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Letter from John Muir to Joseph Hooker 1879 Feb 1

John Muir

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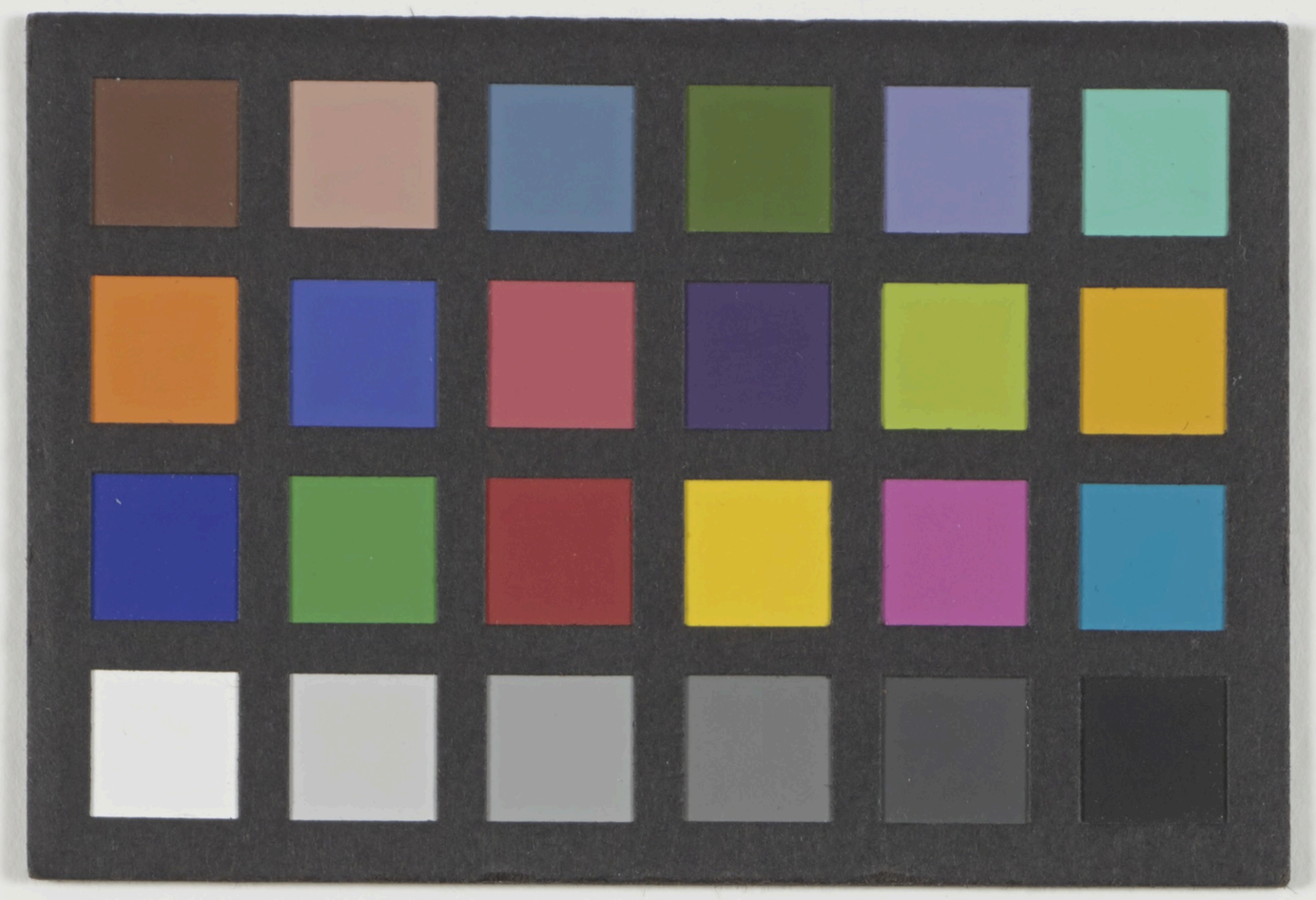

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920 Valencia St.,
San Francisco,
Feb 1st 1879.

