The Differential Death-Rate of the Sexes among Animals, with a Suggested Explanation

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movements, the seeing, and time required for knowing what is viewed. The lectometer provides a means of measuring the length of exposure necessary (the length of time the material must be physically present in order that it may be seen) and the time it takes to do the mental part of the work of reading,—the comprehending. In other words, the question as to where we spend our time in reading can readily be answered.

Our present data from about 100 persons show that the "eye work" is not so important a factor (at least as to time required) as the "head work." Most observers require only from ten to thirty-five thousands of a second exposure of reading matter to see it but 150 to 250 thousands of a second to know what they have seen. The act of reading thus turns out to be a matter mostly of thinking, not of looking, hence, one should ease up on looking so hard and stress thinking more in learning to read most efficiently.

THE DIFFERENTIAL DEATH-RATE OF THE SEXES AMONG ANIMALS, WITH A SUGGESTED EXPLANATION

S. W. GEISER

(ABSTRACT)

It has been conclusively demonstrated in certain mammals, fishes, arthropods, nematodes and mollusks that the female sex has a greater longevity than the male. (Geiser, '21, '23; et al.)

Longevity within the species appears to be inherited in the manner of "blending inheritance," i.e., its mode of inheritance is probably through a series of multiple gametic factors. (Beeton & Pearson, '00, '01; Pearl, Parker & Gonzalez, '23; Gonzalez, '23.)

In many of these groups the genetic constitution has been proved, on the basis of cytological or genetic study, to be of the XX, XY genetic type. The female possesses two X-chromosomes, the male only one.

When certain long-lived strains are crossed with another, shorter-lived strain, longevity has been shown to be inherited in a Mendelian manner. The segregation takes place in the F2 generation. (Hyde, '13; Gonzalez, '23.)

Strains possessing somatic mutations usually have a shorter life-duration than normal strains. (Morgan, '14; Morgan & Bridges, '16; Pearl, Parker & Gonzalez, '23.)

1 The entire paper, with references and tables appears in the Washington University Studies, Scientific Series, July 1924.
Each somatic mutation-strain has associated with it a characteristic mean-duration of life, (Gonzalez, '23.)

Other things being equal, the strains with few mutants appear to vary less in degree of duration of life from that of normal strains, as compared with those possessing many mutants.

Each gene, then, appears to have an effect on the duration of life.

It is suggested that the possession of two sex-chromosomes by the females of certain species of animals ensures a greater longevity of the female by "cancelling out" possible mutations in the sex-chromosome, especially associated lethals, while in the male there is no such "cancelling out." (Morgan, '12, '14; Morgan & Bridges, '16.)

Thus, the greater longevity of the female in certain animals of XX, XY genetic constitution is explicable on the factorial hypothesis of heredity.

Genetic and cytological studies of certain lepidopterous insects, and birds have shown that the male is duplex for the sex-determining chromosome. The genetic constitution of these groups of animals is of the WZ, ZZ type.

Studies of mortality in birds have demonstrated the greater longevity of the male, as compared with the opposite condition found in animals of the XX, XY genetic type. (Pearl, '17; Whitman, '19.)

There is, therefore, a direct relation demonstrated between the greater longevity (of the sexes) in animals and the possession of a duplex condition of the sex-determining chromosomes.

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RESULTS OF THE TESTING PROGRAM GIVEN AT IOWA STATE COLLEGE

NORA M. KLISE

The results given in this report were based upon a study of 368 Home Economics students who had been given mental tests in the spring and fall of 1919. 145 of the 368 had been given Alpha mental test, and 223, Thorndike. High school records were available for 339 of them. The object was to study criteria for prediction of college scholarship. Alpha had the highest correlation with college average, 0.45 as compared with 0.34 for high school with college average, and 0.38 for Thorndike with