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.

LYLE B. BORST

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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

re-establishment of geography, but no action was taken. Dr. Rice, discouraged by the policy of the university to discontinue geography, withdrew his support of the institute. The building is now closed, pending the decision of the university as to its further use.

It is too soon for the staff of the institute to have completed plans for the future, but Edward S. Wood, Jr., expert in aerophotography, is going on with his consulting jobs, and Erwin Raisz is continuing at his workshop in Cambridge.

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Radiation Sensitivity of Benzene-d_6[1]

OF ORGANIC compounds, the aromatic are the most resistant to radiation, and of these the most resistant heretofore reported is benzene (*1*). For example, it is less sensitive to decomposition by high-energy radiation than aliphatic hydrocarbons by a factor approximating 100. It has been shown (*2*) that the 100 ev yields of gaseous products from liquid benzene irradiated with 1.5-mev electrons from a HVEC Van de Graaff generator are, respectively, $G(H_2) \simeq 0.037$ and $G(C_2H_2) \simeq 0.022$.

We have now examined the radiation chemistry of benzene-d_6 and find that it is even more resistant to high-energy radiation than benzene, with yields $G(D_2) \sim 0.011$ and $G(C_2D_2) \sim 0.013$. These results are undoubtedly to be correlated with differences of zero-point energy of C-H and C-D and perhaps of C-C vibrations in the two compounds, but no simple relationship can be expected. The fact that $G(H_2) > G(C_2H_2)$, whereas $G(D_2) < G(C_2D_2)$, suggests that in radiolysis benzene decomposes by at least two essentially different processes.

It is noteworthy that benzene-d_6 has the lowest currently known radiation sensitivity of any liquid organic substance.

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[1] Contribution from the Radiation Chemistry Project operated by the University of Notre Dame under Atomic Energy Contract AT(11-1)-38.

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