

Copy

Letter of Mr J. S. Sargent
to Dr Hooker on some
western Conifers

Borrowash
Derbyshire

12th April. 1849

My dear Sir Joseph

Many thanks for Dr E.'s
letter.

In compliance with your request
I humbly submit the following

With regard to *A. concolor* & *Louiana*
I have lately been thinking that I
should require to follow Dr E. in
classing them as one.

It will be enough for you if I
point out wherein I find them
differ. Louiana coniferous 6-8:



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concolor 5-7 (*A. grandis* true
4, 5, 6.) Understand that these are
the results of observations on thousands
of each sort.

I send you for comparison
4 yr old plants of both forms
I observe the S. Colorado plants
generally have shorter, narrower
leaves, flat & with more rows
of stomata ~~on upper surface~~
on upper surface. You will
observe its whitish bark,
similar to that of its geogra-
-phical associate subalpina.
The Sierra plant has its leaves
channelled on the lower half.



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Find specimen of 6 yr old plant
of concolor. The arrangement
of the leaves is very different
from the Sierra plant at that
or other age.

The bracts of the cone of the
Sierra form are bluntly ovate:
those of concolor usually trunc-
-ate with a tendency to the
bilobed bract characteristic
of grandis.

That you may the better appre-
-ciate the difference in these
two forms I send 4 yr old
specimens of Douglasii from
S. Colorado and from near the
sea N. California

They are evidently one species
& yet they differ as much as do



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the young of Louiana & concolor.

Speaking of Douglasii reminds me of a somewhat remarkable form discovered 2 or 3 years ago in the mountains of California.

Cotyledons 8-12: $1\frac{1}{4}$ - 2 in long; young leaves rather long and pungent. Killed this winter.

Californian Douglasii (Coast plant)

Cotyledons 3-8, $\frac{1}{4}$ - $\frac{1}{2}$ in long.

G^r E's subdivision of P. ponderosa is what I have been expecting for years to see; & I have no serious objection to it, though I cannot see that his descriptions as they stand can be considered descriptive of the plants. The Colorado cone though a little less than that of Oregon & Cal.



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(I found it near the mouth of Russian River) is composed of a considerably less number of scales.

In a fortnight or so I hope to be able to furnish you with fresh flowers from a plant now 60 feet in height that was raised from seed sent home by Douglas.

I cannot distinguish between the vegetative organs of non-
acerosa and Benthamic.

The stomata on their leaves are small, numerous, in from 12-16 rows on the back without any "waxy secretion"; but a



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pretty constant peculiarity of
theirs are numerous resinous
exudations on the bracts composing
the sheath. I do not know
that the pale blue green of the
leaves of *jeffreyi* as compared
with the oily green of *ponderosa*
is owing to "a different structure
of the epidermis cells." The
chlorophyl in the cells is normally
of a different shade of green
& the only "waxy secretion" on
the leaf is between the several
stomata linking them lineally
together: the one larger, and

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in from 9-11 rows on the under
surface. As a tree it is alto-
gether less diffuse; fewer
branches & branchlets; indeed
the latter may be said to be
alternate or one to each
node with their extremities
generally directed towards
the trunk; bark even on
old trees smoother but
slightly rifted and never, I
believe, until it is ten years
old (ponderosa at 5 & 6 years).
I say nothing about its cones.
It is closely related to ponderosa
and almost if not specifically
distinct.

T. contorta

We have here old trees of this



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which well warrant the name -
so very unlike the cylindrical
plants which I lately saw at
New.

Ours from their age & habit I
conclude must have been raised
from Pacific Coast seed.

In all these characters they
differ much from Bolanderi
but I cannot separate the
latter from Murrayana.

When last in Edinburgh Mr
McNab gave me cones of
Murrayana from trees that
were raised from Jeffrey's seeds;

& compared with cones of Bolanderi
they are identical. I forward
2 yr old seedling of Bolanderi.

You need not doubt its identity,
because it has 3 or 4 leaves
in each sheath; the majority



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of 2-leaved sp^s are the same at this stage of their existence, a most significant fact, or ought to be, to those who count so much on the number of leaves in the sheath.

It is a mere phase of vigour & the normal number of leaves to a species would seem to indicate its specific vigour.

Bolanderi has the lowest number of & the smallest cotyledons known to me - 3-4.

It stands near to muricata & muricata to insignis even



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though the latter is a 3-leaved
sp. I cannot separate
young plants until they are
2 yrs old & then with difficulty
as there is much in common
in their cones & seeds.

on page 409 of the Gard. Chron.
for March you may find my
critique on Dr C's revision
of the American species. I
still adhere to all I wrote,
& I consider that a re-vision
of the spruces is required.
I am sorry to say that we did
not raise seedlings of sitchensis
last year, & this year they are



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just now germinated - a
few of which I send along
with seeds & leaves direct from
Cal., - the leaves to show that
they have stomata on under
surface. So that that supposed
distinction between it and
the Rocky Mt. plant falls through.
Let us see if there are any
others to go the same road.
The cones of sitchensis are
said to be shorter than
pungens (Dr E. has written
that length of cone goes for
nothing) and that their scales
are similar, in other words
the cones are described as
being specifically identical -
I do not say that they are so in
reality only that Dr E. has
made them out to be. Thus



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the best character follows the fruit.

Dr. E. knows of purpureus only as far north as the Wind River Mts, Montana.

Amongst the samples of leaves which you kindly sent me is one labelled "T. Englemanni Rocky Mts, alt. 6-7,000 ft, Dr. Lyall". I suppose this is

from near the 49th parallel? Some of the leaves are long stout, squared & somewhat pungent, and look more like purpureus than Englemanni.

The altitude is low for Englemanni is it not?

In his report on the conifers observed by him Dr. Lyall states: "T. Menziesii was plentiful all along the line (49th parallel)



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from the Pacific to the Rocky
Mts, on the Cascade Mts
 as high as 5,500 ft and on the
 Galton & Rocky range up to
 6,000 ft."

I am not aware that there
 are authentic herbaria specimens
 to prove this, neither do I know
 what you and Dr E. think of
 Dr Syll as a botanist, but
 from what I have seen of
 his specimens to judge from
 the names appended I must
 allow that he proved himself
 to be at least a very shrewd



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guesser. He knew the Coast
plant & from there he traced
it without appreciable break
"all along the line" up to the
Rocky Mts. Therefore it was
scarcely possible for him to
mistake it.

If pungens be only a geogra-
phical var. of sitchensis
then I opine that the transition
forms may yet be if not
already found "along the line".

If specimens from all along
the 49th parallel of that region
are not yet in herbaria I
consider it would be premature
for anyone to further insist

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on the specific distinction
of these two plants - sitchensis
& purpurea.

By the way does Bongard
fully describe the coast plant
under the name sitchensis
or at any rate sufficiently
well to justify Dr Englemann
in quashing the name Menzie-
sii ? -

What is the date of publication
of Bongard's book ?

I have all but finished
writing for publication in Gard.
Chron. a description of Chamae-
cyparis nuthkaensis and
should be deeply indebted to
you for the known distribution
particularly the southern
limit and altitude above



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the sea of the species.

With apologies for thus troubling
you & also for the unusual
length of my letter I beg of
you always to command
what little I may know.

Believe me ever

Your obedient servant

(signed) G. S. Syme

Sir J. D. Hooker

Here.



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