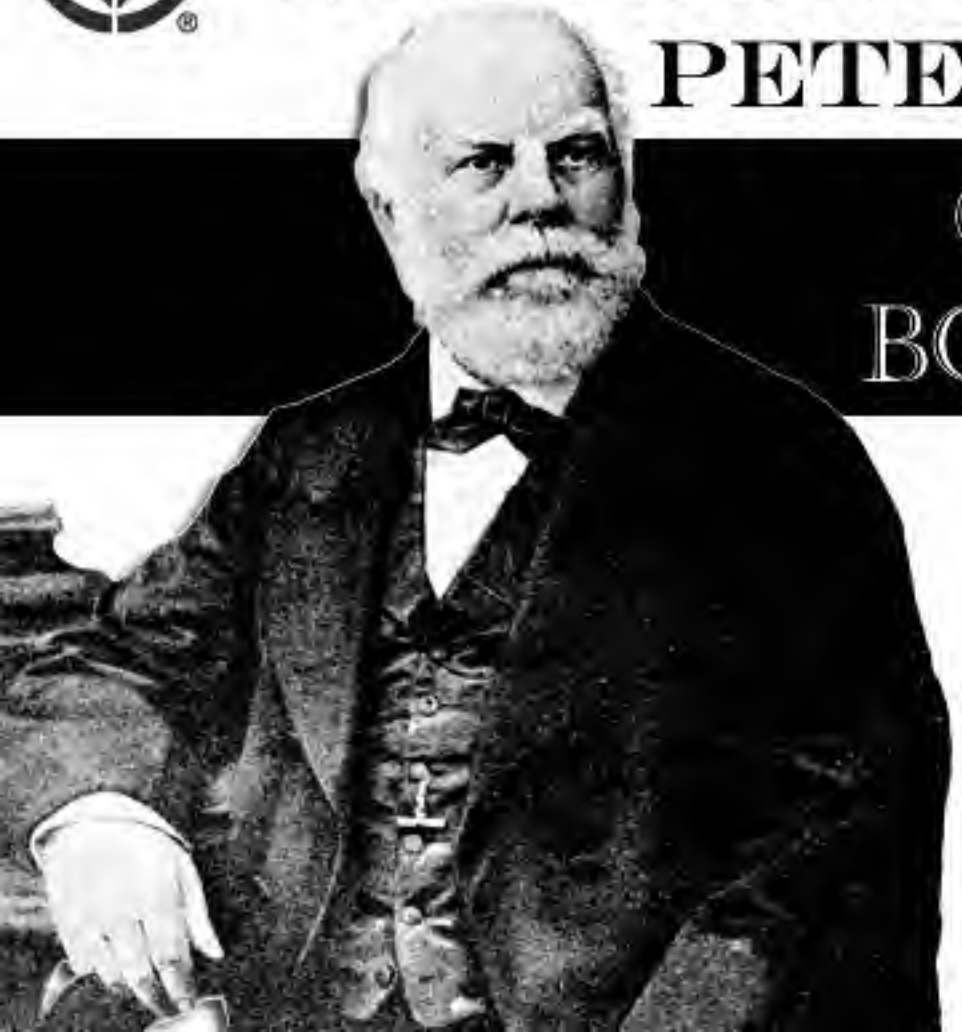
Missouri Botanical Garden
Peter H. Raven Library

George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

Groups of Opuntiae.

Op. strigata (if really named), Pseudotuna, glauca, Fidus Indica.

Op. tricantha, Curarassana, ?vulgaris, polyantha

Op. Dillenii, Engelmannii, fulvispina, leucotricha

Op. candelabriformis, spinulifera, streptacantha (?), oligacantha

Op. Aubesii, Dejecta

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

3053

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

Opuntiae is noting from the joints push out their roots from the areolae above the spines, just where the buds themselves appear. (Opuntia senilis)

An unripe fruit of Opuntia monacantha lying on the ground, was striking root from several of the areolae, and from others on the opposite (upper) side was pushing out two quite vigorous joints!

