

⁴
[Excuse the poor paper
I am sure short]

Some Bromley Kent
May 2^d -

My dear Dr. Gray

I have received your very kind note of the 8th.

In truth it is presumptuous in me to
give you hints; but it will give me
great pleasure to write to you just as I
talk to Hooker, who says my questions are
sometimes suggestive owing to my comparing
the ranges in different Kingdoms of
Nature. I will make no further apologies
about my presumption; but will just tell
you (though I am certain there will be
very little new in what I suggest & ask).
The points on which I am very anxious to
hear about. - I forget whether you include
Arctic America, but if so for comparison with
other parts of world. I would exclude the

Arctic & Alpin-arctic, as belonging to a quite
distinct category. When excluding the Naturalized,
I think DeCandolle must be right in dividing
the exclusion, giving list, of plant & clearing
found in cultivated land, even when it is
not known that they have been introduced
I mean. — I would give list, ~~lower than~~
of temperate plants found in Eastern Asia,
China & Japan; & not elsewhere. — Nothing would
give me a better idea of Flora of U. S.
than the population of the genera to all the genera,
which are confined to America; & the population
of genera, confined to America & Eastern Asia
with Japan; the remaining genera would be
common to America & Europe & rest of world;
I presume it would be impossible to show any
special affinity in genera between America
& Western Europe. America might be related
to Eastern Asia (always excluding Arctic forms)
by a genus having the same species confined

to these two regions; or it might be related by
 the genus being different species, the genus itself
 not ~~being~~ ~~species~~ being found elsewhere. The relation
 of the genera (~~is not~~ ~~species~~ (excluding identical species)
 seems to me a most important element in
 geographical distribution often ignored, & I
 presume of more difficult application in plants
 than in animals, owing to the wider ranges
 of plants; but I find in N. Zealand (from Hooker)
 the consideration of genera with representation
 species tells the story, even plainer than the
 identity of the species with different parts of
 the world. - I should like to see the

genera of the U. States, say 500 (excluding
 Arctic & Alpine) divided into 3 classes, with
 the proportions given, thus,

$\frac{100}{500}$ American genera

$\frac{200}{500}$ Old world genera, but not having any
 identical species in common. -

$\frac{200}{500}$ Old world genera, but having some
 identical species in common: supposing the

Then 200 genera included for U. S. plants;
then the 600 would be the remainder
to the fraction ~~having~~ of the species
in common to the Old world. — But
I am running on at a foolish
length. —

There is an interesting discussion in DeCandolle
(about p. ~~465~~ 503 to 514) on the relation of the size
of Families to the average range of the
individual species; I cannot but think
from some facts which I collected long before
DeCandolle appeared, that he is on wrong
sent in being Taken Families (owing
to their including too great a diversity
in the constitution of the species), but
that if he had Taken Genera, he
would have found that the individual
species in large genera range over

a greater area than do the species
in small genera: I think if you have
materials the thing would be well worth
working out; for it is a very singular
relation. —

With respect to naturalised plants; are
any social with you, which are not
in their parent country? I am
surprised the importance of this, has
not more struck DeCandolle. Of these
naturalised plants are any or many
more variable in your opinion, than
the average of your U. S. plants: I
am sure how very vague these
must be: but DeCandolle has stated
the the naturalised plants do not
present varieties; but being very
variable & presenting hybrid varieties

seems to me rather a different case:
if you would kindly take the trouble
to answer this question, I sh^d be
very much obliged, whether or no, you
will enter on such points in your
Essay. —

With respect to such plants, which
have their southern limits within
your area, are the individuals ever
or often stunted in their growth
or maturity: I have in vain endeavored
to find any Botanist who has
observed this point: but I have seen
some remarks of Barton on the Tree
in the S. I. Trees seem in this respect
to behave rather differently from other
plants. —

It would be a very curious point, but
I fear you will think it out of
your Essay, to compare the list of
European plants in Tierra del Fuego
(in Hooker) with those in N. America;
for without multiple sections, I think
we must admit the ^{new} old in T.
del Fuego must have travelled
through ^{N. America} your country, & so far they
do concern you. —

The discrepancy on Social plants (as regards
as the terms & facts are) ~~which~~ is
DeCandolle strikes me as to be best,
which I have ever seen: two points
strike me as eminently remarkable
in them: that they should ever

be ^{greatly} social close to their extremes
limits; & secondly the species having
an extremely confined range, yet
sh? be social where ~~do~~ they do
occur: I sh? be infinitely mixed
either of better or fully than heard, more
In any cases & as
especially in regard to a species
remaining a clearing to be social,
on the entire of its range.

There is one other point, on which I
wish to dwell sh? be extremely much mixed,
if you could spare the time to think a
little bit & inform me: is whether
there are any cases of the same species
being more variable in U. S. than in
or in different parts of U. S.
other countries in which it is found;
Wahlberg says generally the the same
species in gray S. become more variable

There is extreme rarity. Even still more (5)
and I anxious to know whether any of
the genera, which have most of their
species ^{hotly} variable (as *Prunus* or
Thalictrum ^{or}) in Europe, or ^{the} ~~one~~ part of
world, are less variable in the States:
in the present case, whether you have
any odious genera with you, which
are less odious in other countries.
Any information for this head, would be
a great kindness to me. —

I suppose your flora is too great; but a
small list in clear columns in small type of all
the species, genera, & forms, each consecutively
numbered, has always struck me as
most useful; & Hooker ^{is introduction to} repeats the same
did not give such list, as in Zealand &
other floras. — I am sure I have

Gray 4

Given you a larger dose of questions
than you bargained for, & I
have kept my word & treated
you just as I do others.
Nevertheless if anything occurs to
me during the next two months,
I will write freely, believing
that you will spare me & not
think me very presumptuous.

How well De Candolle
shows the necessity
of comparing nearly
equal areas for
population of Families!

My dear Dr. Gray
Yours very sincerely

Charles Darwin

I have reread this letter & it really is not worth sending,
except for my own sake. I see I forgot in beginning to state
that it appeared to me that the b. heads of your species ~~are~~
included almost every form which could be desired, & therefore there
was little to say. —



Darwin, Charles. 1856. "Darwin, Charles May 2, 1856." *Charles Darwin letters to Asa Gray*

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