MISSOURI BOTANICAL GARDEN
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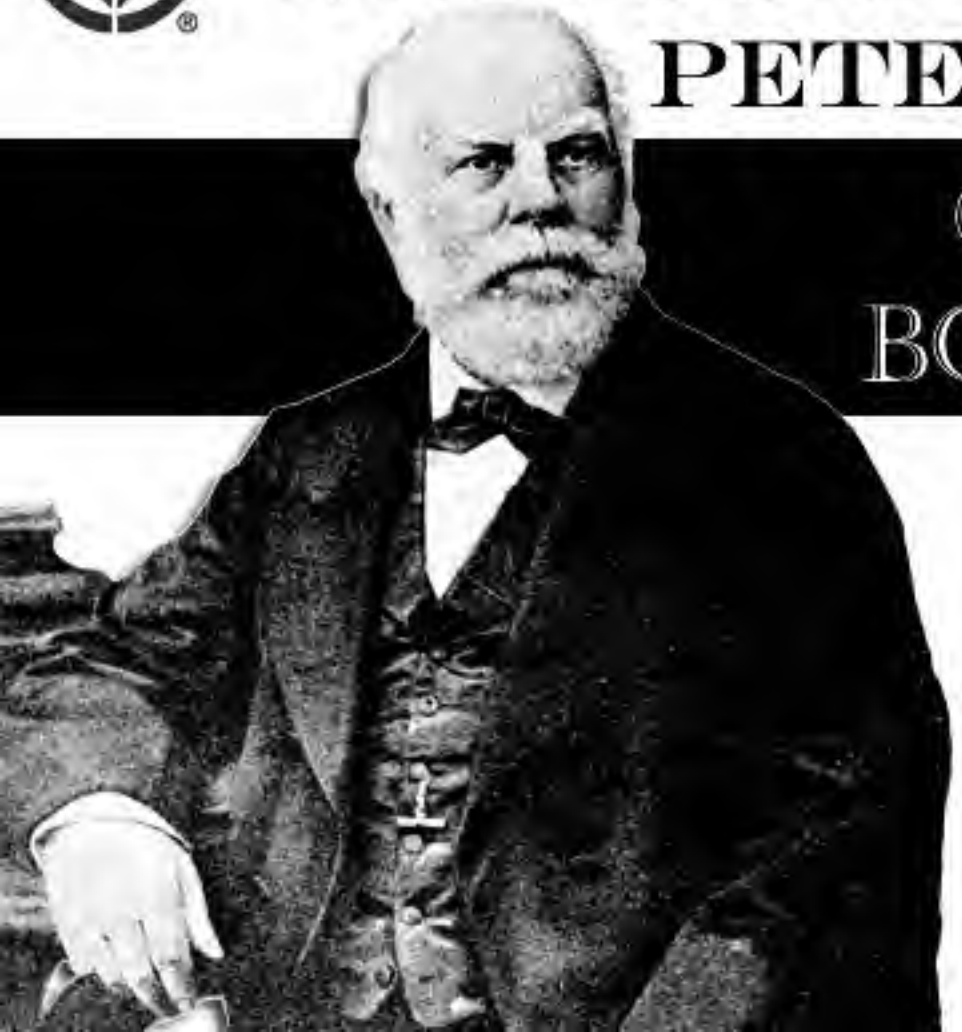

GEORGE ENGELMANN BOTANICAL NOTEBOOKS

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see page 71

Opuntia clavata Hil. N. 7. Fendler N. 275

prostrata, ramis articulis ~~cylindraceis~~ obovato clavatis, tuberculatis; areolis ~~tuberculorum~~ apicem albo tomentosis ~~margine~~ superiore setis spinescentibus ~~praeditis~~ amatis, ~~spinis~~ albis ~~compressis~~ radiantibus ~~exteriorib~~ 6–12 ~~subulatis~~, ~~centralib~~ ~~5 sub 6~~ interioribus 5 longioribus ~~centralibus~~ ~~duos centralibus~~ majoribus 4 to 6, 1, 3–4 ~~divergentibus~~ deorsum ~~flexis~~ 2–3 brevibus ~~supra~~ versis; ~~flosculis~~ tubo ~~glandulosis~~ ~~glandulosis~~ sepalis ~~exterioribus~~ elongatis ~~obtusis~~ ~~sub clavatis~~ cylindraceis, ~~pallidè~~ sepalis exterioribus 30–45 ~~obtusis~~, areolis floris. areolis albotomentosis, setis albas gerentibus 10–15, sepalis interioribus ovato lanceolatis acuminatis v. mucronatis medis rubellis, petalis flavis, obtusis v. erosis, sepalis mucronatis; staminibus plus minusve; filamentis flavis, stylo staminibus paulo superante, stigmatibus 7–10 brevibus erectis — bacca elongata - pyriformi, clavata, subglandulosa, profunde umbilicata, areolis basi stipato, ~~remotis~~ staminibus lacerisque, rostratis, embryone circulari.

On elevated plains, in sandy soil, never on the mountains about Albuquerque (W. & Santa Fe (Fendler). — ~~spreading~~ forms ~~spreading~~ dense ~~& 2 to 4 feet~~ pretty with white spines about 2 to 4 feet in diameter; to which the white spines give a very pretty appearance. F. informs me that the joints, ~~always~~ produce one or more others at their base or near and that in this way the small form a large spreading mass, of 2–4 in diameter to which the upper thirds end of the joints. ≠ below — ovary about 15‴ long, flowers 2″ in diameter, stigmas about 1½‴ long exserted; fruit 15–20‴ long, about ¾ in diameter, areolae covered with spines or bristles 1‴–2‴ long.

≠ Joints 1½–2″ long clavate; tubercles at the base small with short spines towards the apex and they become larger at the spines stronger radial spines vary from 2–4 lines in length, central ones 4–9 or 10‴ long.

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Apparently near Platycarpum Salm, but all these divisions require new examination; the tuberculated ports and the shape of the embryo approach it closely to Cylindraceae —

(subdelis nobilis) Cereus ~~magnificus~~ greggii ~~in pilis~~ tubo perigonii elongato, cinereo (to nuto ~~radicans~~ setiferus ~~setis~~ ~~pilis~~ ~~spalax~~ 60-80 v areolat. ~~aculeis~~ ~~numerosis~~ (~~60-80~~)

setis nigricantibus v. aprice albescentibus 6-12 ~~gracilibus~~ 15-20

sepalis interioribus lanceolatis, acuminatis (e viridi nobilis petalis 15-20 (albidis purpurascentibus Gregg)

lanceolatis acuminatis integris, staminibus numerosis

stigm? — flores ab 6" long ad 2" in diametro

setae of fruit 1½ — 3" long

Opuntia arborescens (vide N: 7)

caule lignoso erecto, ramis horizontalibus, ~~cylindricis~~

ramulis cylindricis (2-4" longis) tuberculosis in spinosissimis; areolis oblongis breviter tomentosis

~~spinosis~~ 12-30 spinas plures corneas stramineo-vaginatis

~~geniculatis~~ undique protendentibus geniculatis;

ramulis versus apicem floriferis; ovario tuberculato,

~~pilis~~ sub 20 sepalis, et tuberculis areolas tomentosas, cum setis paucis albidis gerentibus; sepalis interioribus 10-13

obovatis medio viridescentibus margine petaloideis, petalis violaceis

obovatis obtusis v. emarginatis; filamentis purpureis, stylo exserto stigmatibus 8 patulis

barra flava vario globosa, tuberculata, profunde umbilicata (anno secundo maturescente Sept 1)

Ovary 12-18"' long; fl. 2-3" diameter;

fruit as big as ovary but thicker nearly globose

and as the fruit ripens, runs, ripens the next

year. Stem 5 to 10' high — south of us

I have as much as 30 — last branches

2-4" — spines on large stem 20-30 — further

south only 12-20 — usually found on the ~~lower~~ under side

of the branchlets (or joints), spines horny with straw
colored base varying from 3-10‴ long, rarely
abt 6‴ long — called Joconostle by the Mexicans
description of dry wood vide pag 25 (Gregg)

Echinocereus viridiflorus supra pag 395 W. № 574 ovato-globosus
humilis, sub 13 costatus, (tuberis, demum nudis areolis lanceolatis) spinis
16-18 rectis radiantibus, medii longioribus
fuscis reliquis albidis rectuli ± 6 ad 9. ovato
elongato, apice fusco; flore tubo
albis tomentosis, squamis ovatis albidis (infra 8-12 rotundo rubellis) 3-5 seriatim
stipato; sepalis interioribus linear-oblongis 10-15
virescenti-fusco petalis 12-15 linearibus
oblongis obtusis, subintegris, (e flavo-virescentibus,)
basi alboluteis margine carneis viridibus,
saepius mucronatis, tuberculatis.

Wolfs creek Santa Fe road, 24 June 1851.
Santa Fe 4 May Fendler — body 1-1½‴ high
oval; spines 1-1½ to 3‴ long, rectuse one, when
present 6-7‴ long. flower 1‴ long and of the same
diameter; petals remarkable for color and
well as shape, about 2‴ wide; greenish stone berry
about 5‴ long. seeds small black very rough; very
similar to E. caespitosus Engelm.

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vide Cact. 6.7.

Echinocereus triglochidiatus ovato-cylindricus,
sub 6-7 costatus, costis undulatis, sinubus latis obtusis
areolis remotis dein nudis, spinis albo-luteis
dein nudis; 3-6 (plerumque
3) rectis compressis angulatis, rigidis, divaricatis,
floribus lateralibus, tubo squamis pulvillis
15-20 albo tomentosis, setas spinosas apice fuscas
2-5 gerentibus stipato; sepalis interioribus
sub 12 oblongo-linearibus obtusis, petalis 12-15

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staminibus petalis subaequantibus ~~corona~~ ~~antherarum~~ ~~staminibus subbrevibus~~, stylo obovatis obtusis, / elongato stigmatibus 8-10 ~~v~~ ~~v~~ crassiusculis

Wolfcreek – Pinetimber 24 June Wisl.

