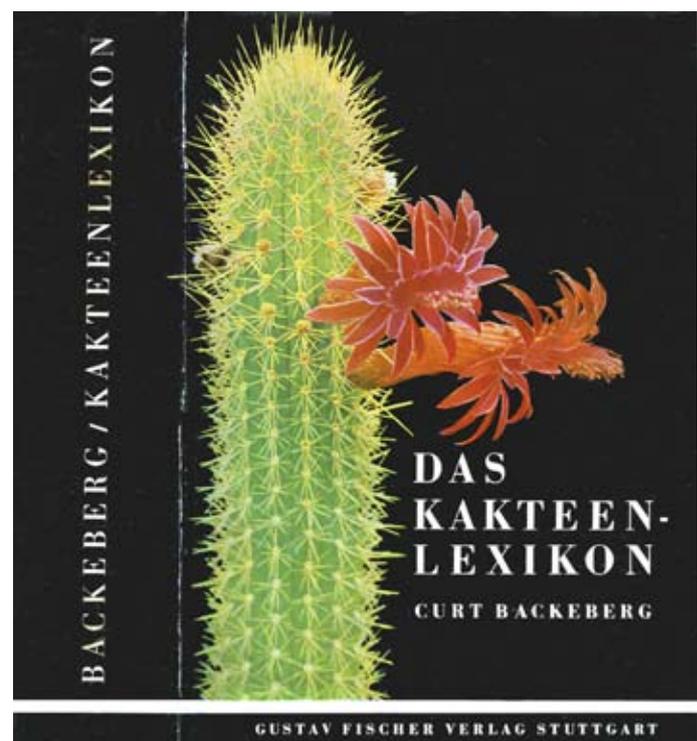


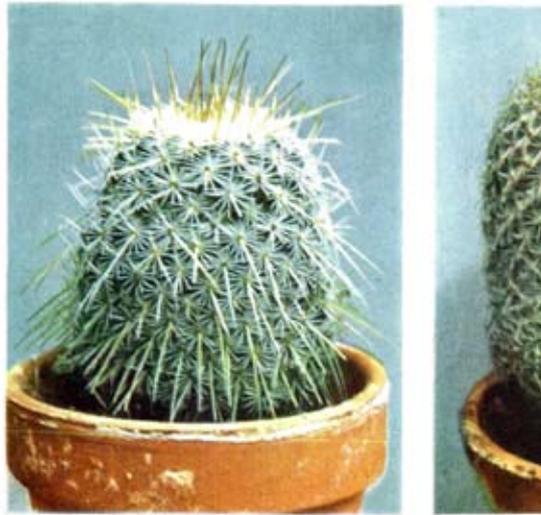
Abb. 212 *Mamillaria dixanthocentron* BACKBG. (links) und *M. flavicentra* BACKBG. (rechts).

Fig. 5 *Mammillaria dixanthocentron*: an example of a species validated in *Das Kakteenlexikon*. References to the Latin description and type are highlighted in pink.

6 (—8), 1 cm und mehr lg., Farbe variabel von hell bis gelb und schwarz oder dunkelspitzig, \pm gebogen; **Bl.** 2 cm lg., 1,6 cm \varnothing , weiß mit rosa Mittelinie; **Fr.** rötlich-bräunlich, 2,5 cm lg.; **S.** braun. — Mexiko (Puebla).

***Mamillaria dixanthocentron* BACKBG. (1 : 2) — Descr. Cact. Nov. III: 8. 1963.**

K. säulig, einzeln, grün, bis 20 cm h., ca. 7 (—8) cm \varnothing ; **W.** konisch, ca. 6 mm lg., Saft halb-milchig; **Bz.** 13:21; **Ax.** kraus grauwoilig; **Ar.** nur anfangs schwach bräunlich-weiß-filzig; **Rst.** ca. 19—20, dünnfriemlich, 2—4 mm lg., weiß; **Mst.** 2 (—4), untereinander bzw. im Kreuz, der obere aufrecht, ca. 5 mm lg., der untere vorstehend-abwärts geneigt, bis ca. 1,5 cm lg., beide zuerst hellgelb, dann hornfarben oder weißlich, mit hornfarbener Spitze; **Bl.** hellrot; **Fr.** 2 cm lg., schlank, unten gelb, oben orange. — Mexiko (Arroyo Verde, ca. 30 km südlich des Standorts von *M. buchenauii*). (Abb. 212 links.) Der halbmilchige Saft steht unter stärkerer Spannung und tritt bei Anstechen schnell und reichlich hervor; ich sah sogar einen bis ca. 3 cm lg. Strahl hervorspritzen. Der Saft ist schwach klebrig und erhärtet nur sehr langsam.

The formative years

Born in Lüneburg to the clerk Johann Heinrich Wilhelm Backeberg and Elise Klara Hedwig Bartel, it is not recorded if Backeberg had any siblings. Attended high school in Lüneburg, leaving in 1912 at the age of 19 with a good working knowledge of history and geography, and groundings in English, Latin, German, physics, etc.

He was also fiercely proud of his roots and lived within the environs of the city of Hamburg for the whole of his life.

When he left school, he set out on a business career, first becoming apprenticed to a Japanese export business in 1912.

The outbreak of war in Europe in 1914 saw him participating in engagements at Verdun and in Ukraine, but having been wounded he was then sent to assist in the restoration of East Prussia until the end of the war in 1918.

Using the business experience gained before the war, he tried to establish his own exporting business to Central and South America in 1919. That proved to be unsuccessful, so he then became a salesman to various companies over the next five years. Finally he became the manager of a Japanese export business from 1925 to 1927, which would have given him plenty of opportunity to practice his language skills.

In 1927, he sought to turn a hobby into a business by starting his own cactus nursery in central Hamburg (Fig. 6). This was also the year in which he made his first contact with fellow nurseryman Walter Haage, at a time when Haage happened to be visiting Hamburg together with that other well known cactus nurseryman and adventurer Alberto Frič. Later he also visited Frič at his nursery in Prague several times.

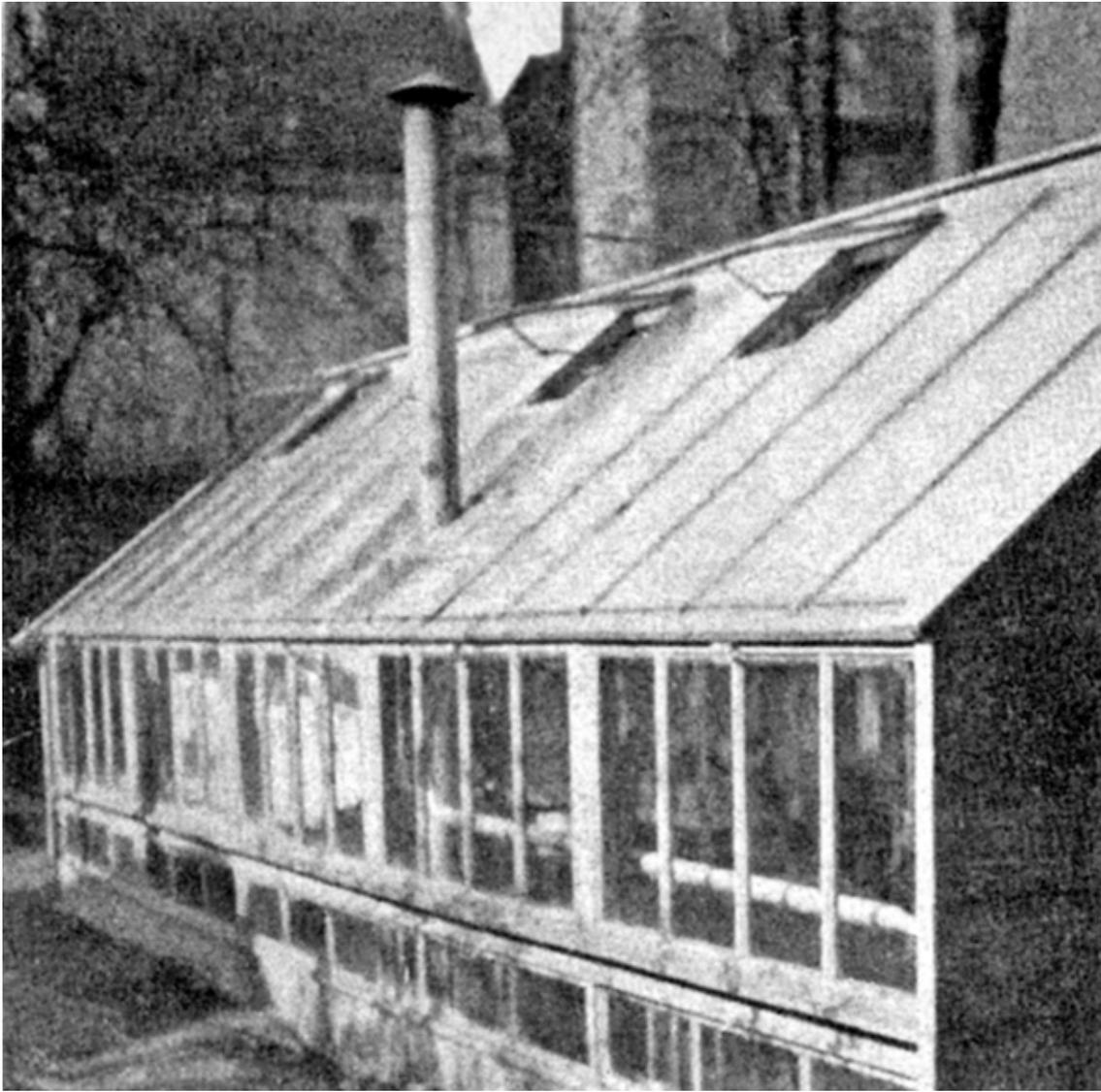
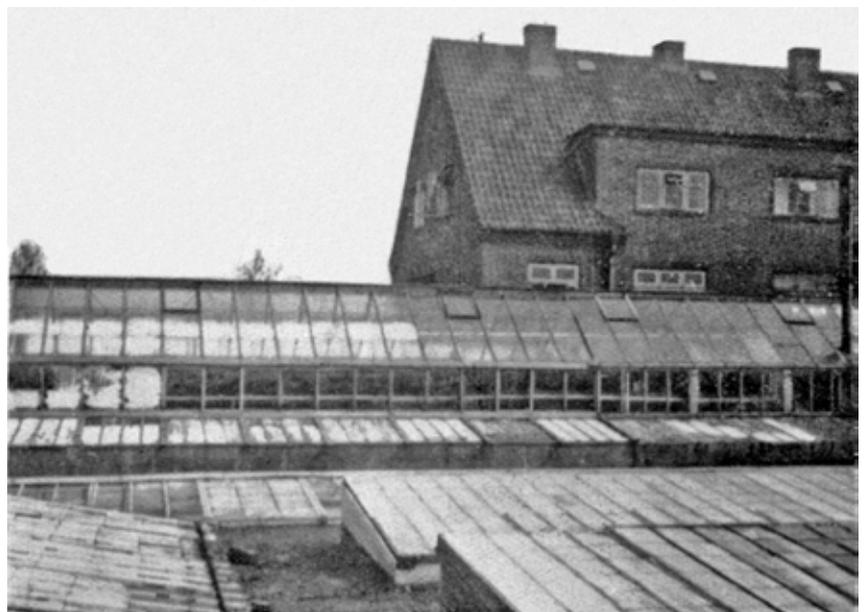


Fig. 6
Backeberg's first
glasshouse in
central Hamburg
in 1927.

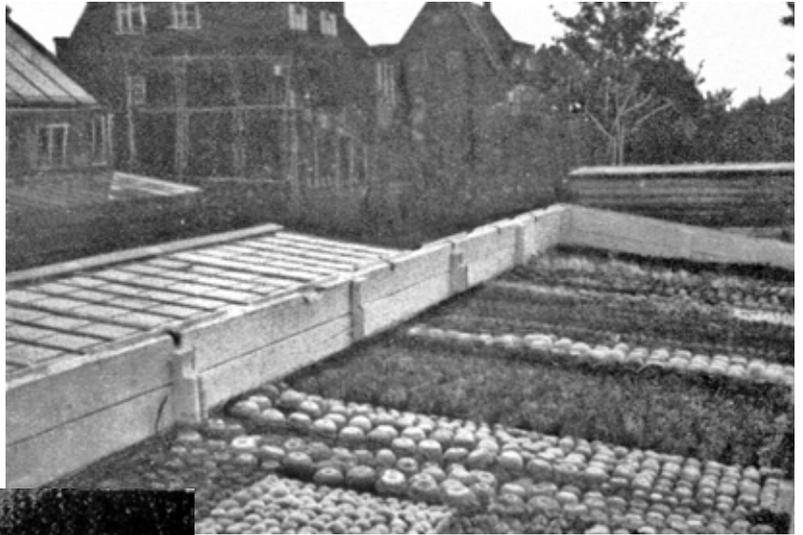
He pretty soon ran out of glasshouse space, so shortly afterwards he moved his operation to a larger site in Volksdorf, a suburb of Hamburg, where he settled for the rest of his life (Fig. 7).

Fig. 7 Views of Backeberg's nursery in 1936 at the height of his plant trading career: a) house and glasshouse, b) frame area, c) frame area in 1937, d) stock plants of *Espostoa lanata*, *Cleistocactus humboldtii* & *C. fossulatus*, e) stock plants of *Matucana haynii*, f) stock plants in variety including *Haageocereus versicolor*, *Cleistocactus humboldtii*, *Opuntia pachypus*, and numerous crests.

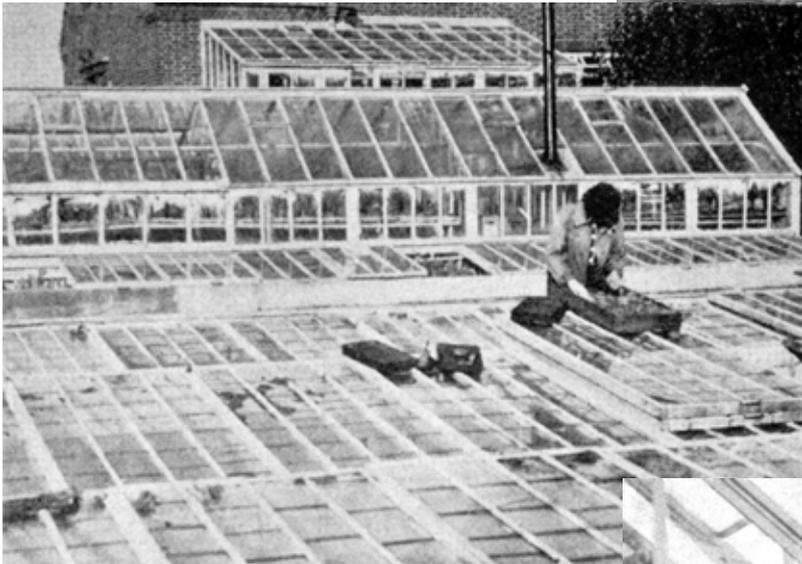


a) house and glasshouse in 1936

b) frame area in 1936



c) frame area in 1937



d) stock plants of
Espostoa lanata,
Cleistocactus humboldtii
& *C. fossulatus*



f) stock plants of *Matucana haynii*



e) stock plants in variety including
Haageocereus versicolor,
Cleistocactus humboldtii,
Opuntia pachypus, and numerous crests.



Influences

The main influence on his cactus career was initially his father, himself an amateur cactus grower. Backeberg's interest in cacti began at a very early age, and his botany and horticulture skills were entirely self-taught.



Fig. 8 Prof. Erich Werdermann (1892-1959), Berlin-Dahlem Botanical Garden. Photographer unknown.

In his twenties, he became a frequent visitor to the Hamburg Botanic Garden, and it was there that he met and befriended his first academic mentor, Prof. Edgar Irmscher (1887-1968), a specialist in *Begonia*, who also happened to be the Curator of the garden in 1919. He was also able to correspond with Alwin Berger (1871-1931).

Perhaps the greatest encouragement came from Erich Werdermann (1892-1959) of the Berlin-Dahlem Botanical Garden (Fig. 8). Werdermann was only 2 years older than Backeberg and a specialist in cacti himself. They coauthored the results of Backeberg's 1931 expedition in Backeberg's book *Neue Kakteen* (Dec 1931). Werdermann himself travelled widely, including to Chile and Bolivia between 1923 and 1926, in Brazil in 1932 and in Mexico in 1933 (Fig. 9)

This collaboration was important in completing Backeberg's botanical training, during which time he slowly came to realise that specimens had only a limited value, particularly for cacti, and could not substitute for a good quality illustration.



Fig. 9 Erich Werdermann (centre), Frau Hildegard (left) & Hans-Wilhelm Viereck (right) in Mexico, Tamaulipas, Jaumave, in May 1933. Photo: Viereck family archive.

During WW2, Werdermann's specimens preserved from Backeberg's 1931 and other expeditions were entirely lost. Among the several reasons for favouring illustration enunciated in a letter to Chris Pitcher in Aug 1965, Backeberg wrote:

“Much type-material of Prof. Werdermann has been lost during the war by fire in the Dahlem-Institute. What is type-material good for if this happens anywhere else? How can it be avoided? By photo-type-material only! Therefore I have published exact macrophotos.”

The expedition years (1928-38)

Shortly after establishing his nursery in Hamburg, Backeberg undertook a ten year period of exploration in habitat (Fig. 10), summarised as follows:

Checklist of expeditions:

1928: West Indies and along the coasts of Costa Rica and Guatemala, and some Mexican cactus areas.

1929: Venezuela, Curaçao & northern Colombia. With Walther Haage.

1930 (end) - 1931 (early): Central & southern Peru, Bolivia, northern Argentina & Uruguay. With Walther Haage. New plants evaluated mainly by Erich Werdermann.

1933 (-Mar): Return to central & southern Peru, Bolivia, eastern and northern Argentina as far as Tucuman, Uruguay & Brazil. The first trip where a cine-camera was used. Transport mainly by mule, taxi and train. Visited Marsoner.

1935-1936: Third visit to Peru, from the coast to the highlands between Oroya & Cusco. Then south through southern Peru and the length of Chile. Then finally to the Botanical Garden, Rio de Janeiro, from where excursions were made into northern Brazil. There he met the Director of the Garden, Dr. Campos Porto, his Deputy Dr. Brade, and the Chief Gardener, O. Voll. With the use of the Garden's large car, he made several excursions accompanied by his fellow countryman Voll. This expedition was financed by Victor Morawetz, USA, intended at the time to be his last expedition, although it proved not to be.

1936 (Nov) - 1937 (May): Ecuador & northern Peru Huancabamba valley. Expedition financed by Victor Morawetz, USA. **In the 10 years of exploration to 1937, he had collected 200 boxes of plants, shot 1,000 metres of movie film and taken 600 photos.**

1938 (Nov): Mexico. Arranged to select suitable plants for an exhibition in the Pflanzen & Blumen [plants & flowers] Garden in Hamburg on 28 Apr 1939.

