THE FUNCTION OF THE LATERAL LINE ORGANS

EXPERIMENTS on the lateral line organs of fishes have indicated that they are of importance in equilibration and that they respond to slow vibrations and possibly to the streaming of water, but I am unaware of any adequate explanation of their function or of the natural stimuli to which they respond. The following hypothesis is offered.

I would suggest that the organs are sensitive to pressure, relative rather than absolute. While the fish is on an even keel, the weight of a column of water reaching from the surface to either lateral line is the same, but when the fish turns on one side the weight pressing on the upper line system is less than that pressing on the lower. Possible action currents set up in the nerves would no longer balance, and in order to restore the "zero potential" the fish would have to carry out the proper muscular contractions to get back on an even keel. The analogy with the Wheatstone bridge is suggested.

In similar fashion, depression of the head with respect to the tail would bring about a difference in pressure between the cephalic and caudal portions of the lateral lines, resulting in efforts to restore the normal posture. The division of the cephalic portion into upper and lower branches may take care of the possibility of swimming bottom-up, the branches being adjusted to a normal difference in pressure.

To test this hypothesis a jar containing small fish was centrifuged in the horizontal and vertical planes. The dorsal fins pointed constantly toward the surface of the water. The fish swam around the periphery of the container against the slight rotatory current induced by the centrifugation.

WALTER FREEMAN

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REPORTS

THE FOURTH GENERAL ASSEMBLY OF THE INTERNATIONAL RESEARCH COUNCIL[1]

THE present convention under which the International Research Council was set up lapses on December 31, 1931, unless it is previously renewed. It is quite generally recognized that the renewal of the convention will carry with it changes in the statutes. The whole question therefore involves careful consideration of the conditions on the part of the nations adhering to the council. In view of these circumstances, the delegates of the Royal Society brought forward the following resolution:

That a committee be appointed to consider what changes, if any, should be introduced into the statutes of the International Research Council and its unions to take effect on the expiration of the present convention (December 31, 1931).

This was strongly supported by the delegates from the United States and Holland and by the delegates from Italy and Czechoslovakia. After general and somewhat vigorous discussion, in which the question whether changes were required was raised in some quarters, the resolution was adopted.

Perhaps fully as important as the resolution organizing the committee were the instructions given to it. Though the discussion was animated and some questions were raised as to the far-reaching effects of the instructions, they were adopted in the following form:

That for this purpose the committee shall enter into communication with the unions, the bodies adhering to the council and such other bodies and persons as it may consider advisable, and present a report to the executive committee of the council not later than June 30, 1930.

It is to be noticed that for the purpose of outlining the new convention the unions are to be consulted. This should tend to allay the restiveness in certain unions arising from the feeling that their organization and statutes were imposed by the council and are not easily changed.

The committee's membership is:

France: Picard and Lerié.
Great Britain: Glazebrook and Lyons.
United States: Kellogg and Schlesinger.
Italy: Volterra and Giannini.
Belgium: Pelseneer.
Denmark: Knudson.
Spain: Cabrera.
Japan: Sakurai.
Holland: Went.
Poland: Kostanecki.
Sweden: Siegbahn.

Sir Henry Lyons is secretary of the committee and it is fortunate that the work of this important committee is to be directed by such an able administrator, who at the same time understands and is in sympathy with the attitude of the unions. It augurs well for a satisfactory organization of the International Research Council and its relationships to the unions.

Among changes suggested in the informal discussion among members, the opinion was widely expressed that the tenure of office of the president and members of the executive committee should be fixed by the statutes and made rotational as is being done in the unions by statute or precedent.

[1] Brussels, July 13, 1928.

The relationship between the council and the unions will be greatly eased by the following resolution adopted by the General Assembly:

The General Assembly is favorably disposed to the freedom of the unions to alter their own statutes within the limits assigned by the statutes of the International Research Council and hereby empowers its executive committee to exercise the powers of approval conferred upon the council in Statute 5.