4–6" high 2 – 2½" diam; spines = yon species 4–6 – old ones generally only 3; angulate compressed; two longer ones lateral (8–14"), one short deflexed (6–8"') — flowers 2–2½" long 2" in diam; petals deep crimson, 6–8"' wide (stems & buttons red); ~~In~~ ~~s~~ specimens only by the time at least the flowers are large, ~~num~~ 3" long and the petals 8–9"' wide setae in the axills of the lower petals are stouter petals spines with brown points a number of spines in each fascicle 3 to 5;

fruit unknown

Echinocereus coccineus globoso ovatus ~~v~~ ~~s~~ caespitosus, 9–11 costatus, costis tuberculosis subinterruptis; areolis obovatis albo tomentosis demum ~~subnudis~~; spinis ~~radialibus~~ 9–10 ~~subdecem~~, albidis ~~v~~ ~~s~~ rectis ~~obliqu~~ ~~v~~ porrectis superioribus brevioribus, centrali 1–3 longiore albis ~~v~~ ~~s~~ ~~fuscis~~ cornis; floribus lateralibus, tubo pubescente 18–25 albo tomentosis, setis tenuibus albidis 8–11 (generatibus stipato), sepalis ~~v~~ ~~s~~ luteo-viridibus 8–10 oblongo-lanceolatis obtusis petalis 10–12 aboratis, obtusis, ~~v~~ ~~s~~ luteo-viridibus petalis ~~v~~ ~~s~~ ~~fuscis~~ ~~v~~ ~~s~~ ~~stigmatibus~~ 6–8 ~~v~~ ~~s~~ crassiusculis, ~~v~~ ~~s~~ luteis

Wolfcreek – Pinetimber 24 June. Wisl

Fendler Santa Fe 15 May. — 1½ to 2 inches high 1¼–1½ inch diameter like most of the Echinocerei; simple or generally branching from the base, caespitose, sometimes forming clusters of 10–15 heads; spines terete all protruding radiating ones all more or less erect radiating ones none appressed as in many other Echinocerei (wild flow pectinates etc.) radiating ones 3–6"' ~~8–10 lines~~ central ones 8–10"' long flowers 1½–1¾" long 1–1½" wide, when

fully expanded; ~~petals~~ tubules of tube 3–6‴ long; petals deep crimson, 4–5‴ wide; filaments red anthers red, or yellow ~~nearly altogether purple, but easily distinguished by the~~. Flowers very much like those of the last named species, ~~but plant~~ though smaller in all dimensions, but plant very different.

Echinocereus: Perigonii tubus ultra germen productus, abbreviatus, ~~pubilligerus~~; exteriora s. ~~Sepala~~ tubi ~~pubilligera~~ ~~sepala tubi~~ ~~phylla exteriora~~ subulata; Sepala tubi subulata, ~~in~~ axillis tomentosis seti- s. spinigera, sepala interiora ~~his~~ subpetaloidea, et petala ~~plus~~ longiora ~~via~~ plurimserialia, ~~os~~ corolla brevitur infundibuliformi. s. subcampanulata accumbentia, Stamina numerosissima, ~~fauci~~. Tubo adnata, tubo breviora s. ~~cum~~ subaequantia. Stylus staminibus vix superans; stigma multisulcatum radiis brevibus; Bacca pubilligera setosa s. ~~spinosa~~ ~~aculeata~~. Semina ~~testa~~ dura ~~tuberculata~~ nigra (an semper) ~~Cotyledones contrariae~~, albumine vix ullo, Embryone vix ~~incurvo~~, cotyledonibus brevibus contrariis.

Cactus regulares globosae s. ovatae, simplices vel plerumque a basi ramosae, inde ~~crespitosae~~, costis s. multicostatae, ~~rostro~~ ~~nunquam~~ lanato, areolis distantibus, confertis s. confertissimis; ~~spinis aculeis~~. Flores laterales ex anni prioris axillis producti, diurni, per aliquot dies ~~in~~ sub sole ~~sole~~ radiis apertis, ~~noctu~~ (que' et sub coelo nubilo) clausi.

Echinocactus ~~magnispinus~~ vide pag 21 ff. ~~rostro~~ lanato globosus costis 21. interruptis, areolis tuberculatis ~~tuberculis~~ ~~apice~~ areolis approximatis albo-tomentosis demum nudis, spinis radialibus ~~ad~~ 21. ~~albidis~~ centralibus albidis nascentibus subulatibus, centralibus ~~sub 6~~ 5 (raro 6) robustioribus ~~rigidis~~ cornea s. ~~corneis~~ ~~et~~ rarius flavescentibus,

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(~~a Tab Loreto~~)

una decora flexa robustissima cornea-fusca, floribus ovatis verticalibus, ~~albario~~ tubo quam laevi sepalis membranaceis, auriculato ovatis, fimbriatis stipato petalis numerosis, oblongis ~~acutis~~ obtusis, stylo supra staminia ~~flavescens~~ numerosa elongato, stigmate subulato (v. penitus?);

~~about~~ Palayo, only one specimen seen. — A very elegant plant; the large recurved spines especially the deflexed central one with its brown or horn-colored point ~~long~~ with the appearance of a large fang covering the whole surface, lower radial spines 6-10''' long, upper ones 12-15''' long upper central one 12-18''' long, lower central one short but, stout 10-12''' long much deflexed. — This is a very remarkable plant, in its shape approaching some Mamillarias. The bunches of spines stand on compressed tubercles, which though rounded in ridges, are sufficiently separate, have a tomentose axillar areola, and a tomentose furrow on the upper side. The ~~body~~ ovary however ~~prevents~~ the supposition constitutes it an Echinocactus, and that opinion is further strengthened by ~~the~~ (at San Lorenzo) ~~the~~ same fruits, collected in the same region by Dr Gregg, which I can hardly doubt belong to the same species; the fleshy oval berry is 10 or 12''' long, covered with the same imbricate scales, and crowned with the remains of the flower; seeds very numerous, black compressed, roughened; albumen considerable, embryo curved cotyledons short, obtuse. — Flowers about 1'' long and probably pale red; described from the dried specimens but on the living plant. This beautiful Echinocactus is common often among here as most of those collected by

that season, though they were not over only two months ago; while those in peat from Aug to Oct and which had been packed up for 8–10 months mostly are growing finely.

Dr Gregg's seeds however germinated well.

77. Echinocactus Wislizeni (Engelm.) Lk. Otto

= = = acutis (vel obtuse) tuberculatis, areolis oblongis approximatis, spinis (circa 15) flavis demum cinereis patentibus (vel deflexis) tenuibus flexilibus, 1 vix semipollicaribus, 5–6 centralibus subulatis, rubellis (vel flavis) rectis (vel curvis) subulatis, radiantibus 12–15 subulatis, omnibus subulatis, centralibus deorsum curvatis, radiantibus patentibus, omnibus basi bulbosa, flore ignoto, fructu ovato, 1 pollicari, rubro, seminibus nigris, rugulosis.

Near Doniana, south end of Jornada — coll in Aug — flowers & ripe fruit on the same specimen. It belongs to those plants though I take Echinocactus setispinus E. which others e.g. E. texensis flower only during the short time of one or two weeks in the first of May buds & open together with the flowers & their axills are developed during the whole season — in May they come out all at once in spring

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Plant mostly about 1½' high, rarely 2–3'
but one specimen was found 4' in height & near 7' in circumference
areoles 5–7 lines long, nearly 6''' distant from one another
radial spines 1/2–2'' long, straight central
one 1½'–1½', & the large hooked one
2–2½ inches long; flowers 2–2½'' long, yellow
not opening wide; fruit 1¼ + 1½'' long, topped
with the remains of the flowers & the scales.
Seeds with considerable albumen, in which
the imbricated cotyledons are buried.

78. Mammillaria macromeris simplex, D. Wats, tuberculis
elongatis cylindricis, inermis, axillis angulis rectis, spinis radialibus
tenuibus longis, centralibus 1–3 robustioribus, longioribus
floribus (maximis ♀ roseis) depresso ovatis sinuato
ciliato-fimbriatis; petalis mucronatis fimbriatis,
stigmate supra staminibus longe exserto, stigmatibus 5–6.

Sandy soil, near Socorro, coll Aug. in
flower. — Stem single, 8 rows, ÷ 12–15'' long, inarmed, groove
at first tomentose down to the tomentose axillary
areola; radial spines 1–1½'', central one 1½–2''
long; flowers 2½–3'' long & of the same diameter,
probably larger than ÷ any of the Mammillaria
petals rose-color, darker red in the middle.

Mammillaria strobiliformis simplex ovato-conica
tuberculis imbricato adpressis, conicis applanatis, axillis
rectis spinis radialibus sub 10 albidis, centralibus 3
rigidis fusco-atris, 2 minoribus suis — versis summa
longiore erecta; floribus centralibus (tomento)
ovario etc vide pag 20.

On Rocks near Socorro, (expanded flowers
flowers) in July when
they were unpacked). about 3 inches high and 2 inches
diameter; tubercles ÷ 10–13 rows, closely adpressed

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tomentose
villous in the furrow groove & to the axills, about 6 lines long
radial spines 3-5 lines long, central one, 5-8" long;
3-5 together in
flowers central ½ long & dense wool, about 15 lines
& striate
long, and as do, petals deep purple. fl. yellow
Mammillaria gummifera Cactiflora
simplex hemi-
sphaerica, Tuberculi pyrum-dalis
axillis quadrangulatis
axillis juvenilibus albo tomentosis, spinis rectis
que
radialibus 10-12 ~~setaceis~~ tenuibus, ~~albidis~~ fere superantibus,
capite fusiris superiora setacea albida robustiora
robustis ~~multo longioribus~~, centralibus 1-2 ~~brevioribus~~
fusiris
brevibus, flore . . fructu . . .

Cos. equiviacki. — From 3 to 5 inches in
diam. 2½-4 inches high, ~~tuberculate~~ when crowded
it exudes a sticky fluid which hardening
forms a gum; mostly in 13 oblique rows tubercles 6-7''' long 5-6''' wide at base upper spines 2-3
lower ones 6-7 ~~long~~, central one, about 2" long —
flowers & fruit not seen, but probably similar
to those of two other species which I obtained
from the Peidernales in Texas M. applanata
and the Month of the Rio Grande E. & G. M. Lloydii
both have also simple Cactus-like, M. Thornberiana
have angular pyramidal tubercles
short upper and long
lower spines and very small central spines; their
flowers are small & with white, the berries
long clavate scarlet, without the remnants of the
flower. —

90. Opuntia vaginata
~~splendoris~~ articulis ovatis tuberculatis, areolis orbiculatis
albo tomentosis margine superiore fissicula setarum
brevium fusciarum, inferiore spinam elongatam, omnem
vaginam laxa straminea involutam deflexam gerentibus,
floribus, pomis flavis ovatis areolis ~~14~~ 13 to minutis
sepalis interioribus & et petalis 5 ~~oblongis~~ obovatis mucronatis
setigeris stipato, baccis obovatis profunde umbilicatis carnosa, ~~acuminata~~ ~~ovata~~,
seminibus pluribus.

