

## GENERAL SCIENCE

# Scientific Opinion Polled

Science Service pioneers new method of obtaining and revealing expert scientific opinion on suitable problems by Grand Jury panels.

► A NEW METHOD of collecting and announcing expert opinion on important questions dealing with science and technology has been developed by SCIENCE SERVICE, the institution for the interpretation of science.

To deliberate upon each scientific question considered, a special body of experts upon the particular question is empanelled by mail questionnaire.

Science Service Grand Jury is the name applied to such a panel.

Each member renders his judgment independently and anonymously.

No member of the body of experts polled is referred to by name in the report prepared, but many comments that are offered are summarized or quoted anonymously to enlighten the question.

The character of the panel, the percentage of the experts who reply, the spread of their opinions and other particular statistical data are given in detail.

It is expected that these inquiries will become one of the most important summa-

tions of scientific opinion available to the public.

Those selected as members of these Science Service Grand Juries are assured they will not be identified by name, position or otherwise. They are asked to answer "yes" or "no" to carefully phrased questions, set in a proper framework by a short explanation of the problem considered.

A new Grand Jury panel is selected for each inquiry. For instance, the first inquiry to be announced polled experts on the planet Mars, which is now making its closest approach in many years to the earth. The Mars jury was selected largely from directors of observatories and scientists who have done actual work concerning the planet.

Most of the experts invited to serve have done so, only a few refusing on the grounds that such polls should not be undertaken.

Additional inquiries are underway. Further polls are planned as scientific problems become suitable for such assay.

Science News Letter, September 15, 1956

## ASTRONOMY

# No Intelligent Life on Mars

► EXPERTS say there is life on the planet Mars. But there is no intelligent life on that ruddy planet.

A panel of experts on Mars, polled by the new Science Service Grand Jury technique, has voted almost unanimously "yes" when asked the question: "Is there any kind of life on Mars?"

With even greater accord, the experts also gave a "no" answer to the question: "Is there any form of intelligent life on Mars?"

The planet, Mars, now easily visible in the southeastern evening sky, made a close approach to earth at midnight EST on Sept. 6, when it was only 35,120,000 miles away, closer than it has been since 1924. Not until 1971 will it come even nearly as close.

SCIENCE SERVICE therefore formed a Grand Jury of 49 experts, mostly astronomers, who have studied or observed Mars, or who head observatories in the United States and Canada. Of these, 75% (37 experts) returned ballots.

On the six questions submitted, positive "yes" or "no" answers were given by 60% to 90% of the panel, depending on the question.

On the "any kind of life" on Mars question, the vote was: yes—26 (70%), no—1

(3%), not voting—10 (27%). On intelligent life on Mars, the vote was reversed: 27 (73%) voting no, 10 (27%) not voting, and no "yes" votes.

There is "a lower form of life, like moss or lichens" on Mars, the experts concluded. The vote was: yes—25 (67%), no—1 (3%), not voting—11 (30%).

The experts would therefore have no expectation of being able to communicate

## ASTRONOMY

# Man Not Alone in Cosmos

► THERE ARE CREATURES roughly comparable to man in the universe, in the opinion of leading astronomers. Man is not alone. There are other worlds than ours.

This is the case, even though astronomers are practically unanimous in believing that there is no intelligent life on Mars, the planet now making its closest approach to the earth in years.

In a Science Service Grand Jury inquiry, 37 astronomers decided 23 (62%) yes, 1 (3%) no, and 13 (35%) not voting on the question: Is there a probability that

with Mars for there are no intelligent beings there in their opinion. Their predominant opinions that there is a very low order of vegetable life there fits in with what is known about the physical conditions on the ruddy planet.

"Will man ever travel to Mars?" This question was asked the experts. Somewhat surprisingly, many believed that space travel would take human beings to Mars. Two-thirds of those who answered the question believe that there would eventually be travel across interplanetary space to the planet. The vote was: yes—15 (40.5%), no—7 (19%), not voting—15 (40.5%).

One eminent astronomer in his anonymous discussion asked why man should want to go to Mars, saying: "The same amount of money or energy spent on making earth a better place on which to live would do more good." Another commented: "Remotely possible but terrifically expensive." "After many decades," another expert said.

As to travel to Mars, another opinion is: "It is possible but it is an open question whether such a journey will in fact be accomplished. Already rocket development has reached the point where we may reasonably expect the journey to be possible in 50 years, barring self-destruction of humanity."

The Mars experts hesitated over "intelligent" life. "Is there intelligence in an electron with a memory or in a sunflower?" asked one. The canals on Mars indicate intelligent life, another expert said, but the low atmospheric density argued that this life has been extinct for an immense period.

"The earth is suitable as a producer and a home of intelligent life," another astronomer said, "yet did not possess it for 99.997% of its history of 5,000,000,000 years. It is doubtful whether an observer on Venus would have seen the change on the earth produced by man."