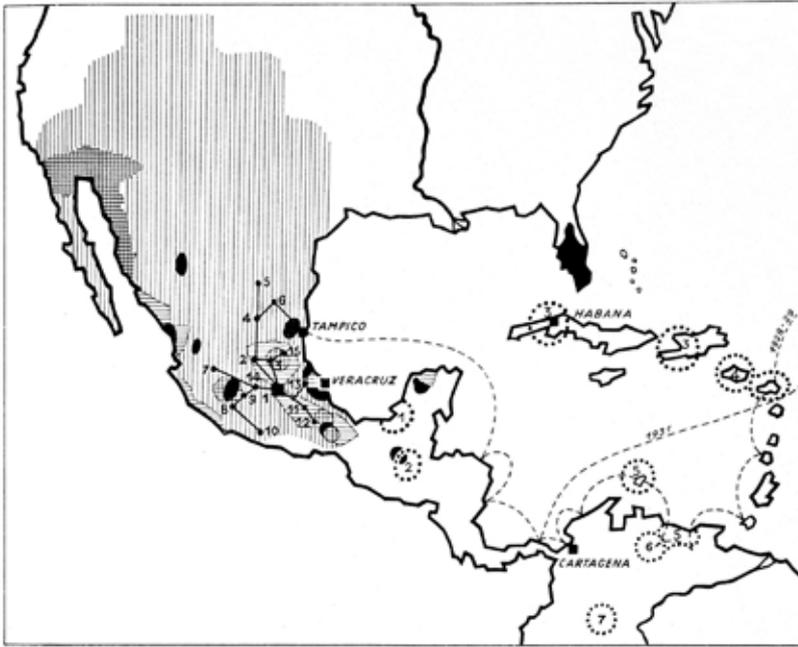
First expedition 1928

There is no evidence that Backeberg possessed a camera on his first expedition, but he must have had access to a few photos taken for him by a colleague. This was most likely to have been Alberto Frič who appeared in some of the photos in Backeberg's book *Kakteenjagd* (1930).

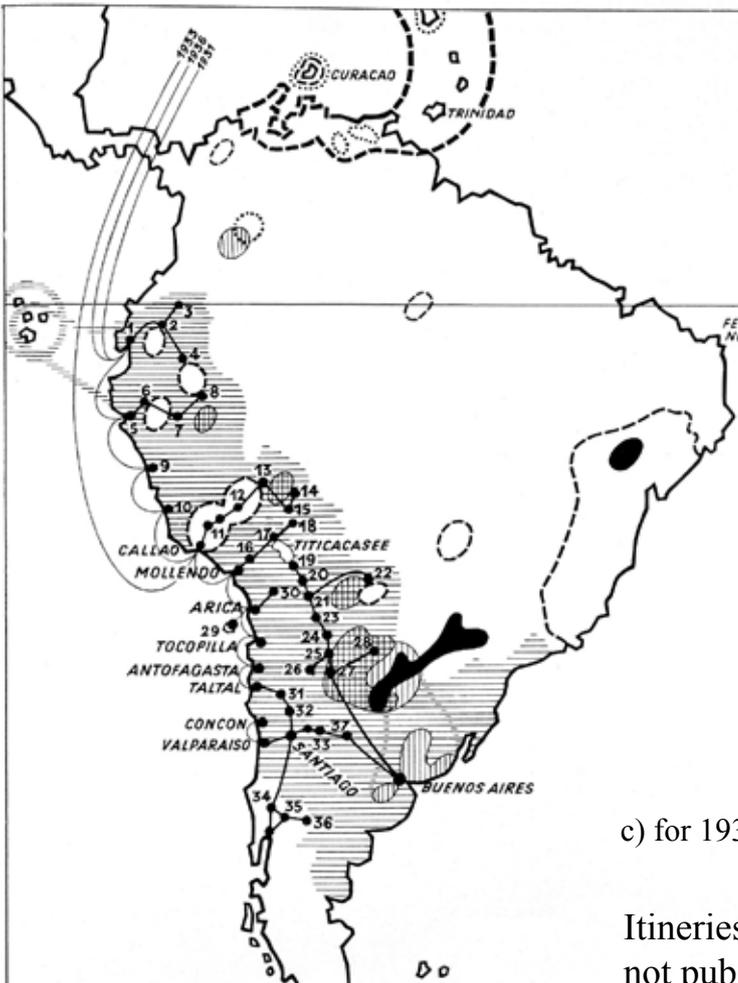
He attributed only one photo specifically to the first expedition (Fig. 11), of *Echinocactus platyacanthus* where he referred to the seated boy as “mein Indio-Boy”. It is a composition that is quite typical of Frič, as is also Fig. 12 of *Pachycereus fulviceps* taken on this expedition in Puebla or Oaxaca.

Fig. 10 Backeberg's itineraries for the first four expeditions.

a) for 1928-1929



b) for 1928-1931



c) for 1931-1933

Itineraries for the fifth to seventh expeditions were not published.

Fig. 11 *Echinocactus platyacanthus* (San Luis Potosi) with Mexican boy. Probably taken by Alberto Frič.



Fig. 12 *Pachycereus fulviceps* in either Puebla or Oaxaca.

This trip was primarily connected with his import/export business, but he also took the opportunity to study Mexican cacti. The lost *Mammillaria jaliscana* & *M. cephalophora (aureilanata)* were said to have been rediscovered on this expedition. The extinct volcano, Iztaccihuatl, the third highest mountain in Mexico, was climbed.





Fig. 13 On horseback in Venezuela. Backeberg can be seen in the centre.

Second expedition 1929

The introduction in the year 1929 of the world's first Single Lens Reflex camera by Rolleiflex was a sensation that probably aroused Backeberg to take up photography himself. He did in fact work at the Rolleiflex factory for a short period around 1937, and shortly after that wrote an article for the photographic magazine *Deutsche Foto-Illustrierte* including some examples of his own camera work.

His pictorial record of this expedition was somewhat limited and of variable quality, but it was notable for having been the first expedition to establish the representation of the genus *Mammillaria* in the interior of Venezuela.

Transport was difficult in this heavily forested region, relying mainly on the horse and mule-cart (Fig. 13-14). Travelled with

Walter Haage, who is posing with Backeberg in front of *Cereus fricii* in Fig. 15.

He found a number of large cerei that he thought were new, which he introduced in his article in the German journal in Aug 1930. One of them was named for him, *Pilosocereus backebergii*, from Puerto Cabello on the Venezuelan coast, described by Weingart at the end of the same article, but only the protologue photo of a branch tip survives of the original material and the illustration is therefore its holotype and all we have to identify it apart from its locality (Fig. 16).

A second *Pilosocereus* found by Backeberg, also at Puerto Cabello, was *P. moritzianus*, a common species of the area (Fig. 17).



Fig. 14 Backeberg with the mule-cart on which specimens were transported.

Fig. 15 Backeberg and Walter Haage posing in front of *Cereus fricii*.

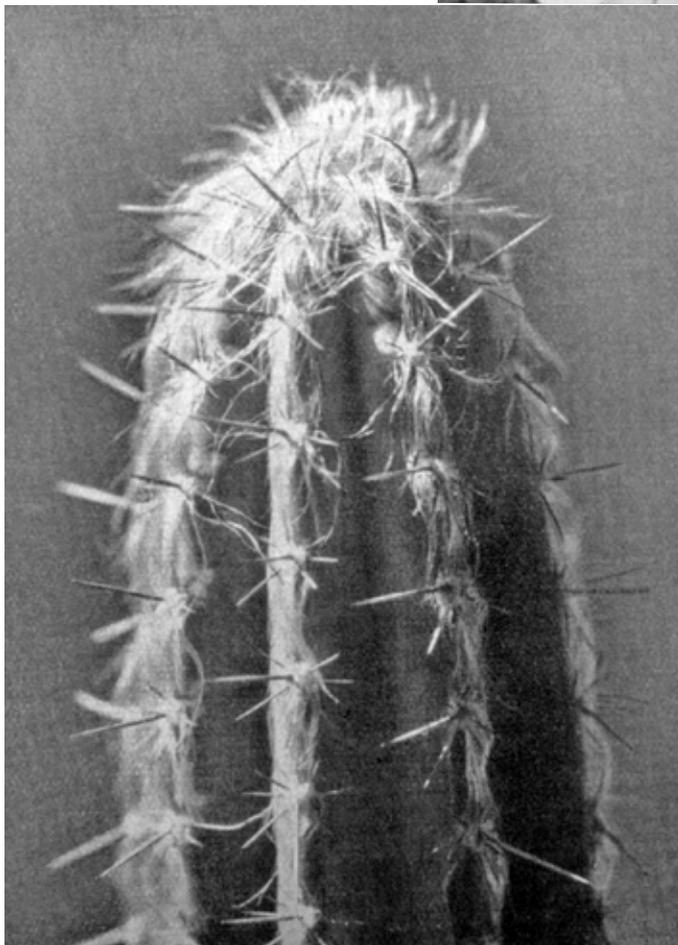


Fig. 16 *Pilosocereus backebergii*, from Puerto Cabello on the Venezuelan coast.

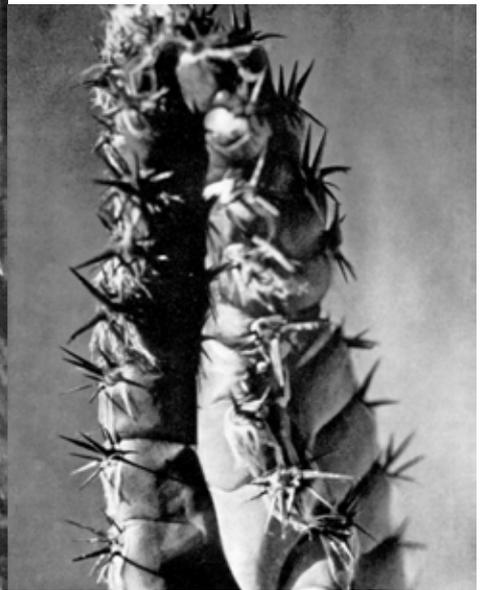


Fig. 17 *Pilosocereus moritzianus* at Puerto Cabello, a common species of the area.



Fig. 18 *Cereus fricii* Backeb. at Puerto Cabello.

Fig. 19 The autotype illustration of *Cereus fricii* Backeb.



All Venezuelan pilosocerei were called *Pilosocereus lanuginosus* (L.) Byles & G.D.Rowley by Zappi, Hunt & Taylor, a view that has so far remained unchallenged, but it may be an over-simplification because neither of these two species appear to closely resemble *Cactus lanuginosus* L. where it occurs at its type locality in Curaçao. Hence, the names applied by Backeberg are being adopted here.

Fig. 20 *Cereus remolinensis* Backeb. along the Rio Magdalena near Remolino. Today considered to be just a form of *Cereus repandus*.



Fig. 21 *Cereus atroviridis* Backeb. from Puerto Colombia in Colombia. Generally assigned to *Cereus repandus*.

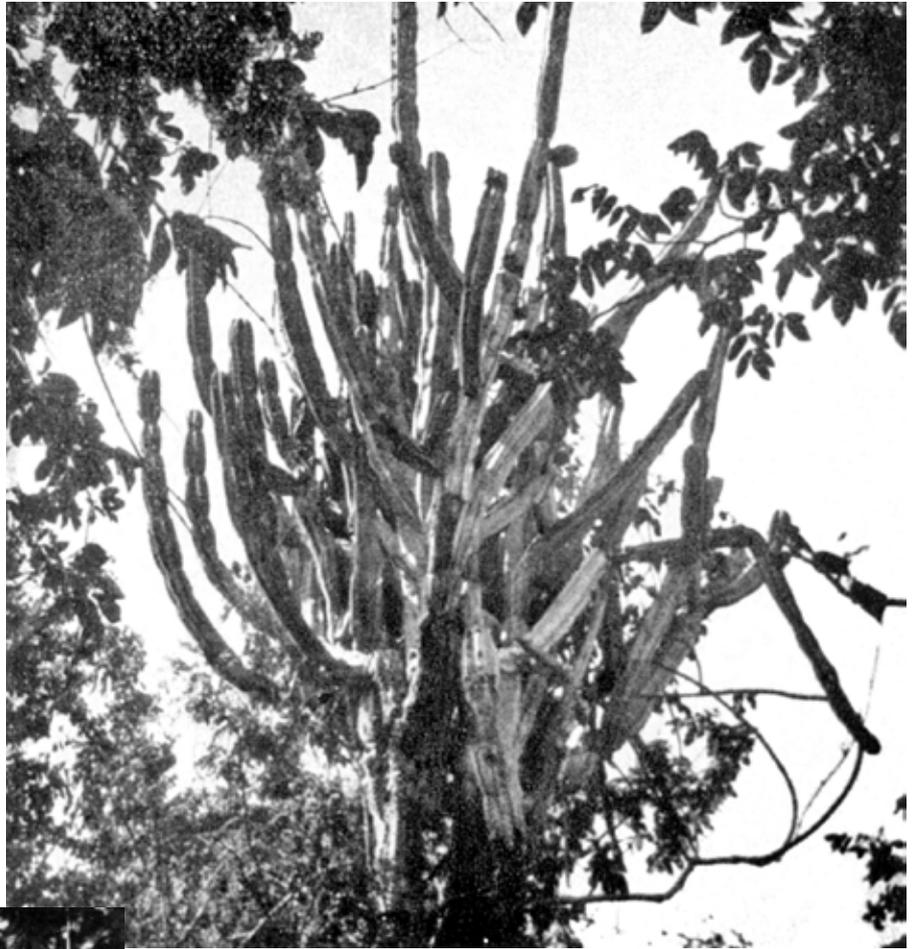


Fig. 22 *Pilosocereus colombianus* (Britton & Rose) Byles & G.D.Rowley from Puerto Colombia in Colombia, treated by most authors as the same as *Pilosocereus lanuginosus*.

Also found at Puerto Cabello was *Cereus fricii* Backeb. (Fig. 15, 18-19), which is notable for its strong stem markings. This species was known for a long time under the name *Cereus russelianus* Salm-Dyck (1850), but that name was illegitimate and has no type. *Cereus fricii* (1930) happens to be its earliest replacement, and its type is automatically the photo shown here in Fig. 19 of a stem tip by Backeberg accompanying his protologue.

Along the Rio Magdalena near Remolino Backeberg found another *Cereus*, which he called *Cereus remolinensis* (1930) (Fig. 20). However this is today considered to be just a short-spined form of *Cereus repandus*.

Another species described by Backeberg that is now assigned to *Cereus repandus* is *Cereus atroviridis* (Fig. 21) from Puerto Colombia in Colombia, where he also found *Pilosocereus colombianus* (Fig. 22), treated by most authors as the same as *Pilosocereus lanuginosus*.



Fig. 23 *Cereus smithianus* (near Puerto Cabello).

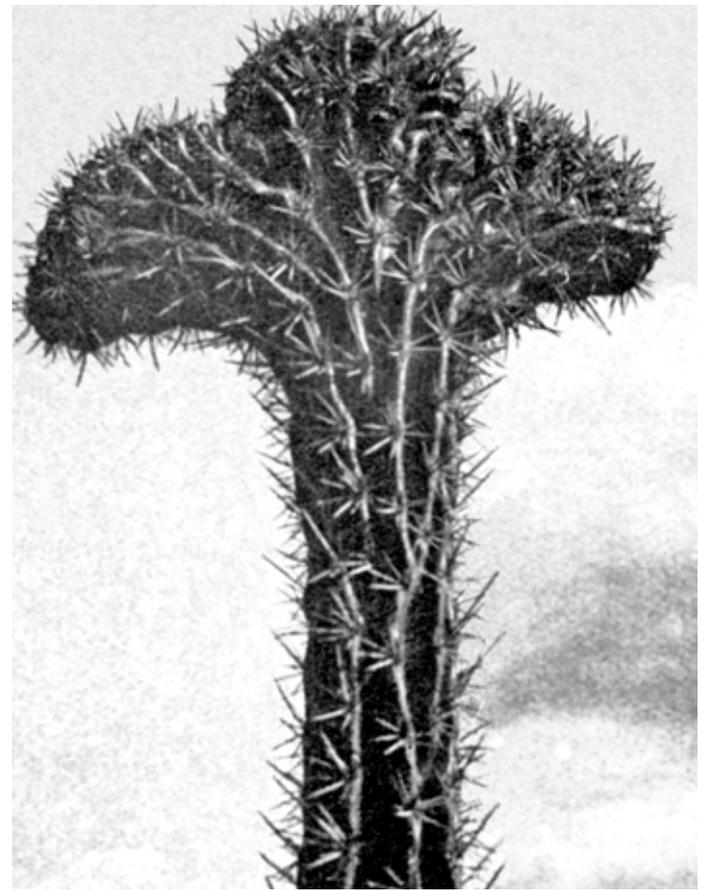


Fig. 25 Crested *Stenocereus heptagonus* from Curaçao. Also known by the later name *Stenocereus griseus*.

Fig. 24 *Hylocereus monacanthus* from Colombia.



The new cerei from this expedition were published in the German journal of Aug

1930, shortly after Backeberg's earliest known appearance in print in the gardener's magazine *Möllers Deutsche Gärtner-Zeitung* 45(7): 81. (Mar) 1930 dealing informally with the same subject.

Other species encountered on this expedition include *Cereus smithianus* (near Puerto Cabello) (Fig. 23), *Hylocereus monacanthus* (Fig. 24) from Colombia, and *Stenocereus heptagonus* (Fig. 25) from Curaçao.

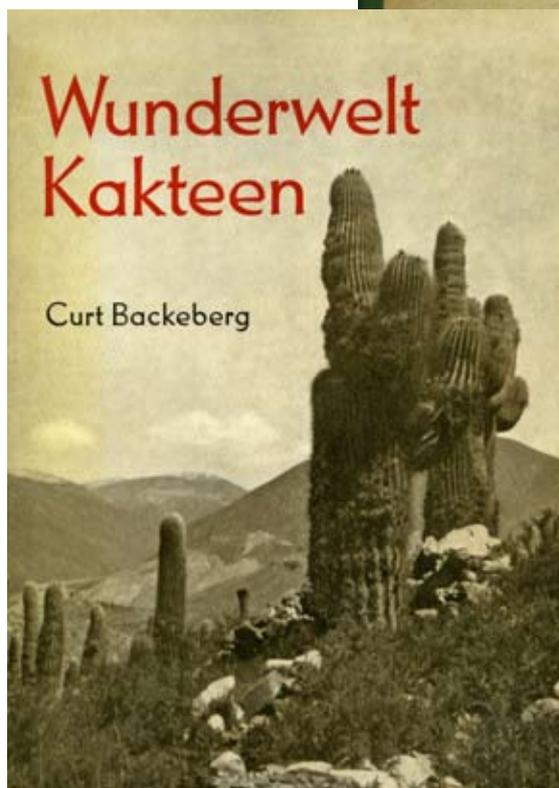
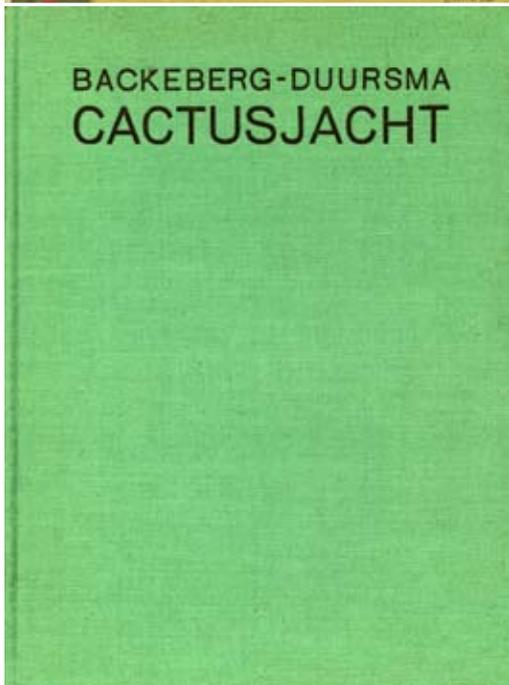
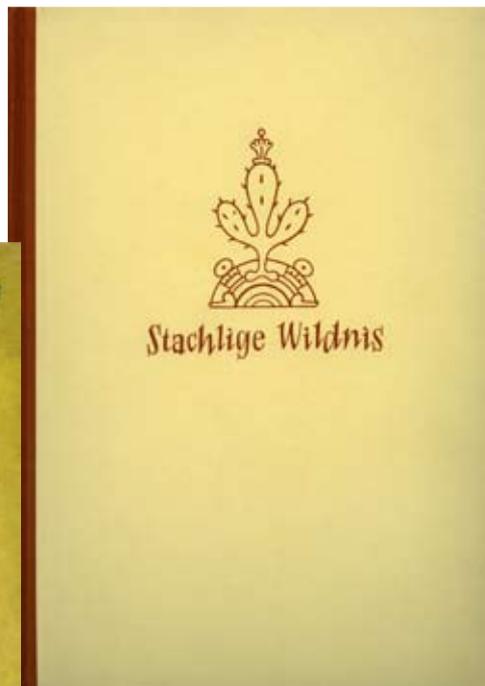
Plants and seeds gathered on this expedition went to Haage's nursery, Erfurt, and to Klousáček, Kouniče, for propagation. Young plants were first offered for sale via the 1930 Haage catalogue.

