The Cactician

ISSN 2052-952X

7. Reinstatement of *Cactus kagenekii* C.C.Gmel.

ORIGINAL RESEARCH PAPERS ON A MISCELLANY OF TOPICS ON THE SUBJECT OF SUCCULENT PLANTS AUTHORED AND EDITED BY ROY MOTTRAM

Taxonomy
Botanical History
Databases
&c.

Reinstatement of *Cactus kagenekii* C.C.Gmel.

Roy Mottram Whitestone Gardens, Sutton, Thirsk, North Yorkshire YO7 2PZ, U.K.
roy@whitestn.demon.co.uk

30 Sep 2014

Summary
This contribution outlines a history of the name of a species that used to be common in the environs of Lima and inland up the valley of the Rio Rimac as far as Chosica. Indeed, it was so common that it would have been obvious to any early visitor to Peru's capital city Lima, and the earliest known botanical explorer happens to have been Joseph Dombey in 1777-78. Today the plant is less common, reduced severely in numbers by human settlement and most notably by the expansion of the city of Lima up the Rimac valley. The earliest name for this plant was *Cactus kagenekii* C.C.Gmel., which is reinstated here with a new combination in *Haageocereus*, and type selections for this and other included synonyms are made wherever appropriate.

New names proposed in this paper
Haageocereus kagenekii (C.C.Gmel.) Mottram (p. 12)

Two type designations appear on p. 12 & 15.

Publisher: Roy Mottram
Whitestone Gardens,
Sutton, Thirsk,
North Yorkshire YO7 2PZ, U.K.
Tel: 0044 (0) 1845 597467
Fax: 0044 (0) 1845 597035
Email: roy@whitestn.demon.co.uk

in association with the International Crassulaceae Network
c/o Margrit Bischofberger
Guggenbühlstrasse 20
CH-8355 Aadorf
Switzerland.
Tel: 0041 (0) 52 212 71 72
Fax: 0041 (0) 52 212 71 29
Email: margrit.bischofberger@enersol.ch
url: www.crassulaceae.ch

Reinstatement of *Cactus kagenekii* C.C.Gmel.

The long, convoluted story of this taxon began with an expedition to Peru in 1778-79 by the French physician and natural historian Joseph Dombey, a competant botanist.

Joseph Dombey (1742-1794)

Joseph Dombey (Fig. 1) had been allowed to travel with the botanists Hipólito Ruiz (1754-1815) and José Pavón (1754-1844) on their Spanish government financed expedition to Peru and Chile, setting off in 1777, but this was only on the express understanding that he would give his less experienced companions the benefit of his botanical knowledge and not publish his own discoveries before Ruiz and Pavón had completed theirs. He was allowed to keep one specimen of each new plant discovered, but the Spanish government would claim the first specimen of any duplicates. Where there was no duplicate he was to supply a description or illustration. Copies of all his notes and descriptions were to be deposited with the Spanish government. Despite these conditions, his salary was to be paid by the French government, so there was an immediate conflict of loyalties from the outset in having to serve two paymasters.

Dombey left Cádiz in 1777 with the Spanish expedition, reaching Callao, Peru, in 1778. He studied the Peruvian vegetation, particularly the Latin American form of Cinnamomum verum (cinnamon), searched for platinum and saltpetre (potassium nitrate), analyzed the Chauchin spa, and made archaeological explorations in Chan Chan, Pachacamac, and Tarma. At Huánuco he found Cinchona (quinine).

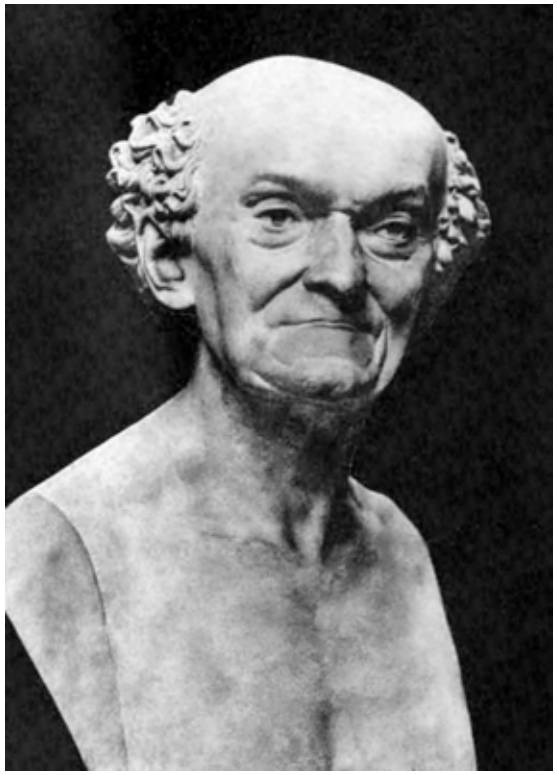


Fig. 1 Bust of Joseph Dombey in 1785, now at the Muséum d'Histoire Naturelle, Paris.

In 1781 he went on to Chile, exploring the mining areas of Coquimbo and Copiapó, and returned to France in 1785, calling at Rio de Janeiro, Brazil, on the way. (Fig. 2)

In common with other contemporaries, who did not know how to preserve cactus specimens other than by just pressing their flowers, Dombey was not known to have made herbarium specimens of cacti.