On the Mountains near El Paso, — Differs in Opuntia
splendens from Lindheimer (Salem Expt), but distinct from

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from all those Opuntias described, perhaps next to
O. Virgata, W. Wms. for which it is distinguished by the longer
and deflexed spines. — Branches 3 or 4 feet high;
the ultimate branches 2 p. to 3''' diameter; spines
single from 1/2 to 2" long, rarely with a second
straight one or less deflexed
smaller one; Vepis dermis sheath deep yellow or
brownish, very loose, finally coming off. Areolæ
4 or 5 lines long, plenum 6-9''' diameter greenish
yellow, stigma conic, 5 parted (or petals?) ovate obovate macronate; fruit 7-8'' long

Echinocereus dasyacanthus (Cact. cult. No. 39)

ovato oblongus v. globosus, 17-18 costatus; costis
tuberculatis subinterruptis, areolis elevatis approximatis,
ovato-lanceolatis, junioribus albo villosis; spinis albidis,
junioribus apice rufidis, radialibus ad 18 patulo
porrectis, centralibus 4 vel 6 plerumque
subdeflexis; flavis — purpureis —

Paso del norte; — The only species before me, the
largest seen by Dr. W. is 12 inches high, with a diameter
of 3 1/2" below and 2" above, wool on the areolæ
very long, ribs 17 or 18. upper spines slender about 3" long
slightly compressed
lateral ones 6-7" long, lowest ones about 5" long;
central ones 4-5" long, stouter than the others. — It closely
resembles Ech. pectinatus and caespitosus, the two other
species with short spines and many a larger number
of ribs, but is distinguished by the longer,
not compressed spines, the lowest ones not being much
shorter than the lateral ones, and the larger size and number
of central ones.

Echinocereus rufispinus (Cact. Cult. 41.)

ovatus 11-costatus areolis elevatis lanceolatis approximatis
albido-
denum junioribus costatis villosis, spinis radialibus 16-18,
(asperatis intertextis) brevibus
√3-5 superioribus setaceis albidis, infra centralibus
elongatis recurvis, flavis, centrali singula porrecta

robusta, fusca. K. vide page 59.

Cosiquiriachi. — 4 inches high, below 2/2 in diameter. Upper radial spines or bristles 1–2‴ lower ones about 4‴ and lateral ones 7–9‴ long; central spine much stouter, about 1 inch long. — Young spines brown, old ones ashy grey

Echinocereus radians (Cact. coll. 43)

ovatus 13-costatus, areolis adustis ovatis subapproximatis, juvenilibus albo-villosis; spinis radialibus 16–20 adpressis juvenilibus apice adustis, superioribus brevibus setaceis lateralibus, inferioribusque longioribus robustioribus, centrali singula porrecta robusta, fusca.

Cosiquiriachi. — 2/2" high, 2" in diameter; upper radial spines 1–2‴, lower ones about 3‴, lateral about 5 ones long; central spine much stouter, about 1 inch long

№ 45 is evidently the same; many areolae without a central spine; 14 ribs; light in dimensions the same; spines a little shorter.

Echinocereus adustus (Cact coll. 46)

elongato ovatus, 13-costatus, areolis elevatis lanceolatis approximatis, juvenilibus albo-tomentosis, spinis omnibus radialibus adpressis albis apice adustis 16–18, 4–5 superioribus brevibus setaceis, lateralibus inferioribusque longioribus, robustioribus, centrali nulla.

Cosiquiriachi. — 4" high 2" in diameter upper spines 1‴, lower ones about 2‴ lateral ones 4–5 lines long.

№ 47 appears to be the same; two heads, 1/2 inch high, 15 ribs;

№ 48 ditto, young plant; 1/2 inch high, 13 ribs

Echinocereus polyacanthus (Cact. coll. 32)

elongato-ovatus, 10-costatis, areolis elevatis, ovatis ~~ovatis~~, subapproximatis, juvenilibus albido-tomentosis; spinis ~~radialibus omnibus plurimis porrectis~~, radialibus 19–12 plurimis porrectis, apice adustis, lateralibus majoribus, denique subadpressis,

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superioribus, ... ; centralibus sub 4, ~~3 superioribus~~
corneis, apice fuscis, 3 superioribus sursum versis, inferiore singula longissima
porrecta demum deflexa. ; — — second oval stem from base
Cosiquiriachi. — 4–5" high 2½–3 in diameter groves deep.
~~upper~~ radial spines 4–5''' lateral and inferior ones 8–10''' long
upper central 9–12''', lower one 15–20''' long ; spines at
last, ashgray — 5–6" r.

244 *Echinocereus enneacanthus* n. sp.

ovatus, 10 costatus, areolis elevatis orbiculatis,
distantibus, junioribus breviter albo-tomentosis ; spinis
~~radii albidis~~ angulatis compressis rectis albis, radialibus 8
subaequalibus, centrali singula longiore demum
deflexa ; floribus lateralibus ; tubo pulvillis 30–35
albotomentosis setas spinosas albidas fuscescentesque
inferioribus 2–3 superioribus 2–3 gerentibus stipato ; sepalis
interioribus 10–13, oblongo linearibus, petalis 12–14 oblongo-
linearibus obtusis & mucronatis apice denticulatis,
staminibus brevibus ; stigmatibus 8–10 elongatis linearibus,

Near San Pablo, south of Chihuahua, coll in
April. — Plant 5–6 inches high, 3–4" in diameter, branching from the
base ; ~~areolae nearly~~ about 1 inch distant from one another
Spines stout, angular like those of E. triglochidiatus
lateral ones 9 ~~to~~ 16 lines, central spine 18–22 lines long.
Flowers 2½ to 3 inches long and of the same
diameter, — red, paler than those of E. triglochidiatus,
but not purple ; ~~bristly spines~~ spiny bristles in the axills of the
lowest sepals (on the ~~tube~~ ovary) 4 brown ones 2–4''' long
and 2 white ones 3–4''' long ; ~~in the~~ higher up the number
of the brown ones diminishes, and on the upper part of the
tube we find only 2 white ones of 6''' length.

Dr Gregg has collected between Chihuahua & Saltillo
a number of Cactus flowers, all of them
belonging to this genus, and most of them very
near this species;

white

1, № 400 7 radial & angulated central spine; pubescilli of the tube crowded, bristles long & thin, petals slightly dentate, mucronate; flower 2 – 2¼ inch long. — Parras, April

2, № 616 13-15 radial, 1 central spine, white, pubescilli more crowded, bristles thinner yet; petals obtuse or mucronate; flower 2½" long. San Lorenzo in May.

3, № 800. 8 radial 1 central spine; white, pubescilli more crowded yet; bristles numerous, hairlike; petals obtuse, ± mucronate, slightly denticulate. — Flower 2¾" long & wide. Aguascalientes, in May

Lindheimer Echinocereus ~~Fendleri~~ Roemeri

from the Llano must also belong here.

8 ovatus, caespitosus, costis 7–9 tuberculatis; spinis ~~8~~ 8-9 radialibus 8–9, centrali majore subulata

Echinocereus Fendleri Fendler № 273

(Char. emend. Sept 55) see page 242

... floribus campanulatis, ovariis tuboque pubescillis 30 albotomentosis, stipato inferioribus squamosis, areolis setis albis ~~inferioribus~~ apice barbatis 8–12 radialibus et 1 angulari centrali, superioribus acutis 3–8 caninis albis gerentibus; sepalis interioribus 12–15 lanceolatis, ~~-----~~, centralis 1 subulatis, obtusis, petalis (16–24) oblongis-lanceolatis, acutis v. obtusis 16–24 longis, hebetico mucronatis, stigmatibus 12–16 divisis, staminum numerosissimum vix superantibus.

Santa Fe, elevated sandy prairies; Fendler. ~~May~~ – June. — According to Fendler's notes the plant grows in clusters, the oval heads have 10 ridges; 7 radiating and 1 central spine which is slightly curved upwards spines more or less compressed; younger ones brownish with lighter tip.

(see page 73) One areola is oval left on one of the specimens has 8 radiating spines, and one longer central one; all

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(are straight, ashy-colored with brownish tips. —
upper radial spines 1½–2‴, lateral ones 2½–3½‴
and lower ones 4+4½‴ long, central one 4½‴ long. —
violet-purple flowers 2½ to 3¼‴ long and ± diameter;
spines on the lower part of tube 2½–3‴, & upper
part 3–5‴ long. — Color of flower resembling
that of E. caespitosus of Texas; petals as variable
as that ± shape — obtuse or mucronate, or acute
and even somewhat acuminate. —

257 (Wil.) Echinocereus pectinatus (Cereus pectinatus
Echinocactus pectinatus, Schdw. Echinopsis pectinata Salm)
simplex (an semper?) ovato cylindraceus, 23-costatus
areolis elevatis lineari-oblongis approximatis, juvenilibus
albo-villosis; spinis radialibus 16–20 (pectinatis) subrecurvis-adpressis
(albis, apice roseis) superioribus
superioribusque brevioribus, lateralibus majoribus;
centralibus 2–3 brevioribus 1 seriatis; floribus
lateralibus; tubo pubrillis 60–70 brevibusetosis
spinulas setas albas v. apice roseas 12–15 gerentibus stipato;
sepalis ideoribus 18–20 oblanceolatis, petalis
16–18 oblongis obtusis (mucronatis) erosо-dentriculatis.

Bachimpa, south of Chihuahua; April.
7" high, below 3/2, above 2½" ± diameter;
upper & lower spines 2‴, lateral ones 4‴ long; central one
hardly 1‴; mostly 3; sometimes only 2 and sometimes
on the lower areolae 3–5, always one above the
other. — Flowers about 3" long & wide, (red or
purple?), spiny bottles on the tube 2–3‴ long,
the uppermost only 3–5 together and from 3–5‴ long. —

vide pag 2. 8. & 9.