Towards the end of 1930 he published an account of his travels thus far in *Kakteenjagd*, his first book, which was translated by Duursma and issued in a new edition with a few extra photos supplied by Frič in 1932. Two other travel books were written by Backeberg, *Stachlige Wildnis* (3 edns., 1942, 1943 & 1951), and *Wunderwelt Kakteen* (1961) (Fig. 26).

Backeberg found book publishing to be very rewarding financially, so he took every opportunity to keep something in print throughout the whole of his career. His books were popular and sold in larger numbers than those of most other cactus book authors.

Fig. 26 Travel books authored by Backeberg:

Kakteenjagd (1930),
Cactusjacht (1932),
Stachlige Wildnis (3 edns.,
1942, 1943 & 1951), and
Wunderwelt Kakteen (1961).



Third expedition 1931

The third expedition was the longest and perhaps most productive of all Backeberg's explorations.

Being many years before the Pan-American Highway was built, entry to points along the coast was best by sea (Fig. 27).



Fig. 27 Ship to shore transport along the coast.

Fig. 28 Transport inland was mainly either
a) by road



Once more he was accompanied by Walter Haage, and transport consisted of journeys made by sea, car, rail and mule or donkey (fig. 28) in a series of separate inland explorations made from ports working southwards along the coast of Peru and Chile, finally crossing Argentina to end the journey at Buenos Aires.

The aim was to travel in the footsteps of earlier explorers, covering the whole of Peru, Bolivia, northern Argentina & Uruguay. In this way, many old species were rediscovered and new ones found.

The first port at Paita in north Peru was the starting point for a mule train inland to the Huancabamba valley and beyond into Ecuador, where he wanted to see the plants encountered by Humboldt & Bonpland (Fig. 29-30).

This he called the northern route, and he illustrated his itinerary in the relief map shown in Fig. 31.



or b) by mule or donkey.



Fig. 29 Paita in north Peru was the starting point for a mule train inland.

Fig. 30 Crossing an uninhabited area NE of Paita, in Dept. Piura.

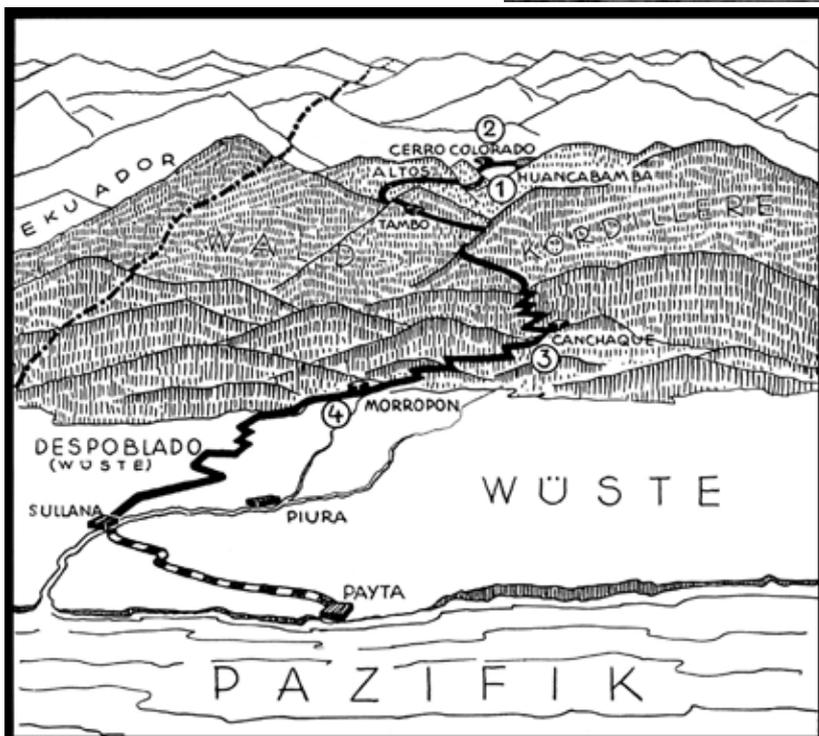


Fig. 31 The Peruvian northern route was chosen to meet up with the north Peruvian section of the Jan-Jun 1802 route taken by Humboldt & Bonpland south from Quito through the Huancabamba valley.

At Carrasquillo in the foothills of the Andes of Dept. Piura, at about 150m, Backeberg encountered a rich cactus flora including *Melocactus unguispinus*, *Haageocereus versicolor* and *Neoraimondia* (Fig. 32).

Climbing further inland, *Pilosocereus tweedyanus* was encountered on Cerro Serran, at around 700m altitude (Fig. 33).



Fig. 32 *Melocactus unguispinus*, *Haageocereus versicolor* and *Neoraimondia* at Carrasquillo in the western foothills of the Andes of Dept. Piura, at about 150m.



Fig. 33 *Pilosocereus tweedyanus* on the slopes of Cerro Serran at about 700m.

The Huancabamba valley (Fig. 34) lies at around 2000m altitude in northern Peru. It was traversed by Humboldt and Bonpland and was their main source of cacti on their long voyage. Backeberg was curious to see the plants that they had observed and recorded.



Fig. 34 General view in the Huancabamba valley.

A prominent species in the Huancabamba valley is *Espostoa lanata* (Fig. 35a), first described by Humboldt, and Backeberg was particularly fascinated to have found a number of crested plants that he photographed several times and gathered a few specimens brought down with a rope and bamboo cane. (Fig. 35b).

Fig. 35 Crested *Espostoa lanata*
a) above the Huancabamba valley at 2500m.

Note the valley floor given over to agriculture, so that cacti are now only encountered on the slopes. Humboldt also commented on the high level of agricultural development as long ago as 1802, warning that this could wipe out the native trees, of which the most economically valuable was *Cinchona*, whose bark was then the only known source of quinine. Its medicinal properties were known to the Quechuan medics as early as the 16thC.

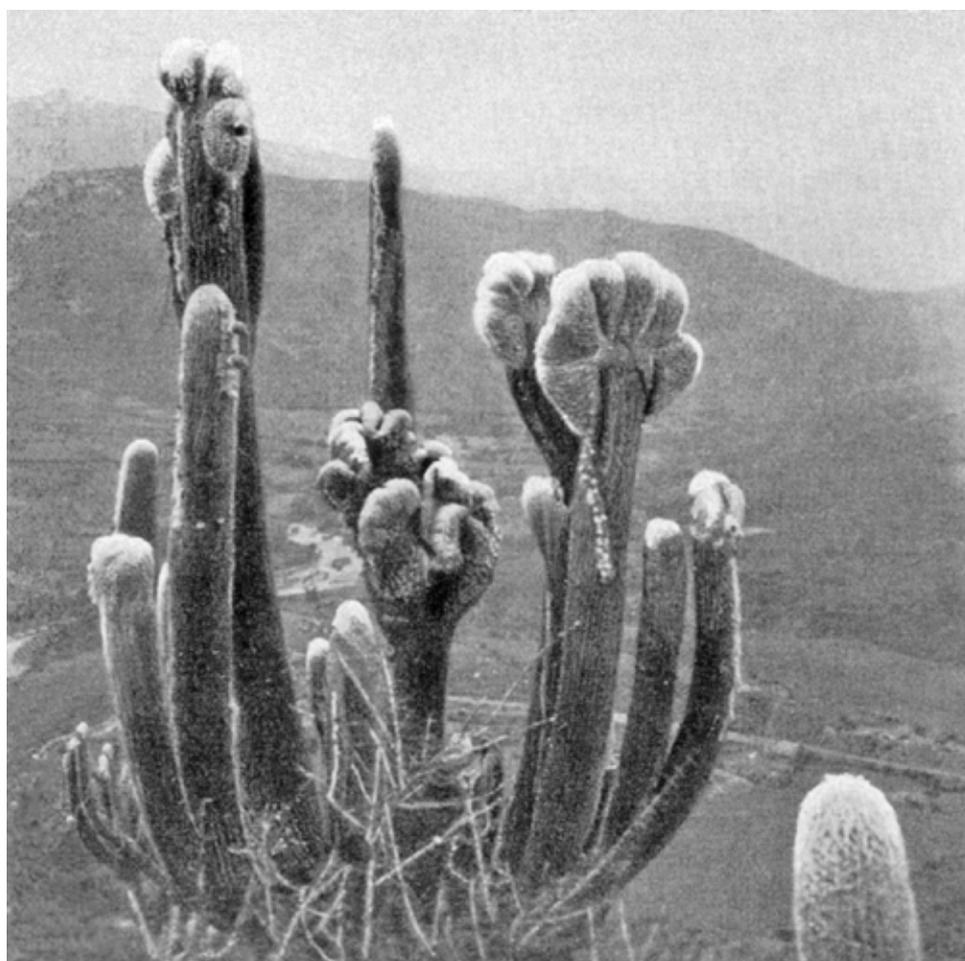


Fig. 35b)
Walter Haage looks
on as Backeberg
lassoes a tall cristate
branch.



In Backeberg's, as in Humboldt's, time, the river in the valley bottom was criss-crossed by a series of fords (Fig. 36).

Fig. 36 In the valley bottom the road that followed the Huancabamba river used to be crossable via a number of shallow fords.

The Peru central route

Backeberg's "central route" began in Lima (Fig. 37), and the primary means of transport was the railroad that ran from the city near sea-level to 4818m at Ticlio Pass, the highest rail junction in the world and the town with the highest paved roads in Peru (Fig. 38).

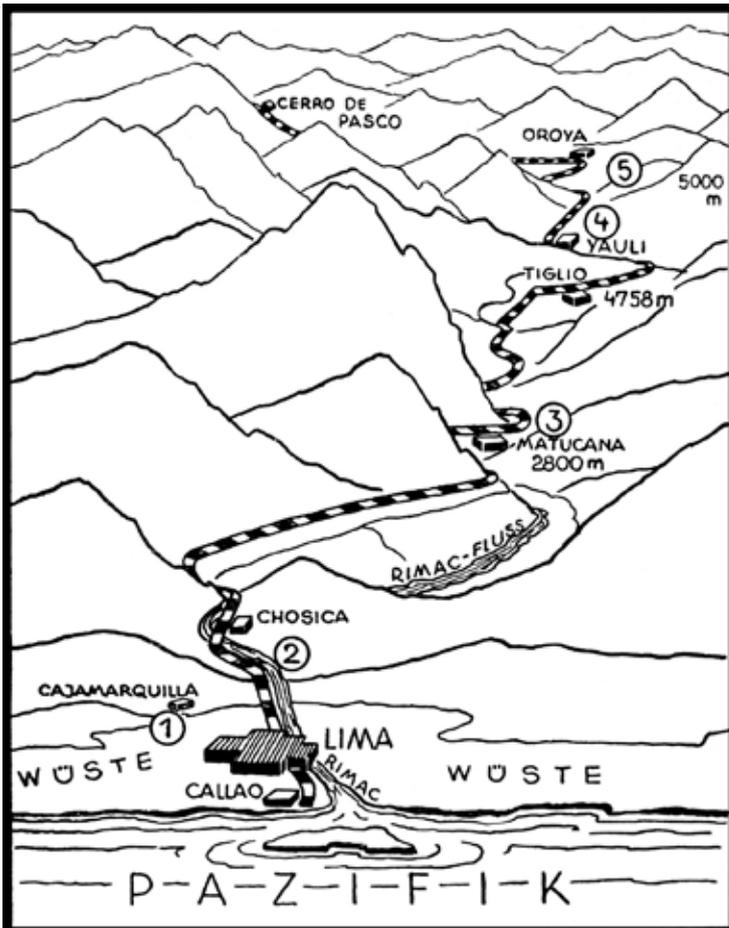


Fig. 37 The Peruvian central route, which follows part of the journey undertaken by Peru's earliest botanical explorer, Joseph Dombey, in 1778.

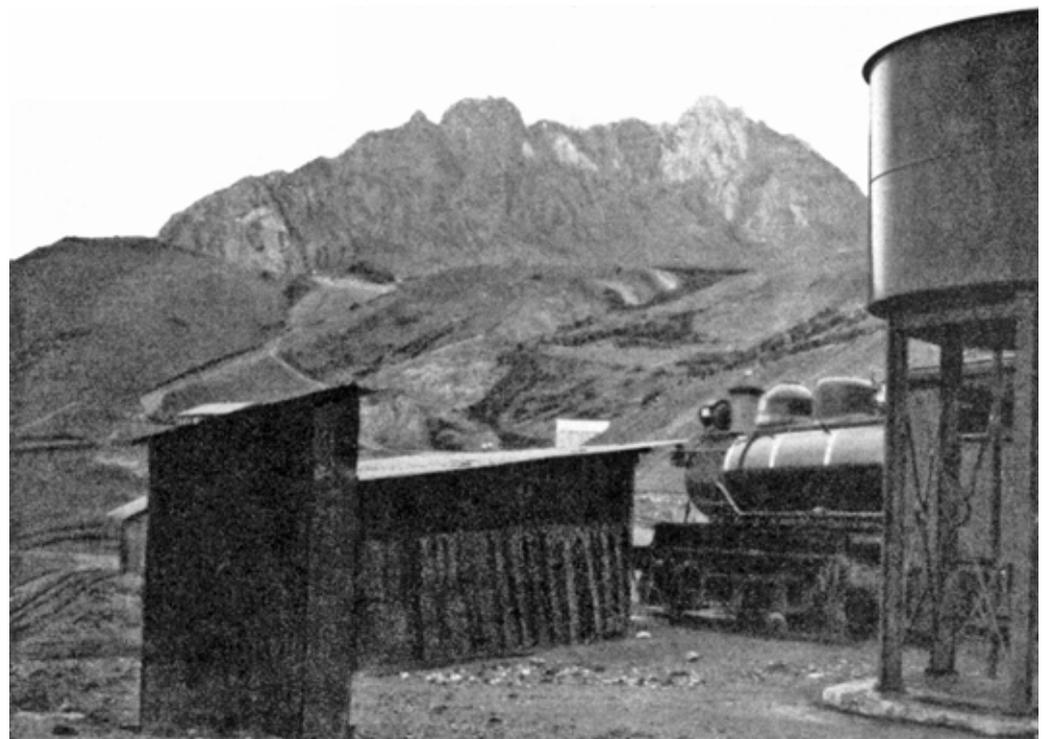


Fig. 38 The train junction of Ticlio Pass, at 4818m then the highest rail junction in the world, but today second only to one in Tibet.

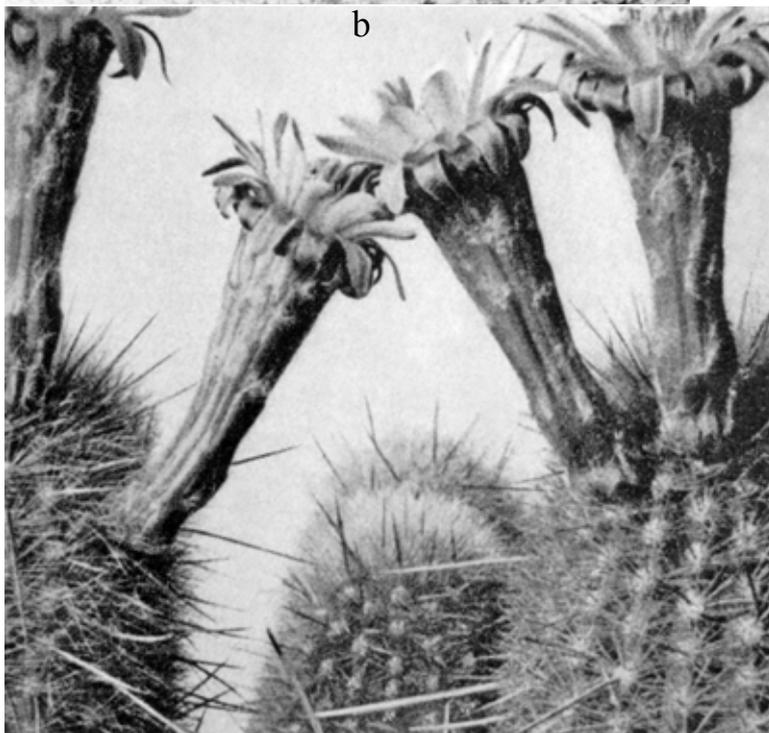
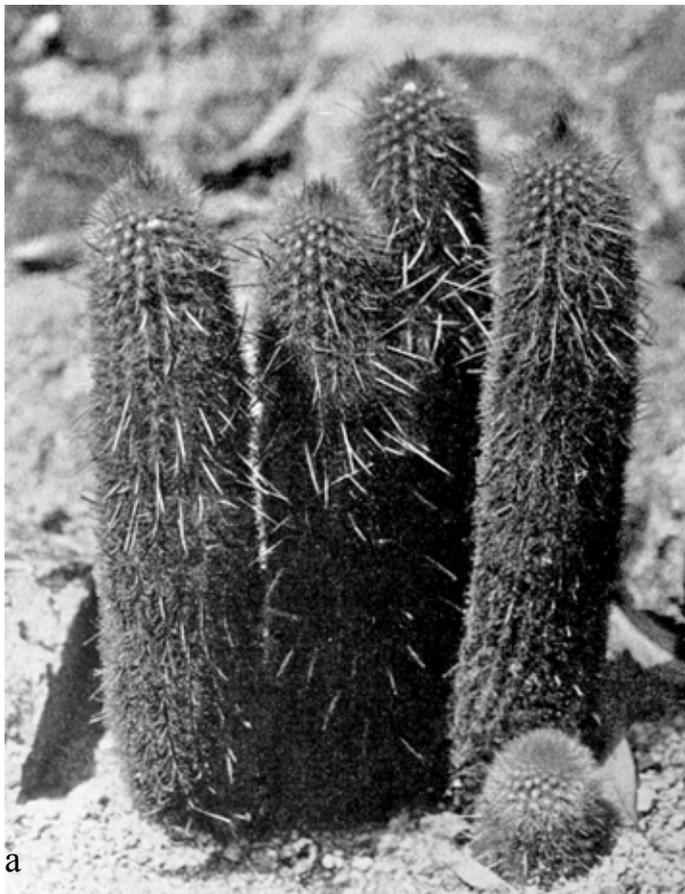


Fig. 39 *Haageocereus kagenekii* (*H. pseudomelanosteles* of Backeberg)
 a) near to its type locality at Cajamarquillas, 500m., just inland from Lima.
 b) plants of the type collection flowering in cultivation.