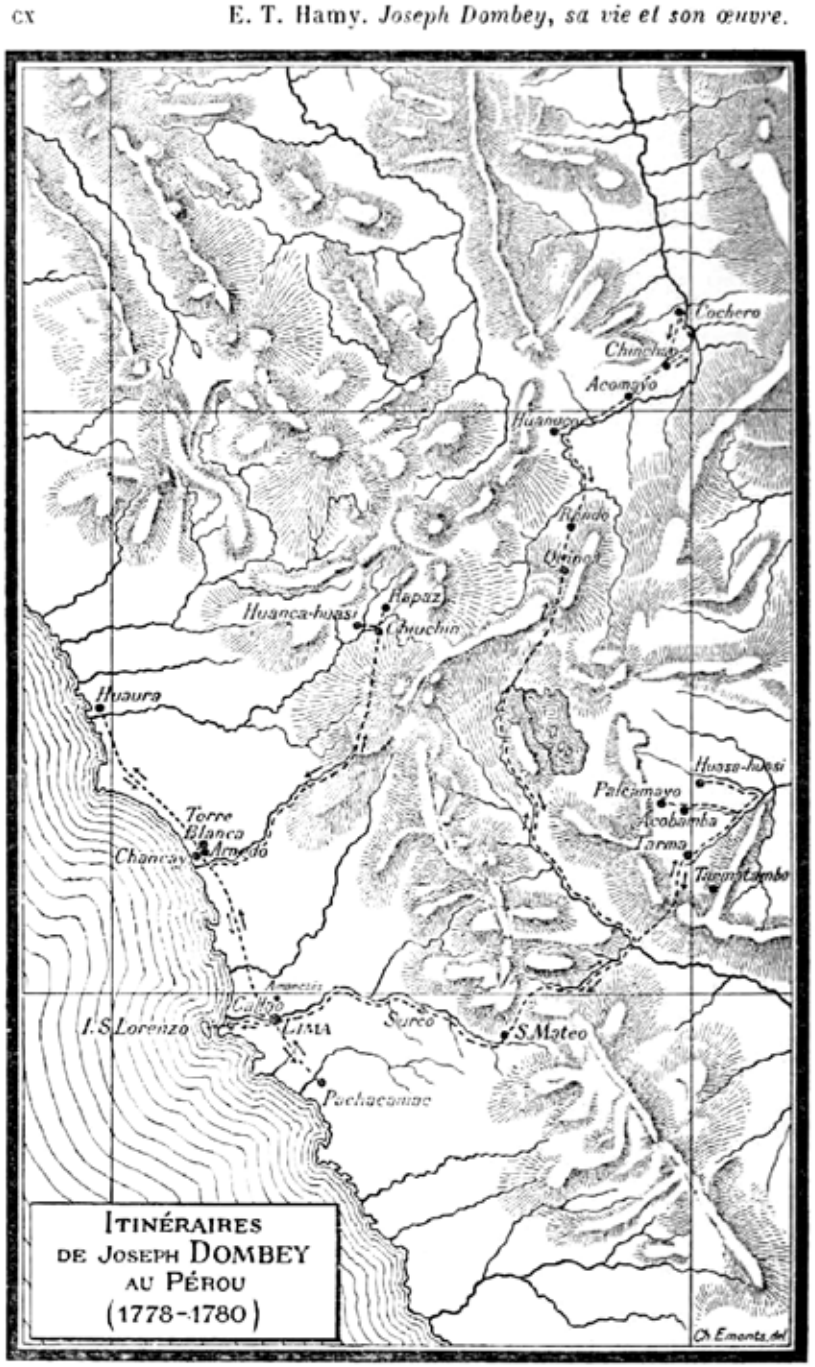


Fig. 2 Itinery of Dombey's explorations in Peru, from Hamy, *Joseph Dombey*: cx. 1905.

However, he did encounter them and occasionally commented on them. In a letter written from Lima to André THOUIN dated 20 April 1779, he wrote "J'ai rencontré dans la route cinq genres nouveaux, une espèce de Cactus qui produit une laine dont j'envoye un très-petit échantillon dans la lettre que j'écris à M. DUHAMEL. L'ordinaire prochain, je vous enverrai une bonne quantité de cette laine, aussi bien qu'un mémoire; il est surtout intéressant que l'Espagne la connoisse, par ce qu'elle peut être un objet intéressant de commerce et pour les manufactures."
[I found five new sorts on the way, [including] a species of *Cactus* that produces wool from which I sent a very small sample with a letter that I wrote to Mr. DUHAMEL. In the next consignment, I will send you a good amount of this wool, along with some notes; particularly interesting when it becomes known in Spain because it may perhaps have an interesting potential for commerce and manufacturing].

This was presumably a reference to *Espostoa melanostele*, another denizen of the Rimac valley above Lima. This letter had been written mainly to advise about a consignment addressed to Buffon in Paris placed on board the vessel Le Bon Conseil which had embarked from the port of Callao, Lima, on 3 April 1779 with geological specimens, dried plants, and seeds gathered in the environs of Lima. It may well have been in this consignment that seeds of the cactus he had provisionally called *Cactus multangularis* were first sent to Europe. Perhaps this consignment never reached France, being intercepted by the Spanish, because

according to Gmelin, Madrid had been the source of his seeds in 1789.

European nations regularly intercepted and confiscated each others cargoes at that time. Moreover, when Dombey finally arrived back in Europe at the port of Cadiz in 1785, the Spanish government laid claim to all of his accompanying rich collections, because the collections that Dombey had allocated for Spain had travelled separately on another ship that had been lost at sea.

In order to negotiate the release of half of these collections to go to France, Dombey was forced to sign a pledge not to publish anything about his travels and discoveries before Ruiz and Pavón had returned and made use of his material for their own publications, in which, it has been alleged, they plagiarised Dombey's work without acknowledgement. These obfuscations continued over an extended period, during which time the collections were held in customs-houses, where all the valuable living plants perished.

Dombey was by now in serious financial difficulties, so he had to part with his precious remaining collections to the Jardin du Roi, Paris, in exchange for a government pension and a grant to pay his debts. The dried plants were loaned to L'Heritier (1746-1800) who had generously offered to publish the botanical part of the Dombey collections at his own expense.

The Spanish government learned of this intention, and, regarding it as a breach of Dombey's written undertaking, demanded half the material back again. To prevent this happening, L'Heritier took the materials to England to put them under the protection of Joseph Banks, and finally a few of the novelties were described in L'Heritier's *Sertum Anglicum* (1788) among a random selection of other new plants at Kew. The Dombey material was then returned to L'Heritier, who kept it in Paris until L'Heritier's own death in 1800, finally being passed to the Muséum d'Histoire Naturelle by his children in 1801.