Echinocereus caespitosus Texas, Lindheimer.
(= Echinopsis pectinata Scheer in part (Cereus caespitosus Engl. ± pl. Lind.);
ovatus, caespitosus
13–18 costatus, areolis elevatis, lineanibus, approximatis
junioribus albo villosis, spinis radialibus albis nonnunquam

roseis Lindh.) 20-30 subrecurvis adpressis pectinatis, albis (nonnunquam ~~roseis~~ castaneis Lindh.) superioribus inferioribus que brevioribus, lateralibus longioribus, centralibus nullis; floribus lateralibus, tubo pubescente 80-100 (vix longe villosis) setas fuscas s. nigricantes, 6-12 apice s. totas, 6-12 gerentibus, stipato; sepalis interioribus 18-25 oblanceolatis integris dentriculatis, petalis 30-40 obovato-lanceolatis, obtusis, acutis s. mucronatis, s. late dilaceratis; stigmate viridi infundibuliformi 13-18 partito supra staminum verticem exserto; bacca viridi ovata, perigonio coronata, villosa, setosa, demum nudata; seminibus obovatis, tuberculatis nigris.

From the Brazos to the Nueces — Texas, Lindheimer.

Generally 1-2 inches high and of nearly the same diameter, rarely as much as 5 or 6 inches high, and 2-3 inches in diameter. Longer spines in different specimens between 2-4 lines long. Flowers in specimens from Industry 2 inches long & wide, in those from N. Braunfels 2½-3 inches in diameter and length — generally a little wider than long; brown or black bristles on the tube 2 to 5 new lines long, surrounded by long grayish wool, often 3 lines long. — Distinguished from the last by the want of any central spines, and from that as well as all others seen by me by the long woolly & bristly ~~tube~~ flower tube.

Mamillaria compacta (cact. coll. Nº 53)

simplex hemisphaerica s. depresso-globosa; tuberculis abbreviatis ovoideo-conicis, subacutis axillis areolis junioribus albo-tomentosis, conicis, spinis omnibus radialibus 13-16 subaequalibus, setaceis recurvatis-adpressis interdum intertextis, albidis, apice fuscis; setis tuberculorum axillis que junioribus et vertice tomentosis; floribus verticalibus, ~~ovatis~~ brevis ~~oblongis~~, ellipticis

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perigonio coronatis, viridibus. seminibus ovatis lucidis

7. Coniquiriachi. — 3/4 in diameter 2 3/4 high;
tubercles in 13 oblique rows (13/34) 4 lines high, 6''' wide
at base; spines 7–10 lines long, stout, recurved.

Mammillaria solida (Cact cult. 60)

globoso-ovata, tuberculis abbreviatis ovoideo-conicis,
sulcatis; areolis ovatis, v. ovato-lanceolatis, junioribus
albo-villosis; spinis ~~nonnullis~~ radialibus 13–15, subaequa-
libus robustis recurvato-adpressis intertextis
albidis 3–5 superioribus fuscatis, centrali unica
~~v. nulla~~ v. simplici erecta fusca; sulcis tuberculorum
axillisque junioribus et ventre tomentosis.

Coniquiriachi. perhaps not different
from the last. 5'' high 4 1/2'' diameter globose; —
tubercles in 8 oblique rows (next. flatter rows 11)
about 5''' high and 6'' wide at base; spines 5–8'''
mostly about 6 or 7'' long; central spine I have
observed only in the youngest ~~joints~~ tubercles,
(deciduous?) and not ever in all of them.
Is this distinct from the foregoing?

Cultivated Cactae, which have died in 1867, some of them, I think
having been examined before

56. Mammillaria gummifera, a small specimen; Coniquiriachi
52 M compacta = 53 described above; hemispherical,
2 1/2 inches in diameter;
44 Echinocereus radians = 43 descr. page 43, about 1 1/2 inch
high. Black central spines very ferocious looking; 13 rows or ribs
50. Echinocereus adustus = 46 descr. page 43. 13 ribs,
apparently near E. radians, but even without the spines
distinguished by having narrower areolae a few and
short or no lower spines; E. radians has three large
nearly resembling the Calendonus

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51. Mammillaria compressa = 52 & 53. ; with 13 principl oblique rows ; only 1 3/4 inch in diameter, and already fruitiferous ; the seeds obtained of this species were from this one specimen, central, immediately ; wool ; elongated obovate, light brown smooth shining

Echinocactus flexispinus

globosus vertice subnudo, costis 13 obliquis tuberculato subinterruptis ; areolis ovatis albo-junioribus albo-tomentosis, spinis distantibus ; spinis junioribus nubellis, demum cinereis, radialibus 9-11 rectis s. subflexuosis, superioribus tenuioribus, infima breviori, curvata, lateralibus longioribus - compressis ~~sub~~ annulatis, rectinsculis angulatis ~~compressis~~ annulatis, 3 superioribus rectinsculis, ~~sub~~ canvatis, inferiore longissima deflexa, flexuosa plerumque ~~sub~~ uncinata

Pelayo, betwn Chihuahua & Parras. The specimen before me is without flowers & fruit about 10" high and of the same diameter ; ribs thick but not rounded ; areolae (without the floriferous areolae, with the 9" long) 6" long 4" wide 1-1½" distant ; upper spines the most slender, 1¼ to 2 inches long ; lowest one 1-1¼" long, stouter mostly curved downward, lateral spines ½ to 2 inches in length, very slightly annulated ; upper central spines 2½-4 inches in length ; lower central spine stoutest, 4-5" long, mostly deflexed but often flexuous, twisted more curved or even hooked at the end, much compressed & angled, sharply carinate above & below, slightly annulate. -

Cent. ad 49 semen oblique obovatum subreniforme nigrum, minute tuberculatum, subopacum

50

Feb 1848

Notes on the Cacti figured by J. M. Stanley and collected in Maj. Emory's Expedition (Gen° Kearny) from New Mexico to California

Copper mines

1. Mammillaria collected Octob 15th 1846, very much proliferous; forms hemispherical masses of 3/4 feet diameter; of a bluish green, often compound of 100 to 150 and perhaps 200 different heads; single stems nearly conical apparently about 4 or 5 inches high and 2/4 to 3" in diameter; spines whitish or reddish. —

Perhaps near M. vivipara, but that forms flat masses, and the single stems are rather hemispherical, not conical.

It may be a peculiar species, and undescribed species and in that case may bear the name of M. aggregata

2. Mammillaria On the Gila midway between the Copper mines and mouth of San Pedro collected. Octob 26th 1846, rare

apparently a mammillaris, but habit more like an Echinocereus; cylindrical stems, many (in the figure 8) from one base.

Stems irregularly cylindrical, with diverse contractions and swellings (bulging out); about 4–6" high and 1/4 to 1/4 in diameter.

May be called M. fascicularis.

3. Mammillaria collected Nov. 4th 1846 abundant

near the mouth of the San Pedro

several (3 in the figure) oval stems from one base, 1/2 to 2/2" high and 4–1/4" in diameter; small red obovate fruit towards the apex, not more than 1/2 inch long.

0 1 2 3 4 5 6 7 8 9 10 cm
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If the figure is correct, it ought to be distinguished by the name of M. microcarpa. Areolae is about 13 rows; spines whitish, rather short.

4. Echinocactus Wislizeni, which I have described from dried specimens collected by Dr Wislizenus in New Mexico. This was collected, Octob 26th 1846. On the Gila betw. Copperm & mouth of San Pedro

In addition to the description in Dr Wisl Report I see from this figure that the species has 21 oblique ribs, is of an oval shape and bluish green colour; the ribs are acute but not compressed according to the figure, and the groves similar.

5. Echinocactus

"18 inches = diameter," Octob 25th 1846. On the Gila midway between the Coppermines & the mouth of the San Pedro

globose, or rather urceolate, ventricose contracted towards the apex; with 21 straight sharp ribs; colour bright green, & straight brown spines on the areolae; vertex whitish surrounded by a crown of fruits (= the figure 31); fruit about 1–1½ inch long, oval, yellowish or reddish seed is figured

I have not seen such a species amongst my collections from New Mexico, it is undoubtedly distinct from all such I have got from there and I propose to name it after its Discoverer E. Emoryi

6. Cereus

3 feet high. November 21st 1846. near the mouth of the Gila!

There can be little doubt, but that we have here my Cereus Greggii before us — Dark green, branching, with 5

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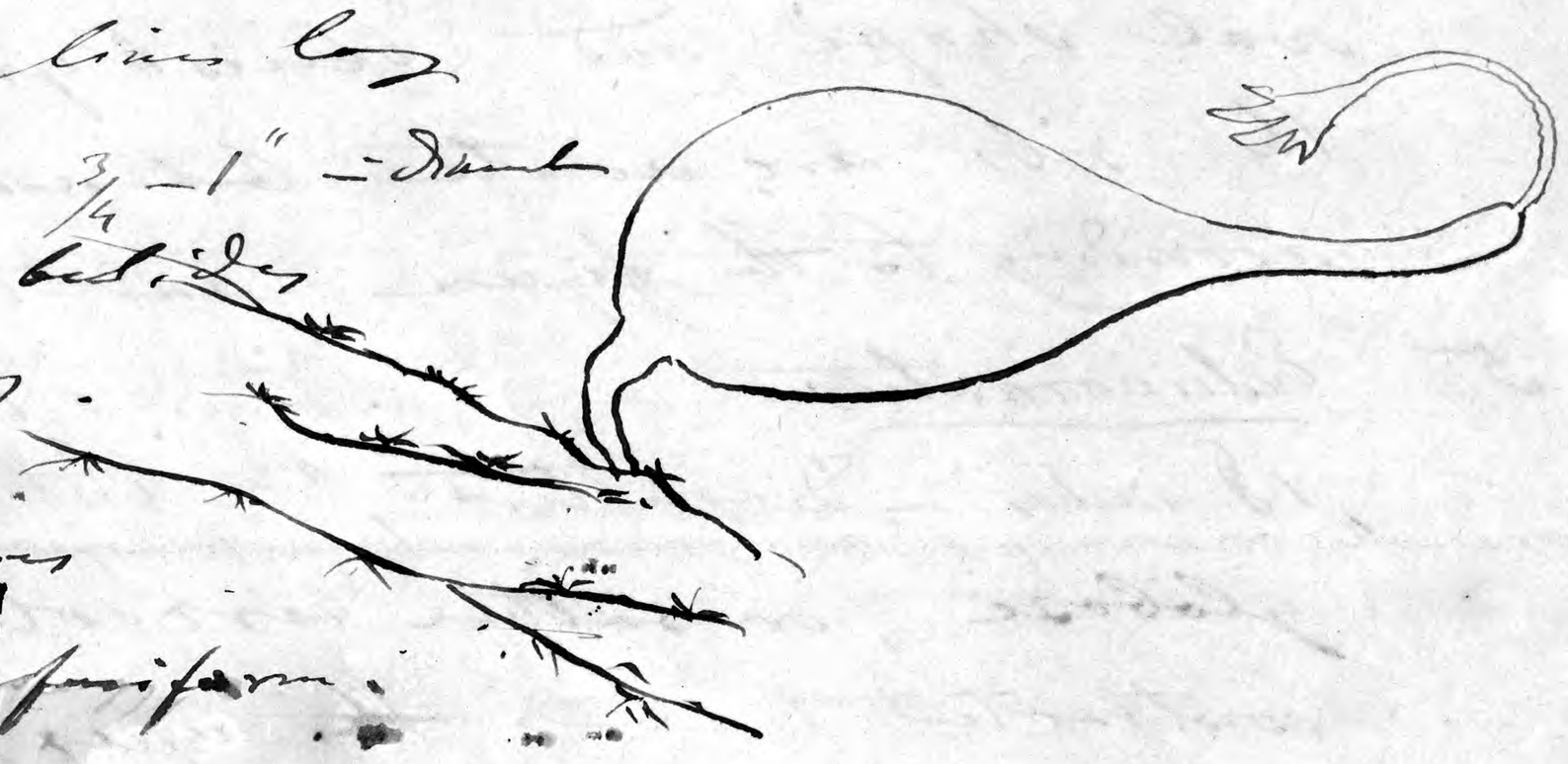
compressed ribs and whitish areolae with short & short ~~black~~ dark spines

