



For the Torch of Reason.
DAWN.

How apt we are to measure all we know
And all the world, by our own narrow
rules.
Those who agree with us are very wise;
Those who do not are lunatics,—or fools.
We pity them, if we have human
kindness
But if inclined to harshness, we despise
Their bigotry; forgetting in our blind-
ness,
We may be just as weak in others' eyes.
And this is selfishness. To ignorance
wed,
The twain have ruled the world for count-
less years.
Chained liberty, and, while her martyrs
bled
Steeped our fair earth in misery and tears.
And, even now, through all man's
generations
This discord jars the music of the song.
From church to state, from governments
of nations
To humble life, this motive power is
strong.
How are we left in darkness! Here to
grope
Through toilsome life, yet reaching
toward the light
Saved from despair, but only by the
hope
That morn is dawning on our troubled
night.
Oh, for more light! Arise, fair Liberty,
And with the TORCH OF REASON lead the
way
Where we may find the truth; and
finding, be
Free, noble, happy in its perfect day.
Oh, for great souls with charity as
broad
As all the universe; a love for all
Humanity; a sense of others' rights!
Such minds are never narrow, cramped
or small.
Divine Humanity, let thy sweet beauty
Abash all prejudice, and forms and creeds.
For after all, our first and highest duty
Is loving, helping others in their needs.
ANNIE TUTTS.

Instinct.

Many instincts are so wonderful
that their development will prob-
ably appear to the reader a difficul-
ty sufficient to overthrow my whole
theory. I may here promise, that
I have nothing to do with the ori-
gin of the mental powers, any more
than I have with that of life itself.
We are concerned only with the di-
versities of instinct and of the other
mental faculties in animals of the
same class.
I will not attempt any definition
of instinct. It would be easy to
show that several distinct mental
actions are commonly embraced by
this term; but every one under-
stands what is meant, when it is
said that instinct impels the cuckoo
to migrate and to lay her eggs in
other birds' nests. An action, which
we ourselves require experience to
enable us to perform, when per-

formed by an animal, more especi-
ally by a very young one, without
experience, and when performed by
many individuals in the same way,
without their knowing for what pur-
pose it is performed, is usually said
to be instinctive. But I could show
that none of these characters are
universal. A little dose of judg-
ment or reason, as Pierre Huber ex-
presses it, often comes into play,
even with animals low in the scale
of nature.

Frederick Cuvier and several of
the older metaphysicians have com-
pared instinct with habit. This
comparison gives, I think, an ac-
curate notion of the frame of mind
under which an instinctive action
is performed, but not necessarily of
its origin. How unconsciously
many habitual actions are per-
formed, indeed not rarely in direct
opposition to our conscious will!
yet they may be modified by the
will or reason. Habits easily be-
come associated with other habits,
with certain periods of time and
states of the body. When once ac-
quired, they often remain constant
throughout life. Several other
points of resemblance between in-
stincts and habits could be pointed
out. As in repeating a well known
song, so in instincts, one action fol-
lows another by a sort of rhythm:
if a person be interrupted in a song,
or in repeating anything by rote,
he is generally forced to go back to
recover the habitual train of
thought; so P. Huber found it was
with a caterpillar, which makes a
very complicated hammock; for if
he took a caterpillar which had
completed its hammock up to, say,
the sixth stage of construction, and
put it into a hammock completed
up only to the third stage, the cat-
erpillar simply re-performed the
fourth, fifth and sixth stages of
construction. If, however, a cater-
pillar was taken out of a hammock
made up, for instance, to the third
stage, and were put into one fin-
ished up to the sixth stage, so that
much of its work was already done
for it, far from deriving any benefit
from this, it was much embarrassed,
and in order to complete its ham-
mock, seemed forced to start from
the third stage, where it had left
off, and thus tried to complete the
already finished work.

If we suppose any habitual action
to become inherited—and it can be
shown that this does sometimes
happen—then the resemblance be-
tween what originally was a habit
and an instinct becomes so close as
not to be distinguished. If Mozart,
instead of playing the piano-forte

at three years old with wonderfully
little practice, had played a tune
with no practice at all, he might
truly be said to have done so in-
stinctively. But it would be a se-
rious error to suppose that the
greater number of instincts have
been acquired by habit in one gen-
eration, and then transmitted by
inheritance to succeeding genera-
tions. It can be clearly shown that
the most wonderful instincts with
which we are acquainted, namely,
those of the bee-hive and of many
ants, could not possibly have been
acquired by habit.