Backeberg recollected what is correctly called *Haageocereus kagenekii* at the Cajamarquilla ruins (Fig. 39), within a few km. of where Rose collected the type of *Binghamia melanosteles* Britton & Rose.

Britton & Rose had caused great confusion by not only describing it under an illegitimate generic name but also by misapplying the name *Cereus melanosteles* Vaupel to it. In doing so, they had inadvertently created a new taxon, which Backeberg and Werdermann subsequently renamed with the replacement name *Cereus pseudomelanosteles*. Its type is the same as that of the replaced synonym, which is Rose's specimen at New York. Joseph Dombey was the first botanical explorer to find it in 1779, and he was responsible for the provisional name *Cactus multangularis*.

At nearby Santa Clara, Backeberg photographed *Haageocereus acranthus* (Fig. 40).

Fig. 40 *Haageocereus acranthus* at Santa Clara, a few km N of Lima.

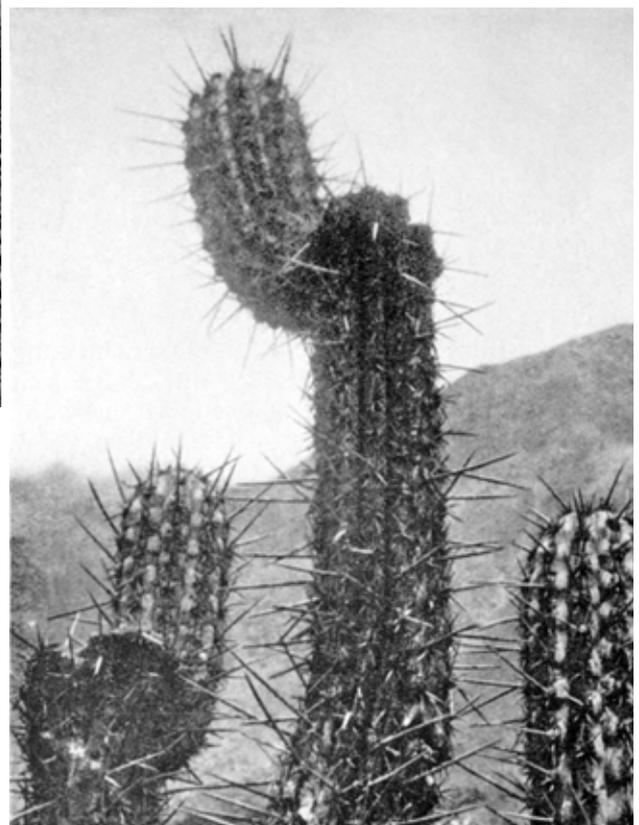




Fig. 41 *Haageocereus chosicensis* at just over 1000m in the upper Rio Rimac valley.



Fig. 42 *Espostoa melanostele* above Chosica, where Backeberg erroneously called it *E. dautwitzii*.

At just over 1000m, higher up the Rio Rimac valley *Haageocereus chosicensis* was found and named by Backeberg (Fig. 41). It grows with higher altitude forms of *Haageocereus kagenekii*, but differs in the presence of long hairs in the new areoles that soon fall away.

An espostoa initially called *Espostoa dautwitzii* (Fig. 42) by Backeberg also extends to this altitude and beyond, up to 2000m. However, *Espostoa dautwitzii* was originally gathered in the Huancabamba valley, so it is a synonym of *E. lanata*. Therefore this is really *Espostoa melanostele*, the only espostoa of the Rimac Valley drainage system.

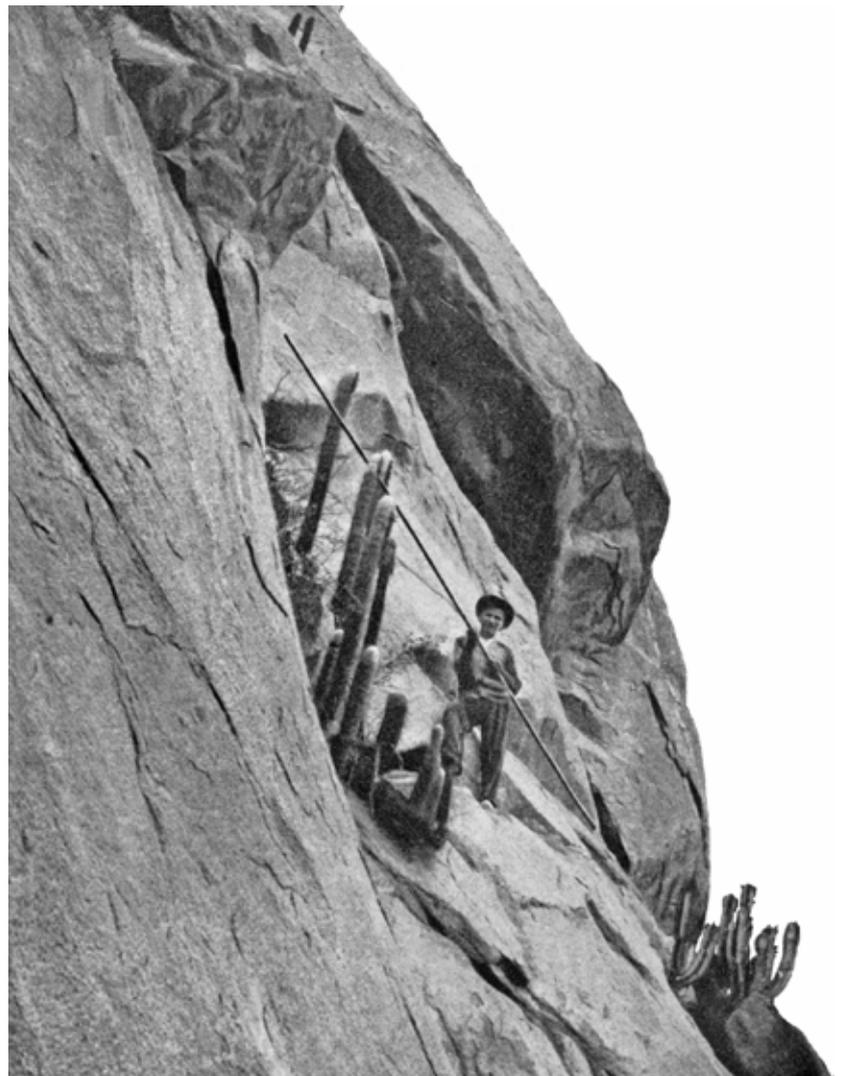


Fig. 43 *Espostoa melanostele* on the cliff walls of the Rio Santa Eulalia valley.

Running northeast from Chosica is the Rio Santa Eulalia tributary of the Rimac, and here Backeberg encountered *Espostoa melanosteale* growing on the cliffs at around 1500m. The valley is a favourite spot for bird watchers and rises steeply to 4000m., but the espostoas do not rise above 1800m. Backeberg climbed the steep sides of the valley to gather and photograph it (Fig. 43). Joseph Dombey again saw it first in 1779 in the Rimac valley at its more usual altitudes of 800-1000m but is not known to have given it a name. However, he did recommend it to his correspondents in France as a potentially useful source of wool fibre for fabrics. As it happens, cephalium wool has been used locally as a filling for pillows.



Fig. 44 *Echinopsis peruviana* producing spectacular bouquets of flowers from prostrate stems in the Rimac valley near Matucana at 2100m.

The Rimac valley continues to rise through central Peru and at Km 75 from Lima is the town of Matucana. It was here that Backeberg found *Echinopsis peruviana* producing wonderful bunches of flowers from its prostrate stems growing on the hillsides at about 2100m (Fig. 44). This species never grows upright, although it is otherwise very similar to the related columnar *Echinopsis santaensis*.

Backeberg explored the highlands above Matucana at around 3000m (Fig. 45). The type species of Matucana, *Matucana haynii*, grows here and also at lower altitudes in the Rimac drainage basin (Fig. 46). It elongates with age so the habit of growth is very variable.



Fig. 45 Backeberg stands overlooking the Rimac valley above Matucana at almost 3000m. among espostoas and trichocerei.



Fig. 46 The eponymous *Matucana haynii* grows in the environs of the town of Matucana, and also at lower altitudes in the Rimac drainage basin. The variable habit of growth is shown here with two examples held obligingly by an officer of the local mounted police.

At the higher altitude of 4000m lies the town of La Oroya, after which Britton & Rose named their genus *Oroya*. Oroyas are quite widely distributed here and further east into the Rio Mantaro valley terraces and beyond, and each population exhibits small differences in spination and flower colour. Backeberg found the oroyas in the neighbourhood of La Oroya, but thought that he could identify two distinct populations, segregating the tighter-spined population under the name *Oroya neoperuviana* (Fig. 47). The town of La Oroya has been the site of a US-owned lead smelter since 1922 turning it into one of the world's most polluted towns. The plant finally closed down in Feb 2012.

In the same location *Opuntia floccosa* is also common, and varies greatly in hairiness and habit of growth. A larger form that Backeberg thought was distinctive enough for him to name as *Opuntia floccosa* var. *crassior* occurred at 4500m. altitude on the Lima-Oroya road (Fig. 48). Possibly a polyploid, but it is not treated as distinct by most authors.



Fig. 47 *Oroya neoperuviana* crest was found near the town of La Oroya, Yauli Dept., on the road to Tarma at 4000m.



Fig. 48 *Opuntia floccosa* var. *crassior* was found at 4500m. altitude on the Lima-Oroya road.

The third section of the Peruvian exploration started from the port of Mollendo in southern Peru, a convenient place to begin an exploration of Dept. Arequipa, from where Backeberg climbed inland up to the town of Arequipa where the volcano Misti is located, then beyond into Dept. Cusco.

On the slopes of volcano Misti at 3800m, Backeberg found a form of *Echinopsis pampana* that he described with Werdermann under the name *Lobivia mistiensis* (Fig. 49).

About 30km to the NW of Arequipa in the Yura district, Backeberg found *Corryocactus brevistylus* at about 2000m, its lowest altitude, a common plant of the region that extends its distribution into northern Chile (Fig. 50).



Fig. 50 *Corryocactus brevistylus* in the Yura district at about 2000m., some 30km to the NW of Arequipa.

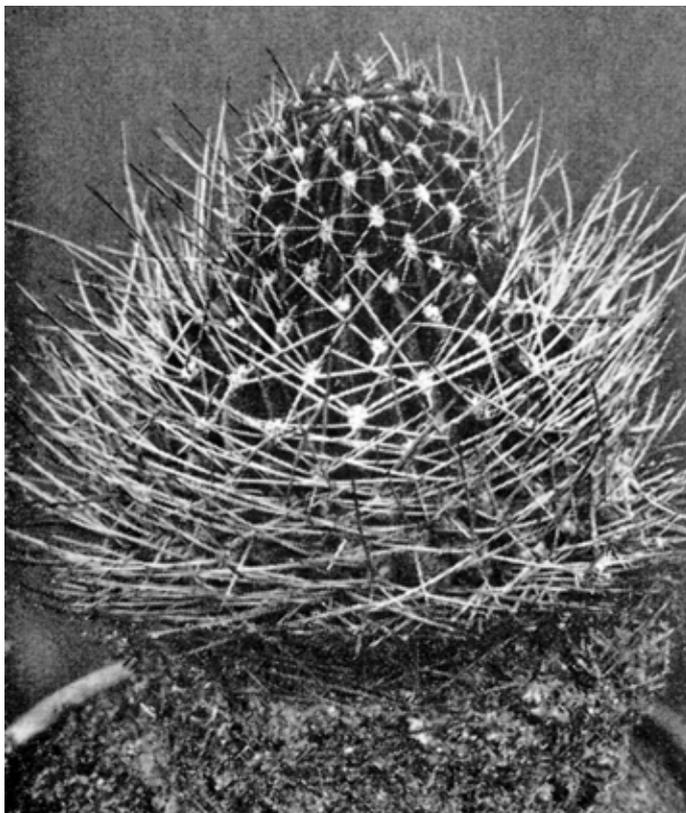


Fig. 49 The protologue & type illustration of *Lobivia mistiensis* Werderm. & Backeb.

Near Arequipa, a feature of the landscape is *Haageocereus weberbaueri* (Fig. 51).

Backeberg distinguished his genus *Weberbauerocereus* on the degree to which the flower tubes were bent into an S-shape, but the flowers are not morphologically different from those of *Haageocereus*, and other characters cannot justify the distinction as a separate genus.



Fig. 51 *Haageocereus weberbaueri* near Arequipa, with volcano Misti as a backdrop.

Fig. 52 *Corryocactus erectus* at 3500m near Urcos.

From Cusco he made his way eastwards to Lake Titicaca and thence into Bolivia.

Near La Paz at around 3600m he found a small echinopsis that Werdermann described for him as *Echinopsis backebergii*. Werdermann's specimens in Berlin have been lost, so the photo Backeberg took in habitat that accompanied the protologue automatically becomes the type replacement, being the only remaining original material (Fig. 53). Backeberg's photo of collected plants in cultivation, published later, are a useful further support for this typification (Fig. 54).





Fig. 53 *Echinopsis backebergii*
 Werderm. near La Paz at about 3600m.,
 described in Dec 1931.
 This illustration is the only remaining original
 material and hence automatically its type.

Fig. 54 Backeberg's photo of three habitat
 plants of the type collection of *Echinopsis
 backebergii* flowering in Europe, which first
 appeared in *Blätter für Kakteenforschung* for
 Dec 1935.



Fig. 55 *Trichocereus orurensis* Cardénas
 was described from material gathered by
 Backeberg at La Joya, near Oruro, at 3800m.
 Today it is referred to *Echinopsis
 bertramiana*.



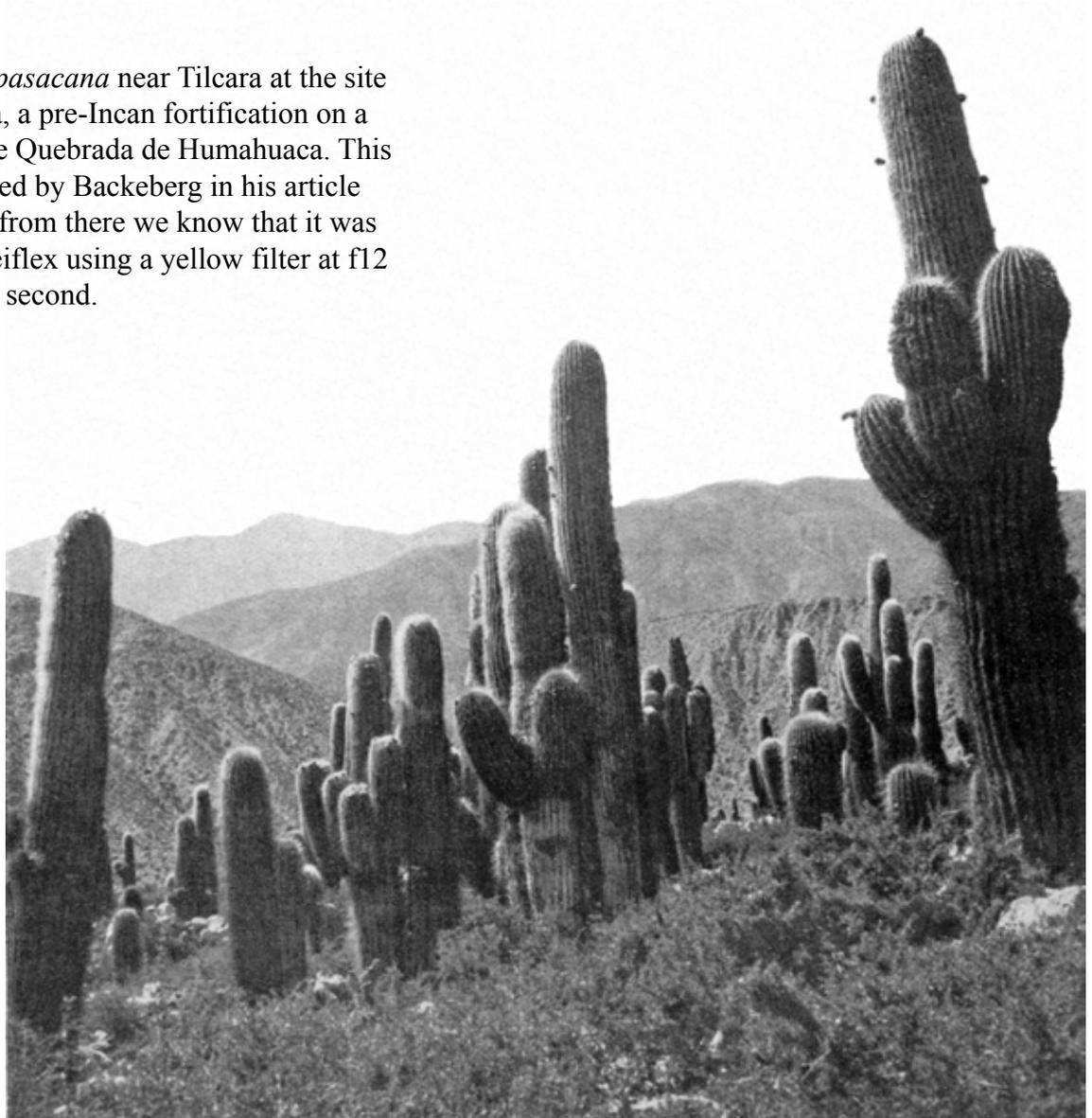
Backeberg found a
Helianthocereus at La Joya, near
 Oruro, at 3800m which Cardénas
 subsequently named for him as
Trichocereus orurensis (Fig. 55).

Fig. 56 Backeberg casually leaning against a solitary plant of *Echinopsis pasacana*.



From Bolivia he travelled south into Argentina, where he fell in love with the mighty *Echinopsis pasacana* (Fig. 56) and took many photographs of it. Near Tilcara is the site of Pucará de Tilcara, a pre-Incan fortification on a hill over-looking the Quebrada de Humahuaca at 2000m, now colonised with a large population of mature *Echinopsis pasacana*, a subspecies of *E. atacamensis*, perhaps introduced here as a source of wood for construction and its edible fruits. It is the only publicly accessible archeological site in the Quebrada, and in the year 2000 it was nominated as a National Monument (Fig. 57).

Fig. 57 *Echinopsis pasacana* near Tilcara at the site of Pucará de Tilcara, a pre-Incan fortification on a hill over-looking the Quebrada de Humahuaca. This photo was reproduced by Backeberg in his article on photography, so from there we know that it was taken with his Rolleiflex using a yellow filter at f12 and one fiftieth of a second.



Also at Tilcara he found *Parodia tilcarensis* and *Echinopsis ferox*, among other species (Fig. 58-59).