The specimen ÷ the figure is remarkable on account of the fruit, which was unknown to me.

Provided the figure is correct we have here a ~~oval~~ smooth oval acuminate fruit, on a distinct stipes, crowned with the remains of the corolla; of a bright crimson colour. Both the stipe and the acuminate are to me unknown ÷ any other cactus.

Stipe 6 lines long
fruit 1½" long ¾–1" ~~–~~ diam
acumination included
about 1" long.



Mr Wright 1851 pronounces the figure correct!
The root is larger, fusiform.

7. Opuntia belonging to the Elliptiae Salm.
" very abundant on the Del Norte & Gila "
" no date, nor any statement whether the figure natural size or smaller. —

x) Provided the figure represents the natural size, the obovate-orbicular joints are bluish green
1½ – 2½ inches long and little less wide, spines short and whitish; ~~fruit~~ berries obovate, ~~small~~, scarlet, small, only about 2–4 lines long
Plant ascending 8–10" high —
x) Older patents prostrate, branches and younger joints erect; joints orbicular-obovate, rounded sometimes obtuse or acutish, of a bluish green colour — now the dimensions, provided the figure is correct. —

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cm
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8 If the plant is figured in natural size, it ought to bear the name of O. microcarpa.

8. Opuntia Octob. 28th 1846 common on the Gila ~~at~~ near the mouth of the San Pedro not stated whether natural size or not.

Much branched, tuberculate, joints short oft articulate, ~~with~~ purplish with 2 or 3 longer brown spines directed downwards; fruit obovate, red.

In the figure the joints are 1/2 ~ 2" long, 1 - 1/4 inch wide; fruit abt 3/4" long.

There are several Opuntiae known with purple joints, Pfeiffer N: 11. 67. 68 but none, similar to this, and I must consider it as distinct species to which I would give the name of O. violacea

9. Opuntia? Octob 22nd 1846 Abundant on the Del Norte and Gila. on the upper waters of the Gila not far from Copper Mts.

A remarkable plant, apparently more like ~~an~~ Mammillaria than like an Opuntia, fruit is also represented without areolae or areolae, exactly like the smooth fruit of ~~an~~ Mammillaria, but that may be an oversight; it is at least umbilicate,

Joints or branches ascending, (similar to my Opuntia clavata) cylindric, tuberculated much like the stem of a Mammillaria, 4 - 6" long 1" - 1/4" in diameter, tubercles very prominent areolate, with about 8 straight spines long (1 - 1/2") obovate, umbilicate scarlet fruit towards the top of the joints about 9" long & 6"' diameter.

It might be named after the skilful artist who drew all this figure O. Hanksii. Mammillaria

On the Gila near Mouths of San Pedro

10. Opuntia, 4' high, Nov. 3d 1846

Stem erect with articulate, horizontal or somewhat pendulous branches; branches cylindrical, strongly tuberculated, about 8th in diameter; with short spines on the tubercules; fruit pale yellow, clavate tuberculate imbricate 1-1/2 inch long, 6-8th in diameter.

This is probably the O. arborescens of Wisl. Report. ~~Through the fruits are~~ near mouth of San Pedro

11. Opuntia, Nov. 2d 1846 somewhat resembling the last, but form 11 low wide spreading branches 11 — joints thinner, more slender, only about 4 or 5 lines in diameter; alternating & not opposite nor verticillate; ~~and~~ separating from the ~~leaving~~ stem under an acute angle, not horizontal; tubercles more prominent, whitish areolae with three dusky deflexed spines, from the upper edge. fruit clavate, tuberculate pale yellow 1 inch long, 4th in diameter. See page 103

It is a species which I believe is undescribed and may be named O. californica

12. Opuntia Octob 10th abundant 3 feet high, with branches spreading the same in circumference — I can see no difference from O. vaginata Engl in Wisliz. Report, which I have growing.

Nos 13-15 are no Cacti.

13. is evidently Hoeberlinia Juccarini a Shrub common in the Chapparals of North Mexico, which has been collected

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in flower about Paso & Soledad by Drs Wright & Gregg. The fruit is unknown to me as well as to the original publishers of this genus. — The Specimen figured is in fruit, & fruits globular, small 3/4 — 1 line diameter, crowned with the persistent style / appearing to be the rudiments of the

It was collected on Octob 23d. 1846.

3 feet high, with low spreading boughs.

14. " collected Nov 15th 1846. 4 feet high, rare. — is perhaps a second species of the same Genus but the entire absence of flowers and fruit make it impossible to decide.

Branches stout, straight leafless, ending in robust dark spines, but the branches are much more elongated, and separate from the stem under acute somewhat [illegible] forming acute angles with the stem; in the other species they are horizontal or even somewhat recurved.

15 " Octob 22d very abundant, 3' high, fruit 5" long "

Leaves have the appearance of an Agave or Aloe; perhaps a Yucca? Scape not much longer than the leaves, fruits in a simple lax raceme only 6 or 8 — apparently angular capsules crowned with the perianth. Leaves apparently entire and somewhat obtuse, — some Amaryllidaceous plant?

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Maj Emory sent me three seeds of
Californian Cacteae

1, Echinocactus, seed obovate, obliquely truncate
at base, full one line long, black, opaque with
a slight roughness, Embryo curved, cotyledons
incumbent, partly buried in the large albumen.

Seed as well as Cotyledons larger than in Ech.
Wislizeni; distinct from that, and any others of
which I have compared the seeds.

2. Cereus seed obovate, obliquely truncate
at base, black, smooth shining, 0,7 line long.
No albumen observable; cotyledons incumbent
hooked, cotyledons dirumbent.

This is evidently the seed of the plant
which Maj Emory describes as growing 25
to 60 feet high, 2–5 feet in circumference,
few branches erect; stem sometimes simple;
ribs about 20, no spines if I recollect
right"; fruit rich, luscious, much relished
by the Mexicans. — Called Pitahaya

The growth and appearance and size
assimilate this plant to Cereus peruvianus,
but that as well as all its near relatives
have only 5 to 8 ribs; and this is
said to have 20! — The species
called generally Pitahaya have only 3–5
ribs and are not so high. — Cereus
variabilis, the true Pitahaya, which I
have from Matamoras is quite different
and has a much larger seed etc,
but also a luscious fruit. —

It might be a Pitorreeus, of which different
species are known, all of them 20–50 feet

Cactaceae 15

D^r LeConte writes 01.06.1851 : Common along the Gila to within 30 miles of its mouth, where it suddenly stops short. The plant is very thorny The wood consists of porous large celled cylindrical sticks connected only at the base, and corresponding with the ribs

feet high, They have many angles or ribs, 12–30 and often loose the hair or spines at old age. — But the Cotyledons are described as thick and globose which is not the case in Emory's plant.

Cereus? ~~Gruenbachii~~ ~~Leichtlinianus~~ n. sp. see pag 100.

3. Opuntia, seed white large, pretty even and smooth, embryo circular, curved around a pretty large albumen, therefore belonging to an Opuntia cylindracea.

This Opuntia germinated and is growing with me 1849 – 1851
The other seeds did not germinate

May 19th 1848

Mammillaria Nuttallii vide pag 160 simplex (semper?) globosa, axillis tuberculorum ovato-cylindraceorum supra leviter sulcatorum subtomentosis, aculeis ex tomento albo demum evanescente ortis, rectis albidis, radialibus 13–16 subinæqualibus, setaceis, centralibus paucis rectis robustiori; floribus ex axillis tuberculorum homotinorum centralibus, ~~lateralibus~~, ex rubello flavicantibus sepalis petalisque oblongo-lanceolatis, sepalis sub 10–13 brevioribus exterioribus ciliato-fimbriatis, obtusiusculis, interioribus apice laceris, acutis; petalis 20–23 integris, breviter abrupte mucronatis; stylo supra stamina (rubella) paulo exserto, stigmatibus sub 5 brevissimis, erectis, adpressis, viridibus, basi tetralibus subglobosis connatis

On high dry Prairies, Upper Missouri; my specimen from Fort Pierre — 1st. May. — fruit ripe in the following spring. — Very near M. similis from Texas. My specimen 18''' high and 10''' diameter, tubercules 6–7 lines long in about 8 rows, more or less, generally very slightly sulcate; radial spines 4–5, central one 5–6 lines long grey only at the apex slightly brownish. Flowers one inch long and when fully expanded of the same diameter. Petals about 2 lines wide, acute and abruptly mucronate; stigmas only ½ to ¾ lines long, erect adpressed

fruit similar to that of M. similis, but smaller; seed very similar, black brown, pitted, but only of half the diameter, though the pits are of the same size. Fruit ripening following spring. —

Differs from M. similis principally by the smaller flowers with more obluscish not long acuminate petals, small stigmas, much smaller seed, and if that is a constant character by its very simple, perhaps also by the larger number of radial spines.

