

Work-in-progress Version 29 Jan. 2017
© 2017 Matthew Block

Source: J. H. Kellogg, GOOD HEALTH, Vol.
LVIII, No. 10, October, 1923

EDITORIAL

XX: EVIDENCES PURPORTING TO PROVE THE INHER- ITANCE OF ACQUIRED CHARACTERS

11. PAWLOW'S AND GRIFFITH'S MICE

20:11.1 Believers in the inheritance of
acquired characters have more recently
cited Pawlow's experiments with white
mice in support of their contentions.

“NEW PROOFS OF THE
INHERITANCE OF ACQUIRED
CHARACTERS” (Kellogg 413)

[contd] IMPORTANT evidence of the
inheritance of acquired characters,
perhaps the clearest that has yet been
offered, has recently been brought
forward....

One of these researches, which has
extended over a period of more than
twenty years, was conducted by the
eminent Professor Pavlov, of Petrograd
(K 413).

In an elaborate study of conditioned
reflexes, one experiment consisted in
teaching white mice to come to feeding at
the ringing of a bell.

The Professor found that 300 lessons
were required for the first generation to
establish an association between the
sound of the bell and food.

It is claimed that Professor Pawlow, of
Petrograd,

has been experimenting with the training
of mice to come to feeding at the ringing
of a bell.

The Professor reports that three hundred
lessons were required for the first
generation to establish an association in
the mind of the mice between the bell and
food.

SOURCE

In the second generation, however, only 100 lessons were required; in the third, 30 lessons; in the fourth, 10 lessons; in the fifth, 5 lessons (K 413).

[Note: Davenport and Kellogg corresponded in 1923.]

Another research still more convincing in its results was reported by Dr. C. R. Griffith.

In the course of some experiments on the mechanics of equilibration of the white rat, he discovered that after the rats had spent several months in a cage with a moving cylinder, moving at the rate of sixty to ninety times a minute,

20: THE TRUTH OF HEREDITY

In the second generation he claims that only one hundred lessons were required; in the third, thirty lessons; in the fourth, ten lessons; and in the fifth, five lessons.

20:11.2 This is, to say the least, an interesting series of experiments if it has been correctly reported, and we await with a great deal of interest, further studies which may shed more light upon the Professor's observations.

20:11.3 Dr. Davenport, in a personal letter commenting on the Pawlow observations, says:

Investigations on capacity for learning the way thru a maze to get food have been carried on at this laboratory with mice. These have been carried on for several generations. The first generation consisted of two pure bred races of mice, the second of hybrids between the two original races of mice tested, and the third of later generations from these hybrids. We did find the first hybrid generation more responsive than their parents which we ascribed to their greater activity, but we did not find that the third and later generations learned any faster than the second. They were, however, very variable in their capacity for learning.

20:11.4 It will be interesting also to see further observations along the lines of

those reported by Griffith,

who believes white rats who have spent several months in cages with a revolving cylinder

SOURCE

permanent changes were developed in the rats.

These changes were, first, a turning or twisting of the head, according to the direction in which the cage was rotating;

and, second, circular movements around the nest which were made in the direction in which the cage had rotated (K 414).

[contd] To the writer's surprise, it was noted that some of the progeny of these rats showed the same characteristics, and up to the time of the report some sixty such rats had appeared in the population of five hundred rats, or about one-eighth of the total number (K 414).

[contd] Those eugenicists who believe, as does the author, in the inheritance of characters which have been acquired as the result of functional activity, will welcome this new evidence of the existence of a biologic principle which offers not only an explanation of changes observed in animal forms under different environmental conditions, but also offers the greatest hope for the improvement of the human race (K 414).

[Find source: "Non-Inheritance of the Acquired," in *Eugenical News*, Vol. 9 (1924).]

20: THE TRUTH OF HEREDITY

develop permanent changes

such as the turning or twisting of the head according to the direction in which the cage rotated,

or circular movements about the nest in the direction in which the cage had rotated.

It was reported that more than ten per cent of the offspring of these rats showed these same tendencies.

20:11.5 Dr. Davenport, commenting on these experiments, in a letter to me, says: "About Griffith's experiments we await further data. It is not very uncommon in rats to get strains which have not been whirled who behave exactly like the rats that have been whirled. This tendency is also inherited."

20:11.6 The work of MacDowell, Bagg, and Morgan fails to confirm Pawlow's claims. In fact, the experiments of these investigators directly contradict the Pawlow and Griffith claims.