

With the author's compliments
Gordon Rowley

ICONOGRAPHIE
DESCRIPTIVE
DES CACTÉES

OU
ESSAIS SYSTÉMATIQUES ET RAISONNÉS

SUR
L'HISTOIRE NATURELLE, LA CLASSIFICATION ET LA CULTURE
Des Plantes de cette Famille

PAR CH. LEMAIRE

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INTRODUCTION
by
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LEMAIRE

Iconographie Descriptive des Cactées

Introduction to Strawberry Press Edition

by Gordon Rowley

The study of cacti, in particular their naming and identification, has always been heavily dependent upon good illustrations. As essentially three-dimensional objects, cacti cannot be readily preserved in a herbarium, as Bradley knew in compiling the first book on succulent plants in 1716, and as L'Héritier also appreciated later in the same century when he turned the attentions of the aspiring flower painter Pierre-Joseph Redouté to these prickly plants especially in need of an illustrator. Cactus flowers are short-lived, and lose many of their recognisable features if dried or pickled. One would anticipate, therefore, a great number of picture books to aid the botanist and plantsman. But this is not the case, at least not until the age of photography and colour-filled coffee-table handbooks. One reason is apparent to anyone who has ever attempted to draw a well-armed *Ferocactus* or *Echinocereus*. A rock-steady hand and total mastery of parallel lines and perspective are called for to produce the type of accuracy demanded by a botanist. In the hands of less than a master the result can be mere stiffness and an exercise in geometry, or, worse, fuzziness and lack of diagnostic detail.

During the grand era of florilegia, from the time of Ehret and Redouté to the middle of the nineteenth century, cacti were little favoured by botanical artists. Exceptions were the epiphytes: the 'Rat's-tail Cactus', *Aporocactus flagelliformis*, and especially the 'Queen of the Night', *Selenicereus grandiflorus*, which could hardly fail to excite any artist, especially by the challenge of capturing the huge white bloom at its brief peak of perfection around midnight. Many fine portraits immortalize this floral beauty, from the minutely accurate documentations of Ehret to the romanticised grandeur of Thornton's "Temple of Flora".

Stapelieae were splendidly portrayed in the works of Masson (1796) with 41 plates and Jacquin (1806-19) with 64, and the mesembs and Alooiidae found an able illustrator in Salm-Dyck (1836-64). Redouté had painted a few cacti for de Candolle's *Plantarum Succulentarum Historia (Plantae Grasses)* of 1797-1837, although one gets the impression that the artist was more at home with leafy succulents that lent themselves more nearly to the same unexcelled technique he lavished on roses and lilies. Other artists successfully captured the unique appeal of cacti, making a virtue of the ferocious armature and heightened symmetry of spine clusters and areoles. Flowers, indeed, are revelatory when they appear, contrasting in softness and purity with the spines through which they somehow push out unharmed. But every true cactus lover knows that flowers are just a bonus, an additional thrill that can be seen, drawn, photographed or filmed for a brief period each year—perhaps for just a single day. For the rest of the year there is the plant, and its own peculiar brand of beauty persists unchanged, to be admired at a season when the lilies vanish below ground and the roses are ugly leafless skeletons.

Up to the third decade of the nineteenth century the selection of cacti available in cultivation in Europe was limited and untypical of the Family as a whole. The dwarf globular kinds, subsequently most acceptable to amateurs with little space and in search of flowers, were almost unknown. The West Indian *Melocacti* and *Mammillaria mammillaris*, indeed, gave cacti a bad name as they need much warmth and care and are notoriously difficult to acclimatise as imports. The riches of Mexico and South America had been barely sampled. But the pioneer travels of Alexander von Humboldt had stimulated interest, especially back in Germany where an increasing number of field collectors followed in his lead and opened the floodgates. George Ackermann, Jean Berlandier, Thomas Coulter, Karl Ehrenberg, Henri Galeotti, Theodor Hartweg, Wilhelm Karwinski, Charles Mackenzie, John Rule, Christian Schiede and others shipped cacti back from Mexico, sometimes in large consignments, while South America was similarly searched by George Gardner, John Gillies, William Harrison, Joseph Pentland, Friedrich Sellow, John Tweedie and, later, Thomas Bridges. Thus began “the first cactus cornucopia”, at its peak in the 1840’s, with botanical gardens and private enthusiasts vying with each other for the size and diversity of their collections. It was a pastime for the wealthy, and some enormous barrel cacti and cerei were shipped over, with varying degrees of success. But the life of large imported cacti is usually short. Even if they arrive in perfect condition the roots are inevitably cut back and slow to regenerate, and rot can meanwhile set in unnoticed. Seed raising was still in its infancy, and it took a long while to realise that, slow as it is, it offers better hope of raising fine show specimens away from the habitat. By the 1850’s, cactomania had passed its peak and was not to revive until the end of the century. But botanical gardens continued to preserve many of the species, and some of the largest and best-endowed collections continued for decades: those of Salm-Dyck in German; Monville and Cels in France, Makoy and Parmentier in Belgium, and Haworth, Thomas Hitchin and the Duke of Bedford at Woburn Abbey in England. There were nurseries, too, of which that founded by Friedrich Haage in Erfurt in 1822 was the most famous for succulents and the longest lasting.

