

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.

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REPORTS

THE FOURTH GENERAL ASSEMBLY OF THE INTERNATIONAL RESEARCH COUNCIL¹

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:

¹ Brussels, July 13, 1928.

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.