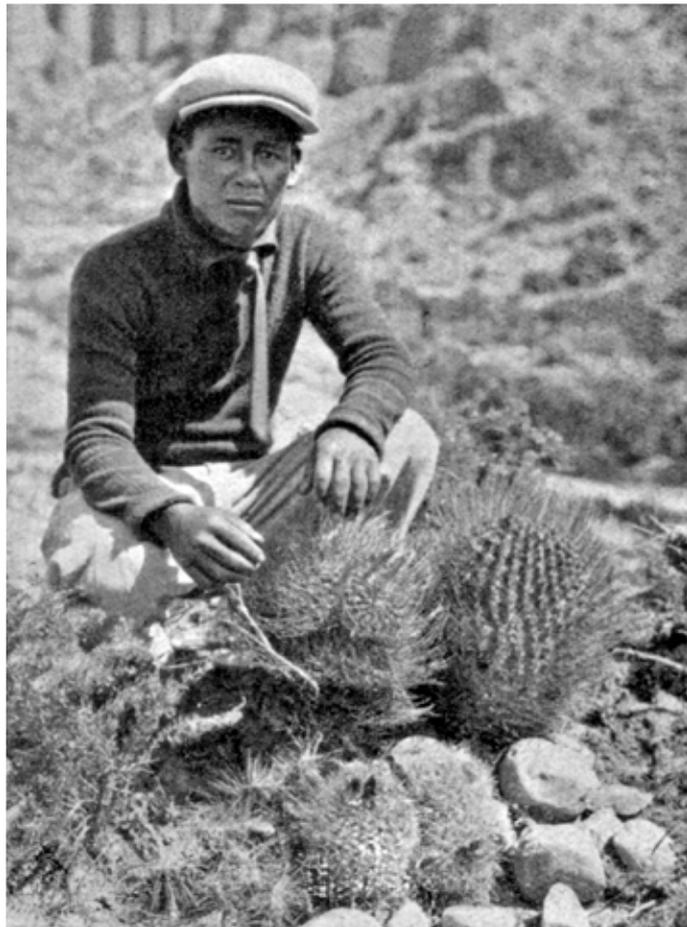


Fig. 58 *Parodia tilcarensis*, *Echinopsis ferox* & *Opuntia corrugata* at Tilcara.



Fig. 59 *Parodia tilcarensis* in flower at Tilcara.

To the SW of Salta city, the Quebrada de Escoipe is an important location for several rebutias. It was on this visit that he was the first to find *Rebutia senilis* in its typical long-spined form at about 2500m (Fig. 60).

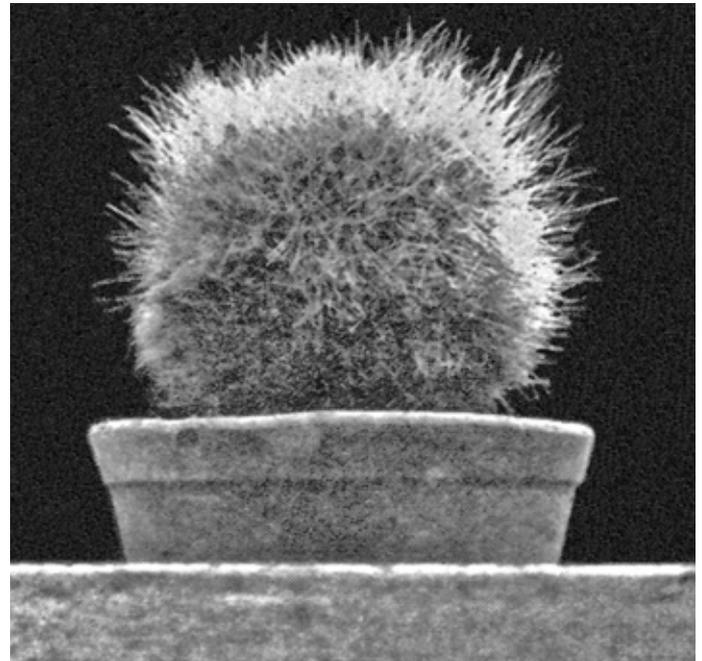


Fig. 60 The protologue photo and autotype of *Rebutia senilis* Backeb., found by Backeberg in the Quebrada de Escoipe, but actually quite widespread at altitudes of 1800-2800m in southern Salta and northern Tucuman.

He crossed the Andes from Argentina into Chile, where he stopped at Tocopilla on the coast. There he saw *Eulychnia iquiquensis*, which seemed to be in fine fettle at the time (Fig. 61). There had been a brief El Niño in 1930, which was to be the last for another 9 years!

Finally, he sailed northwards to Lima where he made preparations for embarkation back to Europe (Fig. 62).



The results of the 1931 expedition were worked on by Erich Werdermann, and published in Backeberg's *Neue Kakteen*, which appeared in Dec 1931 (Fig. 63).

Fig. 61 *Eulychnia iquiquensis* at Tocopilla, and perhaps his last photo taken on the 1931 expedition.



Fig. 62 Before embarkation every plant had to be carefully protected with packaging. Here *Haageocereus versicolor* is being wrapped and boxed.



Fig. 63 *Neue Kakteen* (1931) was published to report on Backeberg's 1931 expedition, and the new taxa were validated here by Erich Werdermann or jointly.

Fourth expedition 1933

In the first quarter of 1933, Backeberg returned to central & southern Peru, Bolivia, eastern and northern Argentina as far as Tucuman, Uruguay & Brazil. This was the first trip where a cine-camera was used, but with less in the way of still photography. Transport was mainly by mule, taxi and train.

Near to Malabrigo, on the coast of Trujillo Province, La Libertad Region, Peru, Backeberg found a new *Haageocereus*. He first described it in the journal that he edited, *Der Kakteenfreund* for May 1933, as *Cereus (Haageocereus) tapacalaensis*. Fig. 64 was the only protologue illustration and is

therefore automatically its type. No specimen is known to have existed. No Latin description or type was required at that time, so it was validly published. He then illegitimately replaced that name with *Haageocereus pacalaensis* in *Kaktus-ABC* (1936), without explanation but giving it a Latin description as required from 1935, and quoting a more specific type locality. No place called Tapacala can be traced today, nor Pacala in that vicinity. Its correct name is nevertheless *Haageocereus tapacalaensis* Backeb., as originally validated in 1933, even if the specific epithet was erroneous, and it should not be corrected.



Fig. 64 *Haageocereus tapacalaensis* Backeb. The protologue photo and type of the species growing near to Malabrigo, on the coast of Trujillo Province, La Libertad Region. The attempt to subsequently change its name to *H. pacalaensis* is superfluous. Differs from *H. kagenekii* by its much stronger habit of growth, said to reach 1.7m.

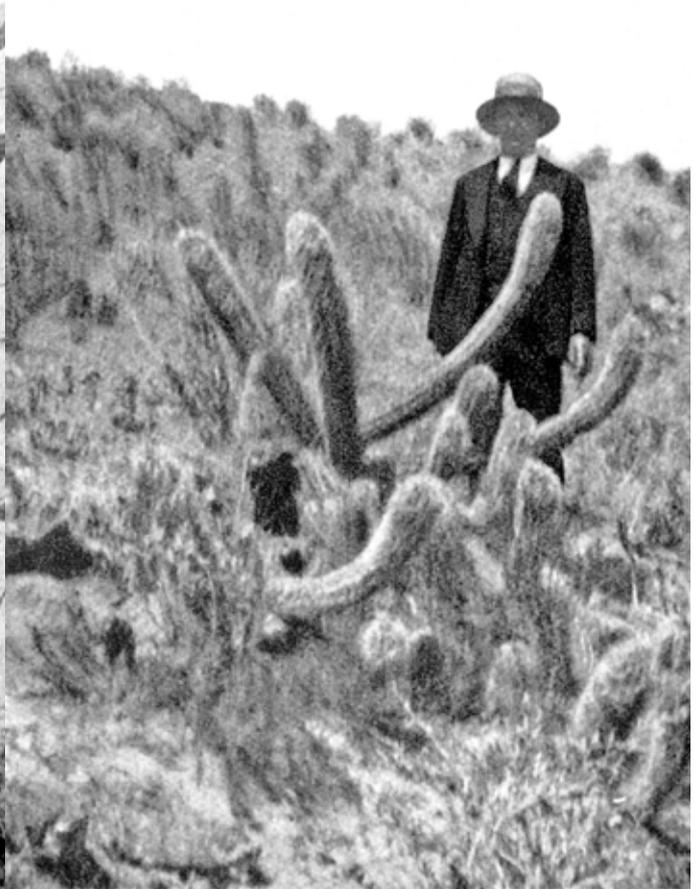


Fig. 65 *Oreocereus hendriksenianus* Backeb. at Uyupampa in Dept. Arequipa at 3000m.

A second novelty from this expedition was *Oreocereus hendriksenianus* Backeb. described in *Kaktus-ABC* (1936) (Fig. 65-66).

It stands between *Oreocereus leucotrichus* and *Oreocereus ritteri* and some authors treat all three as a single species, but that is purely speculative without strong evidence.



Fig. 66 *Oreocereus hendriksenianus* with Backeberg the figure at the back, having just bought himself a native costume, showed off again in Fig. 67.

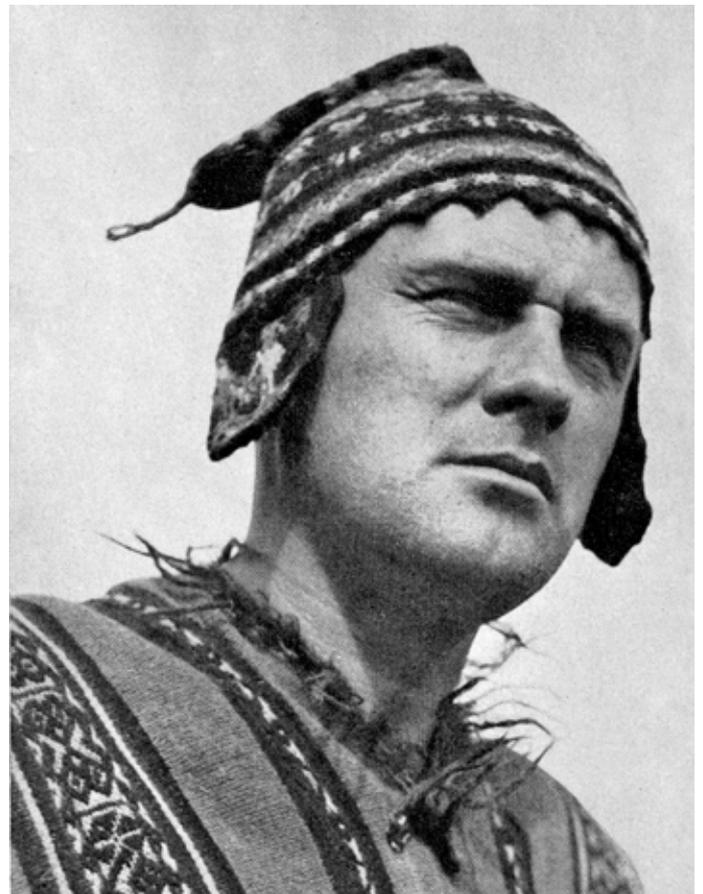
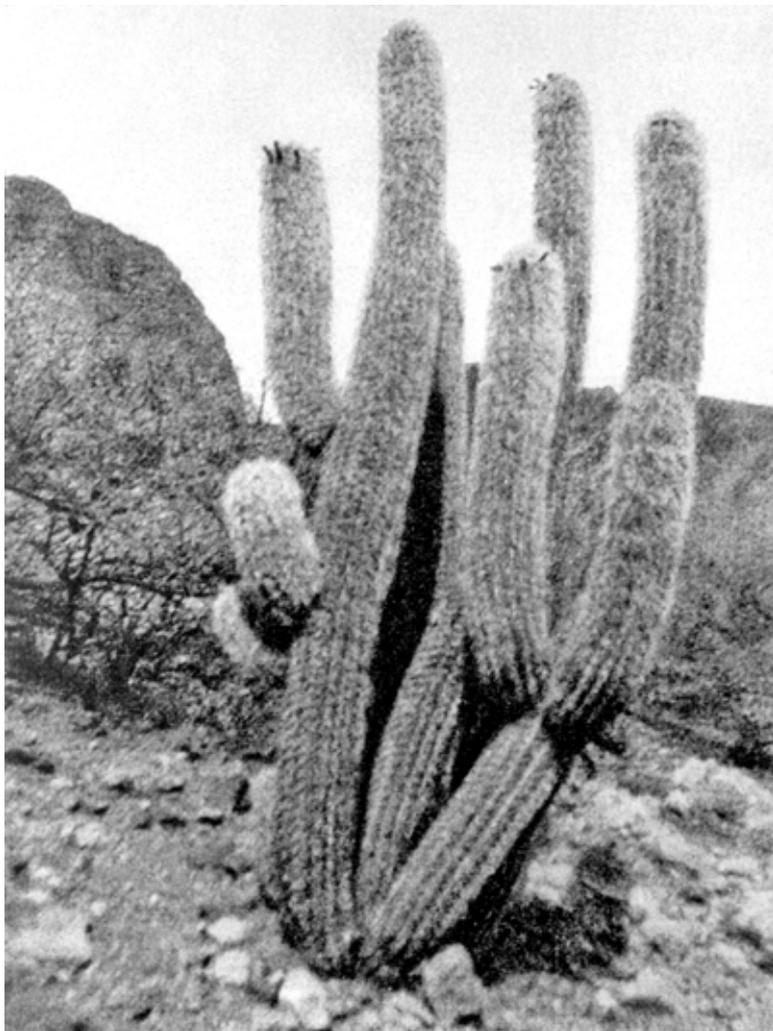


Fig. 67 Backeberg in native costume, said to be at Cusco.

Fig. 68 Backeberg sailing on Lake Titicaca in a reed boat.



After buying himself a native costume from Cusco (Fig. 67), he again travelled on to Bolivia via Lake Titicaca, availing himself of the opportunity to hire a reed boat for a jaunt on the lake (Fig. 68).



In Bolivia he found a particularly large form of *Oreocereus celsianus* from east of the river near Tupiza, which he called *O. maximus* (Fig. 69). More recent travellers to the area have reported that fruits are sometimes solid with pulp, so this might well be an allopolyploid of *O. celsianus* with the other parent a now extinct population of *Cleistocactus fossulatus*.

Intrigued by crests, Backeberg is seen trying to gather something from the one in Fig. 70

Fig. 69 In Bolivia, Backeberg found this robust form of *Oreocereus celsianus* east of the river near Tupiza, which he called *O. maximus*.

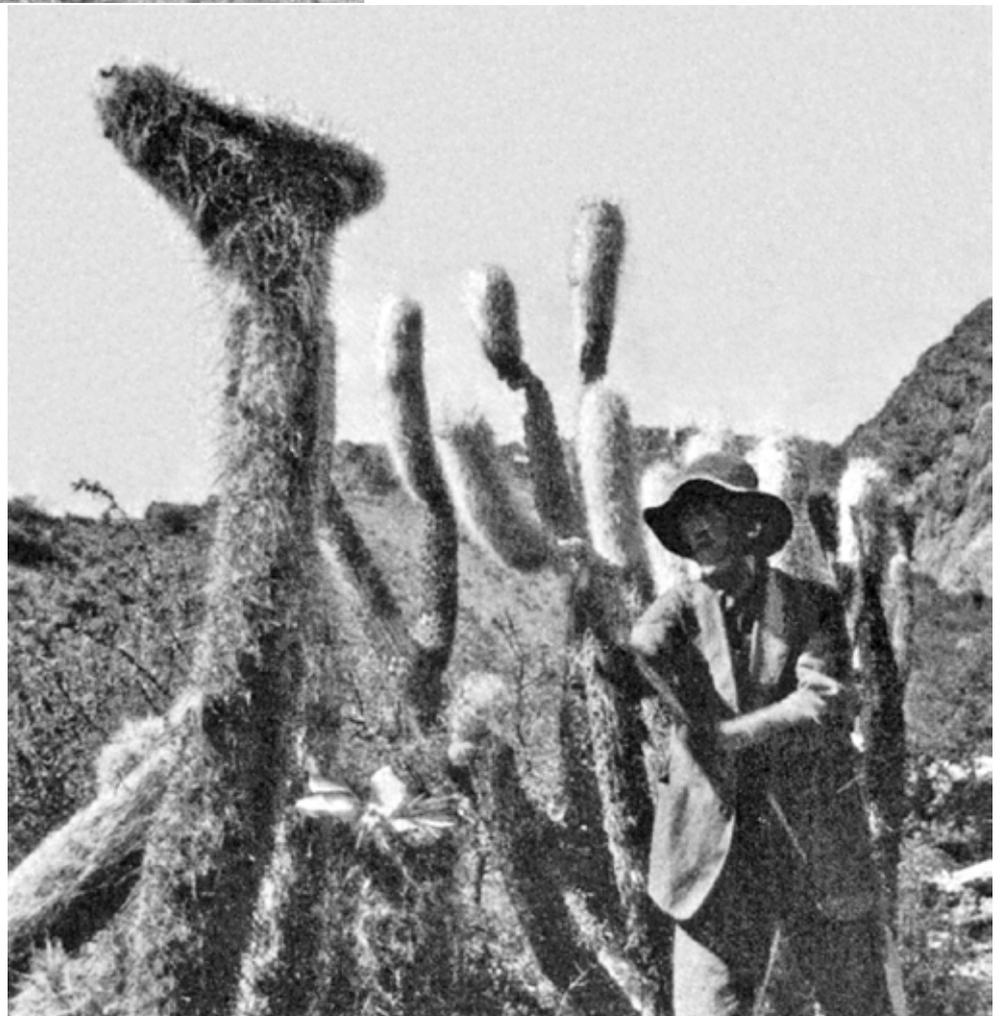


Fig. 70 A crested *Oreocereus maximus* was a special point of interest.



Fig. 71 Backeberg seated below a massive *Trichocereus werdermannianus* Backeb.

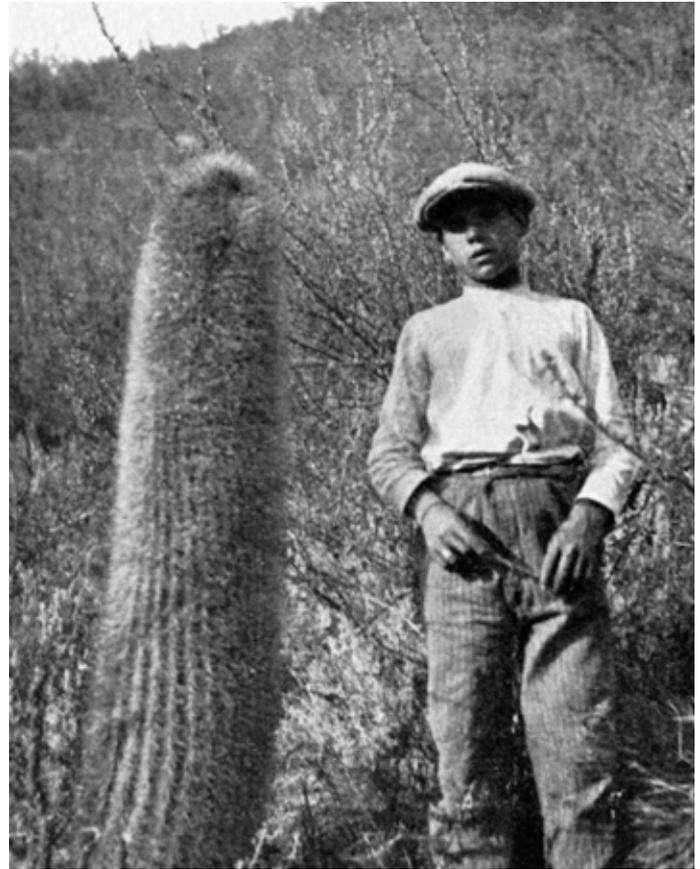


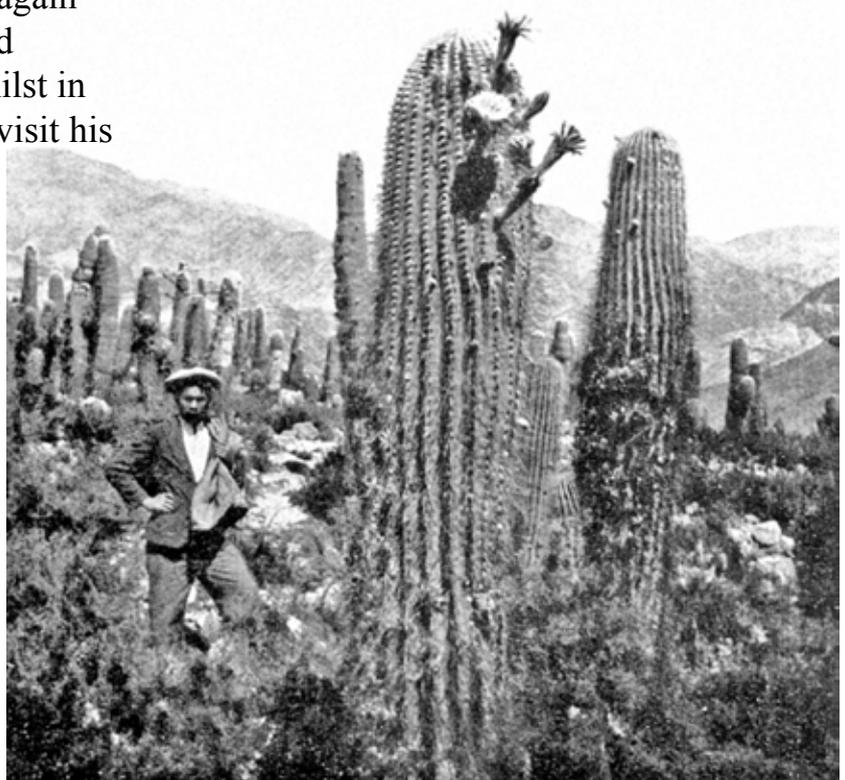
Fig. 72 This especially large, man-high *Denmoza rhodacantha* took his eye in La Rioja.