The flood of new cacti needed new names, and these were supplied in superabundance. In Germany the gardening weekly *Allgemeine Gartenzeitung*, which had its counterpart in England as the *Gardener’s chronicle*, brimmed with descriptions of new cacti by a score or more writers. In the rush for priority, many did not wait for flowers and fruits, and in absence of illustrations we are left with hundreds of names that can never be certainly attached to any plant today. This list of indeterminate names has been a problem to botanists ever since, and further gave the cactus Family as a whole a bad name. Where the description was ample, and accompanied by diagnostic pictures, as in *Curtis’s Botanical Magazine* in England or Lemaire’s *Flore des Serres* in Belgium, recognition is easier. The hand-coloured plates in these publications are works of art, although costly to produce. Cacti make up only a small part of these periodicals, along with other exotics then competing for attention.

Inevitably, with such interest in Cactaceae, someone would attempt an all-cactus picture-book or iconography, to give it the grander name. The first to take the plunge were two outstanding German botanists, Louis (Ludwig) Pfeiffer (1805-77) and Christoph Otto (1783-1856). The former was the author in 1837 of an unillustrated monograph of Cactaceae, and the following year collaborated with Otto in launching their *Abbildung und Beschreibung Blühender Cacteen (Pictures and Descriptions of Flowering Cacti; Pfeiffer & Otto 1838-50; see Stearn 1939)* with large, coloured lithographs. Because of the high cost of colouring, the standard issue had only partly coloured plates: one flower and sometimes part of a stem only. There were a few sets with fully coloured plates at a higher price. To spread the cost, they issued the work in parts over a twelve-

year period, each part or fascicle comprising five plates with accompanying text. With 60 plates it provided a reasonable sample of the best of the novelties but was far from complete. Otto dropped from the scene halfway through, and by 1850 the fashion for cacti had subsided, so perhaps a fall-off in subscriptions determined the end.

All this has a bearing on a parallel venture of even grander lines in France—the subject of the present facsimile—but first we need to know something about the man behind it: Charles Antoine Lemaire.

Charles Lemaire

Charles Antoine Lemaire was born in Paris on November 1, 1800. He went to university and became a Professor of Classical Literature. Nobody has written a biography, and much of the material that might have helped to reconstruct a picture of the man seems to have vanished at the time of his death, as will be mentioned later. I have not been able to trace any portrait of him. Yet through a life of journalism and authorship he was to leave his mark on the world of horticulture and on the study of cacti in particular.

We do not know when he first became interested in botany, but it seems to date from the time when he made two unsuccessful attempts to found a school. One of the attempts was made near the celebrated Jardin des Plantes which he visited and admired. The Director of the garden was M. Carrière, who, with the help of a local nurseryman M. Mathieu, was then building up a large collection of succulents from recent importations.

Monville et Lemaire

We know that cacti in large quantities were being introduced into France by Henri Galeotti in the 1830's. At least one nursery, that of F. Cels, was specialising in supplying cacti. Among the more distinguished figures caught up in the fashionable addiction was Hippolyte Boissel, the second Baron Monville, whose residence was just north of Rouen (Rowley 1991). Just how and when Lemaire came to make his acquaintance we do not know, but already the Baron had an outstandingly fine collection and turned to Lemaire to become its cataloguer. This Lemaire duly did in two Latin volumes published in 1838 and 1839—his first books on cacti. The earlier, a slim quarto volume with a single huge folding plate of *Echinocactus* [*Gymnocalycium*] *monvillii*, is a series of descriptions of 52 species, all but one purportedly new, with "*Echinocactus lemarii*" (sic!) credited to Monville. It is dedicated not to Monville but to Salm-Dyck. Despite the subtitle "Fasciculus primus", nothing further was published in this series. Instead, under a confusingly similar title the following year, Lemaire produced a thicker octavo book reviewing the entire cactus Family with a tabulation of 13 genera (4 of which were new) and systematic survey of species including further novelties. His new method of classification involved dividing the Family into two heterogeneous groups based on the mode of germination and the form of the cotyledons (see review in Loudon Gard. Mag. 16: 32-33, 1840): the Phyllariocotyledoneae and the Phymatocotyledoneae, names which by themselves are enough to deter anyone from adopting this system. It is a pity that Lemaire tells us so little about Monville and his plant collection. Monville himself published little, and the auction catalogue of his collection had long been regarded as a lost publication until a copy came to light in Paris in 1991.