May 19th Mamm. hemisphaerica My largest specimen from Matamoras is now 3 or 4 days in full bloom with 46 flowers and buds all from the growth of last year, and not even the youngest axills, but forming a circular wreath, or ring of 1½ inches diameter inside.

flowers 10-12 lines long and a little less, 9-11 in diameter, when fully open, closing in the afternoon, as all Mammillarias do, which I know. — flowers from a woolly base, but ovary naked. Whitish or very pale red, with darker, dirty rose coloured middle rib and exterior sepals; sepals and petals each about 12; oblong linear, sepals obtuse, petals especially the inner ones acute and mucronate, abt 1½ line wide — ~~filaments reddish~~, inner sepals & outer petals towards the point ciliate or slightly incised. — filaments reddish, stigmas exserted, spreading reddish in all the flowers of this specimen 6.

May 19th 1848 Mamm. vivipara Specimen brought by Audubon from the Upper Missouri — sent to me from Boston:

Mamm. vivipara Nutt. hemisphaerica v. depressa — globosa, extuberculosum sulcis proripara, tuberculis axillaribus, supra plus minus ve sulcatis (apice basin versus tomentoso) axillis ex lanuto albo brevissimo demum evanescente; aculeis ortis omnibus rectis, radialibus albidis inaequalibus setaceis, 14-16, centralibus fuscis, validioribus 3-4, 2-3 supra versus, singulo robustiore porrecto; floribus

ex axillis tuberculorum hornotinorum centralibus, violaceis, sepalis lanceolatis, petalis lineari-lanceolatis, acuminato-aristatis sepalis 30-35- areolis nudo-fimbriatis, apice roseatis; petalis 30-40 integerrimis saturate violaceis, stigmatibus 5-6 roseis abrupte apiculatis (?) staminibus rubellis longe exsertis; baccis latentibus viridibus, ovatis floris mucronatis.

On the Upper Missouri — ft. May. — flower 18''' long and of the same diameter when fully open (later in the day — after 12 o'clock); petals bright purple, darker towards the point. sepals greenish — 2 dirty red. Petals not much more than a line wide.

Near M. radiosa (p. 10) — My specimen is two inches high and 2 in. wide at base; radial setose spines 3-4 lines, central brown spine 4-6 lines long. Different from M. radiosa see p. 11. & 64

May 19th 1848. Echinocereus reflexispinus, floribus exserte subinfundibuliformibus (2-2¼'' longis) tubo elongato, limbo petalo (1¼'' lato) sepalis ovatis & tubi sub 35- squamosis — areolis nudis; — axillis in lana alba arcuatis 6-10- albidis apice fuscis, setaceis exsertis; spinis radialibus sub 15- ovatis acutis, petalis lanceolatis (petaloideis nudo lanatis) petalis 16-20 obovatis, abrupte acuminatis violaceis versus apicem — cruentato eroso — stigmatibus (filiformibus) 8 luteolis albidis staminibus — pallescentibus exsertis;

Petals abt 4'' wide, 9'' long; ovary & tube 1½ inch long; tube stiffly evident above; spinous setae of tube 3-4 lines long, 8 stigmas pale yellow, erect only ½ to 2 lines long, very slender

vide page 42

this is the new Mexican Mammillaria vivipara var arachnoidea

differs from the true vivipara from the Missouri by having larger and stouter spines, and smaller flowers; the seeds are paler and smaller

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than those of M. radiosa; 15–17 radial spines, white stouter, 4–7 lines long, 3 upper and one straight brown, mottled central spines, 7 lines long, stout. flowers just about 1 inch long and wide, central, fruit lateral, stigmas apparently 5–7 and apiculate, while those of M. radiosa are obtuse.

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divided according to position of flower & fruit
May 1848

Mammillaria

1. Flores ex axillis tuberculorum anni prioris
   bacc. rub. clavat.
   1. M. hemisphaerica
   2. M. applanata
   3. ? M. gracilis
   } baccis rubris nudis clavatis semina testa coriacea, fusca

2. Flores ex axillis tuberculorum hornotis nonnis
   a. flores (centrales,?) fructus sparsi
   4 M. [illegible]
   5 M Nuttallii
   } baccis rubris nudis, globosis semina testa ossea nigra
   6 M radiosa
   7 M viripara
   8 M. barbata
   b. flores fructusque centrales
   9 M. calcarata
   10 M comptaria
   } baccis viridibus perigonio connatis ovatis semina testa coriacea fusca

Echinocereus Both species which I have seen in fruit E. pectinatus and E. viridiflorus are remarkable for ripening their green fruits in a very short time, a few weeks, different from the other Cacti known to me.

Mammillaria papyracantha n. sp. ovata prolifera aculeis omnibus planis, chartaceis, flexilibus, albis, radialibus brevibus 8, centralibus 3–4, multo longioribus, 2–3 superioribus sursum curvatis, angulo superiore longiore latiore, deorsum flexo; floribus centralibus albidis sepalis 12–16, ovatis acutis, margine petalis mucronulatis lanceolatis

24th April 1847. Santa Fe.

Loose, sandy, red soil, rather fertile, without gravel or stones; in a valley of the lesser hills.

This plant, of which I ~~possess~~ found only one specimen, hung undisturbed from the 24th April to the 18th of May, fastened by its slender root, on the wall close to the fire place (in which a brisk fire was kept throughout the greater part of the day). On the 18th of May I observed 3 perfectly expanded beautiful white ~~blos~~ flowers and 4 buds at the apex of the plant, ~~all~~ close ~~together~~ each other ~~flo~~ forming a cluster of flowers.

Mammillaria malaco-
papyracanthia
centra

May 1848 61

...bus 5 subcrectis

...red soil, fertile

...between the lowers

...y. — About 2 inches

...in about 8 rows,

...in the dry and rotten

...proliferous. —

...paperlike, flexible

...wards directed, none

...ely longer; two or

...upwards 6 to 8 or

...longest, the middle

...central spine curved

...long about 1 line

...en. X Lower sepals

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cm
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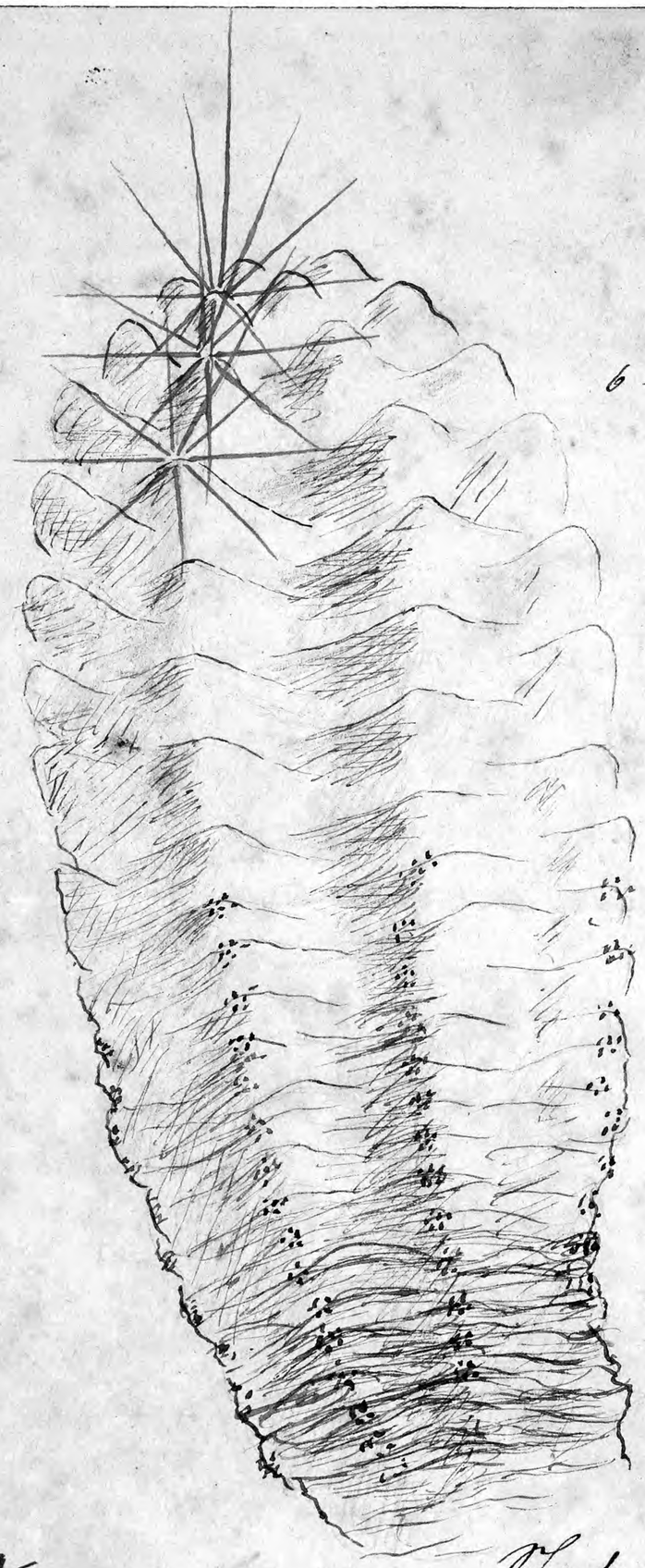