H Bol Naples Jan 7 1869

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

3054

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Octob 1861

1.

Opuntia fruit

The examination of the different stages of fruit of Opuntia glaucophylla in Hort Bot Missouri (see my drawings) seems to indicate that:

1, The (green) fruits of Opuntiae are differently shaped, some even on the same joint are shorter and plumper and less angular or tuberculated, containing more seeds, in other words, more normal; and others, more elongated, more angled usually thinner, with more areolae and with a smaller ovarian cavity [in other instances I have, in these fruit, found the ovarian cavity almost obliterated and all the ovula abortive]

2, The umbilicus is deeper, in proportion to the greater length of the fruit.

3, The seed of the full grown but green and not ripe fruit is very glutinous or with viscid surrounded by elongated often clavate fibres, which are one celled or consist of several (often 2) cells, proceed from the whole seed coat (arillus) but principally from the carina and apparently less so from the convex faces of the seed, and which are filled with a very glutinous insipid colorless juice, which, ~~by~~ steeping the seed in water, ~~makes~~ communicates its mucilaginous (ropy) properties to a large quantity of water.

4 In the ripe fruit everything is changed. It has become soft and pulpy, enlarging its volume, smoothing the angles, ridges and protuberances and considerably diminishing the depth of the umbilicus.

5. The pulp around the seed is no longer ~~not~~ glutinous now but very juicy and more abundant. The filamentary appendages of the seed coat having become enlarged and divided into many cells of various shapes and sizes filled

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

Question:

May not all the cells be filled originally with colour juice — and some cells have lost it in preparing the object for the microscope?

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

more or less coloured (purple)
with coloured and sweetish juice, which are finally detached and ~~becoming~~ free form the pulp. — The cells seem some of them (usually the larger ones) colourless and others coloured (the smaller and more irregular ones). The colour is purple but in a faint, which seems to be somewhat decomposed. I find ~~the~~ only few purple cells, other contain a dark red juice and others again are yellow.

It is probable that the whole seed coat is covered with the hairy excrescences which afterwards form the pulp; but it is certain that they, at full maturity, adhere only to the rim or carina (the attached part of the funiculus) while the convex face of the seed seem appear naked.

6. On the unripe seeds of some species (I have examined C. Brasiliensis and C. monoanthe and C. monoanthe Hort Bot Mission) I find th. Dyk their ~~hairlike~~ appendages as a dense and long and tough beard (2–3 lines long) consisting of several called ~~partitioned~~ hair, of uniform thickness or clavate, and very firmly adhering to the surface. — It remains to be seen how their will change in ripening.

7. The funiculus enters into the pulp ~~around~~ the seed but can always be recognized by its spiral vessels and by the smaller cells (many of which ~~very often~~ contain agglomerations of crystals, which I now find in the pulp proper.

8 The flesh of the fruit, as distinguished from the pulp surrounding the cavity, consists of smaller cells, many of them filled with aggregation of crystals, some with colourless others with purple juice,

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

3055.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

Berry of Opuntia colour inside & outside — time of ripening

smooth tuberculate.

glabrous — ovate — oblong

sessile with broader base

attenuated below

Napoli Jan 1869

Areolae few or many

close or distant

all more or less equal, or upper ones

much larger with longer bristles,

lower part of berry with or without areolae

Bristles few, small, deciduous, or

stouter, longer, more persistent,

some almost or really spines

Umbilicus flat (and the world so distinctly marked

or immersed (and circularly marked)

hemispherical or infundibuliform

also with flat bottom & vertical sides.

(~~barrel~~ tub shaped)

Cavity of fruit ~~the~~ whole ~~fruit~~ or in upper part only

globose or ovoid.