Lemaire left Paris for Belgium in 1845. The following year the Monville collection was sold; to whom we do not know, but the Cels Nursery would seem to have been the most likely buyer. A freak storm struck the peaceful countryside of Clères and Cailly on

August 19, 1845, causing great loss of life in the spinning mills. The name of the Baron was subsequently drawn into a scandal regarding the handing of relief funds. He sold up and we hear no more of him after his removal to Paris where he died in 1863. It could be that the discontinuing of Lemaire's *Iconographie* after 1847 resulted from his lost contact with Monville and his plants.

Horticultural periodicals

Lemaire's principal publishing activity, spread over the last thirty years or his life, was in the field of horticultural journalism. Gardening papers of the time were few and poorly illustrated. Lemaire was to raise the standards and include high-quality colour plates, some original and some copied from Curtis, Engelmann and other sources. As editor or part-editor and prolific contributor, he was associated with several high-class journals, including:

<i>L'Horticulteur Universel</i>	1839-44
<i>Flore des Serres</i>	1845-52 [-80]
<i>Jardin fleuriste</i>	1851-54
<i>L'illustration horticole</i>	1854-69 [-96].

The last-mentioned may be taken to represent his chosen format: a blend of florilegium and gardening newsheet, each part having a section for colour plates and descriptions of new plants (including many hybrids), and another part for general or topical news on nurseries, shows, pest control and so forth. Succulents turn up at intervals, with accompanying colour plates, original or copied, and several new species and genera are described.

Around 1845 Lemaire moved from Paris to Ghent in Belgium at the invitation of Van Houtte to take over the editing of the latter's *Flore des Serres*. He stayed in Ghent until 1870, and became a Professor of Botany. Lemaire collaborated on the publication of *L'illustration horticole* owned by A. Verschaffelt. Lemaire returned to Paris after Verschaffelt died and he must have been amazed at the changes brought about by the self-declared Emperor Napoléon III. But the Emperor's aggressive foreign policy soon led to his downfall. He had declared war on Prussia, and Paris was under siege. Lemaire was already in his final illness, being nursed by his daughter. Following France's defeat there were uprisings and massacres, in the midst of which Lemaire died almost unnoticed on June 22, 1871. His library was "dispersed by sale" (Stafleu & Cowan, 1979). In more favourable times he would no doubt have been honoured with extended obituaries, and one wonders what manuscripts and other memorabilia were lost to us in such troublous times. He was commemorated by Britton & Rose in the genus *Lemaireocereus*, although ironically that name has fallen victim to the Code of Nomenclature, being preceded by *Stenocereus* or *Rathbunia*. Of the species named after him, *Hylocereus lemairei* Hook. B.&R., *Melocactus lemairei* (Monv) Lem and *Opuntia lemaireana* Cons. are generally recognised, *Euphorbia lemaireana* Boiss. is queried and *Agave lemairei* Versch. seems to have passed unnoticed by later commentators.

The *Iconographie Descriptive des Cactées*

It is not on record when Lemaire first conceived the idea of a full-scale illustrated monograph of Cactaceae, which he estimated would run to 200 plates. We know that he was hard at work on it in 1840. He had seen the early issues of Pfeiffer and Otto's *Abbildungung*, and he mentions this work in 1841 and 1868, when he compares the illustrations

APERÇU DE L'OUVRAGE.

L'Iconographie descriptive des plantes de la famille des Cactées se composera d'au moins 200 planches, et d'autant de feuilles de texte.

Planches.

Toutes les planches seront supérieurement gravées sur cuivre par M. Duménil, tirées en couleur et finement retouchées au pinceau. Les dessins, entièrement originaux, seront exécutés par un peintre habile (M. Maubert), d'après nature, et représenteront chaque plante de grandeur naturelle, toutes les fois que son volume ne s'y opposera pas ; dans le cas contraire, une portion seulement en sera figurée, et le port de la plante entière sera donné au trait. Presque toutes les Cactées seront figurées en fleurs et en fruits, sur format grand in-folio. La plupart des dessins représenteront des plantes entièrement inédites ou mal figurées ailleurs, et arrivées directement de leur pays natal ; point essentiel, afin de ne pas figurer des plantes dénaturées par une longue culture.

Texte.

