

The Earthworm Book

How to Raise and Use Earthworms
for Your Farm and Garden

by
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The greatest of the early civilizations was doubtless that of the Egyptians, who developed a marvelously sophisticated culture and maintained it for four thousand years. The Egyptian experience alone is strong indication that a complex civilization cannot develop until the basic agricultural needs of its people are met. There is little time to pursue art and philosophy until bellies are full. The Nile Valley offered the richest agricultural land the world has ever known.

But can the extraordinary soil of the Nile Valley be due not to earthworm activity, but to the annual flooding of the Nile, which brings continuing renewal of the land by depositing nutrient-rich alluvium?

Again, not likely. The annual alluvial deposits are essential, to be sure, but without the extraordinary earthworm activity of the Nile Valley, even this rich soil would not be so lushly productive. A U.S. Department of Agriculture report of 1949 stated:

Investigations carried on in the valley of the White Nile in the Sudan indicate that the great fertility of the soil of this valley is due in large part to the work of earthworms. Observations are recorded from which it is estimated that the castings of earthworms on these soils during the six months of active growing season of the year amount to 239,580 pounds (119.79 tons) per acre.

Earthworm casts are the highest grade compost imaginable. As organic and mineral matter pass through the body of the earthworm, many of their nutrients are made available to growing plants. Thus, worm castings constitute a superb organic fertilizer and soil conditioner. Consider, then, the annual incorporation of *120 tons per acre of high-grade organic fertilizer* on Egypt's agricultural fields. This is approximately *ten times* the amount of castings that are deposited on good American and European agricultural lands, and goes far in explaining the unparalleled fertility of the Nile Valley.

There is also evidence that the ancient Egyptians were well aware of the earthworms' contribution to their prosperity. Cleopatra, in fact, decreed the earthworm to be a sacred animal, to be revered and protected by all her subjects—doubtless the only time in history that the earthworm has achieved so elevated a status.

The Egyptians. I have already mentioned that Cleopatra (69–30 B.C.) recognized the earthworm's contribution to the Egyptian agriculture by declaring this animal sacred. Egyptians were not allowed to remove so much as a single worm from the land of Egypt, and even farmers were not allowed to touch an earthworm for fear of offending the god of fertility. It is believed also that certain Egyptian priests devoted their full time to the study of the earthworm and its work. Unfortunately, the results of their efforts have not survived, or have not so far been uncovered for modern man to examine.

EXCERPTS FROM RICHARD CONNIFF'S ON THE LOWLY WORM WE
EARTHLING SPIN OUR LOFTIEST DREAMS, FROM *SMITHSONIAN
MAGAZINE*, JULY, 1993, PGS. 86-88. _____ ON CHARLES DARWIN'S
WRITINGS ON THE EARTH WORM

WORMS WERE ALSO A LIFELONG INTEREST FOR NO LESS A
NATURALIST THAN CHARLES DARWIN, WHO ONCE WROTE:

IT MAY BE DOUBTED WHETHER THERE ARE MANY OTHER ANIMALS, WHICH HAVE
PLAYED SO IMPORTANT A PART IN THE HISTORY OF THE WORLD

(86)

CHARLES DARWIN'S LAST BOOK, *THE FORMATION OF VEGETABLE MOULD*,
PUBLISHED IN 1881, WAS THE FIRST METHODOICAL STUDY OF
EARTHWORMS..... DARWIN CAME TO RECOGNIZE THAT WORMS ARE
INCREDIBLY NUMEROUS, CITING ONE ESTIMATE (MODEST, IN
RETROSPECT) THAT 56,767 WORMS PER ACRE FORAGED THROUGH AN
ORDINARY GARDEN. HE ALSO DEMONSTRATED THAT WORMS
TRANSFORM THE EARTH BY EATING THEIR WAY, OVER AND OVER,
THROUGH THE ENTIRE UPPER SOIL LAYER.

A WORM CAN CONSUME ABOUT 30 PERCENT OF ITS OWN WEIGHT DAILY
IN PLANT MATTER, MINUTE ANIMALS AND DIRT, MUCH OF WHICH GETS
EXCRETED ON THE SURFACE IN THE FAMILIAR, COILING HEAPS KNOWN
AS WORM CASTS (*HUMUS*). FROM THE CASTS AT ONE SITE, DARWIN
CALCULATED THAT EARTHWORMS BROUGHT 18 TONS OF SOIL TO THE
SURFACE EACH YEAR.
THAT NUMBER FALLS WELL WITHIN MODERN ESTIMATES. **IN THE NILE
DELTA, AN EXTREME CASE, EARTHWORMS ANNUALLY DEPOSIT 1,000 TONS
OF CASTS PER ACRE** _____ A WEIGHT EQUIVALENT TO 500 JUNKED CARS BUT
CONSIDERABLY MORE USEFUL TO FARMERS.

(87-88)

ABOVE ALL, DARWIN WON POPULAR ACCEPTANCE ... THAT WORMS
MAKE THE GROUND SUITABLE FOR PLANTS. THEY AERATE AND DRAIN
THE SOIL WITH THEIR BURROWS, DRAG DOWN LEAF FRAGMENTS TO
GRIND UP FOR FOOD AND

MINGLE THE WHOLE INTIMATELY TOGETHER, LIKE A GARDENER WHO PREPARES FINE
SOIL FOR HIS CHOICEST PLANTS

LONG BEFORE THE ADVENT OF THE PLOW OR OF THE HUMAN RACE
ITSELF, DARWIN WROTE:

THE LAND WAS IN FACT REGULARLY PLOUGED BY EARTHWORMS

(88)