Seeds few or many

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

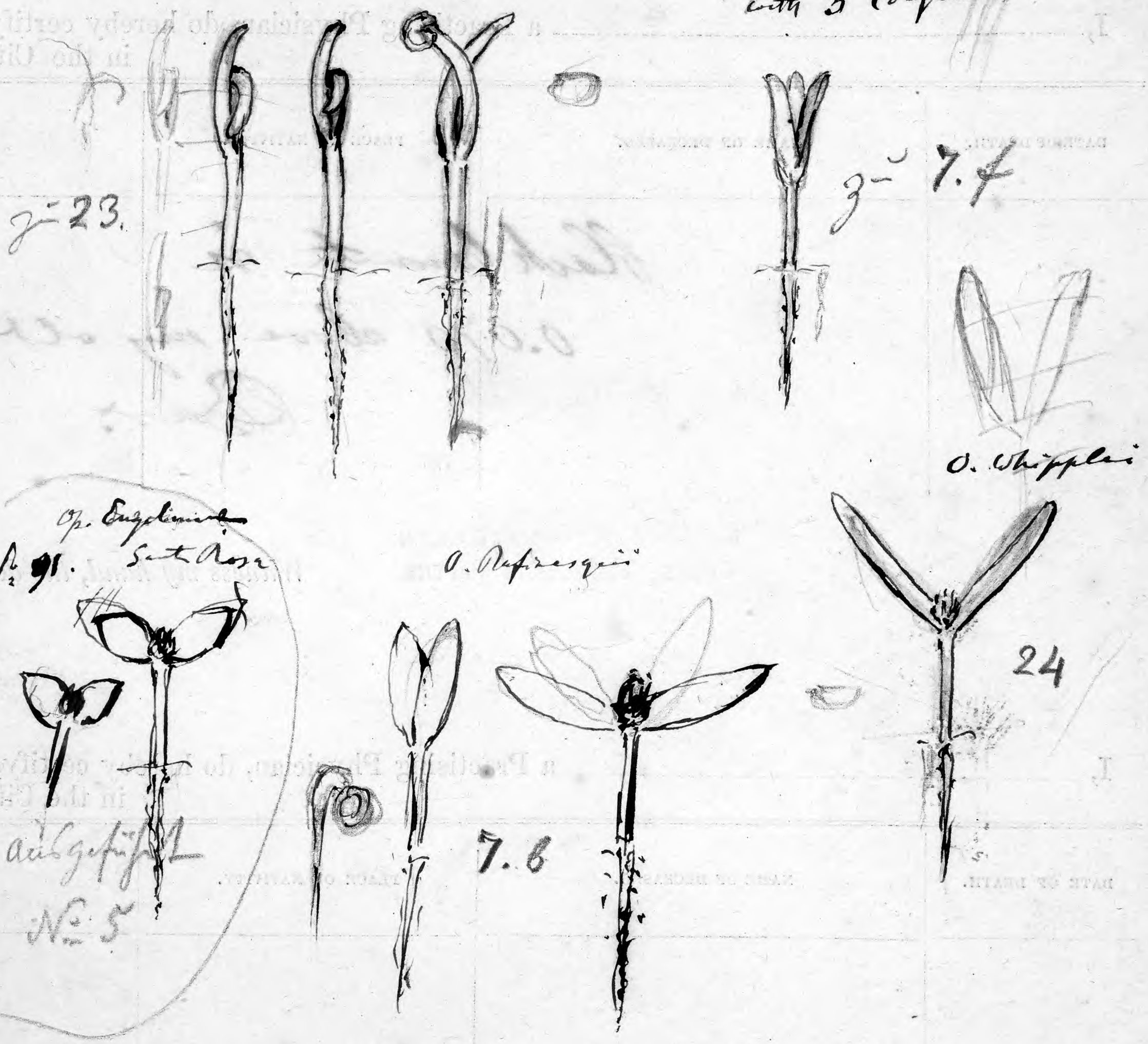
3056

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

Germination of Op. echinocarpa

Opuntia cymochila with 3 cotyledons



13 platycarpa

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

I, ... a Practising Physician, do hereby certify, in the City

DATE OF DEATH.	NAME OF DECEASED.	PLACE OF NATIVITY.	
		Black barometer is 0.070 above my old	

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Witness my hand, the day

I, ... a Practising Physician, do hereby certify, in the City

DATE OF DEATH.	NAME OF DECEASED.	PLACE OF NATIVITY.	