Chaque feuille de texte, format grand in-folio, comme celui des planches, sera imprimée, recto et verso, en beaux caractères neufs et variés, et contiendra, en deux colonnes (texte latin et français), et par paragraphes distincts, *l'histoire, l'étymologie du nom, la synonymie, la diagnose, la description proprement dite, les affinités*, etc., de chaque plante. Chaque fin de page contiendra en outre, en deux colonnes, texte également latin et français, un traité de la partie historique, physiologique, systématique, critique, etc., des plantes de cette famille, de leur classification, de leur culture, etc. Comme cette dernière partie comprendra de longs développements, si elle ne se terminait pas avec le nombre de feuilles de texte annoncé, le reste formerait des feuilles supplémentaires données gratis, mais seulement aux cent premiers souscripteurs inscrits.

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Les cent premiers souscripteurs, seuls, recevront **GRATIS** toutes les livraisons dépassant le nombre de cent, nombre pour lequel ils s'engagent en souscrivant. Leurs noms seront inscrits sur la couverture de chaque livraison, avec la date de leur demande, afin de constater leur ordre d'inscription et le droit inhérent aux cent premières souscriptions.

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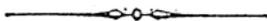
Chez **H. COUSIN**, libraire-éditeur, rue Jacob, 21 ;

Chez **MM. CELS**, horticulteurs-pépiniéristes, barrière et chaussée du Maine, 77 ;

Et chez les principaux Libraires de France et de l'étranger.



AVIS aux Souscripteurs.



La première livraison de l'*Iconographie descriptive des Cactées* a paru il y a déjà plusieurs mois, sans avoir été immédiatement suivie par d'autres. Le retard apporté à l'apparition des livraisons suivantes avait pour but de consulter, sur le mode de rédaction adopté, tant les hommes compétents en la matière que les amateurs éclairés qui s'occupent de la collection et de l'éducation de ces intéressantes plantes. Ce même retard doit prouver en même temps aux souscripteurs qui ont accueilli favorablement cet ouvrage quels soins l'auteur et l'éditeur se proposent d'y donner et avec quelle sollicitude ils prétendent veiller à y apporter toutes les améliorations désirables.

Une telle oeuvre, en effet, devant demander plusieurs années pour son achèvement total, et répondre à la fois à l'état actuel de la science et aux exigences typographiques de l'époque, nécessitait de mûres réflexions et le concours bénévole des illustrations en ce genre.

Ainsi, nous avons été assez heureux pour obtenir les conseils de M. le prince de Salm, l'auteur de la belle *Monographie des Aloès et des Mesembrianthèmes*, et de M. le baron de Monville, dont chacun connaît la riche et magnifique collection de Cactées. Ces messieurs ont bien voulu nous permettre de puiser à même dans les savantes observations qu'ils ont faites et font chaque jour, sur ces plantes ; le second, en entre, met généreusement à notre disposition, pour les décrire et les faire figurer, les beaux individus qu'il possède dans ses serres.

C'est aussi d'après leurs sages avis que nous nous sommes décidé à modifier la partie descriptive de notre *Iconographie*, comme nos souscripteurs peuvent le voir par les folios ci-contre. A l'avenir cette forme de texte ne variera plus, et quant à la partie historique et scientifique de l'ouvrage, que nous avons commencé à écrire au bas des pages de descriptions, nous la donnerons sur des feuillets séparés et paginés, lesquels, par la suite, formeront un tout complet qui précédera l'ouvrage général.

A l'avenir encore, nos folios de texte descriptif et nos planches ne porteront aucun chiffre. Cette négligence apparente est toute, au contraire, dans l'intérêt des souscripteurs, et nous nous sommes déterminé à cette mesure par des causes d'une haute importance. Entre autres motifs de cette détermination, c'est que, dans l'état actuel de la science, une classification systématique des Cactées en tribus, leur dénomination générique rigoureuse même, tout est, sinon impossible, du moins encore incertain, et que rien aujourd'hui, à cet égard, ne peut certainement être constitué d'une manière rationnelle et définitive.

Or, comme, grâce aux écrits nombreux et contradictoires de plusieurs auteurs éminents qui s'occupent de ces plantes, on doit espérer, dans un avenir assez prochain, pouvoir poser des bases solides d'une classification satisfaisante et vraiment naturelle des Cactées, nous nous réservons, avant l'achèvement total de l'ouvrage, de donner à nos lecteurs cet important travail, lequel sera tout à la fois le complément et l'analyse critique de tous les écrits qui ont été publiés sur la matière.