The remainder of Dombey's life after the expedition continued to be dogged by misfortune. He was again arrested after yet another act of state-sponsored piracy whilst on a French government mission to America, ending up being incarcerated on the island of Montserrat, where he eventually died in 1794.

Dombey's Spanish material was subsequently used, along with their own, by Ruiz and Pavón to publish their own account of the expedition (1794-1802).

There is said to be a Dombey manuscript titled *Novae plantae americanae annis 1778-79 collectae* (MS 6615) at the Institut de France, Paris, in the Delessert library, but the Institut did not reply to an enquiry for a digital copy. Maybe it only relates to the material handled by L'Heritier, which contained no cacti.

Botanical history of Dombey's *Cactus multangularis*

The type collection of the seed of *Cactus multangularis* Dombey nom. prov., probably gathered in the environs of Lima city, ended up at the Madrid Botanic Garden. From there some seed was forwarded in 1789 to the Director of the Karlsruhe Botanic Garden, who at that time was Carl Christian Gmelin (1762-1837).

Fig. 3 The page on which Gmelin's first description of *Cactus kagenekii* appears. (See the Appendix for a translation of this and other early descriptions).

CACHRYS

Libanotis. L. hisp. gall. m. med. t. ♆
† tomentosa. *desf.* hisp. barbar. t. ♆
C. panacisfolia. Vahl.

CACTUS

cochenillifer. L. am. m. oec. c. ♄
curassavicus. L. curassao. orn. c. ♄
cylindricus. *Lam.* peru. orn. c. ♄
Ficus - indica. L. am. m. orn. c. ♄
flagelliformis. L. am. m. orn. t. ♄
grandiflorus. L. jamaica. vera Cruz. orn. c. ♄
heptagonus. L. jamaica. orn. c. ♄
hexagonus. L. surinam. orn. c. ♄
*) Kagenekii. *mihi.* am. m. orn. c. ♄
lanuginosus. L. jamaica. orn. c. ♄
mamillaris. L. am. m. orn. c. ♄
**) monstrosus. *H. par.* ..... orn. c. ♄
Opuntia. L. hisp. afr. oec. orn. c. ♄
pendulus. L. jamaica. orn. c. ♄
pentagonus. L. am. m. orn. c. ♄
Pereskia. L. am. m. orn. c. ♄
peruvianus. L. peru. jamaica. orn. c. ♄
phyllanthus. L. am. m. orn. c. ♄
repandus L. jamaica. orn. c. ♄
Royeni. L. am. m. orn. c. ♄
tetragonus. L. am. m. orn. c. ♄
triangularis. L. jamaica. orn. c. ♄
— variegatus.
Tuna. L. am. m. jamaica. orn. c. ♄

*) *Cactus Kagenekii: erectus, cylindricus, multangularis, uniformis, spinosissimus, pulcherrimus, vix adhuc descriptus. Semina ejus miki communicata Madriti 1789. ab Ill. Comite de Kagenek. Misi abhinc individua in H. Erlangensem, Gottingensem, Berolinensem, Parisiensem, aliosque sub Cacto multangulari.*

**) Hanc speciem sub hoc nomine nuper vidi in Horto Parisiensi.

Presumably not confident in being able to raise cactus seed himself, he forwarded his allocation of the Dombey seeds to a nearby and well known cactus enthusiast of the day, Karl Friedrich Graf von KAGENECK (1729-), of Baden. Kageneck successfully grew the plants and returned some of the seedlings to Gmelin, which he then renamed formally as *Cactus kagenekii*, as an honour to his friend, in a Karlsruhe garden catalogue of 1811. As it is the earliest known description, this name stands as the correct name for this taxon. (Fig. 3). The description is not sufficient for identification but clearly establishes it as being the same plant as the then unpublished *Cactus multangularis* Dombey nom. prov.

Seedlings had also been distributed to other European institutions, notably the Jardin du Roi, Paris, and several recipients in Germany including the botanical gardens in Berlin, Erlangen, Göttingen, and elsewhere.

Cactus multangularis was listed by Desfontaines (1815: 192) in the Dec. 1815 second edition of his Paris garden catalogue, with authority attributed to Willdenow.

Berlin had also been successful in growing *Cactus multangularis*, resulting in Willdenow's brief description of it in 1814, and it appeared in Link's catalogue of the Berlin garden in 1822. Wildenow described all his cacti without any indication of their origin or earlier authority, so his intention had not been to introduce *Cactus multangularis* as a new taxon. He had nevertheless published the earliest validation of the name.