Sir Joseph Hooker,

Dear Sir.

I was delighted the other day on receiving your paper on the Distribu=
=tion of the North American flora. It came while I was away in the Great Basin so that I received it only a few days ago.

The explanation you present of the rarity of East Asiatic types in America west of the prairie region is most interesting, & I would like to offer you here a few facts bearing upon the question, gleaned in the Great Basin between the Sierra Nevada & the Wahsatch mountains during the last three years.

Last summer I travelled over 2,800 miles on horseback, crossing the Basin

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in a wide Zigzag between the
38th & 40th parallels.
I found the average elevation of the
numerous Mountain ranges to be about
9000 feet above sea level. The highest
point in the basin is the summit of
Mt Wheeler, on the Snake Range, near
the Utah - Nevada boundary - 12,500 feet.

The average elevation of the
"Sinks" & intervening valleys is about
5,000 feet - Of the whole basin
if leveled - Mountains & valleys -
about 5 or 6000 feet.
I found Glacial traces in great
abundance on all the ranges,
Quite fresh on ~~the~~ the highest ones,
as the Toiyabe, Toquima, White Pine,
Golden Gate, & Snake Ranges; More
obscure on the lower & more weathered
the East of the Basin, Glaciers
have but recently vanished.

I also found evidence that
shows conclusively that the

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lowlands as well as the highlands were loaded with ice, but I cannot present it in a more fuller. I will however give a few of the more important generalizations based upon the observed facts.

1, At the beginning of the Glacial period the region now known as the Great Basin was an elevated tableland, not furrowed as at present with parallel valleys & mountain ranges, but comparatively bald & featureless.

2. This Ancient tableland, bounded on the east & west by lofty master ranges, but open to the north & south, was loaded with ice, which was discharged to the ocean both northward & southward, & in its flow brought most if not all the interior ranges into relief by erosion.

3, As the Glacial winter drew near

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its close the ice vanished from
the lower portions of the basin,
which then became lakes, into
which seperate glaciers descended
from the mountains. Then these
mountain glaciers vanished in
turn after sculpturing the ranges
into their present condition.

4. The few immense lakes, extending
over most of the lowlands, & in
the midst of which many of the
interior ranges stood as islands,
became shallow as the ice vanished
from the highlands & seperated
into many distinct lakes whose
waters no longer reached the
ocean, & finally disappeared
by the filling in of their basins
& the general desiccation of the
climate, all save a few fed by
streams from the Sierra & Wahsatch
These dry lake basins now form
the Sage & alkali plains.

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The transition from one to the other of these conditions was gradual & orderly: first a nearly simple tableland. Then a grand Mer de glace shedding its slow-~~flod~~ crawling currents to the ocean & becoming gradually more wrinkled as unequal erosion roughened its bed & brought its highest ridges above the surface. Then a land of lakes, an almost continuous chain of water from the Sierra to the Wahsatch, adorned with innumerable mountain islands. Then a slow desiccation & decay to present conditions.

Such a Mer de glace would form a fine barrier to the northward march of your Asiatic plants. & hold them perhaps until they perished or came into competition with others better adapted to the changed conditions.

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Scudder's fine book which you sent me long ago reached me since I began this letter. Gray kept it some time, & finally sent it out here by Sargent—, who gave it to one of the members of the academy of Sciences. ~~I~~. I have not yet read it, but am glad to get hold of so comprehensive a collection of facts relating to an agent that plays so important a part in the making & breaking & building of our fine world, & will doubtless find it very interesting. When are you going to pay us another visit?

What conclusions have you reached with reference to our pines & silver firs

I found the true P. flexilis on all the higher ranges of the Great Basin. It also grows on the eastern slope of the Southern Sierra. P. Balfouriana is confounded, I think, both with P. Monticola & Aristata.

I found P. edulis in Western Utah mingling

Cordially Yrs, John Muir.

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