

Washington, July 5th 1843.

Dear Sir,

Your letter has been by me a long time;— but had there been a prospect of accomplishing anything in a practical way, you would have heard from me before.— Sir. William is certainly not complimentary towards the Naturalists of the Exploring Expedition, but this would not influence their course in any matter which is likely to benefit Science. There are however difficulties of all sorts in the way of sending any portion of our Collections abroad; and I cannot at present see how it is to be brought about. It is not probable however that we have a great deal from those Countries, that is not included in the English Collections.— Our New Zealand Plants number 398, collected in February & March, about the Bay of Islands (including one trip to Wangaruru and a second across the island to Hokianga, on which coast the vegetation is infinitely more rich). We have besides 50 species, obtained by an Officer in a day's excursion on the Auckland Islands. New Zealand was the hardest place I ever visited, for finding things in flower; nevertheless (I speak not of myself) we brought some excellent eyes to bear. From the variety of obscure forms, whoever I think, meddles with New Zealand plants, will need to have all his wits about him.— In Orange Harbour, about 15 miles from Cape Horn, we collected in a week 220 species. The vegetation is richer here than at the Falkland Islands, and there are forests.— From a comparison made at the time with Gaudichaud, we had 51 not in his Flora of the Falkland Id.; and he gives 30 not found by ourselves.— A few species from Good Success Bay in the Straits of Le Maire, are included in the above enumeration.—

I rejoice to learn that Mr. J. Hooker has made so many dissections from life. This alone ~~would~~ enlist my utmost abilities in furthering ^{his} views. When I first heard of his sailing, I thought he would be cheated out of Botany altogether, but his chances have turned out a great deal better than I anticipated. ~~Nevertheless~~ Being confined to not a very great variety of Objects, and as I have always understood

rather keen, he must have become more familiar than any one else, with the Antarctic Plants. — If before the final publication of his work he should happen to visit America, I trust he would meet with no difficulty in getting access to our specimens; and with the aid of such information as Mr. Brackenridge could give, I flatter myself he would pick up ~~something~~ additions. Anything in my Notes that might be useful to him, should be at his service, so far as I have a "say" in the matter. If however he should not be able to visit us, I doubt not he will turn out such work, that we shall be able to furnish anything that may be left, in the way of an Appendix. —

The Oregon & California Plants were shipped in 1841, ^{from the Sandwich Is.} direct ~~from~~ the United States. The vessel as well as I have been able to make out, touched at Valparaiso & thence proceeded on a voyage to China!, thence to Europe, where she was sold!, and subsequently going on a voyage to the West Indies, finally dropped our plants at Havana! — They have been written for by the Department, and we are in hopes of some day seeing them. It is my opinion that you ought to be allowed access to them, to publish as you get on with your work; — for I suppose you would not wish to make a separate job of them. Mr. Rich, I believe coincides with me. But I do not think it is worth while to make any movement at present. — Among 1700 species, it will be hard if there is nothing new. — The most promising ground was the neighbourhood of the Shasty Mountain, on the land route from Oregon to California — where were *Sarracenias*, *Scarlet Thistles*, &c. &c. —

By the way I see there is a "*Helianthus petiolaris*". Has this been critically compared with *H. Annuus*? — There is something of this sort in Oregon & California, naturalized about Indian Huts, &c. — As for *H. Annuus* coming "from Peru"; we certainly never saw it there, and I doubt whether any one else.

You may perhaps recollect that I once spoke to you about the numerical relation of leaves and floral envelopes. The Theory being, that the latter ^{or} ~~being all com-~~ ^{are likewise resolv-} ~~able into~~ leaves, their relative disposition should form a fundamental character. ^{My meaning will} ~~would~~ be rendered apparent if instead of saying, "leaves alternate, sepals⁵ five, petals⁵ five, stamens¹⁰ ten, carpels³ three", or "leaves² opposite, sepals⁴ four, petals⁴ four, stamens⁸ eight, carpels² two", we simply agree upon { ¹⁵⁵⁰³ 24482 } . — Another character might be used

for what is above (10); or (7) perhaps, since it is not often called for.* — We might naturally suppose that the odd numbers would go with ~~the~~ alternate leaves, and the even ones with ~~the~~ opposite; but this is not always the case; instance, the Cruciferae, and you will perhaps recollect, the "Begonias". — There is however a very strong tendency this way, as may be observed even in the exceptions, as — The Gentians are very apt to vary to a quaternary disposition; ^{many Genera of Melastomaceae are 4-petalled;} in the Labiata, Trochilata, Acanthaceae, &c, the corolla is apt to be bilabiate, & one stamen to abort; — in the Endogeneae, 6 is likewise a multiple of 3; &c. &c.

In practical Botany I have always gone more by leaves than flowers, — and besides, the former are always available. — In looking at a plant, I now find myself first examining the leaves, and ~~then~~ ^{Afterwards} the flowers. — Further, the leaves being serrated or entire, is one of my first inquiries.

As however I may not pursue this matter any further, I wish you to examine; — Whether the labour of describing plants may not be abridged by the adoption of Numbers? — and, whether references would not ^{be} rendered more convenient ~~this adoption~~? — and as I hope to see you before long, let me know what you think about the matter. —

Excuse the latter portion of this letter, which is a "Midnight" production.

Yours truly,
Charles Pickering.

*The Mass. sent to Boston,
August 11.*

* Note. — A full-stop (©) might be used, where any part is deficient, or not ascertained, thus
(24.82)

W

Prof. Ave Gray

Cambridge

Mass.





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