Witness my hand, the day

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

According to A Scholl
the following figures in Mexican Boundary Report
vol I refer to

Opuntia tesselata pl. 37. 64

O. occidentalis pl. 43. 62.

O fulgida pl. 44. 51. 54. 55. 56. 57. 58. 60

O. Whipplei pl. 47

O. Emoryi pl. 55

O. echinocarpa pl. 58. 62.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

JAMES E. YEATMA
WAYMAN CROW,
ROBERT CAMPBEL
JOHN H. BEACH,
JOHN T. DOUGLA
C. R. STINDE,
J. B. S. LEMOINE,

On behalf of th

you an invitation to jo

Evening of the Thirtee

You will please

Board of Directors, *at*

proper place on the pla

3058

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

MISSOURI BOTANICAL GARDEN
copyright reserved
0 1 2 3 4 5 6 7 8 9 10
cm

" Gaertn de fruct II. p. 265 T. 138 (1791)

Cactus Lin " Opuntia Tourn "

— — — semine ossea, reniformi turgide lenticulari, pallide testacea, annulo crasso calloso circumdato;

— — — albumen nullum

— — cotyledones tenuissimae incumbentes

---

the figures the fruit and seed of Opuntia vulgaris under the name of Cactus Opuntia

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

Deutsche Apotheke

—von—

John G. Schütze,

Südwestliche Ecke von Broadway und Morgan Straße,

St. Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS
3059

cm 0 1 2 3 4 5 6 7 8 9 10
copyright reserved
MISSOURI BOTANICAL GARDEN.

very spiny

Sept 1861

Opuntia dejecta Salm Pfeiff. p. 159 "Havana"
Hort bot Monacen. sub nom "2. Nopalea dejecta"
Trunco erecto cylindraceo, 3 pedali; ramis horizontaliter divaricatis, ramosissimis, laxis, saepe decum pendulis dejectisve, articulis majoribus 8–12" long. 1½–2 lat. viridissimis, vetiusioribus, areolis semot. polis subulat. squamosis, areolis albidis s. cinereis apice fuscis, in articulis junioribus 1 superiore majore 1–2 inferioribus setaceis; in vetustioribus aeul. 3–5, superioribus paulo robustioribus 1¼–1½ lin longis.

Pfeiff. p. 159. says: aeul 5–6 albi, infimo longiore pollicari.

July 23d 1863 a few flowers yet open, many have been in bloom and the bush is covered with young fruit. –

Whole flower abt 34 l. long to top of style.

Ovary 14 lines
Sep & petal 10 l
stamens 5 l.
stigl & sty 5 l.
} 34 lines

Ovary oval, elevate, scarcely tuberculate with 28–30 areolae bearing small subulate deciduous sepals of tube 12–13 triangular acute, erect or slightly patulous, dirty red, varying to orange. Petals 8 erect adpressed, obtuse, crimson. Base of tube hemispherical, not obconic as is mostly the case – only lowest horizontal part below the bulb or dilat of the style naked.

Filaments red, longer the petals; anthers yellow obtuse or emarginate

Style with a wide disk like enlargement on bulb just above the very narrow base, thence abruptly cylindrical.

8 greenish capitate (always?) stigmas.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN.

3060

Phyllotactic arrangement of areolae on ovary of scales & petals following the same system; in one of the flowers $\frac{6}{10}$ with 4 & 6 spirals most conspicuous; in another one $\frac{8}{13}$ with 5 & 8 spirals.

Joints very green, leaves patulous or recurved a little shorter than in Reibesi, joints rather thinner, spines stouter 1–3, ovary different less tuberculated

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN