DR. G. E. HILBERT has been appointed as research assistant to Professor Treat B. Johnson, Sterling professor of chemistry at Yale University for the academic year 1928–29.

ASSOCIATE PROFESSOR A. ELIZABETH ADAMS has been promoted to a professorship of zoology at Mount Holyoke College.

HARRY N. EATON has resigned the associate professorship of geology at Syracuse University.

DR. W. B. CROW, lecturer in botany at the University College, Cardiff, has been appointed head of the department of biology at the Technical College, Huddersfield, in succession to Dr. T. W. Woodhead, who will soon retire.

DR. ADOLF FRAENKEL, professor of mathematics at the University of Marburg, has been called to the University of Kiel.

DISCUSSION AND CORRESPONDENCE

THE REAPPORTIONMENT BILL IN CONGRESS

HOUSE RESOLUTION 11725, reported favorably by the House Committee on the Census on April 4, 1928, presents an interesting scientific situation.

This bill, which provides for an automatic apportionment of 435 representatives after each decennial census (unless Congress takes other action), specifies the method of major fractions as the method to be followed in the computation; and the report of the Committee (no. 1137) describes this method of major fractions as a "specific, concrete and exact scientific method." As a matter of fact, this method is an obsolete method which has failed to secure the approval of any scientific body.

The problem of selecting the best method of apportionment is a mathematical problem of quite unexpected complexity, on account of the necessity of obtaining a solution in whole numbers. The problem has been the occasion of bitter debates in Congress for over a hundred years. Several different methods have been used and later discarded. On one occasion, after a long speech by Daniel Webster, the Senate reversed the action of the House on purely mathematical grounds. Not until 1921 did a satisfactory solution of the problem become available. In that year, at the request of Senator Sutherland, the Joint Advisory Committee to the Director of the Census held extensive hearings on the subject and published a unanimous report in favor of a method, then new, known as the method of equal proportions—a method which in point of simplicity, directness and intelligibility leaves nothing to be desired. This method

has since been endorsed by a general consensus of scientific opinion. It was adopted in the only bill which came up in the House in 1927, and at that time, according to Hasbrouck's "Party Government in the House of Representatives" (p. 126), the "method of equal proportions was pretty generally favored over the method of major fractions which had been the basis of the 1911 apportionment." All the bills introduced in the House in the early part of this winter, which specified any definite method, specified, as a matter of course, the method of equal proportions. Moreover, the question of the choice of method is vitally important at the present time, since, if the proposed legislation is carried, there are conceivable distributions of population for which the choice of a wrong method might affect the number of representatives in every state in the Union.

In spite of these facts, the present report from the House Committee on the Census makes no mention whatever of the method of equal proportions and totally ignores the scientific report of the Advisory Committee. Why this sudden change?

The change is attributable entirely to the efforts of one man, Professor W. F. Willcox, of Cornell, whose testimony before the House Committee, as printed in the hearings for February 21, contains an entirely false description of the method of equal proportions, by which, supported as it was by impressive charts and diagrams, the committee was completely misled.

In a carefully worded paragraph on page 61, repeated with emphasis on page 62, instead of presenting the simple definition of the method of equal proportions which is well known in the literature of the subject, he substitutes therefor a complicated definition which bears no resemblance to the standard method and leads to strikingly different results. For example, suppose 100 representatives are to be apportioned among the five states A, B, C, D, E, in the following table, according to the method of equal proportions. Column I shows the result under the true method of equal proportions; column II shows the result under Professor Willcox's erroneous idea of that method. The results are different for four of the five states.

State	Population	I	II
A	12,972,500	52	51
B	11,000,000	45	44
C	345,000	1	2
D	342,500	1	2
E	340,000	1	1
	25,000,000	100	100

Other parts of his testimony are equally erroneous and misleading, but no opportunity was afforded for rebuttal, and the committee had no reason to question the accuracy of the information offered it. Moreover, after a number of these errors were called to Professor Willcox's attention, he declined to take steps to correct them.

From the scientific point of view there is another feature of the situation which is even more unfortunate. After admitting (p. 88) that "a large majority of mathematicians and statisticians are on record in favor of the method of equal proportions," Professor Willcox secured and read into the hearings about a dozen statements from constitutional lawyers and professors of political economy in favor of his method of major fractions and thus persuaded the committee that there is a conflict of opinion among scholars on this subject. Inasmuch as these scattered statements were secured by means of the same unsuspected misinformation that had misled the committee, they can not be regarded as concerted or final judgments.

There is of course no conceivable conflict of interest between the mathematicians on the one hand and the political scientists on the other hand. On the mathematical side the problem is a highly technical one, requiring investigation of scores of different methods; the results of the mathematical analysis are indispensable to the statesmen who must make the final choice between the small number of methods that are found to be logically possible and workable. Among the logically possible methods, the method of equal proportions is the only method which has the approval of any organized body of scholars. If Professor Willcox has any serious objections to offer against this method, he owes it to mathematicians and economists alike to publish his views in some regular journal, so that they may be accessible to the scrutiny of all groups of scholars.

This is not the place to go into any detailed discussion of the problem. Full references may be found in a recent paper in the Transactions of the American Mathematical Society for January, 1928. The important thing in relation to Congress is to have scientific opinion united on a scientific question.

Professor Willcox has himself suggested that the American Political Science Association might well appoint a committee to investigate and report on this subject. This is a suggestion which should be welcomed by all those interested in the constitutional aspects of the problem. If it is generally accepted, as seems now to be the case, that the provisions of the constitution are not intended to favor systematically either the smaller or the larger states in any apportionment of representatives, then the question becomes a purely mathematical one. The mathematical evidence, which was seriously misrepresented in the recent hearings, clearly indicates that the method of equal proportions is the one method which has no bias in favor of either the smaller or the larger states. It would be most unfortunate to have any other method incorporated in permanent legislation.

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A POSSIBLE CORRELATION OF EYE SORENESS WITH VITAMIN A DEFICIENCY AMONG THE NEZ PERCÉS INDIANS

THE relation of vitamin A deficiency to a characteristic eye disease, known as xerophthalmia, keratomalacia, etc., was discovered by Osborne and Mendel in 1913 in their feeding experiments upon rats. Since the publication of their work various authorities have endeavored to determine whether a deficiency of vitamin A in the diet might not also be responsible for cases of eye trouble in man. The existing evidence upon this point by McCollum, Mori, Bloch and other observers has been summarized on pages 192 and 193 of Sherman and Smith's work upon "The Vitamins" of the American Chemical Society Monograph Series.

In the present note the writer wishes to call attention to what appears to be a much earlier recorded instance of eye soreness in man as a result of vitamin A deficiency. The references are contained in the journal of the expedition conducted by Lewis and Clarke to the northwestern territory of the United States in the years 1804-5-6, under the dates of May 10-12, 1806. The following extracts relate to observations made by the expedition during its stay with the Chopunnish or Nez Percés Indians within the present borders of Idaho. The page references are to Volume III of the "History of the Expedition under the Command of Captains Lewis and Clarke," published by the Allerton Book Co., New York, 1922.

The chief spoke to the people, who immediately brought about two bushels of dried quamash roots, some cakes of the roots of cows (kouse), and a dried salmon trout: we thanked them for this supply, but observed that, not being accustomed to live on roots alone, we feared that such diet might make our men sick. (Page 102).

Their chief subsistence is roots, and the noise made by the women in pounding them gives the hearer the idea of a nail factory. (Page 104.)

We now resumed our medical labours, and had a number of patients afflicted with scrofula, rheumatism and sore eyes, to all which we administered very cheerfully as far as our skill and supplies of medicine would permit. We also visited a chief who has for three years past so completely lost the use of his limbs, that he lies like a perfect corpse in whatever position he is placed.