A cette époque aussi la première livraison de l'*Iconographie* sera remplacée *gratuitement* pour tous les souscripteurs, et mise en harmonie avec notre nouveau mode de rédaction. Rien ne sera épargné pour la confection matérielle de cet ouvrage de la part de l'éditeur, qui est désormais en mesure d'en publier rapidement et sans interruption les livraisons suivantes.

unfavourably with his own. He must also have known de Candolle and Redouté's *Plantes Grasses* and took over from it the same format of serial publication in parts comprising loose plates and text. However, there was a difference. Redouté, the celebrated artist, had sponsors to cover the enormous costs of printing his works; Lemaire was never well-to-do and must, have had greater problems. Ever optimistic, he announced: "The plates, to be number of about 200, painted from nature by M. Maubert are engraved on copper by M. Duménil, printed in colour and finely retouched with a brush. The work will form about 100 fascicles in large folio which will appear regularly over 20 years; the 100 first subscribers only will receive gratis all the fascicles exceeding the number 100." The price is given as frs. 5.- for each part containing two coloured plates and two pages of text.

As we know from *L'Horticulteur Universel* (1841, p. 320) the first part had then been published—or had it? The announcement, was repeated in the following volume (3, 1842, p. 96) and it is also noted in *Bibl. de la France* 30: 594 n. 5790 for Dec. 1841. Whatever the exact date of issue, it is certain that a long cold silence descended—so long that Lemaire was obliged to circulate an "Avis aux Souscripteurs" to boost subscriptions and encourage those who waited in vain for further issues.

In this notice he explained away the long delay as being caused by the need to take stock of the new cacti arriving and to seek the help of Baron Monville and Prince Salm-Dyck in working on them. Following their advice he had made a number of changes in the format of the *Iconographie*.

The first change concerned the "historical and scientific part of the work" which had initially consisted of running footnotes to the first four pages—the ideal way to confuse and infuriate readers. He stated accordingly that in the future this information would appear on separate pages which would eventually form the introduction to the whole work. As no separate pages ever appeared, about which we know, we are left with the tantalising fragment that ends in the middle of a sentence on page 4.

Second, he stated that henceforth plates would not be numbered, allowing subscribers to rearrange them according to a future, promised classification which never materialised. Lastly, he indicated that Part 1 would eventually be replaced free of charge to subscribers by a version in the new format.

Although so few copies of any of the *Iconographie* survive, there are to be found two different states of Part 1. The text is identical in both, but the captions differ on the plates. State 1 (as represented by the facsimile here) has the spelling "*horizonthalonius*" on Plate 1, the same as when first published by Lemaire in 1838, and the spelling "*Hechinocactus*" on Plate 2. In State 2 (as seen in the copy now at the Royal Horticultural Society—see below) "*horizonthalonius*" became "*horizontalinus*" and "*Hechinocactus*" was corrected to "*Echinocactus*". For some unknown reason Plate 1 had become Plate 2, and Plate 2 became Plate 1, although the accompanying text was unaltered! The remaining parts all adopt the new simplified format with the text all on one sheet and no running footnotes, and I have seen no variant versions to date.

A nomenclatural issue arises here: are we obliged to take up the author's "correction" of *horizontalonius* in place of the familiar *horizonthalonius*? I am indebted to Prof. W.T. Stearn and Nigel Taylor at Kew for confirming my belief that we are not. Lemaire was not correcting but substituting a new and hence invalid, epithet: "*horizontalonius*" is not, the same as "*horizonthalonius*", a better and correctly compounded epithet which Lemaire himself explains as derived from the Greek *horizontos*, *horizon*, and *halonion*, a halo, small circle or, in cactus context, an areole.

