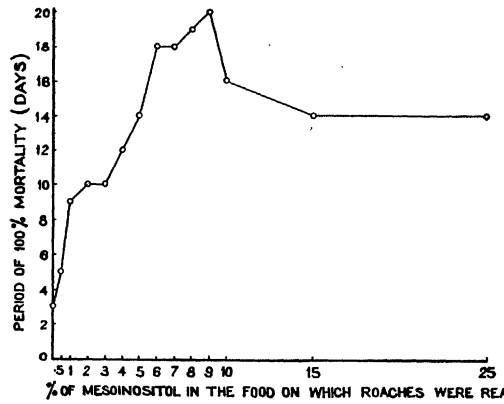

FIG. 1. Extent to which *meso*-inositol inhibits the action of the γ-isomer. Curve showing the period of 100% mortality of roaches when fed food containing 0.1% γ-isomer. The roaches were previously allowed to feed for 38 days from the time of hatching in food containing various concentrations of *meso*-inositol. Av temp, 80° F; relative humidity, 60%.

cular piece of white paper occupying the whole area, and two small vials, one filled with poisoned food and the other containing water plugged with cotton wool. The period of 100% mortality of roaches was then recorded for each dish. Controls were also run. The results of the experiment in which the roaches were tested on 0.1% of the γ-isomer have been plotted in Fig. 1.

It is evident that the roaches reared on 9% *meso*-inositol have maximum resistance, with 100% mortality occurring only after 20 days on food with 0.1% γ. As the concentration of the inositol was decreased from 9%, the period for 100% mortality was also decreased. If, on the other hand, the concentration of inositol was increased above 9%, the survival period also decreased. The results with 10% α-isomer in the food were quite inconsistent in relation to the inositol concentration. The β-isomer at the 10% level was nontoxic.

The maximum inhibition of the γ-isomer was shown at 9% *meso*-inositol concentration, but even at this level it did not completely neutralize the toxic action. It is suggested that there may be several metabolites affected in the cells by the γ-isomer, and *meso*-inositol may perhaps be one of these, although there does not appear to be a direct metabolic relationship between the two and the inhibition shown in these insects may be due to resistance acquired or developed by them after feeding on this vitamin. Moreover, the γ-isomer molecule is not isomorphous with that of *meso*-inositol (*12*).

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Serological Differentiation of Fish Bloods

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The need for methods by which separate breeding populations can be readily distinguished within single species of fish has prompted the present investigation of the serological properties of fish bloods. The purpose has been to discover individual variations in the blood of fishes analogous to those that have been studied by anthropologists interested in the evolution and migrations of human populations (*1, 2*). If such variations could be discovered in fish, it might be hoped that further work would produce information of value in separating races within such fishes as the tunas, the salmons, and the Pacific sardines. In addition, it is possible that these serological variations could be used as markers by which the movements of fish populations could be followed in the sea.

The present note is prompted by the discovery of individual variation in the agglutinin content in the bloods of yellow fin tuna, *Neothunnus macropterus* (Temminck and Schlegel), and skipjack, *Katsuwonus pelamis* (Linnaeus).[1]

Whole blood samples were frozen immediately upon collection from living fish and were shipped frozen to this laboratory. Investigation has shown that the large amount of hemoglobin that is released by the lysed erythrocytes in blood treated in this way apparently has no significant effect on such observations as those reported below.

The bloods were found to be separable into four distinct groups on the basis of their agglutinin content (Table 1). Absorption experiments have revealed that the agglutinins that differentiate these types include one specific for human antigen B, one specific for all human cells tested, and one specific for sheep cells.

In addition to these agglutinins, an antigen in tuna blood similar to the human A substance is indicated by the fact that rabbit antituna serum agglutinates human A cells specifically and that tuna serum specifically inhibits human anti-A typing serum. As yet, no individual variations in this inhibiton have been

[1] Bloods of individuals of the two species of tuna referred to were obtained through the efforts of John L. Kask and Fred C. June, Pacific Oceanic Fisheries Investigations, U. S. Fish and Wildlife Service, Honolulu. The author is indebted to them for the careful preparations that have made this study possible.

TABLE 1

A SUMMARY OF INDIVIDUAL VARIATIONS NOTED IN THE AGGLUTINATION OF ERYTHROCYTES BY TUNA BLOODS

Species and group	Human cells (type)				Sheep cells
	A	B	AB	O	
Tuna					
Group 1 (1 fish)	0*	+†	+	0	+
Group 2 (1 ")	+	+	+	+	0
Group 3 (12 ")	0	+	+	0	0
Group 4 (6 ")	0	0	0	0	0
Skipjack					
Group 1 (6 fish)	0	+	+	0	0
Group 2 (1 ")	0	0	0	0	0

* 0 = no agglutination.
† + = definite agglutination.

established, all fish that have been investigated showing the effect.

Finally, it should be noted that in these studies human sera have been found to contain agglutinins that react with the erythrocyte antigens of a variety of species of fish (*3*). These include the anti-B agglutinin and several that are distinct from the classical anti-A and anti-B agglutinins. Detailed reports on these observations will be published. Other reports on the serological differentiation of fish bloods that are known to the author are three dealing with differences in individual eel sera with respect to their ability to agglutinate human type O cells (*4–6*), and one (*7*) dealing with the use of the precipitin technique in demonstrating differences in the serum antigens of a variety of species of marine and freshwater fishes.

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Comments and Communications

Lobbyist for American Science

WADSWORTH LIKELY'S timely and pertinent article in SCIENCE of October 12, 1951, missed perfection by a single omission: We feel he should have added, "Support the Federation of American Scientists."

How well the federation has filled the role of lobbyist for American science or, as we prefer to think, lobbyist for the best interests of the country as they are affected by science, is well known to most of the scientific fraternity. A measure of our inadequacy is, perhaps, that Mr. Likely seems to have overlooked us.

Since the successful fight in 1946 for civilian control of atomic energy, for which the FAS has been given much of the credit, we have maintained an office and staff in Washington. We have sent regular news bulletins to our membership, innumerable special releases to the press, and calls for action at critical times to our membership and to the public at large. Our advice is sought and respected on Capitol Hill, in the executive agencies of the government and by the press.

In the areas of secrecy and security, we have exerted a salutary and cumulative profound influence on the regulations and procedures of the Atomic Energy Commission and defense agencies. We were active throughout the fight for a National Science Foundation. We opposed special security clearance for employees and fellows of the foundation. In most of the issues raised as Congress deals with the now apparent importance of science to the national welfare, we have had influence far beyond our numerical strength.

The federation should be stronger. We hope that all those concerned with science and the national welfare share the convictions of Mr. Likely. They should know, however, that the edifice need not be designed and built. It need only be enlarged and strengthened.

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Geography at Harvard

THE Institute of Geographical Exploration went out of existence Oct. 1, 1951. The institute, although part of Harvard University, was privately financed and directed by Hamilton Rice, the noted Amazon explorer.

During its lifetime of twenty years, the institute gave instruction in cartography, aerosurveying, field communications, field surveying, and exploration in general. The map collection of 102,000 modern maps and atlases is the largest in New England. The library of 20,000 volumes specialized in books on exploration. Instruments were often lent to explorers, and Dr. Rice sponsored several notable expeditions, such as those of Bradford Washburn, Arthur B. Emmons, Jr., and many others.

Three years ago the university dismissed the entire geography staff with the exception of D. S. Whittlesey. A special committee last year recommended the