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The Present Status of the Genetics Problem

The problem of heredity has been attacked in four principal ways. Galton
developed to a high degree what we may call the statistical method. His most
important conclusions are embodied in his law of ancestral inheritance and his law of
regression. According to the former, the two parents together contribute one half of
the total inheritance of an individual, the four grandparents one fourth, the eight
great-grandparents one eighth, and so on indefinitely. The law of regression attempts
to state the average deviation of a fraternity from the mean of the general
population in terms of the average deviation of the two parents. Recent investigations
have shown that neither of these laws is true except for averages of large num-
bers of cases, and not in all cases even then. They are not applicable to individual cases,
and are hence of no importance in the modern science of genetics, however important
they may be in statistical problems in general.

In recent years the methods used by
Galton have been developed by Pearson
and others into a highly mathematical
treatment of the subject of heredity, which
has given us important means of dealing
with the precision and reliability of data
and enabled us to study certain types of
correlation to advantage, but which has
otherwise had comparatively little influence
on the progress of genetics. The study of
correlation between hereditary characters
by statistical methods has not as yet led to

1 Presidential address before the Washington
Botanical Society, March 5, 1912.