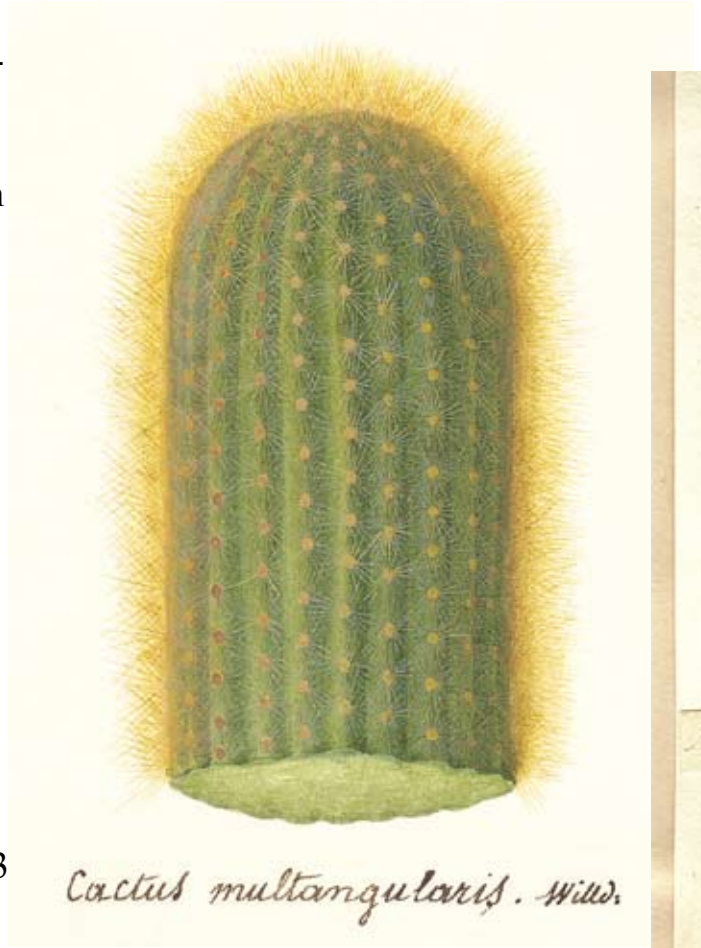


Fig. 4 *Cactus multangularis*: Salm-Dyck plate executed in or after 1805 from a plant received from Willdenow. Reproduced in Rowley (1999: 15, t.19). Leuenberger (2004: 317-319) misapplied the name *Weberbauerocereus winterianus* F.Ritter to this illustration, misled by the golden spination which was somewhat crudely depicted. Ritter's plant was not discovered until 1953 at locations nowhere near Dombey's routes.

Salm-Dyck had listed it in his catalogues from as early as 1805, as a cutting supplied by Willdenow and a permanent record of it was made by Salm-Dyck with his own painting of a golden-spined clone (Fig. 4). In 1824 Salm-Dyck himself sent a cutting of a different but less colourful clone to Kew, where it was painted by the resident artist Thomas Duncanson (Fig. 5).

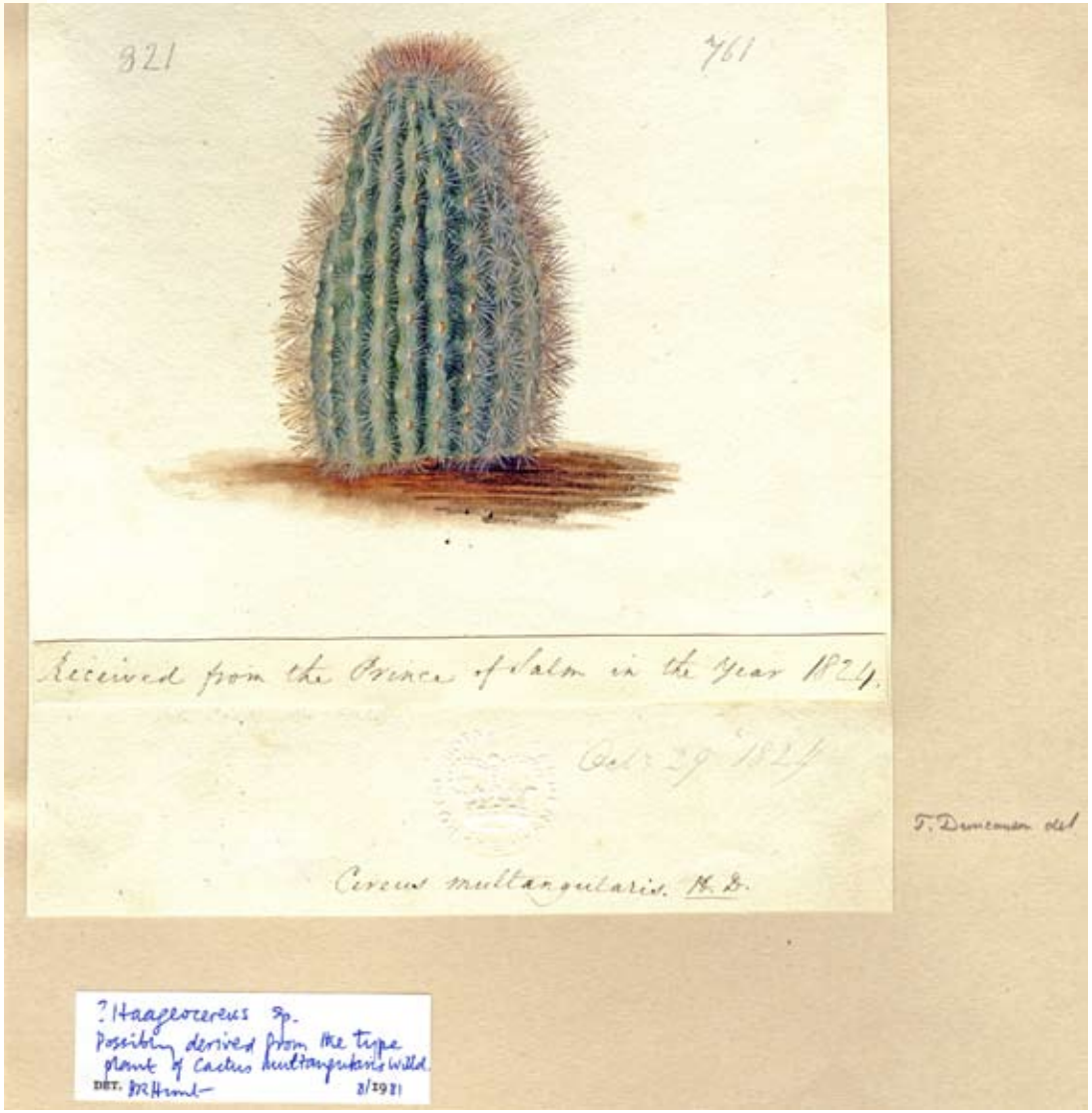


Fig. 5 *Cereus multangularis*: t.821 by Duncanson, annotated "Cereus multangularis H.D." [H. D. = Hortus Dykensis] & "Received from the Prince of Salm in the year 1824" Reproduced here with the kind permission of RBG Kew ©.