LEMAIRE ICONOGRAPHIE 1841 COLLATION OF PLATES

"NOT BEFORE" ¹	DATE	PLATE NUMBER	PLATE	LEMAIRE'S NAME	KARL SCHUMANN'S NAME 1898-1902 ²	BRITTON & ROSE'S NAME 1919-1923 ³	I.O.S. CONSENSUS NAME 1994 ⁴
1839	1841	1	1	<i>Echinocactus horizontalis</i> (<i>horizontalis</i>)	<i>Echinocactus horizontalis</i> Lem.	<i>Echinocactus horizontalis</i> Lem.	<i>Echinocactus horizontalis</i> Lem.
1838			2	<i>Echinocactus hexadrophorus</i>	<i>Echinocactus hexadrophorus</i> Lem.	<i>Thelocactus hexadrophorus</i> (Lem.) Br.&R.	<i>Thelocactus hexadrophorus</i> (Lem.) Br.&R.
1843 May		2	3	<i>Mammillaria erecta</i>	<i>Mammillaria erecta</i> Lem.	<i>Coryphantha erecta</i> (Lem.) Lem.	<i>Coryphantha erecta</i> (Pfeiff.) Lem.
1843			4	<i>Echinocactus erinaceus</i>	<i>Echinocactus erinaceus</i> Lem.	(not cited)	<i>Parodia erinaceus</i> (Haw.) Tayl.
1843		3	5	<i>Echinocactus gibbosus</i>	<i>Echinocactus gibbosus</i> P.D.C.	<i>Gymnocalycium gibbosum</i> (Haw.) Pfeiff.?	<i>Gymnocalycium gibbosum</i> (Haw.) Pfeiff.
1842			6	<i>Cereus perrot(t)etianus</i>	<i>Cereus jamacaru</i> P.D.C.	<i>Cereus hexagonus</i> (L.) Mill.	<i>Cereus hexagonus</i> (L.) Mill.
1842		4	7	<i>Echinocactus concinnus</i>	<i>Echinocactus concinnus</i> Monv.	<i>Malacocarpus concinnus</i> (Monv.) Br.&R.	<i>Parodia concinna</i> (Monv.) Tayl.
1842			8	<i>Echinocactus coptonogonus</i>	<i>Echinocactus coptonogonus</i> Lem.	<i>Echinocactus coptonogonus</i> (Lem.) Lawr.	<i>Stenocactus coptonogonus</i> (Lem.) Hill.
1841		5	9	<i>Mammillaria elephantidens</i>	<i>Mammillaria elephantidens</i> Lem.	<i>Coryphantha elephantidens</i> (Lem.) Lem.	<i>Coryphantha elephantidens</i> (Lem.) Lem.
1842			10	<i>Mammillaria dolichocentra</i>	<i>Mammillaria dolichocentra</i> Lem.	<i>Neomammillaria tetraantha</i> (s.d.) Br.&R.	<i>Mammillaria polythele</i> Mart/
1841		6	11	<i>Echinocactus pentacanthus</i>	<i>Echinocactus pentacanthus</i> Lem.	<i>Echinofossulocactus pentacanthus</i> (Lem.) Br.&R.	<i>Stenocactus obvallatus</i> (P.D.C.) Hill.
1837			12	<i>Echinocactus sellowianus</i>	<i>Echinocactus sellowii</i> Link & Otto	<i>Malacocarpus tephracanthus</i> (Link & Otto) K. Sch.	<i>Parodia erinacea</i> (Haw.) Tayl.
1839	1845	7	13	<i>Echinocactus pectiniferus</i>	<i>Echinocereus pectinatus</i> Eng.	<i>Echinocereus pectinatus</i> (Scheidw.) Eng.	<i>Echinocereus pectinatus</i> (Scheidw.) Eng.
1841			14	<i>Echinocactus?</i> (<i>Astrophytum</i>) <i>myriostigma</i>	<i>Echinocactus myriostigma</i> s.d.	<i>Echinocactus myriostigma</i> Lem.	<i>Echinocactus myriostigma</i> Lem.
1841	1847	8	15	<i>Echinocactus monvillianus</i> and <i>monvillii</i>	<i>Echinocactus monvillei</i> Lem.	<i>Gymnocalycium monvillei</i> (Pfeiff.) Br.&R.	<i>Gymnocalycium monvillei</i> (Lem.) Br.&R.
1843			16	<i>Mammillaria sulcolanata</i>	<i>Mammillaria sulcolanata</i> Lem.	<i>Coryphantha sulcolanata</i> (Lem.) Lem.	<i>Coryphantha sulcolanata</i> (Lem.) Lem.

¹ That is, the latest date cited in the references in the text, before which it could not have been published.

² Ex Gesambt. d. Kakt. 1898-1902 (omitting Nos. 3 and 13), and Monatss. f. Kakt. 8:51, 1898.

³ Ex The Cactaceae.

⁴ Ex European Garden Flora 3: 202-301, 1989.

In the preceding table, I have adopted the same sequence of parts as in my 1966 article, that is, the order of the bound copy at the Natural History Museum Library used for the present facsimile. The one crumb of evidence to suggest that this is the order as published is that it is non-alphabetical. In the bound copy at Missouri, and in the plate

assigned by Schumann and Britton & Rose (Rowley 1966), there is some attempt at regrouping alphabetically the species in the later parts. Beyond this we have no water-marks on the paper, dates on wrappers or lists of contents, and the best I have been able to supply is “not before” dates gleaned from scrutiny of the references cited for synonyms under each species. This merely tells us, for instance, that, the text to *Mammillaria erecta* (No. 3) could not have appeared before May 1843, but it could have been later. In *L'Horticulteur Universel* 5 (1845) Lemaire claimed that parts had already been published, and two years elapsed before the eighth part (present only in the British Library copy) was published. But that is not the end of the story. In *L'Illustration Horticole* 5 (1858, p. 128) Lemaire claimed that 9 parts with 18 plates had appeared, and in his 1868 book, *Les Cactées* p. 137 he admits that it had been discontinued, but cites it as 10 parts with 20 plates. Unfortunately no copy with more than 8 parts is currently known to exist.