Another particularly massive plant discovered by Backeberg in the Charcoma valley, east of Tupiza was described as *Trichocereus werdermannianus* Backeb. in honour of his friend and mentor Erich Werdermann (Fig. 71). It can grow to a height of over 5m with a trunk 40cm. diameter.

In Argentina he filmed the impressive *Echinopsis pasacana* at Tilcara once again (Fig. 73), and in La Rioja encountered *Denmoza rhodacantha*. (Fig. 72). Whilst in Argentina he took the opportunity to visit his friend Marsoner.

Fig. 73 In Argentina, Backeberg revisited Pucará de Tilcara once again in order to add the impressive site of *Echinopsis pasacana* to his movie film.

Fig. 74 One of Backeberg's camp-sites on the 1933 expedition, although the location was not stated.



Fifth expedition 1935-36

The fifth and sixth expeditions were both financed by a wealthy New York lawyer with the name of Victor MORAWETZ (1859-1938), considered in his time to be one of the most distinguished in America, known for his astute dealings with railroads and corporations (Fig. 75). Amongst other historic houses, in 1929 he bought an 11,000 acre plantation near Charleston, South Carolina, which he called Fenwick Hall Castle, and there he established a large cactus garden.

Ever the flamboyant character, Morawetz saw a portrait of a lady in an artist's studio one day, and immediately fell in love with her. On asking to be introduced to her by the artist he was told that he couldn't because she was living in Paris. He immediately took the next boat to Europe and lay siege to her Paris home until she capitulated to his advances.

Gardening became his chief hobby in later years and his cactus gardens were said to have rivalled only by those at the Huntington Botanic Garden (Fig. 76). However, it was



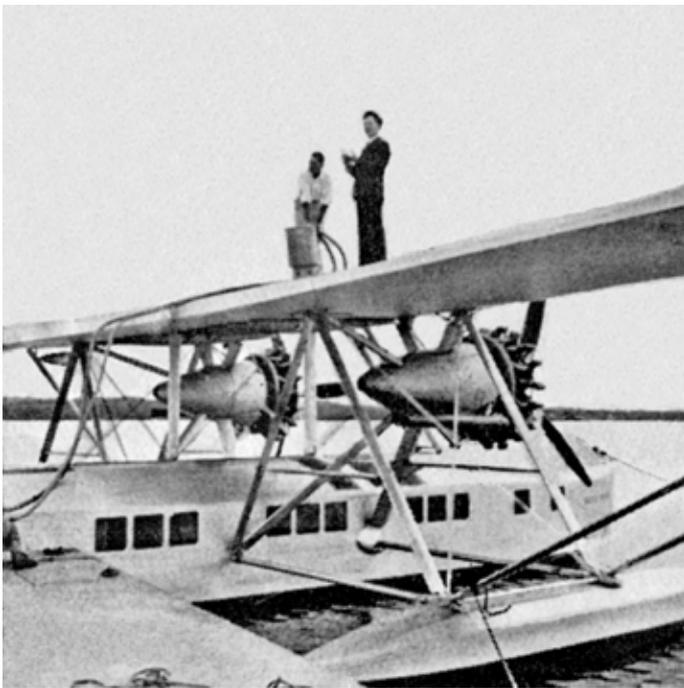
Fig. 75 Victor Morawetz (1859-1938)

too private, and very few images appear to have survived of it and its subsequent history is not recorded.

Money was no object on this expedition, so Backeberg was able to buy himself the latest in fashion, and transport along the coast was done by flying boat, perhaps also to Lake Titicaca (Fig. 77).

Fig. 76 Saguaros guard the entrance to the garden of Fenwick Hall Castle, one of the world's largest ever private gardens of cacti, around 1935.





At this point in his life Backeberg was every inch the successful businessman, stylishly decked out in fashionable plus fours (Fig. 78-79).

Still photography again took a back seat on this expedition as he wanted to shoot more reels for his film *Hunting for cacti*. A few still photo frames were taken from this film, such as the giant *Puya raimondii* from 4000m in Ayacucho, Peru (Fig. 80), and *Austrocephalocereus fluminensis* growing near Rio de Janeiro, Brazil (Fig. 81), which are therefore a little fuzzy.

Fig. 77 Voyages by sea were undertaken by flying boat on this expedition.



Fig. 78 Backeberg (left) and his hire car.

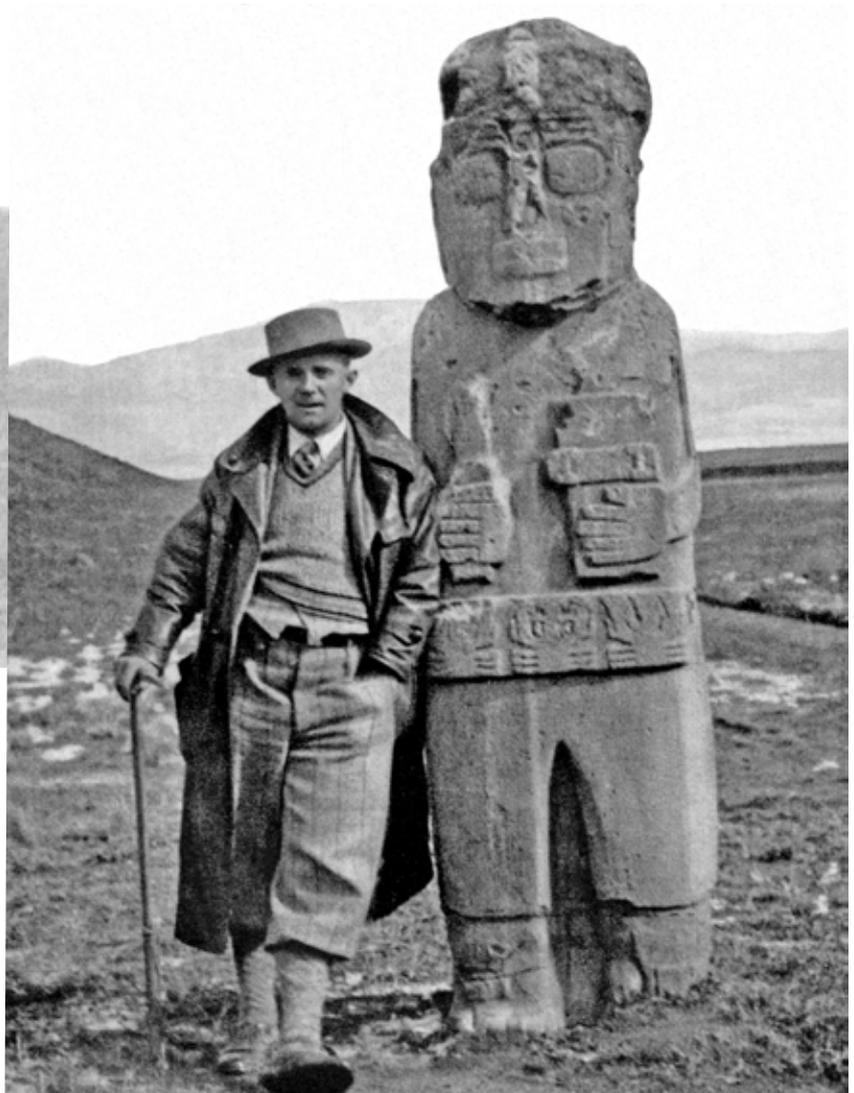


Fig. 79 Backeberg looking debonair alongside a stern stone statue at the Tiahuanaco Inca ruins on the SE shore of Lake Titicaca.

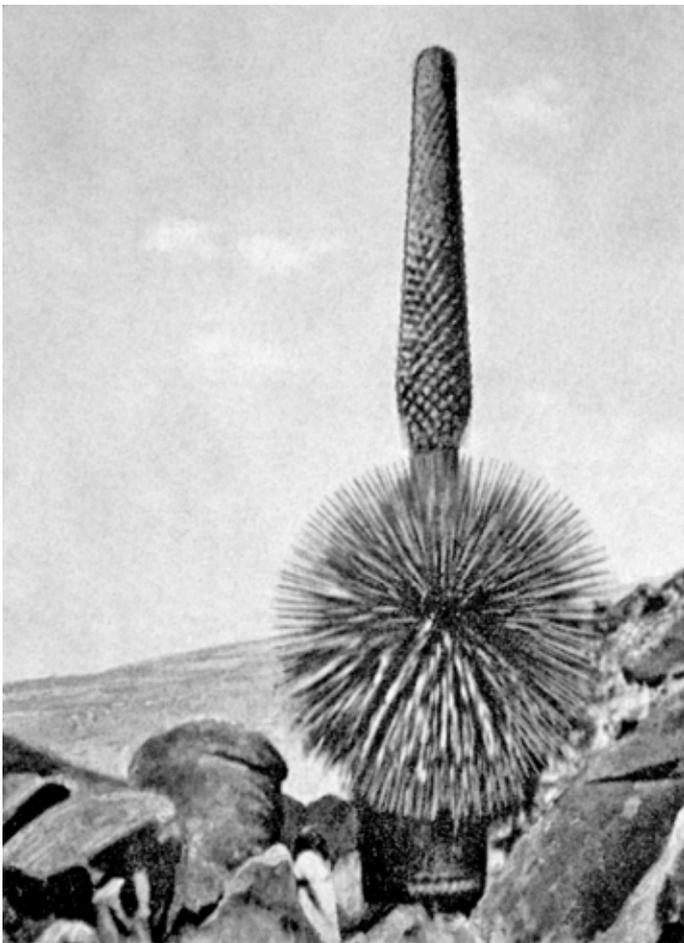


Fig. 80 The giant bromeliad *Puya raimondii* from 4000m in Ayacucho, Peru.

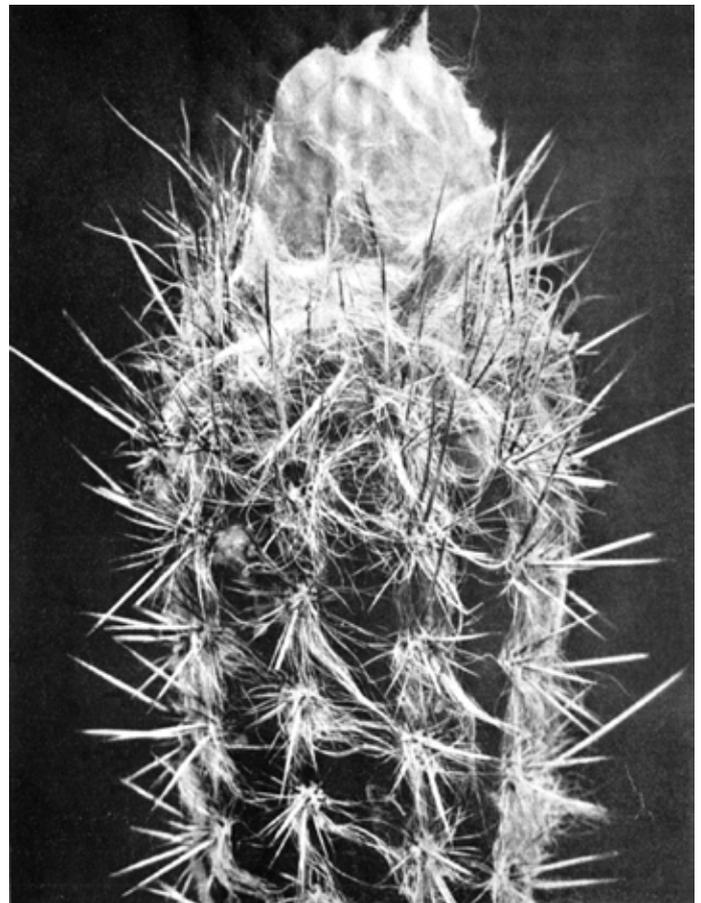


Fig. 82 *Morawetzia doelziana* Backeb., a monotypic genus honouring Victor Morawetz.



Fig. 81 *Austrocephalocereus fluminensis* growing near Rio de Janeiro, Brazil.

Victor Morawetz was honoured by Backeberg by the naming of two new discoveries for him: The genus *Morawetzia* was erected for one species with affinities to *Oreocereus*, but distinguished by its terminal cephalium (Fig. 82-83). Although still currently most often placed in *Oreocereus*, when molecular data and chromosome counts become available they might well reveal something unexpected.



Fig. 83 The protologue illustration and autotype of *Morawetzia doelziana* at its type locality near Mariscal Caceres in the Mantaro valley along the road to Ayacucho, at about 2500m.

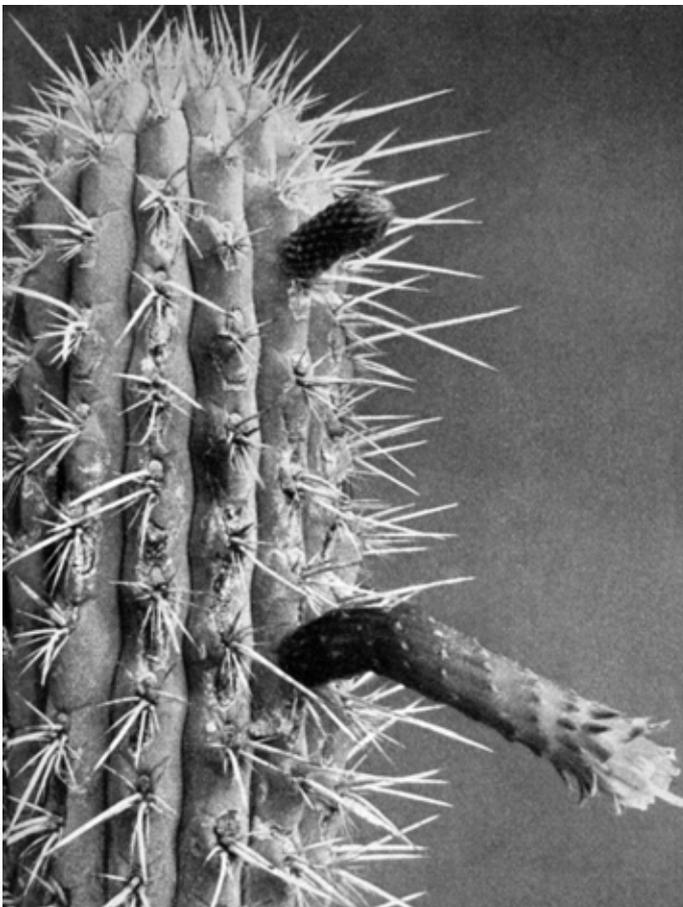


Fig. 84 *Cleistocactus morawetzianus* Backeb., flowering in Europe.

Ayacucho & Huancavelica.

Another discovery of particular interest from the same region, Huancayo in the Mantaro valley, is *Echinopsis tegeleriana* (Fig 86). It is something of a curiosity in *Echinopsis* because it is the only species to have a receptacle and a fruit heavily armed with strong spines.



Fig. 85 The protologue illustration and autotype of *Cleistocactus morawetzianus* at its type locality

Not far from that discovery Backeberg found another quite unique species, *Cleistocactus morawetzianus*, which is the only Peruvian representative of a group that is otherwise endemic to Bolivia and Argentina (Fig. 84-85). It occurs at around 2000m in the drainage system of the Rio Mantaro in Depts.

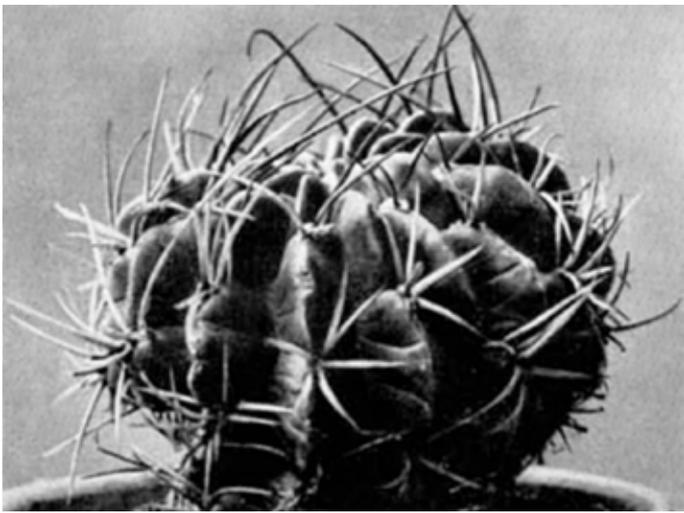


Fig. 86 Protologue photo and autotype of *Echinopsis tegeleriana* Backeb. from its type locality at 3300m near Huancayo in the upper Mantaro valley.

There are forms in which the spines are absent, but most are spiny. Rauh later found another isolated form of it 1000km away in the Parinachocas region of Dept. Ayacucho.

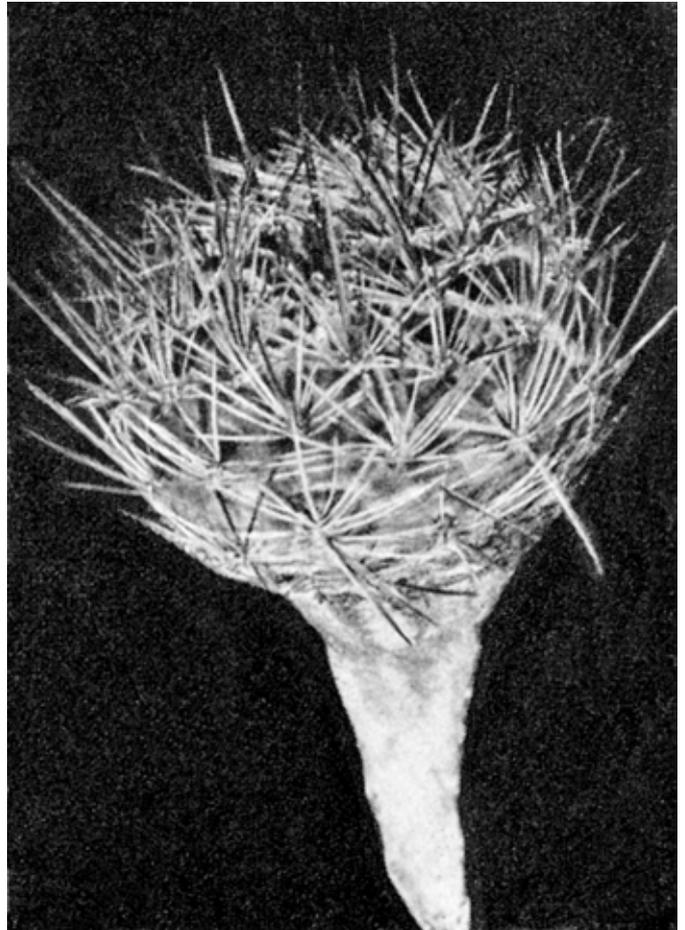


Fig. 88 *Neowerdermannia chilensis* (Chile, Arica region, Tignamar, 3500m).



Fig. 87 *Weingartia fidana* (Bolivia, Tupiza).



Fig. 89 *Copiapoa gigantea* (Chile, Antofagasta, on the coast near Papos).

The trip ended with a visit to old friends at the Botanic Garden in Rio de Janeiro (Fig. 90).



Fig. 90 Friends at the Botanic Garden in Rio de Janeiro: A. C. Brade is second from the right. Otto Voll, the Garden Curator is to the left.

Sixth expedition 1936-37

In the year before he died, Victor Morawetz financed a second expedition, this time to Ecuador and northern Peru.

Ecuador is most famous for Mt. Chimborazo (6310m), not the world's highest mountain from sea-level but notable for being the furthest point away from the centre of the earth (Fig. 91). It was first climbed to its peak by the British mountaineer Edward Whymper in 1880.



Fig. 91 Backeberg's view of Mt. Chimborazo (6310m), Ecuador.

In the Chanchan valley near Huigra, Ecuador Backeberg found *Borzicactus morleyanus*, a stouter relation of *Borzicactus sepium* described in 1922 (Fig. 92). It was named for Edward Morley, a resident of Huigra, who Backeberg met at the Huigra Hotel (Fig. 93).

It was named for Morley by Britton & Rose for the assistance that he had given to Dr. Rose on his expedition to Ecuador in 1918.



Fig. 92 Backeberg found *Borzicactus morleyanus* in the Chanchan valley near Huigra, Ecuador.

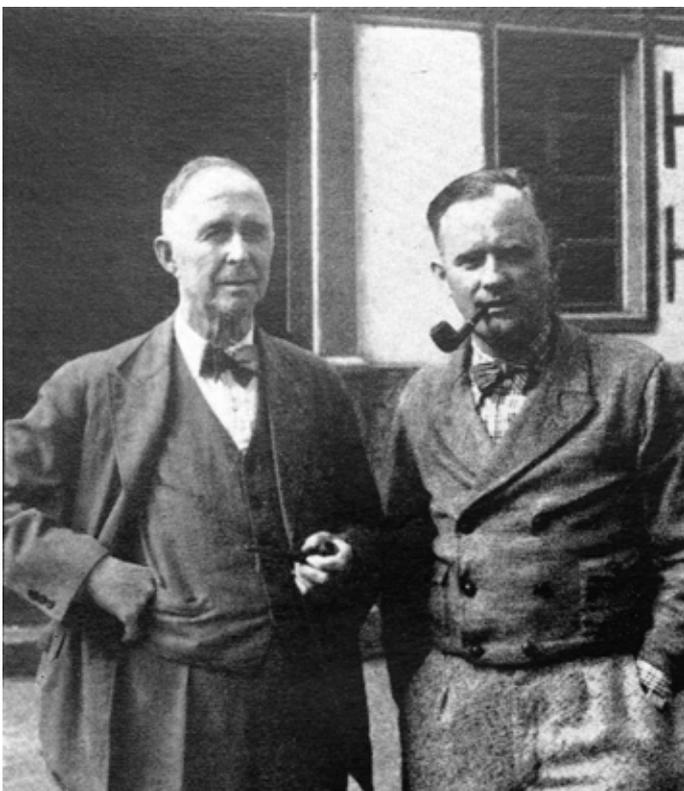


Fig. 93 Edward Morley, seen here with Backeberg outside the Huigra Hotel.



Fig. 94 The endangered Ecuadorian endemic *Puya sodiroana*. Below Backeberg is holding the top of an inflorescence destined for the Berlin herbarium.

Backeberg also collected the occasional non-cactus, such as *Echeveria chilensis* var. *backebergii* and *Villadia dyvrandae* (*Sedum backebergii*), both near Matucana.

On this expedition he found the Ecuadorian endemic *Puya sodiroana*, now a Red-List species known only from five small populations all of which are threatened by habitat conversion to croplands and fires (Fig. 94).

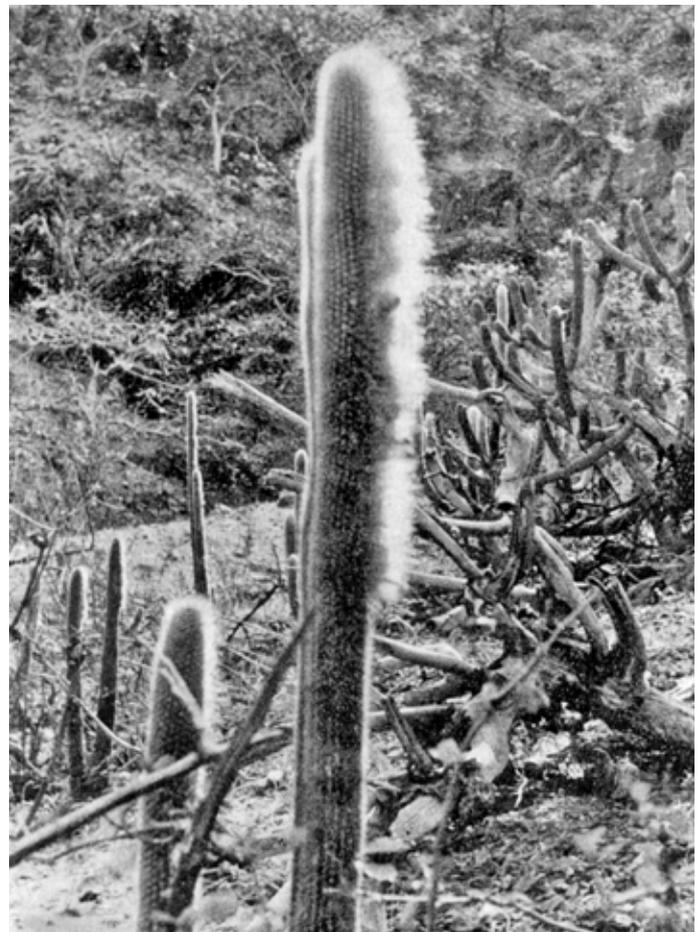


Fig. 96 *Thrixanthocereus blossfeldiorum* at its type locality near the town of Huancabamba.

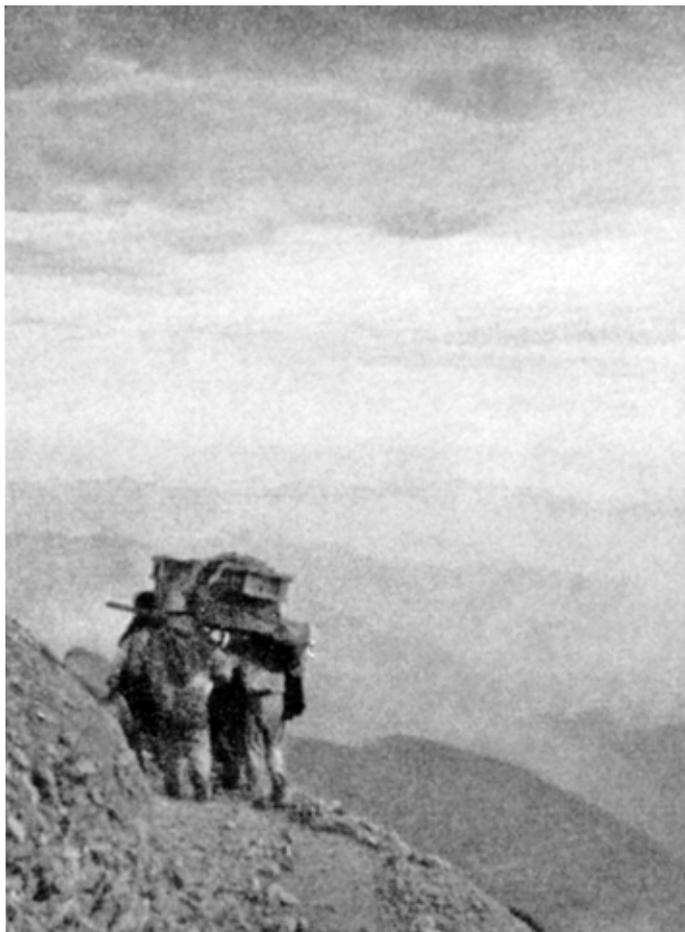


Fig. 95 On a high donkey trail overlooking the Huancabamba valley.

In Peru, he was once again drawn to enter the Huancabamba valley (Fig. 95). Here he found *Thrixanthocereus blossfeldiorum* (Werderm.) Backeb. which had recently been described based on a gathering by Harry Blossfeld and his father Robert near the town of Huancabamba. Backeberg found and recollected it again near its type locality (Fig. 96), although it has quite a wide distribution in the Huancabamba, Olmos, and Maranon

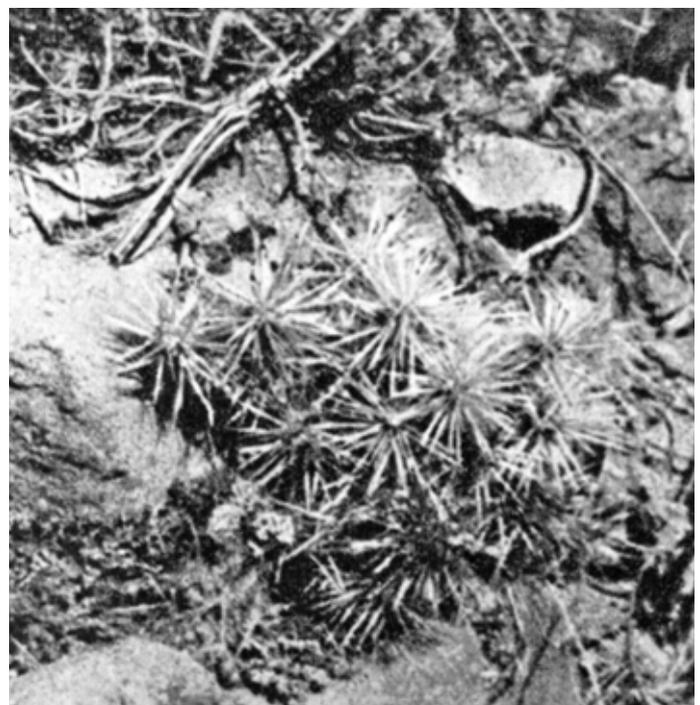


Fig. 97 *Opuntia tunicata* from the northern end of the Huancabamba valley.

valleys. Near the same location he also found *Opuntia tunicata*, a North American invader (Fig. 97).

The disembarkation point for this expedition was the port of Talara, and near here Backeberg found *Haageocereus versicolor* var. *fuscus* (Piura, nr. Talara) (Fig. 98).

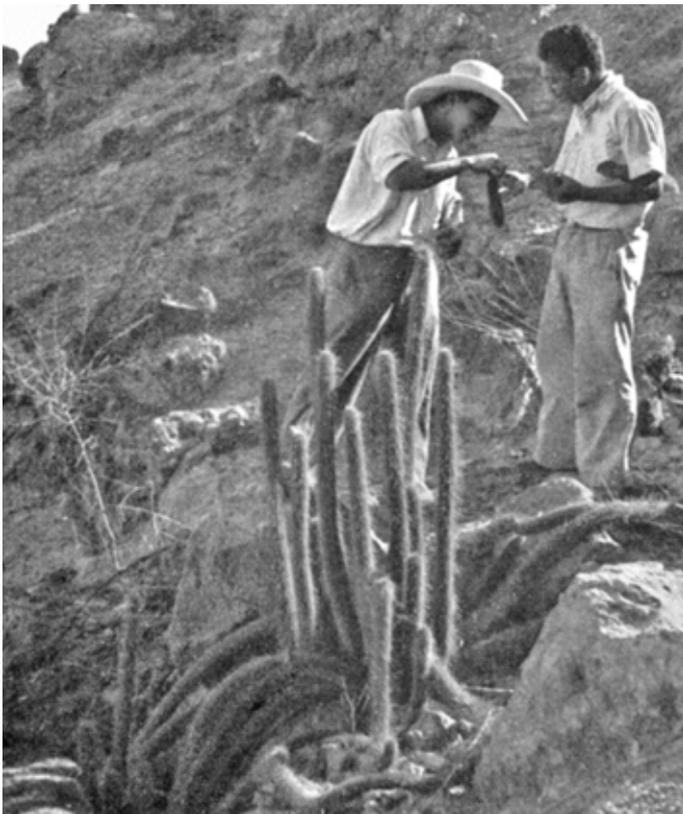


Fig. 98 *Haageocereus versicolor* var. *fuscus* (Piura, nr. Talara).

Seventh expedition 1938

In the 10 years of exploration to 1937, Backeberg had collected 200 boxes of plants, shot 1,000 metres of movie film and taken 600 photos. Botanically, these yielded some 140 new taxa, most of which were described by himself.

He was now aged 44 and thought that his days of exploration were over. However, out of the blue came a commission from the Hamburg City Council to supervise an expedition to collect large, impressive-looking cacti to mount a new exhibit of large cacti scheduled to take place at the Planten & Blomen [plants & flowers] Garden in Hamburg on 28 Apr 1939 (Fig.99).



Fig. 99 Planten & Blomen [plants & flowers] Garden exhibition hall, Hamburg, in 1935.



Fig. 100 Backeberg's exhibits at the Planten & Blomen Garden exhibition hall, Hamburg, in 1935.

The City had already been very impressed by Backeberg's large exhibit covering five halls that he had created for them in 1935 (Fig. 100), and wanted him to create an even bigger and better display.

Of the new commission he wrote: "The expedition was a veritable hunt for a number of impressive giant cacti that did not however allow time for interesting and exciting experiences and collecting unusual plants. It was not easy in the short time to carry away huge ball cacti of 2m height and weighing nearly a ton, tall columns about 3m high and one third of a metre in diameter with old, gigantic prickly crowns, to give an impression of the spination, shapes, colours, and sizes of these Mexican desert wonders."

Despite the shortage of time, he did use the opportunity to visit his old friend Fritz Schwartz in San Luis Potosi, and together they enjoyed a short trip to the Zopilote Canyon in Guerrero (Fig. 101).

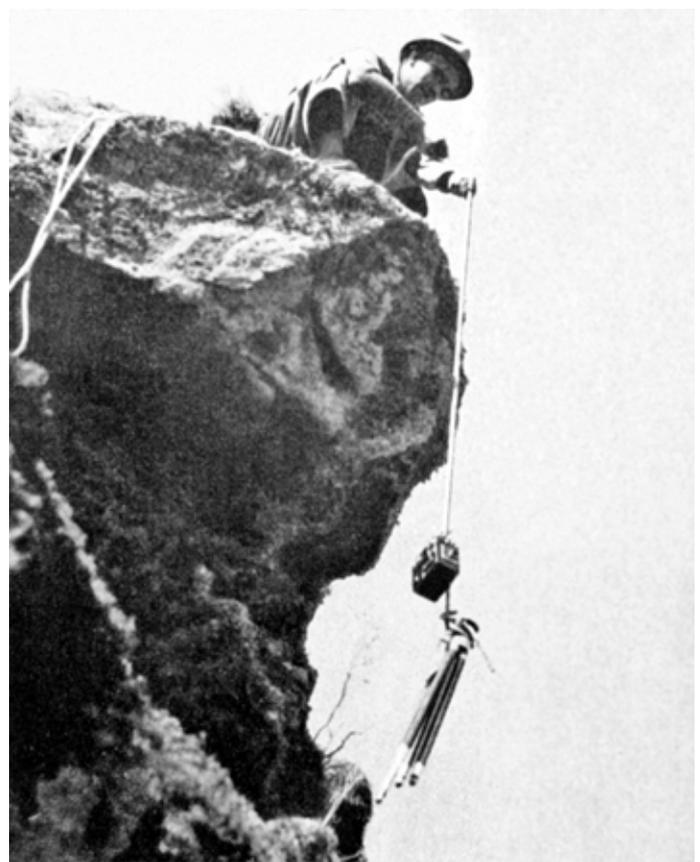


Fig. 102 Backeberg lowering his cine-camera down the south wall of the Barranca Venados after shooting an impenetrable forest of "Cardona" in the valley (*Isolatocereus dumortieri*).



Fig. 101 Fritz Schwartz admiring *Pilosocereus alensis* in the Zopilote Canyon, Guerrero.

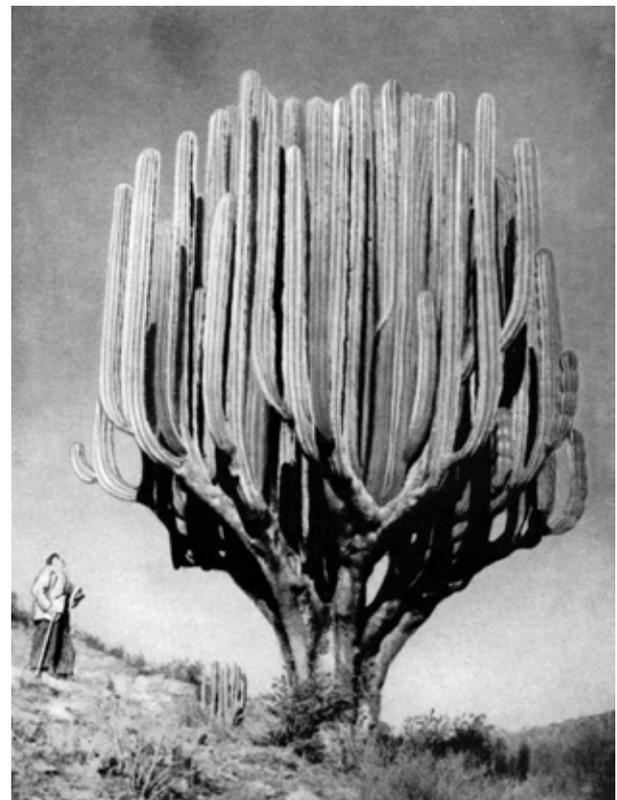


Fig. 103 The gigantic *Pachycereus grandis* var. *gigas* Backeb.



Fig. 104 A smaller example of *Pachycereus grandis* var. *gigas* provided suitable specimens.