From 1811 onwards, this plant should have been called *Cactus kagenekii* C.C.Gmel., but unfortunately Gmelin's description was almost completely overlooked by all authors. The later catalogues of Salm-Dyck placed *C. kagenekii* in the synonymy of *Cereus multangularis*, but that of course is an illegitimate usage because the name *C. multangularis* was not validated with a description until 1814.

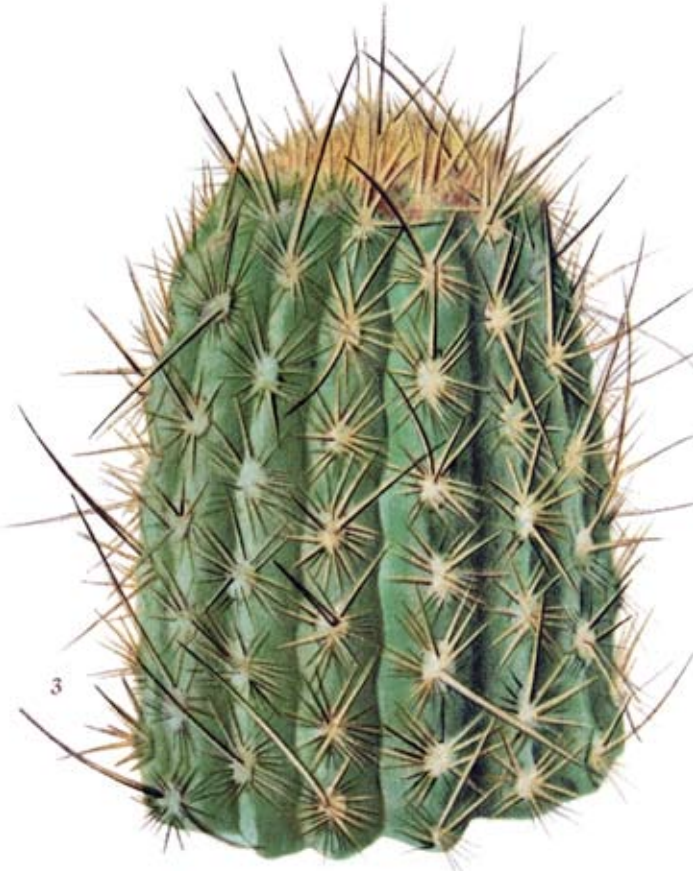
Notoriously, Britton & Rose (1920: 167) misapplied the name *Cephalocereus melanostele* Vaupel to this plant, under an illegitimate new genus, later synonymising it under the earlier name *Cactus multangularis* Willd. in the Appendix to their work (1923: 279) under their illegitimate generic name *Binghamia*. (Fig. 6-9).

Fig. 236.—Binghamia melanostele.

Fig. 6 Britton & Rose material associated with *Binghamia melanostele*: Photo of Rose 18558 in the vicinity of Santa Clara, near Lima, taken by Rose in Jul 1914.

Fig. 238.—Fruit of B. melanostele. ×0.6.

Fig. 7 Britton & Rose material associated with *Binghamia melanostele*: Sketch of a fruit based on a photo taken at Santa Clara.



3. Top of branch of *Binghamia melanostele*. (Natural size.)

Fig. 8 Britton & Rose material associated with *Binghamia melanostele*: Top of a stem collected by Rose (18533) in the vicinity of Chosica at 800m. on 30 June 1914, drawn by Mary Eaton.

Fig. 9 Britton & Rose herbarium sheet & photo associated with *Binghamia melanostele* from Santa Clara, near Lima city from two gatherings on 3 & 6 Jul 1914: *J. N. Rose 18558* (NY 02219098).

New York Botanical Garden ©.

Fig. 10 *Rose 18558* NY 484612. This contains two separate gatherings making it ineligible as a type. Reproduced with the kind permission of the New York Botanical Garden ©.

Subsequently, needing a name combination in *Cereus*, Werdermann & Backeberg (1931: 74-75) replaced the name *melanostele* with the new taxon *pseudomelanostele*.

Then follows another long history of confusion as to whether *multangularis* or *pseudomelanostele* was its correct name, with the latter usually winning because of uncertainty about the identity of the former. Thankfully, this long concaternation of mistakes can now be swept aside and the earliest and demonstrably correct name applied.

Alphabetic summary of the taxonomic history of *Haageocereus kagenekii* and its obligate synonyms

Many other synonyms can be referred to this species, but it is the following few that have been involved in creating the most confusion. Thankfully they can all now be dropped in favour of the correct name.

akersii

Peruvocereus multangularis Akers, From Peru–*Peruvocereus multangularis*, *Cact. Succ. J.* (US) **22**(6): 174. 1950 nom. illeg. (Art. 52.1). [Combined with an illegitimate generic name. Also, though proposed as a new combination of *Cactus multangularis* Willd. (1814), it was based on the type of *Cereus pseudomelanostele* Werderm. & Backeb. (1931), so Akers had created a superfluous replacement, not a new combination]

Haageocereus akersii Backeb., in Rauh, *Beitrag zur Kenntnis der peruanischen Kakteenvegetation*: 416. (Jul) 1958. [Superfluous replacement for *Peruvocereus multangularis* Akers, and also *Haageocereus pseudomelanostele* (Werderm. & Backeb.) Backeb. (1936), both sharing the same type].

Etym. Named for John F. Akers (1906-).

T: Peru, Dept. Lima, nr. Cajamarquilla off the Lima-Oroya road; 1931, *Curt Backeberg s.n.* (Fig. 11-12)

Obs: Merely a pink to red flowered form of *Cereus pseudomelanostele* Werderm. & Backeb. (1931).

Syn: *Cereus pseudomelanostele* Werderm. & Backeb. (1931).

Ref: *Haageocereus kagenekii* (C.C.Gmel.) Mottram.