Lemaire never seems to have explained why the venture was curtailed—one can only guess that it could have been the high cost of the artwork and a failure to attract sufficient subscribers. Or perhaps he found it too difficult to manage in Paris after his removal to Belgium? So we have to be thankful that at least we have the tantalizing fragment that remains: the rarest of Lemaire's publication, indeed, the rarest of all major work on Cactaceae.

Why do so few copies survive? Large, thin folios are not the easiest of items to store in a library without crumpling, and a glance at the Royal Horticultural Society copy will reveal that the soft paper becomes brittle and easily crumbles. Did the publishers go to so much expense to produce just a mere handful of copies, or did they have scores of unsold sets mouldering in a basement somewhere that were eventually destroyed in a moment of pique? We shall probably never know.

In Sotheby's auction catalog of the Library of Robert de Belder, offered for sale April 1987, Lot 209 was the only set of Lemaire's *Iconographie* to come on the market for many years. The accompanying colour plate is No. 2 *Thelocactus hexaedrophorus*. The set comprises just the first 7 parts, with one leaf of text in duplicate and another missing, and it is in a fragile state with the paper near to crumbling. Still, it fetched £5,280 and is now happily housed in the renowned Library of the Royal Horticultural Society in London, to whom I am grateful for allowing me to examine it and confirm that, like the copy at Missouri, it has Part 1 in the revised state. The catalogue does not exaggerate in stating that this “is the rarest work on cacti ever published, and is virtually unknown in any State” and contains “the finest depictions of cacti ever published.” The artist M. Maubert and engraver M. Duménil produced work always of the highest quality further displayed in Lemaire's horticultural periodicals. The *Iconographie* plates were printed in colour and the finer details retouched with a brush. Cacti are presented life size or even larger, as in the case of No. 14 *Astrophytum myriostigma*, which has tremendous visual impact and has never been better figured.

Lemaire's *Iconographie* was overlooked by Stapf in his *Index Londinensis*, but the plates are cited by Schumann and by Britton & Rose in their respective monographs of Cactaceae. Despite their rarity some plates have been copied in black-and-white and used to illustrate other books, such as Watson's *Cactus Culture for Amateurs* (1889; plates 7, 8, 9 and, in reverse, 16, and *Nicholson's Illustrated Dictionary of Gardening* (1884-1900; plates 8, 9, 16). Such is the excellence of the originals that they give an authentic record of the plants known to Lemaire, and some plates have accordingly been designated as pictotypes (iconotypes) in absence of herbarium specimens—*Thelocactus hexaedrophorus* No. 2. for instance, by E.F. Anderson in *Bradleya* 5: 71, 1987.

In view of the scarcity of copies of Lemaire's *Iconographie* (1841-47), it may be useful to note the locations of seven copies that are on record:

LOCATION	NUMBER OF PLATES	INFORMATION SOURCE
Natural History Museum, London	16	
Royal Horticultural Society, London	14 (Lacks Part 8)	
Bibliothèque de la phanérogamie, Paris	14 (Lacks Part 8)	J. Callé
Missouri Botanical Garden, St. Louis	14	Stafleu & Cowan
Bibliothèque Nationale de Paris "L'exemplaire... possède seulement des planches noires."	10 (Parts 1, 2, 3, 5, 6 only)	J. Callé
Jardin Botanique de l'Etat, Brussels	6 (Parts 1, 2, 3 only)	A. Lawalrée
Bibliothèque Générale du Muséum, Paris	2 (Parts 1 only)	J. Callée

The National Union Catalog Pre-1956 Imprints Vol. 325 page 445 notes four further copies at the U.S. Library of Congress (14 plates), Arnold Arboretum, Huntington Library, and Yale University, without further details.

Later Work on Cacti

After time folio-sized *Iconographie* proved a non-starter Lemaire set his sights lower and began a cactus monograph in octavo. He must have been encouraged by the poor reception given to the only other attempt in French, that by Labouret in 1858. In the bibliography added to Lemaire's *Les Cactées* of 1868, p. 138, we read:

13°—*Cactac. Monogr. Tentamen. ou Essai d'une monographie d'une famille des Cactées.* un vol. in-8° (*inédit*). Dédié à M. Frédéric Schlumberger, etc., 1854-1868. C'est l'ouvrage le plus complet publié jusqu'ici sur ces plantes, et le plus au courant de la science, et dont celui-ci peut donner une juste idée."

This book, "the most complete up to now on these plants, and the most in accord with science", was still not published at the time of his death three years later, and nothing more was heard of it. However, he did publish samples of it so that we can get an idea of the format, resembling the *Iconographie* in miniature. Thus, there is an article on *Pelecyphora aselliformis* in *L'illustration horticole* 5: t. 186, 1858, accompanied by an excellent plate, and another on the genus *phyllocactus* in *Rev. Hort.* 35: 377-379, 1864.