Statute 5 reads:

The statutes of the unions formed by the International Research Council require the approval of this council.

The above resolution not only assures sympathetic consideration of the desires of the unions on the part of council, but also makes possible action by the executive committee in the long intervals, usually three years, between the meetings of the General Assembly.

The delegates from the United States were Dr. Moore, of Purdue University, and Dr. St. John, of Mount Wilson Observatory.

CHARLES E. ST. JOHN

VITAMIN B TERMINOLOGY

IN November, 1927, Dr. E. V. McCollum, president of the American Society of Biological Chemists, received the following communication from the British Committee on Accessory Food factors:

Dear Sir:

At a meeting of the Accessory Food Factors Committee (appointed jointly by the Lister Institute and the Medical Research Council, 1918) and others interested in vitamin research in this country,[1] which was held on November 14, 1927, at the Lister Institute, under the chairmanship of Sir Frederick Gowland Hopkins, a discussion took place upon the nomenclature of vitamin B and its recently defined constituent parts.

The committee feel strongly that those workers in this field of research, should, if possible, arrive at some provisional general agreement regarding this point, so that references in the literature emanating from different schools may be uniform and unnecessary complications may be avoided.

The following suggestions were unanimously supported by those present: (1) That pending further investigation, much confusion will be prevented if the designation vitamin B, first used by McCollum and Davis and now firmly established in the literature, should be retained for all dietary factors belonging to this group of water-soluble vitamins. (2) That the term vitamin B_1 should be adopted for the antineuritic (more heat-labile) water-soluble dietary factor which was first discovered by Eykman in 1897 and is required to prevent polyneuritis in birds and marasmus with, or without, paralysis in mammals and beriberi in man. (3) That the term vitamin B_2 should be adopted for the more heat-stable, water-soluble dietary factor, recently described and named P–P ("pellagra-preventive") factor by Goldberger, Wheeler and Lillie and Rogers (1926) and found necessary for maintenance of growth and health and prevention of characteristic skin lesion in rats, and considered by the latter workers to be concerned in the prevention of human pellagra.

Such a scheme as the above possesses the advantage that place could conveniently be found to include any other constituents of this group which might be discovered subsequently.

The committee was of the opinion that the term "Bios" should be retained to denote the factor or factors encouraging rapid growth of yeast cells.

The committee have instructed me to forward the above suggestions to the American Society of Biological Chemists in the hope that they may be brought to the notice of its members and may invite their comments and criticism. It is held that all will agree upon the necessity of reaching agreement upon this point.

A copy of this letter has, at the same time, been forwarded to the British Biochemical Society and to some of the principal workers in this field of research on the continent and in the United States of America.

I am, yours faithfully,

(Signed) HARRIETTE CHICK,
Secretary

In response to this communication President McCollum appointed (in December, 1927) a Committee on Vitamin B Nomenclature to report at the April meeting of the American Society of Biological Chemists. This committee consisted of H. C. Sherman (Columbia University), Atherton Seidell (Hygienic Laboratory, Washington, D. C.), P. A. Levene (Rockefeller Institute for Medical Research), Harry Steenbock (University of Wisconsin) and R. Adams Dutcher (Pennsylvania State College).

Opinions of several interested workers, in addition to the members of the committee, were sought and letters were received from others. A total of fifteen workers have written the committee expressing their views. In many cases the opinions expressed represented the opinions of from one to eight coworkers.

The opinions expressed by the various groups of American workers were far from unanimous, the majority voting unfavorably on the suggestions of the British committee, except for the suggestion regarding the retention of the term "Bios." No letters have been received expressing opposition to this suggestion. Analysis of all suggestions submitted indicates that American workers favor three different

[1] Sir Frederick G. Hopkins, F.R.S., *chairman;* Professor J. C. Drummond; Professor A. Harden, F.R.S.; Sir Charles Martin, F.R.S.; Professor E. Mellanby, F.R.S.; Professor R. H. A. Plimmer; Professor R. A. Peters; Dr. Harriette Chick, *secretary.*