

## ANTHROPOLOGY

# Ancestry of Man Extended

Man's ancestry may extend back not only a couple of million years as now believed, but as much as half a billion years, two University of California geologists find.

► THE ANCESTRY of man extends far longer into the past than has been credited and may be not merely a couple of million years but as much as half a billion years.

A method of dating volcanic rock by means of measuring the amount of argon gas produced by radioactive potassium in the rock has allowed two University of California geologists to make new datings of early man. The scientists, Drs. J. F. Evernden and G. H. Curtis of the University of California, Berkeley, reported their results to the American Association for the Advancement of Science meeting in Philadelphia.

An age of 1,750,000 years for the early African man, the Zinjanthropus that comes from Olduvai Gorge in Tanganyika, Central Africa, has been confirmed by this method of geologic dating.

More primitive Stone Age cultures were found to have persisted for more than a

half million years. The geologists are confident, from the kinds of tools used by Zinjanthropus, that there was a period of more than 2,000,000 years before which was required for the existence of these creatures and their development. That makes the total years for man's existence on earth some four to five million years.

It was also found that the four classic glaciations of the Alps are much more than 420,000 years.

The available potassium-argon ages are consistent with the astronomical theory of glaciation that suggests a time span of approximately 600,000 years.

Only specimens and skeleton material that is completely encased in volcanic rock are used in making the dates. This prevents contamination from later layers of the earth that might give a false ancient date due to argon from the atmosphere.

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## SPACE

# Record Ionospheric Noise

► HISSING AND WHISTLING sounds heard in the electrically charged air layer that bounces radio waves back to earth are now being used to measure the number of charged particles in that region.

These sounds are among the more important unexpected findings of the communications research satellite, Alouette, reported by Dr. John Chapman, Defense Research Telecommunication Establishment, Ottawa, to the American Association for the Advancement of Science in Philadelphia.

The Canadian Alouette was launched Sept. 29, 1962, and is the first satellite in orbit that was designed and built by a country other than the U.S. or the USSR.

The Topside Sounder of the Canadian satellite caught two distinct sounds. The "whistling" noise is thought due to charged particles in lightning. The "hissing" sounds are associated with magnetic noise in connection with auroral particles. They are recorded as sharp bangs on the audiograph.

The Alouette provided the first means of studying the ionosphere with radio waves bounced onto it from above and within the charged air layer. The basic purpose of the satellite's experiments was to obtain additional information about the ionosphere, which is not consistent in bouncing radio waves back to earth in the same manner.

Besides studying the ionosphere's free electron distribution, other satellite experiments being performed by the Alouette, which will stay in orbit about one year, include measuring radio noise from the Milky Way and observing cosmic rays.

Alouette was launched by the National Aeronautics and Space Administration from the Pacific Vehicle Missile Range.

In connection with space sounds, Dr. Brian J. O'Brien of the State University of Iowa reported, "we are picking up the music of the magnetosphere." He explained that the U.S. research satellite, Injun III, is tuning in on radio frequencies in space and that these frequencies are in the audible range.

He described the sounds from this space broadcast as a "curious mixture of whispers and strange warbles." Dr. O'Brien said the existence of these radio waves in space had been known before because some had been picked up by receivers on earth. However, only a small portion reach the earth through the ionosphere.

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## PSYCHIATRY

# Nuclear Bomb Survivors Need New Identity

► ANY SURVIVOR of a nuclear attack needs nothing less than a new identity in order to come to terms with his world following such disaster.

This is the conclusion drawn from the first major psychological study of survivors of the atomic bomb attack on Hiroshima in August 1945. It was reported by Dr. Robert Jay Lifton, Yale University psychiatrist, at the annual meeting in Philadelphia of the American Association for the Advancement

of Science. His recent interviews with Hiroshima survivors, Dr. Lifton said, brought out three basic psychological problems that can only be solved through a new identity, or a new sense of relation between oneself and society.

The most important of these, he said, is "the ultimate problem of the continuous encounter with death." One of the striking features of the Hiroshima people is that they not only survived atomic disaster, but "seem to have imbibed it and incorporated it into their beings, including all the elements of horror, evil and particularly death. They feel compelled to virtually merge with those who died, not only with close family members but with a more anonymous group of 'the dead,'" Dr. Lifton noted.

The second problem is to master feelings of guilt—not necessarily feelings of evil and sinfulness, but a more fundamental sense "that one has, however unwittingly, participated in this total human breakdown."

Thirdly, there is the problem of "re-establishing some trust in the human order," Dr. Lifton reported. He said it is clear that exposure to the bomb "changed one's status as a human being," and that the survivors in Japan have become members of a new group, called the Hibakusha. They feel permanently bound to this group.

This, along with the sudden mass annihilation of the bomb, and the return of death and fear of death in the form of radiation sickness and leukemia are responsible for an "unresolved" and never-ending encounter with death that Dr. Lifton called a unique feature of the Hiroshima disaster.

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General Electric

**MORE LIGHT**—A model of a new lamp that employs a sodium metallic vapor in a pencil-thin tube of synthetic ceramic is inspected by its developers, William C. Loudon (left) and Dr. Kurt Schmidt of General Electric. Producing up to 145 lumens, or units of light, per watt, the lamp is about twice as efficient as today's most efficient lamps.