

Box of plants sent from New Orleans on June 2^d per ship Corsica
43 to Fay & Farwell, Boston for Dr Gray.

Cacti

Endlicher says that all Cactaceae have black seeds, but my *Opuntia futescens* has white ones, and they germinate now, in July, after having been in the ground 3 or 4 months, with two large cotyledons (the 1st inch long) oblong linear & cotyledons!

Are the fascicles of spines with their tubercles, which are plain in *Mammillaria*, but less distinct, and confluent in *Cereus* & *Echinocactus*, are they leaves or branches? I should think the first. The short spines of the *Opuntias* correspond with the tubercles of many *Cereus*, *Echinocactus* etc. - the flowering, some out of the center but always out of the axilla of the spines proper.

The growth of Cactaceae appears not to be well characterized. Might it not also be of importance to pay attention to the production of the flowers above (or in the axilla of) the bundles of spines of the same year, or of last year. Of the few that I have now seen in flower, my two *Echinocacti* and my *Mammillaria salicaria* produce the flowers in the axilla of the bundles of spines of the same year, and my *Cereus repens* in those of last year. *Opuntia vulgaris* also has the flowers on the joints (branches) of last year. -

I shall be much obliged to you for live specimens of our Cactaceae for the upper Missouri, *Mammill.* & *Opunt.* - and if I should obtain any from there, I should send you specimens. Compare *O. fragilis* well, before you say that our *futescens* is the same. Can you compare also *M. simplex* and *M. vivipara* for above with *repens*?

The *Mammillaria* seen by me in Gardens have all the flowers in the axilla of the tubercles of last year, at least not at the top but *Mammillaria M. vivipara* and my *salicaria* have them in the center and in the axilla of tubercles of this year, and a kind of tubercles, which might be analogous with a *Melocactus*, only not protruding. I have never seen a *Melocactus*.

My *Mammillaria similis* will not come to flowering this season but many of the ^{tubercles} leaves are also, though slightly, *salicaria*, and produce at their base young branches, or clusters of tubercles, and sometimes also at their middle. *M. salicaria* has them usually just below the spines at the upper end of the sulcus.

Echinocactus gyrocarchus has a very woolly top and woolly flowers and *O. setispinus* is ^{glabrous} smooth, with smooth flowers with a long tube. It is just now in flower for 6 weeks to 2 months after the others. I was mistaken in describing the flower as very small, from a shrivelled fragment, it is about 2 inches long and wide with etc. - I shall describe it directly and request you to make the necessary changes in the former description. The description of the flower must be altered entirely.

yellow with a very rich scarlet colour at base, filaments
orange rather short; style much longer.

In flower (cultivated in Mexico) in July, 6 to 8 weeks
after the others; flowers open two days, and only in Sunshine.

Prof. Wm. Gray
Cambridge
Mass.

I heard from Gray today by a letter dated Honolulu, January 11th.
He was on his way to England, says he has collected much
and new things in the north eastern parts of Oregon
with numerous plants from England.

The 2 Pons 213 & 214 appear to me to be very distinct,
and both bear seed. Proportions of parts of flower
is also different. I believe I have answered your letter of
July 2nd as well as I could. I hope it may come in time
for the printing.

Yours truly
G. Engelmann

St Louis July 2



Engelmann, George. 1845. "Engelmann, George July 22, 1845." *George Engelmann letters to Asa Gray*

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