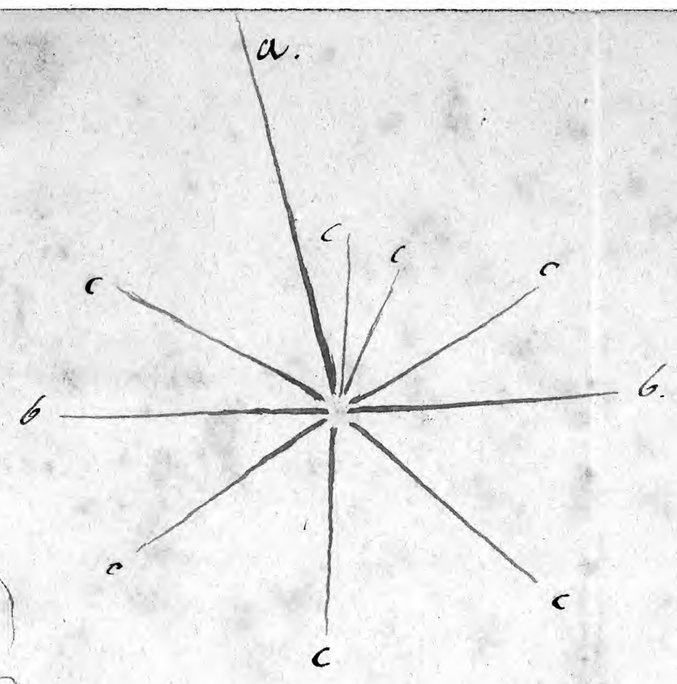

Echinocereus Roemeri

Cactus vom Liano, 200 miles nördlich von Neu-Braunfels

Wächst in Bündeln ähnlich dem Cereus caespitosus. Die Tuberculen, hoch und abgesondert in der Spitze ordnen sich weiter nach unten in 7, 8, oder 9 Reihen. Blüten oder Fruchtreste habe ich nicht an den zwei mir übersendeten Exemplaren gefunden. – Stacheln grau. a der mittlere und größte Stachel steht senkrecht auf der Spitze der Tubercul. Oefters ist noch ein zweiter kleinerer schräge stehender mittlerer Stachel vorhanden. b und b. zwei diagonaliter sich entgegengesetzte Stacheln rechte Winkel bildend mit a. Ferner c, c, c, etc. andere Stacheln die nicht in einer Fläche mit b, b. liegen sondern etwas mehr aufwärts gerichtet sind. Der Zahl nach wenigstens 3 nach unten und 3 nach oben stehend, oder auch manchmal

4 also in jedem Stachelbündel wenigstens 9 Stacheln.

In den mountains werden wir dieses Jahr eine schöne Ausbeute an Cacteen haben. Es ist allerlei auffallendes droben von unseren Leuten gesehen worden, namentlich größere säulenförmige Cacteen. Vor ein paar Wochen erhielt ich ein paar Exemplare von Cacteen die am Liano gesammelt worden waren. Sie waren bloß mit ein bißchen Gras locker in ein Kästchen gepackt und sind wahrscheinlich bei der starken Kälte erfroren. Die gesendeten Cacteen waren 1 Exemplar von Mamillaria complanata und ein paar Exemplare von Cereus caespitosus mit roth gefärbten Stacheln wie das häufig ist, wenn die Pflanze auf Felsen wächst.
Zwei Exemplare von einer spec. Cereus? die sich dabei befanden waren in so fern etwas von einander verschieden, als das eine Exemplar, ohngefähr aus 5 zusammengewachsenen Individuen bestehend mit ~~mit~~ gräulich hellen Stacheln und mehr zusammenfließenden Tuberculen bestehend (davon eins gezeichnet auf der andern Seite), das andere Exemplar ohngefähr aus 10 zusammengewachsenen Individuen bestehend mit dunkelgrauen Stacheln.

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acuminatis, ~~stigmatibus~~ stigmatibus 5 subcruentis exsertis albidis.

Santa Fe, in loose sandy red soil, fertile without stones or gravel in a valley between the lower hills A. Fendler. ♃. May. — About 2 inches high and 1/4 in diameter, tubercles in about 8 rows, small, but not well recognizable in the dry and rotten specimen before me; lower ones proliferous. — Spines silky white shining, flat, paperlike, flexible & radiating spines laterally and downwards directed, none upwards, 1/2 to 2 lines long, rarely longer; two or rarely 3 central curved spines directed upwards 6 to 8 or even 9 lines long (the two lateral ones longest, the middle one shorter or wanting); the lower central spine curved downwards, much longer, 10–14 lines long about 1 line wide at base, sometimes even wider. × Lower equally membranaceous, upper ones herbaceous — the middle; petals ± (× flowers nearly white, 12–13 lines long and 12–15 lines diameter,

± about — 2 lines wide

62

Echinocereus Roemeri ~~ovato-cylindricus~~ ovatus (plerumque 8) rostatus
ovatus ~~v. ovato-cylindricus~~ 7-9

(~~costis tuberculatis~~ (receptoris e basi ramosis) costis tuberculatis: polyacanthus)
ovatus, costis 7-9 (plerumque 8) tuberculatis
interruptis, areolis elevatis, orbiculatis, juni-
oribus breviter tomentosis; ~~spinis~~ aculeis albidis
v. flavidulis
demum cinereis, teretibus; radialibus sub 8
centralibus singulo robustiore ponecto; — ♀ — ♂ —

In the Granit region about the Llano river
western Texas. — I name this species after my
friend Dr. F. Roemer who was the first to explore
the Geology of the region, which this Cactus
inhabits and disfigure the sides of west Texas.
Often and sometimes and even 10
1 to 5 from the same base; single heads
3-4 inches high, 1½ to 2½ inches in diameter; ribs
conspicuously interrupted, tubercular for 4-8
lines distant from one another. — Radial spines from 5-12
lines long — Central one longest, upper ones usually
shortest; — Central spine from 10 to 15 lines long, —
all terete; — I have seen some specimens where
all the spines were shorter, but they appeared to be
depauperate specimens
artificially stunted. — Flowers not yet seen

Near E. pectinatus and still more to
E. enneacanthus, distinguished from the first by
the smaller number of spines and from the
second by the smaller size and more tuberculate
more approximate areolae
appearance of the ribs & shorter spines and
particularly the terete spines — Echinocereus
rotundus appears also to be nearly related,
but the plant is smaller, ribs more numerous
spines also more numerous and much shorter and
weaker. —

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In flower with me May 27 1851 stigmata 12-14 petals cross-shaped

63.

Cereus prostratus rumbens n. sp. very near C. Deppii see page 79
was bought from Matamoros by the Missouri Volunteers
in flower today May 25- 1848 in Gobels Garden

— floribus ex axillis tuberculorum anni prioris,
tubo floris pubescente albido-villosis 40 (25 in ovario, 15 in tubo)
setas albidas subulatas longiores 6-9 gerentibus stipato; sepalis
interioribus sub 15- lineari-lanceolatis acuminatis; petalis 18-20
oblongo-lanceolatis acutis apiculatis, exterioribus subintegris (violaceis); stigmate viridi
infundibuliformi 10-14 partito, staminibus pallide flavescentibus 10 vel ultra, capsula
ovata viridi, irregulariter dehiscente, seminibus pallide fuscis nigris lucidis, tuberculatis. (Vide August 1851)
flower 3 long and wide or a little
wider when fully expanded in the morning sun.
stigmas pretty large and thick; petals about
4 lines wide. Bristles on the tube about
twice as long as the wool, lanceolate 1½-2
upper ones 2½ & 3 lines long.

Cereus Deppii Berlandieri vide pag. 17 — tubo floris pubescente 30-35 (20-25 in
ovario 10 in Tubo) breviter albo-tomentosi;
setas albidas longiores 8-10 et 1-2 robustiores basi bulbosas
pallide fuscas gerentibus stipato; sepalis
interioribus sub 15- linearibus lanceolatis acuminatis;
petalis 16-18 oblongo-lanceolatis versus
apicem subdenticulatis (violaceis); stigmatibus
9 viridibus, saepe staminibus pallide violaceis
exsertis. —

flowers before me 4 inches long and
4/12 wide, stigmas large and thick
bristles of the tube below 2 or 3, above 4-6 lines
long, very bulbous at base, tomentum white & short.

Similar to the foregoing but distinguished
by the shorter tube, fewer petals with shorter
tomentum but longer and weaker bristles

and a more deeply divided stigma

June 12–14 1848 All my specimens of Echinocereus caespitosus in these days = flowers, sky clear, sun very hot — flowers opening at 8 o'clock and remaining open all day till 4 or 5 p.m. but not opening again the following day! — evidently because they had been exposed to the hot sun all day and had bloomed their time! —

The other Cacti flowering the same time opened again the second day, as they always have done with me,

× stigmatibus obtusis longe supra staminа exsertis

Mamillaria radiosa, several specimens = flowers to day, June 15 — but in spite of the hot sun beaming on them the flowers never open before noon, much later than the other Cacti. I observe the same thing in the nearly related Mam. virispam, from the Missouri which was = flowers 4 weeks ago.

M. r. differs from M. v. by the shape of the plant. its larger somewhat cylindrical growth, the much larger number of spines, the obtuse stigmata, ~~the flowers~~ lateral position of the flowers and the later time of flowering. — no doubt also the seeds

In M. virip. the flower buds appear in the centre of the plant, that is to say in the axills of the youngest tubercles; and the flowers remain in the same position, but immediately after flowering the plants continues to grow, new tubercles are developed and the young fruit is pushed aside, so that the flowers is carried out the first lateral,

In M. radiosa the flower buds are formed also in the axills of the first young tubercles of the season, but not before other younger ones have already pushed the former, with the buds aside; the flowers are therefore lateral as well as the fruits.

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In some plants of M. radiosa I find the petals naked in others ciliate at base. In some the central spines are reddish brown, in others paler, yellowish, even whitish.

Among his collection of 1847 Mr Lindheimer has sent a Mammillaria, from the same region where M. radiosa was found, but with globose heads — question whether that is M. radiosa or the form of M. viviparia. ? (Spines numerous, therefore M. radiosa. It is radiosa! with 24 radial spines)

Echinocereus caespitosus appears to be distinct from any other Cactus known to me so far, by the structure of the sepals. In the first descriptions drawn up by me 1845 & 1846 pag 2 & 8 it is said: "sepalis tubi apice spinis setiformibus villoque coronatis" the same is repeated in the description in plant Lindheim. pag 39. — In plant Wislizen note 45 I have said: "tubo floris pubi villis ... villos ... setas ... plerumque stipato" —

The first account is more correct than the last, but the areola producing the villus and setae is not on top of the sepal but below the pointed more or less foliaceous tip and not in the axilla of the sepal as in almost all others.

The usual structure in all Cerei and Opuntiae is the following

The ovary is covered with very short (for the greater part adnate) sepals, the adnate part of the sepal forms a protuberance, or tubercle; the free part is mostly very small often only a minute deciduous scale. In the axil of this scale is the areola, covered with a short tomentum, long wool and almost always bristles or spines. This altogether is the "pubilla"

Next in order follow those sepals which form the tube of the flower. They form the transition between the sepals of the ovary and the interior more free and petaloid sepals. The lower ones are entirely similar to the sepals of the ovary, In the upper or interior ones the tip or free part becomes larger and larger, more herbaceous & flat the wool and setae become fewer, but the latter longer; they are produced by an areola which is almost always situated in the axil of the free part, where it separates from the adnate part which forms the outer coating of the tube.