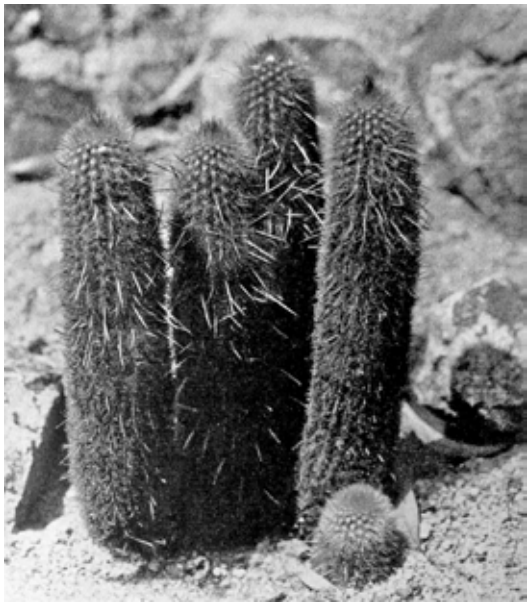


Fig. 11-12 *Cereus pseudomelanostele* (Peru, Dept. Lima, near Cajamarquilla) Photographed by Backeberg at the Cajamarquilla Inca ruins, not far from Lima city, and later flowering in Europe).

kagenekii
Cactus kagenekii C.C.Gmel., *Hortus magni ducis badensis carlsruhanus*: 48. 1811. (Fig. 3)
Cereus kagenekii (C.C.Gmel.) K.Schum., *Gesamtbeschreibung der Kakteen* (2): 66. (15 May) 1897.
Haageocereus kagenekii (C.C.Gmel.) Mottram **comb. nov.** [Bas: *Cactus kagenekii* C.C.Gmel., *Hortus magni ducis badensis carlsruhanus*: 48. 1811].
Etym: Named for Karl Friedrich Graf von KAGENECK (1729-), Baden, who was a cactus enthusiast. Gmelin's spelling appeared twice, and thus was intentional and not a typographical error. Kagenek would have been the accepted 18thC latinised form, because the digraph *ck* is not used in Latin, so it must remain uncorrected.
T: Peru, Rio Rimac valley; 1778-1779, *Joseph DOMBEY*. If preserved, no longer extant.
Gmelin's types were at MPU according to Dorr & Nicholson, *TL2 Suppl.*8, but a search for a specimen under this name was negative, as was also a search made at KR, where most of Gmelin's specimens were destroyed in WW2.
NT: t.821 by Thomas DUNCANSON, annotated "Cereus multangularis H.D." [H. D. = Hortus Dykensis] & "Received from the Prince of Salm in the year 1824". (Fig. 5). **Designated here.** Believed to have been raised from seed gathered by Dombey.

melanostele
Cephalocereus melanostele Vaupel, 10. *Cactaceae* andinae, in Engler, *Botanische Jahrbucher fur Systematik, Pflanzengeschichte und Pflanzengeographie* **50**: Beiblatt zu den Botanischen Jahrbüchern nr. 111(2-3): 12-31. (19 Aug) 1913.
Binghamia melanostele (Vaupel) Britton & Rose, *The Cactaceae* **2**: 167-168. 1922 nom. incorr. (Art. 11.4). [Misapplied to *Haageocereus kagenekii* (C.C.Gmel.) Mottram].
Espostoa melanostele (Vaupel) Borg, *Cacti*: 112. 1937.
Etym: From the Greek prefix *melano*-, black-, & the suffix -*stele*, -column.
T: Peru, Dept. Lima, near Chosica, on the Lima - Oroya road, in very poor overgrown and rocky ground, 800m.; 15 Mar 1903, *August WEBERBAUER 2630*.
HT: B.
Obs: Although Britton & Rose misapplied this name, the type is necessarily the same as the basionym.
Ref: *Espostoa melanostele* (Vaupel) Borg.

Fig. 13. *Binghamia melanostele*: Peru, Dept. Lima, Larigancho-Chosica Distr., vicinity of Chosica; 30 Jun 1914, *Mr. & Mrs. Joseph N. Rose 18533*; NY 02219096. Reproduced with the kind permission of the New York Botanical Garden ©.

multangularis

Cactus multangularis Dombey nom. nud., unpublished, 1779-1794.
Cactus multangularis Salm-Dyck nom. nud., unpublished in Salm-Dyck notebook "C". 1805, without description.
Cactus multangularis Dombey ex Willd., *Enumeratio plantarum horti regii botanici berolinensis, continens descriptiones omnium vegetabilium in horto dicto cultorum. Supplementum: Post mortem authoris editum D. F. L. von Schlechtendal*: 30. (Jul-Dec) 1814.
Cactus multangularis Willd., imported to England from Hanover by Conrad Loddiges & Son., Hackney, London in 1815. [reported by Haworth (1819: 75)].
Cactus multangularis Willd., in Desfontaines, *Tableau de l'école de botanique du jardin du roi*: 192. (Dec) 1815, without description. [not listed in the first edition of 1804]
Cactus multangularis Willd., in Salm-Dyck, *Plantae succulentae horti Dyckensis*: 9. 1816, without description.
Cereus multangularis (Willd.) Haw., *Supplementum plantarum succulentarum*: 75. 1819, with longer description.
Cactus multangularis Willd. & Haw., in Salm-Dyck, *Plantae succulentae horti Dyckensis*: 10. 1820, without description.
Cactus multangularis, in Loddiges, *Catalogue of plants, in the collection of Conrad Loddiges & Sons* [ed.12]: 5. 1820 as *multangularis* and [ed.13]: 5. 1823 as *multangulare*, without authority or description.
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Index plantarum succulentarum in horto Dyckensi cultarum. Anno 1822*: 13. 1822, without description.
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Index plantarum succulentarum in horto Dyckensi cultarum. Anno 1829*: 18. 1829, without description.
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Index plantarum succulentarum in horto Dyckensi cultarum. Anno 1834*: 20. 1834, without description.
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Hortus Dyckensis*: 62. 1834, without description. [Illegitimately used with *Cactus kagenekii* C.C.Gmel. (1811) as a synonym.]
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Index plantarum succulentarum in horto Dyckensi cultarum. Anno 1843*: 39. 1834, without description. [With *Cactus flavispinus* Colla (1824) as synonym (but only 7-8 angled)].
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Cacteae in horto Dykensi cultae anno 1844*: 26. 1845, without description. [Illegitimately used with *Cactus kagenekii* C.C.Gmel. (1811) as a synonym.]
Cereus multangularis (Willd.) Haw., in Förster, *Handbuch der Cacteenkunde*: 375-376. 1846, with description. [Illegitimately used with *Cactus kagenekii* C.C.Gmel. (1811) & *Cactus nobilis* hort. as synonyms.]
Cereus multangularis (Willd.) Haw., in Salm-Dyck, *Cacteae in horto Dykensi cultae anno 1849*: 43. 1850, without description. [Illegitimately used with *Cactus kagenekii* C.C.Gmel. (1811) & *Cereus lecchii* Colla (1824) as synonyms.
Echinocereus multangularis (Willd.) Rümpler, *Carl Friedrich Förster's Handbuch der Cacteenkunde*: 825. 1886.

