

LOW-LEVEL IRRADIATION

Editor: Austin M. Brues

A symposium organized by the AAAS Section on Zoological Sciences, cosponsored by the U.S. Atomic Energy Commission and the Division of Biological and Medical Research of the Argonne National Laboratory.

Public debate on global fallout has been acrimonious because scientific facts about radiation and human implications regarding nuclear warfare have become confused. Scientists have consequently been thought guilty of ignorance or of partisanship. The Symposium on Low-Level Irradiation deals in a considered way with the many points of view that have brought this about, and indicates possible solutions.

Scientific Background: Introduction—National and Artificial Radiation Background of Man—Meteorological Factors and Fallout Distribution—Genetic Effects—Somatic Effects

Implications: Introduction—Radiation as a Public Health Problem—Responsibilities of the Press—Legal and Political Implications—Science and Morality

Summary and Conclusions—Index

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in mass and temperature, with a resultant wide distribution of cooling times, onsets of life, and technological advances on the part of the intelligent beings that have evolved. This is to say that many thousands of years may separate the evolution of planets X and Y to the point of intragalactic communication. It follows that with this sort of "arrival spectrum" a given planet cannot afford to send signals throughout the centuries toward planets in a less advanced stage of development.

It may well be that in the older, cooler planets—located, in general, in the outer fringes of the galaxy—intelligent beings "arrived" technologically many thousands of years ago; in that case, the logical thing for them to do would be to wait for developing societies (like that of Earth) to signal *them*, once the new civilizations have "arrived."

In short, the rule for initiating intragalactic communication could well be: Let the innermost (relative to the center of the galaxy), and supposedly youngest, planet, send signals toward the outermost.

Thus it may well be up to Earth to make itself known by beaming signals of high intensity in narrow bands toward the outer stars in the galaxy. The time and cost involved is the price man must pay for being a curious and sociable being!

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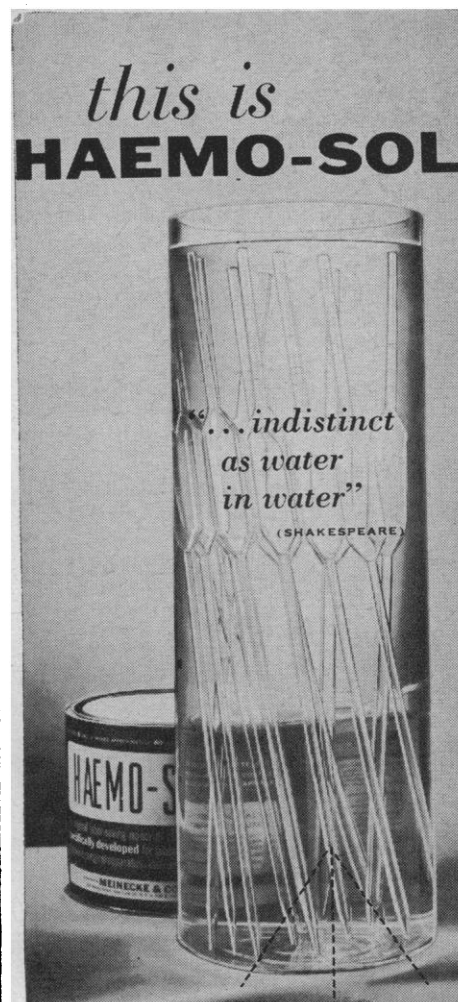
Hello Out There (Project Ozma)

Twinkle, twinkle, little star,
Out in space so very far.
If you're as bright as we think you are,
Beam us a signal, little star.

KATHARINE O'BRIEN
Portland, Maine

Olfactory Discrimination

Michelsen recently reported in *Science* [130, 630 (1959)] some interesting work from the Harvard Psychological Laboratory on olfactory discrimination in the pigeon. The general findings as summarized in the abstract were as follows: "A discrimination, based on olfactory stimuli, was established in two pigeons by an operant conditioning procedure. Results from control sessions demonstrate that the discrimination can be attributed only to the presence or absence of olfactory stimuli." I was pleased to learn of these findings since they made more tenable the hypothesis



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