In Cereus caespitosus the free upper part of these sepals of the tube is elongated more and more elongated, somewhat terete not foliaceous, flat as is mostly the case, and bears the areola with it wool & setae just below the subulate tip. x or ± th immersed foliaceous.

In Opuntia the sepals of the ovary can not be distinguished from the leaves and produce in their axills the same areolae & bristles, oft also spines, and sometimes branches, — The sepals on the upper edge of the ovary are similar, and next to them come the interior or petaloid sepals, as a tube is entirely wanting, — In the opuntiae elliptical the ovary is more or less smooth, and in O. cylindr. the ovary is more tuberculated, and the sepals and areolae are on the top of these tubercles,

Notes on Tender's Cactaceae

Opuntia phaeacantha Thop. Tend. N: 8. ~~Decumbens~~ diffusa, ascendens articulis ~~ascendentibus~~, obovatis compressis, areolis obiculatis, fusco-setosis, margine inferiore aculeis (robustis 3-4) longis ~~rectis~~ rectos ~~fusis~~ apice pallidioribus ~~unis~~, ~~duum~~ compressis ~~geracibus~~ inæqualibus ~~ultra~~ unum alterum ve sursum, ~~rectis~~ rectos deorsum ~~porrectis~~ versis gerentibus. —

This seems a fine sp. P. phaeacantha

Floribus ? Ovario obconico areolis sub 30 itinerato pallide viereo-fusco instructis, superioribus albo setosis, stipato; sepalis iterioribus sub 20, late obovatis, cuspidatis, supe emarginatis; petalis 60-70 obovatis retusis, emarginatis; stigmate 5-7 radiis ~~vix~~ superantibus, inberectis.

Bacca obovato-pyriformi, nuda, seminibus majusculis.

The dry specimen from which the description of the plant is taken, the flowers and the fruit were all separate and I must rely on the recollection and Notes of Mr Tendler as to their belonging to the same species. He describes the plant as prostrate, with ascending branches; the joints before me are 5 to 5½ inches long and 3½ to 4 inches wide — Areolae about ½ inch distant from one another, covered with brown setae; most of them especially the upper ones bearing long and straight stout spines, the lower ones sometimes only one, the upper ones from 2 to 5, usually 3 or 4 one or two usually directed upwards, the others more or less downwards; the larger spines dark brown with lighter tips, the smaller ones whitish, all of them at least in the dry state compressed, large ones 1½ to 2 inches and more long, small whitish ones ½ - 1 inch long. —

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In the flowers before me the ovary is short, (not long,
flowers 2 - 2½ inches in diameter, sepals yellow-
green with red tips and centre; petals yellow,
stamen yellow or red, stigmas apparently green.

Fruit which is said to belong to this same species
1½ inch long, red smooth apparently juicy when
fresh; seeds of 3 lines in diameter marginal
(like those of O. vulgaris)

—

A second specimen said to belong to the same
species, collected on the south side of a rocky hill
near Santa Fe, is much larger, spines fewer and
shorter, but may belong to the same species:

articulis orbiculato - obovatis, areolis
nudis s.
fusco - setosis margine superiore aculeos 1 - 3
rectos robustos demum compressos, deflexos, fuscos
apice pallidiores s. minores albidos gerentibus.
Joints before me 6 - 8 inches long 5 - 6 inches
wide, spines 1 to 2 inches long, smaller ones
often only ½ inch long. — Has a different
appearance from the other; ~~in the~~ in the first
~~in every species the~~ spines are mostly much longer
and more numerous, & this they are shorter
fewer, & not many areolae more than all
over the cen there appears to be no essential
difference between them. —

I have a remarkable piece, evidently
belonging to the same species, which is triangle
spines all pale brown 3 - 5 on one areola.

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missouriensis var

Opuntia ~~fragilis~~ ? N. 7 Fender Decumbens, articulis orbiculatis (subinde transverse ovatis) areolis orbiculatis parvis, approximatis, aculeos fortes, valde inaequales, 5-7 albidos, singulum longiorem porrectum, ceteros breviores deorsum versos gerentibus.

The dry ~~specimen~~ shriveled specimen before me has joints 1½ inch long and 1¾ ~~in diameter~~ wide; the areolae are only about 4 lines distant from one another, covered with a very short tomentum ~~and~~ bristles on the upper edge, and ~~longer~~ deflexed and divergent spines on ~~the~~ their lower part, ~~of~~ 2-4 lines in length; one ~~stout~~ nearly twice as stout whitish or at base yellowish spine 9-12 lines long porrect (stands out) from the rest.

Another specimen before me has even smaller orbicular joints, and much longer (8"') spines, ~~which are brown~~ the longest being brown at base, the smaller ones are very unequal whitish and partly an inch long.

A third specimen resembles in size and shape the first very much but has hardly any spines. It has an unripe fruit, which resembles the fruit of Op. vulgaris. [is probably cynochila var montana see No. 263

A fruit, sent by Fendler without label belongs perhaps to the above mentioned forms: ovate

berry ~~is~~ ovate, profundissime umbilicata, subglobose
~~spinosa~~, seminibus paucis maximis yellowish green
fuscis about 8 lines long; seeds compressed, ovate, their longest diameter 3 lines

It is probable that these plants except the spineless form mentioned above, belong (either to O. fragilis or) O. missouriensis; the perhaps to the following form from Fort Pierre

I shall give here an attempt at a description of two forms which may be O. missouriensis with some notes. — var microchila see pg 257

Opuntia ~~fragilis~~ missouriensis ?? from Fort Pierre, Upper Missouri

Diffusa, articulis orbiculato-obovatis, compressis, areolis subapproximatis brevissime albo tomentosis, aculeos teretes valde inaequales ~~albidos~~ cinereos (junioris pallide fuscis) 6–8 breves deorsum versos et radiantes, singulum centralem multo-longiorem porrectum gerentibus; foliis subulatis, ~~aristatis~~ ~~acuminatis~~ acutissimis, minutis, rubellis; floribus — — bacca subglobosa ovata, ~~umbilicata~~ umbilico parum depresso, sicca setaceo-aculeata; seminibus minoribus.

Joints 2 1/2–3 inches long and 2–2 1/2 wide; leaves 1/2–2 lines long, with a long almost aristate acumination; areolae 6 lines distant from one another; lower spines 1–3 lines long, three of them generally somewhat longer than the 3 to 6 others; central spine pale reddish brown when young, gray, when old, stout, 9–12 lines long, somewhat erect, never in my specimens directed downward. Fruit ripening the same summer, dry spiny, yellowish green, 9–10 lines long, 7–8 in diameter, seeds 2 lines in diameter, flowers not seen. — Grows well with me

Opuntia missouriensis hort Salm, received from Prince Salm himself, certainly therefore the plant which is taken for O. missouriensis in Europe.

Articulis obovatis compressis, areolis sub-approximatis, fuscis setosis, aculeos teretes valde inaequales cinereos 8–12 radiantes omnes deflexos, centralem ~~singulatem~~ nullum s. singulum porrectum gerentibus — — —

Joints 3 inches wide and 4 inches long; areolae about 6 lines distant from one another; spines

very numerous all radial, and deflexed, most of the 3–6 lines long, one or two stouter ones 10–12 lines long; only on a few of the upper areoles a central straight spine about 12 lines long.

Nuttall in his original description says:
articulations nearly circular — — larger spines radiate, persistent, — — fruit dry and spiny —— a much larger plant than Opuntia vulgaris

Torrey & Gray Flora add: " fruit deep purple as large as a hens egg." (probably a note of Dr James)

Foerster describes Salm's plant.

— I. 296

Opuntia fragilis: Nuttall says: „articulations short, and oblong, somewhat terete doubly spiny, fragile — fruit dry and spiny.

Torrey says: „articulations oblong, tapering"

Foerster: I. 474 „prostrate, articulations short oval, compressed or almost terete — fragile — areolae — approximate, white — tomentose, 6–8 white lower appressed spines and 6–8 larger central erect light brown. — — O fragilis of most collections is nothing but a form of O. Missouriensis!

Opuntia excavata (vide pag 33), prostrata-adscendens etc areolis magnis orbiculatis, albotomentosis, margine superiore sctas albas spinescentes gerentibus, areolis albis complanatis, radiantibus superioribus sub 9–11 radiantibus ± porrectisque minoribus angustioribusque, inferioribus sub – 6 – majoribus longioribus, laterioribus deflexis etc ut supra, pag 33.

A large spreading mass of ascending elbowed joints, areoles 2–2½ lines distant 3–5 lines distant from one another – radial and upper on central spines 2–4 and even 6–8 lines long, lower deflexed upon

spines 7 – 14 lines long; of those

which the largest are regularly & fully developed areolae, one

is more central, the other, almost as large as

just below it, two smaller ones on both sides of the

last are directed sideways, and the 5th & 6th, larger

again are more latterly set. —

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Opuntia arborescens plants before me

1 – 2 feet high, much branched, branches forming

right or acute angles with the stem. Older stems

terete; areolae 5 – 6 lines distant from one another

young branches tuberculated, areolae 6 – 8 lines

distant. — Spines often 1 inch long; generally 15 – 25

in one bunch

Cereus ? Among Fendlers Collection is

a specimen which has very much the habit of

a true Cereus, a very young one of the same

species will apparently grow yet. — No!

Simplex Cylindricus, erectus, 10 – ostatus, costis

tuberculatis, interruptis; areolis approximatis,

obiculatis, aculeis albidis, rectis, setaceis, sub 8.

radiantibus, inæqualo robustioni, patentibus.

Eastern Mountains near Santa Fe, within

definite limits between rocks. — The specimen is 5

inches high and below 13, above 9 lines + diameter

Areolae about 3 lines distant, ~~below~~ radial spines

Spines Dirty yellowish or whitish, ~~lateral~~ weak,

bristle like; ~~lateral~~ radial ones 3 – 6 lines long, upper

ones the shortest, central spine 5 – 7 lines long a

little stouter.

May it be a form of Echinocereus coccineus ?

grown in shade ?

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