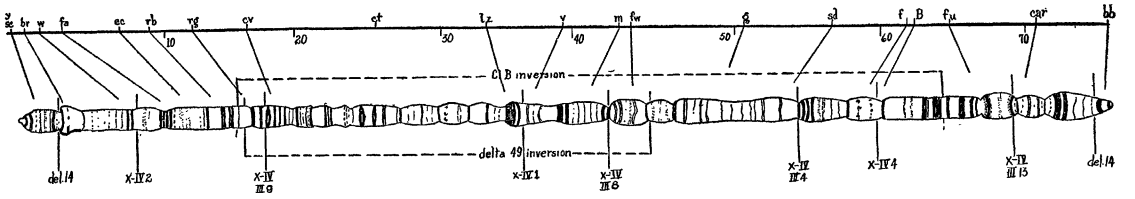

some which has been identified is a short piece which, morphologically, is homologous to part of the right-hand end segment of the X. This part of the X (see figure) carries the normal allelomorph of bobbed. Either the inert material of both the X and Y has been eliminated during ontogeny, by diminution or some similar process, or this material exists in the salivary nuclei in some unrecognized form not visibly connected with the chromosomes. The inert area comprises about $\frac{2}{3}$ of the volume of the oogonial metaphase chromosome.

The accompanying figure is a drawing of the X-chromosome made by uniting camera lucida sketches of various regions. Fine details are omitted. Above the figure, a crossover map having the same length as the X is shown. The symbols of gene loci, which have been located, are given together with lines showing their approximate morphological positions. The points of breakage are indicated on the X, with the name of the break given below. Thus, deletion 14 (at the left) broke the X between the loci of scute and broad. The morphological point of breakage is shown on the drawing, and, of course, scute must lie to the left of the break and broad to the right. In a similar way the position of other gene loci has been determined. Geneticists will be interested to note the morphological (and genetic) limits of the C1B and delta 49 inversions as shown by the figure, and in the close correspondence between the cytological and crossover maps.

The writer has two articles in press, one dealing with the technique and the general morphological characters of the salivary chromosome, the second, a detailed study of the X-chromosome from which the drawing herewith presented was taken. Similar studies of the autosomes have been under way for some time, and a number of students are at work on various cytological and genetic problems opened up by the new method of attack.

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PROPOSED IMPROVEMENT FOR PLANKTON NETS

WHEN plankton nets were first put to use for quantitative purposes two problems made themselves apparent. First, control of the net in regard to selection of a given operating level beneath the surface of the water without contamination of the sample from intermediate levels; second, the determination of the quantity of water filtered. The first problem was solved at an early date for vertical nets, and at a much later date (to a satisfactory degree), with some difficulty, by Kofoid for horizontal nets.

The second problem has not yet been solved to the satisfaction of planktologists, and even with the use of a complicated system of calculations, only a fair approximation to accuracy is attained. Hensen (1901)[1] developed a net which had a mouth small in proportion to the silk filtering surface in an attempt to insure the immediate filtering of all water entering the net; a coefficient of filtration was determined for various sizes of nets. The volume of filtered water was then calculated from the size of the mouth, filtering area, mesh, speed of the net, etc., these factors being subject to numerous variations and consequent corrections. However, this method, and modifications of it now in general use, does not make allowance for clogging of the pores of the net which in the case of certain types of plankton becomes an important factor.

It is the writer's desire to suggest another approach to the problem; *i.e.*, to measure the water leaving the net after it has been filtered rather than that entering the net before it is filtered. It seems that this could be done very simply by adding to the net an outside jacket of suitable waterproof material, opening at the tail into a cylinder sufficient in dimension to take a suitable type of current meter. This means that the water could enter the net in any quantity, and only the filtrate would be measured by the attached current meter, such measurement being independent of clogging. The actual volume would be arrived at by the simple equation, $F(\pi r^2)$, when F is the linear measure of the water column as indicated by the current meter.

As far as can be seen without actual experiment this method would offer no serious difficulties in development; and it is believed that it would supply more accurate data, and incur a higher degree of dependability than the methods now employed.

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[1] Hensen: "Uber die quantitative Bestimmung der kleineren Planktonorganismen und über den Diagonal-Zug mittelst geeigneter Netzformen." Wissenschaftliche Meeresuntersuchungen, Abth. Kiel, N.F. Bd. 5, pp. 69–81, 1901.