As it is, we are left with two small cactus books by Lemaire, written for gardeners: *Manuel de l'Amateur de cactus* (1845), which mainly dealt with cultivation, and *Les Cactées* (1868) which included the new names and groupings of his projected monograph and thus has nomenclatural importance in spite of its humble format. A companion volume *Les Plantes Grasses autres que les Cactées* in 1869 was his final book and also introduced a number of new or newly revived generic names, most now long sunk in synonymy, but *Adromischus* Lem. (Crassulaceae) survives.

Lemaire as botanist

Later generations have been quick to point out Lemaire's shortcomings as a self-taught botanist (Hunt 1976). He was headstrong and pedantic, over-sensitive to the faults of others while blind to his own, some say. If he made any herbarium specimens to document his many new species, they have apparently not survived his death. He no doubt thought, with good reason, that a good colour plate was the best record of a new succulent. He prided himself on his classical background and fluency in languages, and wrote lengthy critiques on nomenclature. Lemaire took Salm-Dyck to task over the latter's new name *Diotostemon* (= *Pachyphytum*) in *L'Illustration horticole* 2: 26, 44, 1855. In view of this fastidiousness, it is curious to note that Lemaire was so careless about his own names, both in spelling and derivation. Thus we have, often within the same paper *Echinocactus horizontalinus*, *E. horizonthalonius* and *E. horizontalonius*; *Cereus perrottetianus*, *C. perrottetianus* and *C. perrotteti*; *Echinocactus monvillianus* and *E. monvillii* (the accepted modern spelling is "*monvillei*"). Good critics should at least try to practise what they preach. Leighton-Boyce (1968) working on *Tephrocactus* and Tjaden (1969) on *Schlumbergera* both encountered problems in trying to unravel some of Lemaire's writings. Even if proved wrong, Lemaire preferred to extend the argument rather than back down.

Lemaire disapproved of some of the botanical terms in general use, replacing those that he considered vague or ambiguous. Thus by 1868 he was using "tyléole" for areole and "cyrtôme" for tubercle. Neither term has been taken up by later workers. The same could be said of his attempted new system of classification of Cactaceae, dividing the family into two heterogeneous groups based on the mode of germination and the form of the cotyledons (Lemaire 1839; see Loudon Gard. Mag. 16: 32-33, 1840).

But there are many good things in Lemaire, also. A glance at the sumptuous torso of a cactus monograph presented here will at once reveal some of them—not least, his enthusiasm and desperate urge to do justice to such remarkable plants. He excelled in descriptive botany, and has to his credit the establishment of at least five cactus genera that are recognised in just about every cactus collection today: *Aporocactus*, *Astrophytum*, *Cleistocactus*, *Coryphantha* and *Schlumbergera*. His *Consolea* and *Tephrocactus* are accepted by Backeberg, although treated by most other authorities as subgenera of *Opuntia*. The abbreviation "Lem." serves to remind us of his activities at lower levels of the hierarchy, too.

His eagerness to provide a new genus for the 'Old Man Cactus', then the most sought-after and prestigious of the novelties from Mexico, unleashed a nest of vipers with the names *Cephalophorus* and *Pilocereus*. Currently, neither is upheld, Pfeiffer's *Cephalocereus* being championed by Hunt (1980) as having priority, and *Pilosocereus* (Byles & Rowley 1955, 1957) replacing *Pilocereus* sensu Schumann non Lemaire, with a different type species. Another ill-fated Lemaire genus, *Anhalonium*, was anticipated by *Ariocarpus* Scheidw, although it persisted in wide usage in the nineteenth century for the peyote, *Lophophora* (Anderson 1980).

In his *Iconographie* of 1841-47 he published a number of new varieties, distinguished with Greek letters and a brief Latin diagnosis: three each under *Echinocactus erinaceus* and *Mammillaria dolichocentra* and one under *M. sulcolanata*. Attention is drawn to them here as they seem to have been overlooked by later commentators and deserve to be properly evaluated.

Outside of Cactaceae, Lemaire was interested in all manner of other plants, especially the tender and tropical exotics which add spectacular bursts of colour as one turns the pages of Lemaire's numerous well-illustrated periodicals. But this is no place

to attempt an evaluation of his work in other fields. It cannot be denied, however, that he made his mark in horticultural journalism over a period of thirty years, and well earned the praise of Karl Schumann, who commends him for raising the standards, especially in the field of high-quality illustrations.

In conclusion, I would like to thank the Trustees of the Natural history Museum, London and the Royal Horticultural Society for allowing me to examine their copies of Lemaire's books, the Missouri Botanical Garden for sending me details of theirs, and Prof. J. Callé, J.A. Janse, Dr. A.C. Lawalrée, Roy Mottram, Prof. W.T. Stearn and Dr. C. Walker for their information, interest and help.

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