Cereus multangularis (Haw.) K.Schum., *Gesamtbeschreibung der Kakteen* (2): 66. (15 May) 1897. [Illegitimately used with *Cactus kagenekii* C.C.Gmel. (1811) & ?*Cactus multangularis* Willd. (1814) as synonyms. Other synonyms which do not belong here were also included. This is the earliest expression of doubt that the *multangularis* of Willd. might not be the same as that of Haworth]
Binghamia multangularis (Willd.) Britton & Rose, *The Cactaceae* **4**: 279. 1923 nom. incorr. (Art. 11.4). [Combined with an illegitimate generic name]
Haageocereus multangularis (Willd.) F.Ritter, *Die von Curt Backeberg in "Descriptiones Cactacearum novarum" veröffentlichten Diagnosen "neuer" peruanischer Kakteen nebst grundsätzlichen Erörterungen über taxonomische und nomenklatorische Fragen*: 12, 39. (before Oct) 1958 nom. inval. (Art. 41.5). Incomplete bibliographic reference.
Haageocereus multangularis (Willd.) F.Ritter, *Kakteen in Südamerika* **4**: 1400. 1981 nom. inval. (Art. 41.5) Incomplete bibliographic reference.
Etym: A compound adjective from the Latin *multus*, many, & *angularis*, angled. Believed to be a provisional name assigned to the species by Dombey.
T: There are no specimens in Willdenow's herbarium at B, so it was probably not preserved.
LT: t.821 by Thomas Duncanson, annotated "Cereus multangularis H.D." [H. D. = Hortus Dykensis] & "Received from the Prince of Salm in the year 1824". (Fig. 5). **Designated here.** This action now makes this taxon identical with *Cactus kagenekii* C.C.Gmel, as originally intended by Gmelin.
Syn: *Haageocereus kagenekii* (C.C.Gmel.) Mottram.

pseudomelanostele
Cereus pseudomelanostele Werderm. & Backeb., in Backeberg, *Neue Kakteen*: 74-75. 1931.
Haageocereus pseudomelanostele (Werderm. & Backeb.) Backeb., in Backeberg & Knuth, *Kaktus-ABC*: 209. (12 Feb) 1936.
Haageocereus multangularis var. *pseudomelanostele* (Werderm. & Backeb.) F.Ritter, *Die von Curt Backeberg in "Descriptiones Cactacearum novarum" veröffentlichten Diagnosen "neuer" peruanischer Kakteen nebst grundsätzlichen Erörterungen über taxonomische und nomenklatorische Fragen*: 12, 40. (before Oct) 1958 nom. inval. (Art. 41.5). Incomplete bibliographic reference.
Haageocereus multangularis var. pseudomelanostele (Werderm. & Backeb.) F.Ritter, *Kakteen in Südamerika* **4**: 1406. 1981 nom. inval. (Art. 41.5) Incomplete bibliographic reference.
Echinopsis pseudomelanostele (Werderm. & Backeb.) Anceschi & Magli, *South America 2011/2013*: 39. (Jun) 2013.
Etym: From the Greek prefix *pseudo*-, false-, & the substantive *melanostele*.
T: Peru, Dept. Lima, Ruinas Cajamarquilla, off the Lima-Oroya road; 1931, *Curt Backeberg s.n.*
HT: Probably deposited at B but no longer extant.

Fig. 14 Lectotype of *Cereus pseudomelanostele* Werderm. & Backeb., from Backeberg, *Neue Kakteen*: 75. 1931.

LT: Photo in Werdermann & Backeberg (1931: 75). Designated by Calderón & al. (2007: 82). (Fig.14).
Ref: *Haageocereus kagenekii* (C.C.Gmel.) Mottram.

Fig. 15 Modern photos of *Haageocereus kagenekii* from near the type locality of *Binghamia melanostele* PH773.02 (Peru, Rio Rimac valley, California, near Chosica, 990m., 21 Jul 2008). Photos: Paul Hoxey.

Acknowledgements:
My thanks are due to Caroline Loup at Montpelier (MPU) and to Simone Lang at Karlsruhe (KR), for specimen searches, and to Barbara Thiers and staff at the New York Botanic Garden for supplying images of three herbarium sheets representing four gatherings and a spirit specimen by J. N. Rose, and for permission to reproduce these. Paul Hoxey is thanked for the supply of clear habitat photos in fig. 15.