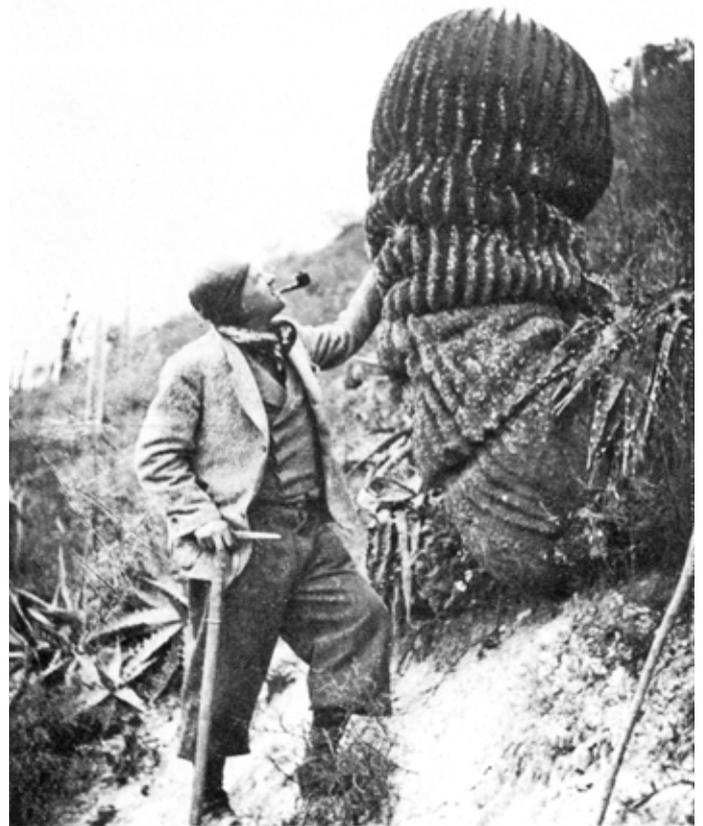


Fig. 105 Backeberg sets about selecting suitable plants for the Hamburg exhibit. Seen here with an *Echinocactus platyacanthus*.



Fig. 106 *Echinocactus platyacanthus* marked by a flag for later removal.



Fig. 107 The mighty beast in its final resting place in Hamburg, attracting the attention of a young admirer.

In the Zopilote Canyon is a truly massive form of *Pachycereus grandis* that Backeberg described as var. *gigas* [giant] (Fig. 103). A somewhat smaller example was used as a source of material, gathered with the aid of his trusty lasso (Fig. 104).

For the exhibit, Backeberg selected suitable plants (Fig. 105). These were marked with a flag for the removal team to dig out (Fig. 106). The end of the journey for this plant is shown in Fig. 107.

Plants were protected with padding prior to removal (Fig. 108), then dug out to load onto a pickup truck (Fig. 109). *Cephalocereus columna-trajani* and *Echinocactus platyacanthus* were the largest plants shipped.



Fig. 109 *Echinocactus platyacanthus* being man-handled onto a truck.



Fig. 108 Selected plants were wrapped in padding prior to being man-handled onto a truck. Here we see *Cephalocereus columna-trajani* being prepared.



Fig. 110 Backeberg stands on the corpses of *Echinocactus platyacanthus*, gathered and de-spined for processing as cactus candy.

Echinocactus platyacanthus has its economic uses, as large numbers are harvested for processing into cactus candy (Fig. 110).

The Hamburg Pflanzen & Blumen [plants & flowers] Exhibition of 28 Apr 1939 was a great success, but regrettably all Backeberg's hard work was destroyed shortly afterwards in a bombing raid in 1943.

Later he said: "They arrived well, rooted well and many of them flowered in Hamburg, until the war set a heroic end to these heroic plants."

He also grew tobacco on a small scale and supplied friends with handmade cigars.

In 1944, a blast from an air raid bomb took all the glass out of his glasshouses, but thanks to the income from his home-grown tobacco trade he was able to repair them fairly quickly.

The post-war years

After the war he earned a living from cacti and guest speaking and relied heavily on his wife, Emma, to maintain his plant collection while he was absent. He and Emma were married in 1919, but had no direct descendants (Fig. 112).



Fig. 111 Backeberg stands before another of Mexico's giants, *Yucca periculosa*, as if in a parting salute to Mexico after his final adventure in habitat.

The outbreak of World War II in 1939 put an end to any further ambitions that Backeberg may have had as an explorer but he continued through the war years making a small living as a nurseryman, and by making presentations featuring his film, mainly to military units and especially in France, adopting the style of a businessman and adventurer. He also continued to write, lecture and study cacti. The first edition of his second autobiographical travelogue appeared in 1942 (*Stachlige Wildnis*) (Fig. 26).



Fig. 112 Backeberg with his wife Emma among his books in 1948.



Fig. 113 A studio photo of Backeberg in 1948, aged 54.



Fig. 114 Louis Vatrican (1904-2007), Director of the Jardin Exotique, in a photo taken around 1965 by Willy De Cocker. Backeberg named the genus *Vatricania* in his honour in 1950.

In 1949 Backeberg visited the French Riviera to make a study of its large plant collections. In Monaco, he was invited to assist in the identification of the cacti in the Jardin Exotique (established 1913), and delivered a lecture at Monte Carlo. It was here that Louis Vatrican (Fig. 114), first Director of the Jardin Exotique (Fig. 115), introduced Backeberg to Julien Marnier-Lapostolle (1902-1976) (Fig. 116), son of the founder of the Grand Marnier company, and for the period 1951 to 1955 Backeberg became the Curator of the private Botanical Garden at “Les Cèdres” established in 1924.

Fig. 115 View of the most photogenic corner of the Jardin Exotique, seen here in 1948.

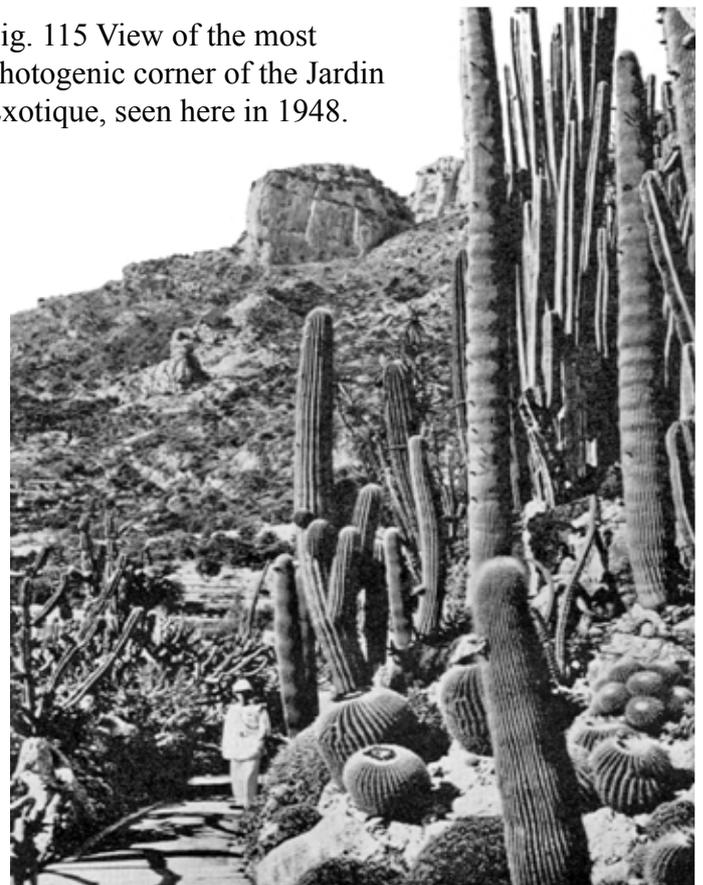




Fig. 116 Julien Marnier-Lapostolle (1902-1976), owner of the private botanical garden Les Cèdres, Saint-Jean-Cap-Ferrat, France. Seen here in 1967. Photographer unknown.

In 1951 he successfully transferred his own collection of several thousand plants from Hamburg to Les Cèdres, where they had agreed to house them (Fig. 117).

Between 1951 & 1955, Backeberg was appointed as Curator of the cacti at the Botanical Garden “Les Cèdres” by Marnier-Lapostolle. However, it ended due to irreconcilable differences with the owner, and he returned to Hamburg in 1955. During this period, he also continued to maintain and trade with cacti propagated from his private collection and made countless lecture tours.

In 1953, Backeberg made contact with Werner Rauh of Heidelberg (Fig. 118-119), which resulted in a period of intense correspondence and collaboration in the evaluation of the cactus material of the two Rauh expeditions in Peru in 1954 and 1956.

The type material from Rauh’s 1954 expedition was kept at Les Cèdres, while that of the 1956 expedition was grown in the Heidelberg Botanical Garden and preserved

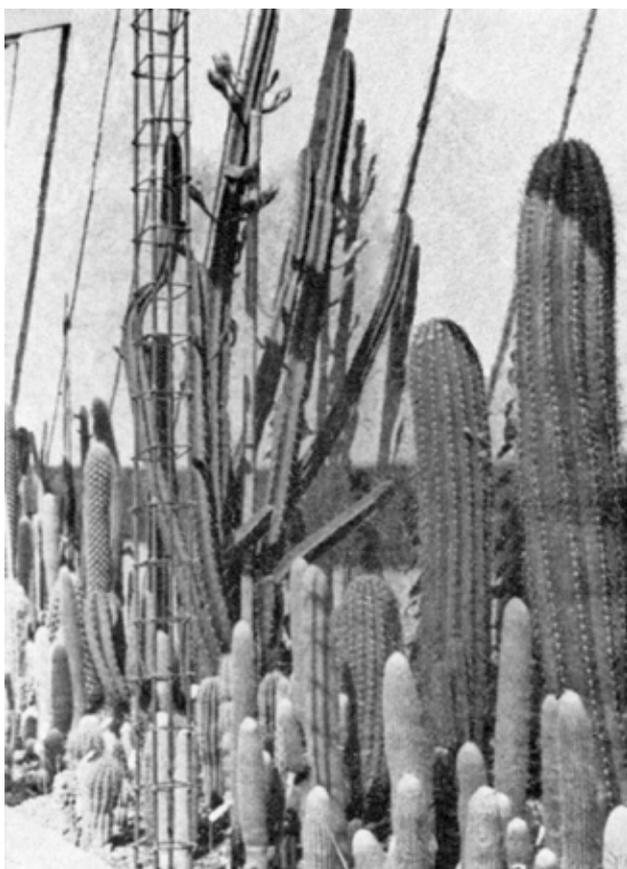


Fig. 117 Some of Backeberg’s own collection rehoused at Les Cèdres in 1951.

material deposited in the Heidelberg herbarium, now at Zürich. The new plants were validated by Rauh & Backeberg in Backeberg’s *Descriptions Cactacearum novarum*, published in early 1957.



Fig. 118 The German botanist Werner Rauh (1913-2000).

Photo: Hunt Institute.

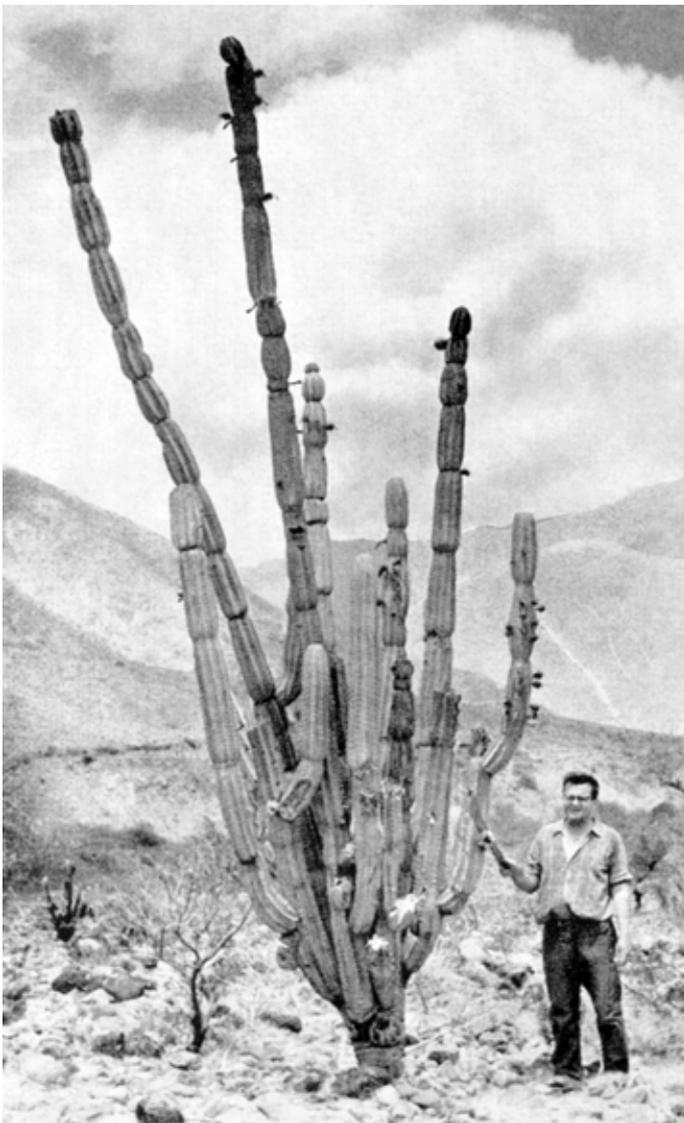


Fig. 119 Rauh and the eponymous *Armatocereus rauhii* Backeb. at its type locality in 1954. Photo: Werner Rauh.

Also in this period first contacts were made with F. Riviere-de-Caralt in Spain and he helped to build up the extensive collection of opuntias in his garden “Pinya de Rosa” on the Costa Brava, near Blanes, NE of Barcelona.

Backeberg made frequent visits to this collection in the years until 1965 (Fig. 121).

Fig. 121 Backeberg in discussion with Riviere-de-Caralt in his garden. Photo Len Newton.



Fig. 120 Fernando Riviere-de-Caralt (1904-1992), the Spanish owner of an extensive collection of opuntias in his garden “Pinya de Rosa” on the Costa Brava, near Blanes, NE of Barcelona, in 1959.

Photographer unknown.



Intensive work began in 1955 on the first volume of his 6-volume monograph *Die Cactaceae* (Fig. 3), and for some of this time he stayed in a health spa in order to be able to work undisturbed. The manuscript for the first volume was completed by mid-1956 and it was published in Jan 1958. The work had initially been intended to run to three volumes, but it became more and more extensive as it proceeded.

Countless lecture tours provided his income at this time, and also a contract with the southern French Tourist Board for over 120 promotional lectures in 1955 in Germany.

In 1956, he sold his private collection that had been housed at “Les Cèdres” since 1951 to the “Jardin Exotique” in Monaco, but in the years that followed he slowly began to rebuild a new private collection.

The volumes of *Die Cactaceae* appeared in rapid succession with the final Vol.6 appearing in June 1962.

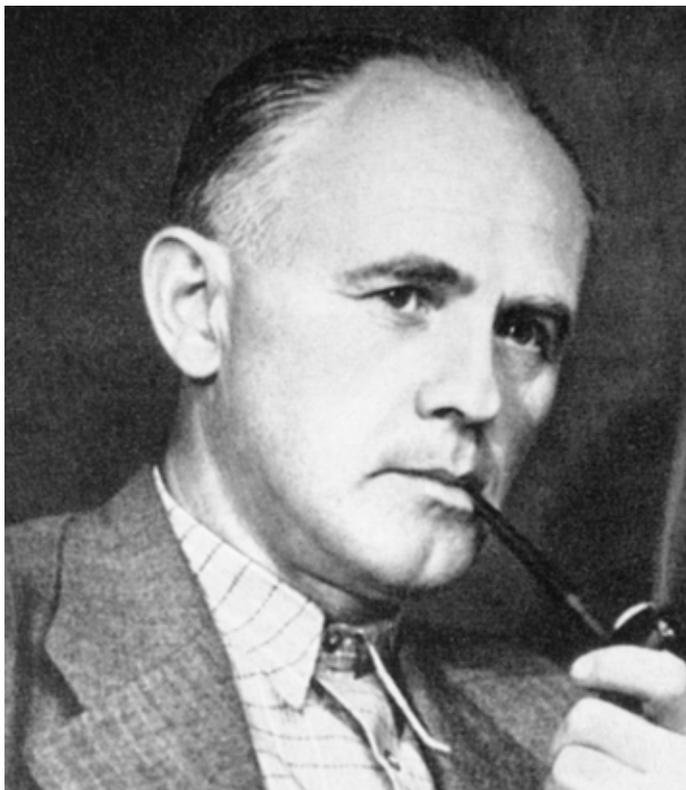


Fig. 122 Backeberg portrait taken by Hilgert in 1964.

He began to accumulate material in preparation for a planned cactus dictionary from an idea formed in 1963, and spent a further 4 months in 1964 going over his collection and other plants at Les Cèdres.

In 1964 he began to prepare a new autobiography, but this was never completed or published.

At the beginning of 1965, the Deutsche Forschungsgemeinschaft (DFG): German Research Foundation, honoured Backeberg with their Distinguished Service Cross for his life’s contribution to cactus studies. Like the British Royal Society, they are also members of the International Council for Science, and had contributed funds for two of Backeberg’s expeditions.

A lecture tour to England took place in May 1965 during which he spoke to audiences in seven cities (Fig. 124).

Also in 1965 he negotiated the sale of his rebuilt private collection, again to the Jardin Exotique in Monaco, to come into effect upon his death.

His end, on 14 Jan 1966 of a heart attack, came unexpectedly, just before the appearance of his last and most popular work *Das Kakteenlexikon* on 20 Mar 1966.

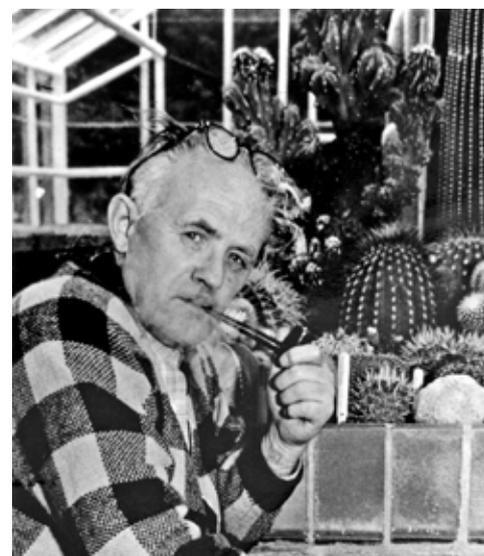


Fig. 123 The last known published photo of Backeberg by Wouters, from *Dodonaeus* 4(2): 43. (Mar-Apr) 1966.



Fig.124 In May 1965, on his English lecture tour, seen here in Gordon Rowley's garden with Cyril Parr & Len Newton.

From Rowley & Parr's obituary notice, *Cactus and Succulent Journal (US)* **38**(2): 70. 1966.

Photographer unknown.

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Postscript

The legacies of Curt Backeberg are manifold: literature about new plants, exploration, complete dictionaries, illustrated with a rich assortment of photographs, and a novel and very detailed classification. His contributions made no criticism of any other author, and he wisely chose not to dignify the critics of his own work with responses.

His taxonomic decisions did not meet with the approval of everyone, with the accusation of indulging in too much splitting being the most frequently seen comment. Narrow or broad taxonomic arrangements are, however, purely private matters of personal opinion, not fact, so this could be

taken as a manifestation of petty jealousies. His species concepts were actually quite average, while his generic divisions tended to follow those of Britton & Rose, who set the trend for adopting narrowly defined generic limits that remain fashionable even today.

The lack of herbarium specimens has not proved to be any problem because the correct application of all his names has never been in question. His clear photography has always made identification simple.