Not all of the experts polled approved the method of making such inquiry. One said: "Scientific matters are not settled by counting noses." Another: "Childish and ridiculous." "To collect votes from scientists on any scientific question is misleading and unscientific," another voted.

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Admittedly in the realm of speculation because no observations can be made of satellite so even the closest stars in our own Milky Way galaxy, astronomical opinion as shown by this poll does hold that there must, among the millions upon millions of stars, be some that have acquired planets like the nine in the solar system.

There are literally billions of stars in the great galaxy of stars in which we are located, the Milky Way. This can be seen stretching across the sky on a clear night with only the closest and most brilliant of the stars visible to our eyes.

There are millions of galaxies like the Milky Way. And in our galaxy alone there must be hundreds of thousands of stars

much like our sun. Such vastness of the universe and its heavenly bodies has allowed the astronomers to express their belief in other worlds than ours.

In discussing planets outside the solar system, one astronomer observed that the probability of life comparable to man is extremely small for a given planet, even granted physical conditions similar to the earth. He based his favorable answer more on philosophical grounds than astronomical.

What is comparable to man—rats, apes, birds?—asked another astronomer who voted “yes” on extra-solar system inhabitants.

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#### ENDOCRINOLOGY

## Pure Skin Color Hormones

► INTERMEDIN, the pigmentation hormone that gives color to the skin, has been isolated in pure form and its chemical structure determined by University of California scientists.

The research on what has appeared a minor hormone has broad implications for progress in treatment of metabolic diseases.

The work marks the first time a specific biological function apparently can be pinned down to a specific structural segment of a large complex pituitary hormone.

It shows hormones like ACTH are probably several hormones rolled into one. Possibly purification or synthesis of the fragments may bring better, more specific treatment.

The scientists, after purifying intermedin, which is known as MSH or melanocyte-stimulating hormone, showed it is composed of 18 amino acids in a simple peptide chain.

The striking thing is that a segment of seven of these amino acids are arranged in the same sequence as a similar segment of ACTH. The sequence is methionine, glutamic acid, histidine, phenylalanine, arginine, tryptophane, glycine.

ACTH has been known to contain MSH activity for many years and, until recently, was believed its only source. Recently, however, extracts of MSH were obtained and this secretion was identified as a separate hormone produced by the intermediate lobe of the pituitary.

This separate hormone could darken the skin of frogs, fish and other animals just as ACTH could. The University of California scientists say a segment of seven amino acids in both hormones is undoubtedly responsible for pigmentation. In ACTH this sequence acquires adrenal-stimulating activity because of the different order of amino acids on each side.

The scientists believe the wide variety of biological effects of the large pituitary hormone molecules eventually will be pinned down to structural segments of the molecules.

For example, ACTH causes fatty liver and an increase of red blood cells in addition to stimulating the adrenals and caus-

ing pigmentation. Small segments may be responsible not only for pigmentation but for other activities as well.

The research is reported in the *Journal of the American Chemical Society* (Sept. 4). The scientists conducting the research are Drs. Irving I. Geschwind, C. H. Li and Livio Barnafi, all of the Hormone Research Laboratory at Berkeley. Dr. Li and other colleagues previously have isolated five pituitary hormones, including ACTH, and growth, lactogenic, interstitial-cell-stimulating and follicle-stimulating.

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#### TECHNOLOGY

## Vulcan Gun Developed For Use Against Jets

See Front Cover

► THE VULCAN, a fast-firing 20 millimeter gun, was designed to keep up with the ever-increasing speeds of jet aircraft.

It is also known as the “Gatling gun” because it operates in a manner similar to that of the original “Gatling gun” invented in 1862.

This design was chosen by General Electric engineers and Army Ordnance officers because its rotating six-barreled cluster offered the most desirable characteristics for producing the increased rate of fire.

Extensive testing of the new armament system has been underway for over two years at the Air Force Armament Center. It has included ground firing, air-to-air firing and all-weather operation in a climatic hanger.

Shown on the cover of this week's SCIENCE NEWS LETTER is the Vulcan undergoing one of the tests made to prove its operability at temperatures as low as 70 degrees below zero Fahrenheit.

The weapon is 72 inches long and weighs approximately 300 pounds. It is named after the ancient Roman god of fire. The gun is externally powered by either electricity or hydraulic fluid.

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## ● RADIO

Saturday, Sept. 22, 1956, 1:45-2:00 p.m., EDT

“Adventures in Science” with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Harry C. Kelly, assistant director for scientific personnel and education, National Science Foundation, Washington, D. C., will discuss “Scientists for the Future.”

“Adventures in Science” will not be heard again until December on account of the football season. Listen in then. Check your program listings.

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