

ASTRONOMY

Earth Formation Theory

The evolution of our present solar system is traced. Due to the weakness of gravitational forces, gases from the original cloud escaped, the particles forming a solid mass.

► HOW the earth and planets were formed was described in Berkeley in a new theory by Dr. Wendell Latimer of the University of California.

The chemical reactions accounting for the evolution of the solar system are set forth in the general framework of theories that have gained wide favor among both astronomers and geologists.

Dr. Latimer states the steps by which the earth and planets developed into their present form from a great, cold cosmic cloud. He also accounts for the elimination of gases from the cold cloud—a big stumbling block in cosmology.

While the cosmic cloud was still diffuse and in the early stages of condensation, Dr. Latimer proposes, it broke up into smaller clouds from which the earth and planets were formed.

The particles of the earth cloud, at that time about 10,000 times larger than is the earth today, were of a varying weight. Because gravitational forces were so weak, the gases in the cloud escaped from the cloud. Then the particles fell together to form a solid mass.

Because of the variations in weight, the particles fell together at different velocities. So the metals, being the heaviest, tended to be at the center of the earth mass, with the lighter silicates and basalt particles on the outer layers.

Thus, when the earth was originally

formed, says Dr. Latimer, it was cold and had no appreciable atmosphere, water or continents. He reported his theory in the journal, *SCIENCE* (July 28).

But in this earth mass there was a lot of potassium, uranium and other radioactive materials. The heat provided by this radioactivity was enough to raise the temperature of the earth's surface to 2000 degrees centigrade 1,500,000 years after condensation of the cloud. The radioactivity-produced heat was also the source of the energy for chemical reactions which created the atmosphere, water, continent and mountains of the earth.

For example, decomposition of basalt into granite and dunite, the latter being among the very heavy rocks of the earth, was responsible for the building of continents and mountains. The heavy dunite sank to lower levels, the granite rising.

Water was formed by the breaking down of water-containing silicates and aluminates. Carbon dioxide was formed by the reaction of iron oxides with carbides, and a sequence of reactions provided hydrogen and nitrogen for the atmosphere. Oxygen was added later through photosynthetic processes.

Dr. Latimer estimates that about half of the solid particle material of the universe has been condensed into planets and stars. The remainder, in great cosmic clouds in space, is the stuff of which new inhabitants of the expanding universe are being formed.

Science News Letter, August 5, 1950

this point the wounded are moved to evacuation hospitals and thence flown to large hospitals in Japan.

Wounded who will require 120 days or longer to recover are being flown back to the United States. The others can be cared for at the hospitals the Army has in Japan.

New drugs for fighting the diseases our troops will encounter in Korea and for stopping infection in wounds add further strength to the chain of mercy.

For malaria, one of the two chief disease dangers in Korea, there is chloroquine. A tablet taken once a week does the work the skin-yellowing daily tablet of atabrine did in World War II.

Landing parties and troops transported by air will not arrive too seasick or airsick to fight, thanks to dramamine.

Against scrub typhus, a potential threat in Korea, the Army has chloromycetin whose value was proved by Army doctors in tests in Kuala Lumpur since World War II.

And there is a new vaccine against Japanese B encephalitis, a disease that attacks brain and central nervous system.

Besides malaria, the chief disease threats our troops face in Korea are dysentery and diarrhea. Protection against these, as against malaria, depend chiefly on self-discipline on the part of the GI's who must stick to safe water for drinking and bathing, take the chloroquine tablet regularly and take precautions against mosquitoes whenever possible. Mosquito control units are operating in Korea.

Theater Surgeon Maj. Gen. Edgar Erskine Hume expects neuropsychiatric cases to be above normal because of the type of military operation in Korea.

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ARCHAEOLOGY

"Light" for Cigarette Is Clue to Oldest Village

► WHEN a village sheik in Iraq used a flint and steel to light a cigarette offered by an archaeologist it furnished the clue which led to the unearthing of the oldest known village site, about 7,000 years old.

It turned out that the flint, one of many which have been found on a nearby mound of Jarmo, was a product of the late Stone Age.

An expedition will soon set out under the direction of Prof. Robert J. Braidwood, of the University of Chicago's Oriental Institute, to explore the Jarmo site. The oldest known row houses may be found here.

Bones unearthed at Jarmo during a preliminary study of the site showed that the people of this ancient village raised crops and had domesticated animals.

The site was dated by the very modern "atomic calendar" developed as a by-product of atomic bomb studies. Measurement of the amount of radioactive carbon 14 found in snail shells from the site showed it to be about 7,000 years old.

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MEDICINE

Smooth Medical Service

Korean forces are backed up by an efficient and well operated medical service. Each company now has four aid men instead of the two it formerly had.

► BACKING our fighting forces in Korea is the most efficient, smooth-working rescue operation that has ever existed in history. It is known as the Army Medical Service and it celebrated its 175th birthday the week of July 27.

The unbroken chain of mercy operated by this service from the front line to gigantic military hospitals in the United States has been strengthened in several ways since World War II.

Right at the front, when a wounded man calls "Medic," there are twice as many aid men to answer his call and help him.

Each company now has four instead of two of these aid men to put on splints, give morphine to ease pain and start the wounded GI back to shelter and waiting doctors and nurses.

When he has been carried by litter, ambulance or jeep litter as far back as the division clearing station, he will find another of the strengthened links in the chain of mercy. This is the mobile surgical hospital, a new unit since World War II. At this point major surgery can be performed for those wounded who cannot be transported any farther without such care. From