It will be universally admitted
that instincts are as important as
corporeal structures for the welfare
of each species, under its present
conditions of life. Under changed
conditions of life, it is at least pos-
sible that slight modifications of in-
stinct might be profitable to a spe-
cies; and if it can be shown that
instincts do vary ever so little, then
I can see no difficulty in natural se-
lection preserving and continually
accumulating variations of instinct
to any extent that was profitable.
It is thus, as I believe, that all the
most complex and wonderful in-
stincts have originated. As modi-
fications of corporeal structure arise
from, and are increased by, use or
habit, and are diminished or lost by
disuse, so I do not doubt it has been
with instincts. But I believe that
the effects of habit are in many
cases of subordinate importance to
the effects of the natural selection
of what may be called spontaneous
variations of instincts—that is of
variations produced by the same
unknown causes which produce
slight deviations of bodily structure.

Again, as in the case of corporeal
structure, and conformably to my
theory, the instinct of each species
is good for itself; but has never, as
far as we can judge, been produced
for the exclusive good of others.
One of the strongest instances of an
animal apparently performing an
action for the sole good of another,
with which I am acquainted, is that
of aphides voluntarily yielding, as
was first observed by Huber, their
sweet excretion to ants: that they
do so voluntarily, the following facts
show: I removed all the ants from
a group of about a dozen aphides
on a dock-plant, and prevented their
attendance during several hours.
After this interval, I felt sure that
the aphides would want to excrete.
I watched them for some time
through a lens, but not one excreted;
I then tickled and stroked them
with a hair in the same manner, as
well as I could, as the ants do with

their antennæ; but not one excreted.
Afterward, I allowed an ant to visit
them, and it immediately seemed, by
its eager way of running about to
be well aware what a rich flock it
had discovered; it then began to
play with its antennæ on the abdo-
men first of one aphid and then of
another; and each, as soon as it felt
the antennæ, immediately lifted up
its abdomen and excreted a limped
drop of sweet juice, which was
eagerly devoured by the ant. Even
the quite young aphides behaved in
this manner, showing that the ac-
tion was instinctive, and not the re-
sult of experience. It is certain,
from the observations of Huber,
that the aphides show no dislike to
the ants; if the latter be not present
they are at last compelled to eject
their excretion. But as the excre-
tion is extremely viscid, it is no
doubt a convenience to the aphides
to have it removed; therefore prob-
ably they do not excrete solely for
the good of the ants. Although
there is no evidence that any ani-
mal performs an action for the ex-
clusive good of another species, yet
each tries to take advantage of the
instincts of others, as each takes ad-
vantage of the weaker bodily struc-
ture of other species. So again cer-
tain instincts can not be considered
as absolutely perfect; but as details
on this and other such points are
not indispensable, they may be here
passed over.

As some degree of variation in in-
stincts under a state of nature, and
the inheritance of such variations,
are indispensable for the action of
natural selection, as many instances
as possible ought to be given; but
want of space prevents me. I can
only assert that instincts certainly
do vary—for instance, the migratory
instinct, both in extent and direc-
tion, and in its total loss. So it is
with the nests of birds, which vary
partly in dependence on the situa-
tions chosen, and on the nature and
temperature of the country inhab-
ited, but often from causes wholly
unknown to us. Audubon has given
several remarkable cases of differ-
ences in the nests of the same spe-
cies in the northern and southern
United States. Why, it has been
asked, if instinct be variable, has it
not granted to the bee "the ability
to use some other material when
wax was deficit?" But what other
natural material could bees use?
They will work, as I have seen, with
wax hardened with vermilion or
softened with lard. Andrew Knight
observed that his bees, instead of
laboriously collecting propolis, used
a cement of wax and turpentine,
with which he had covered decorti-
cated trees. It has lately been
shown that bees, instead of search-
ing for pollen, will gladly use a very
different substance, namely, oat-
meal.
—Darwin.