Literature cited:

Britton, N. L. & Rose, J. N. (1920) ***The Cactaceae* 2** (9 Sep). Carnegie Institution publication no. 248(2), Washington.
- (1923) ***The Cactaceae* 4** (24 Dec). Carnegie Institution publication no. 248(4), Washington.
Calderón, N., Zappi, D., Taylor, N., & Ceroni, A. (2007) **Taxonomy and conservation of *Haageocereus* Backeb. (*Cactaceae*) in Peru**, *Bradleya* **25**: 45-124. British Cactus and Succulent Society, England.
Desfontaines, R. L. (1815) ***Tableau de l'école de botanique du Muséum d'Histoire Naturelle.*** J. A. Brosson, Paris.
Gmelin, C. C. (1811) ***Hortus magni ducis badensis carlsruhanus.*** C. F. Macklot, Karlsruhe.
Hamy, E. T. (1905) ***Joseph Dombey, médicin, naturaliste, archéologue, explorateur du Pérou, du Chili et du Brésil (1778-85).*** E. Guilmoto, Paris.
Haworth, A. H. (1819) ***Supplementum plantarum succulentarum, sistens plantae novas vel nuper introductas, sive omissas in Synopse Plantarum Succulentarum: cum observationibus variis anglicanis.*** J. Harding, London, for the author.
Lawrence, G. H. M. (1963) **Charles-Louis L'Héritier de Brutelle Sertum Anglicum 1788 facsimile with critical studies and a translation**, *The Hunt Facsimile Series* **1**: xx-xxiv. (The Dombey affair). The Hunt Botanical Library, Pittsburgh.
Leuenberger, B. E. (2004) **The *Cactaceae* of the Willdenow herbarium, and of Willdenow (1813), De Herbario Berolinensi Notulae No. 45**, *Willdenowia* **34**: 309-322. Botanischer Garten und Botanisches Museum, Berlin-Dahlem.
Rowley, G. D. (1999) **Salm-Dyck's cactus paintings**, *Bradleya* **17**: 1-26. (12 Nov) 1999.
Ruiz Lopez, H., & Pavon y Jiménes, J.A. (1794) ***Flora peruvianae, et chilensis prodromus, sive novorum generum plantarum peruvianarum, et chilensium descriptiones, et icones.*** Gabriel de Sancha, by order of the King, Madrid.
- (1798-1802) ***Flora peruviana, et chilensis, sive descriptiones, et icones plantarum peruvianarum, et chilensium, secundum systema linnaeanum digestae, cum characteribus plurium generum evulgatorum reformatis.*** 3 vols., Gabriel de Sancha, Madrid. Vols. 4 & 5 were not issued, though plates of Vol. 4 were distributed via the London bookseller O. Rich. Both volumes were eventually published in *Anales del Instituto Botánico A. J. Cavanilles* Vol. 4 in **12**(1): 113-195. 1954; **13**(1): 5-70. 1955; **14**: 717-784. 1956; **15**: 115-241. 1957, published separately in 1957. Vol. 5 in **16**: 353-462. 1958; **17**: 377-495. 1959.

Werdermann, E. & Backeberg, C. (1931), in Backeberg, ***Neue Kakteen***. Gartenbau-Verlag Trowitzsch & Sohn, Frankfurt (Oder).
Willdenow, C. L. (1814) ***Enumeratio plantarum horti regii botanici berolinensis, continens descriptiones omnium vegetabilium in horto dicto cultorum. Supplementum: Post mortem authoris editum D. F. L. von Schlechtendal.*** Taberna Libraria Scholae Realis, Berlin, 1813 [publ. (Jul-Dec) 1814].

Appendix: Translations of early descriptions

Gmelin's first description (1811):
Cactus Kagenekii: erectus, cylindricus, multangularis, uniformis, spinosissimus, pulcherrimus, vix adhuc descriptus. Semina ejus mihi communicata Madriti 1789. ab Ill. Comite de Kagenek. Misi [*Missi*] *abhinc individua in H. Erlangensem, Gottingensem, Berolinensem, Parisiensem, aliosque sub Cacto multangulari.* (Erect, cylindrical, many-angled, symmetrical, very spiny, very beautiful, so far barely described. Seeds of the same sort were sent to me from Madrid in 1789. [then raised] by the celebrated Graf von Kagenek [Kageneck]. Thence it was distributed to individuals in the gardens of Erlangen, Göttingen, Berlin, Paris, and others under the name Cactus multangularis).

Willdenow's first description (1814):
Cactus multangularis.
C. erectus octodecimangularis, angulis valde approximatis obtusis, spinis setaceis flavescentibus lana longioribus. (Erect, 18-ribbed cactus, with obtuse angles very close together, with bristle-like yellowish spines [and] longer wool).

Haworth's description (1819):
C? ***multangularis*** (*Many-angled*) *erectus 20-angularis; angulis valde approximatis obtusis, spinarum fasciculis numerosissimis sub-imbricantibus; spinis in singulo fasciculo subtriginta ultrave, junioribus fulvis, senectis emortuisve sordide pallescentibus, saepe semuncialibus, effuso-radiantibus*. (20-angled erect ?cereus; with obtuse angles very close together, with very numerous bunches of spines almost overlapping; with almost 30 or more spines in each areole, at first tawny yellow, becoming paler and dirty with age or death, irridescent, mostly half an inch [long]).

Haworth's additional observations:
Forte idem cum Willdenovii planta. Species valde notabilis. Exemplar nostrum 8-unciale praecrassum subcucumeriforme; superne parum tenuis, spinis undique, at magis, in apice creberrimis. (Perhaps identical with Wildenow's plant. An extremely noteworthy species. Our example is 8 inches [high], resembling a thick cucumber; attenuated a little at the top, densely spiny, especially crowded at the apex.).

Protologue notes by Backeberg & Werdermann (1931: 75):
Cereus pseudomelanostele: *Die Pflanze wurde von Britton & Rose verkannt und in Cactac. 2 (1920), S. 167 unter dem von Vaupel aufgestellten Cephalocereus melanostele beschreiben. Im Nachtragstellten sie diese Art als synonym zu C. multangularis (Willd.) Haw. Tatsächlich hatte Rose eine neue Art gefunden und auch beschreiben - sie nur irrtümlich zu siner schon bekannten gestellt.*
(The plant was misconceived by Britton & Rose and described under *Cephalocereus melanostele*, erected by Vaupel, in *Cactac*. **2** (1920), p. 167. In the appendix they made it synonymous with *C. multangularis* (Willd.) Haw. In fact Rose had found and had also described a new species – though erroneously he had placed it with his already known one).