

turned out together on the Cumberland
Mountains, & one particular breed
is found to succeed so much
better than all the others,
that it fairly stands the test
to death: I do here say
that natural selection picks
out the best, & would tend
to improve it for aboriginality
to have formed it. -

Many thanks for said & I have
of admiration: I must confess
from what I have seen of Bees in
which making I see no difficulty whatever
in forming the individuals;
- Bees copying the individuals;
& I would venture to predict
that it has a tendency on both
sides instead of on only one side,

18.

Down Bromley Kent
Nov. 29.

My dear Gray

This shall be such an extraordinary
note as you have never received
from me, for it shall not contain
one single question or request.
I thank you for your unreserved
opinion. Every criticism from
a good man is of value to me.
What you hint at generally is
very very true, that my work
will be given up hypothetical &
large parts of no means worthy
of being called induction; my
comment even being partly
induction from too few facts. -

I had not thought of your objection
of my using the term "natural
selection" as an agent; I
use it much as a geologist
does the word denudation, for
an agent, specifying the result
of several combined actions.
I will take care to explain
not merely by inference, what I
mean by the term; for I
must use it, otherwise I should
be unable here to expand it
into ~~some~~ ^{then miserably expressed} such formula as
the following, "the tendency to the
preservation of living to the severe struggle
for life to which all organic

beings at some time a generation are
exposed) of any to slightest
variation in any part, which
is of the slightest use or harm
to the life of the individual
whole has then varied; together
with the tendency to its inheritance,
any variation, which was of no
use whatever to the individual,
would not be preserved by the
process of "natural selection". But
I will not weary you by going
on; as I do not suppose I can
make my meaning clearer without
large expansion. - I will say of all
one other sentence: ~~namely~~
of sheep
& several varieties, have been

natural cause, to a species
produced by the separation out of
the Hand of God. But I am
running on foolishly. - By
the way I met the other day
Phillips, the Palaeontologist, & he
asked me "how do you define
a species?" - I answered "I cannot"
He said "at last" I
have found out the only true
definition ~~the~~ - "any form which
has never had a specific
name" !

I am infinitely obliged to you
for your offer (if you can ever
find time, & how much overworked
you seem to be) of considering

Gray 18-
for the sort of case of joined
petals can be pushed into
equal casing both ways, but
when there is only one way
it can be pushed (as far as
I have seen) only one way:
Lecop. I observe, brings forward
Fumaria as a genus which I
never be misled by natural
means, whereas I suspect its
structure is formed in direct
relation to former supposing !!
I sent you gardeners climber
with little notice in Kidney
Beans: since writing it, I have
received a most curious lot
of Beans naturally curled, & the
seed-coats affected by the frost

act of fertilization, like Goertzen
Pea case. - By the way I must
tell you what I heard yesterday,
though not in your time, but on
subject of the copying of individuals.
(Balanus)
Barnacles - one hermaphrodite &
with three well shut up shell of eggs
as just a difficulty to copying
as can well be conceived: I
found an individual with
monstrum & imperfect penis, but
set with fertilized ova; but I
had not known whether it might
be case of parthenogenesis or
a strange accident of some
flocking hermaphrodite; well yesterday I
had an account of a man who
watching some shells, saw one
fertilize its long protruded

penis, & insert it in the shell of an
opposing individual! So here is a
load off my mind. -

You speak of species not having
any material basis to rest on;
but in this my greater hardship
than deciding what deserves to be
called a variety & be designated
by a Greek letter. When I was
at Hydruntum work, I know I
longed to have no other difficulty
than deciding
the (great enough) then deciding
whether to form was distinct
enough to deserve a name; & at
to be haunted with undefined
& unanswered question whether
it was a true species. Which
a finish it is for a well
marked variety, produced by

My dear Greg
Yours heartily M.D.
Darwin

How I wish I knew what large
(for large it must be) ~~one~~ ^{with a Hurd's Bee}
insects & fertilizers *Libellula*
fulgens in its native home:
do you know any southern
young Botanist who w^d look to
this? I would cover a flask
with a very coarse gauze
cap, & thus not a pod would
get in I believe. But if
you I have broken by now
of a sort of question or request!

again ^{May 18.}
a list of close species, such as
Hooker would perhaps lump
together: you could not do me
a more essential service.
If you do it, with you please
label, if in your power, large
& small orders as they come,
for possibly there may be some
difference in the large
natural & small broken families.
I intend to go into them
with *Libellula*, as far as
metamorphosis are concerned.
In ^{all} *Libellula* & may other
Flies, I find the true universal

of the large genera presenting
most varieties. In the
British Fl. & in Watson
aid, I have struck out
the most trifling varieties
& I find the rule holds
good, as it also does
with the forms which
most British Botanists rank
as species, but which some
one Botanist has considered
a variety. This rule, as
I must consider it of the
large genera varying most,

I look at as most
^{for work} infatigable, & I believe it
to be the foundation of the
method in which all
beings are grouped, together
with what I rather vaguely
call my principle of divergence
is ^{contingent to} the preservation of the
most different members of
each group. But I am
amusing myself & scribbling
away all my notions
without any method.
I judge now, & believe



Darwin, Charles. 1857. "Darwin, Charles Nov. 29, 1857." *Charles Darwin letters to Asa Gray*

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