

## ASTRONOMY

# Earth Slowing With Age

**Saving cancer patients' lives by removing adrenal gland and possible cause for goiter prevalence reported to National Academy of Sciences meeting.**

► **THERE SEEMS** to be no question but that the earth is slowing down with age, but just how much is another question. The rotation of the earth, which measures time for us here on earth, does fluctuate perhaps as much as a little more than a half a minute per century.

Dr. Dirk Brouwer of Yale University told the National Academy of Sciences meeting in New Haven, Conn., that his studies of the rotation of the earth show such complications that mathematically if it is desired to predict the rotation a century hence it will have an uncertainty of about 40 seconds one way or another.

The fluctuations in the earth's rotation do not retain a more or less uniform amplitude as has previously been thought. And it will be necessary to make a new solution for the rate at which the earth's rotation is gradually slowing down due to friction of the ocean tides. For this purpose, Dr. Brouwer recommends the inclusion of all reliable old records of moon eclipses from the most ancient to those just before the invention of the telescope early in the 17th century. This is because the motions of the moon around the earth as well as that of Mercury around the sun provide more accurate clocks over long intervals of time than the rotation of the earth on its axis.

Rearrangements of masses of matter in the interior of the earth are believed by Dr. Brouwer to account for the known irregular changes in the earth's rotation. He considers unnecessary sudden changes inside the earth of relatively large magnitude previously blamed.

## Cause of Goiter Prevalence

► **SEXUAL SELECTION** may have played a part in making goiters prevalent in some parts of Europe, Drs. G. E. Hutchinson and Eva M. Low of Yale University and the Academy of Natural Sciences of Philadelphia suggested in a report to the National Academy of Sciences.

The bulging neckline of a goiter was considered highly attractive in a woman in some parts of Europe from the sixteenth century on, according to pictures and books, the scientists find.

If these were the women men preferred as mates and mothers of their children, genes for susceptibility to iodine lack and consequent development of goiter might have been handed down in increasing numbers of the population. This would lead to

more and more persons being born with a hereditary susceptibility to goiter.

Evidence of an inherited susceptibility to the action of antithyroid chemicals exists in some animals, the scientists point out. This gives some support to their theory of the development of goiter prevalence in some regions.

## Treatment for Anemia

► **A SUCCESSFUL** treatment of Addisonian anemia disease by a new method was reported to the meeting of the National Academy by Dr. Paul R. Burkholder, professor of botany at Yale. He demonstrated that there is a factor present in some gastric juice that holds away from intestinal organisms the vitamin B 12 that is needed to prevent the development of this disease. Prof. Burkholder and cooperating doctors then administered by mouth to patients material containing this factor along with the vitamin. The patients got better. The material used was obtained from the pylorus of hogs, the part located at the bottom of the stomach. Addisonian anemia results in a dangerous reduction of the red blood cells through lack of an intrinsic factor, replaced by the hog-derived material.

## Abundance of Elements

► **ONLY ABOUT** a third as much iron, cobalt and nickel occur in the universe as previously thought, Dr. Gerard P. Kuiper of University of Chicago's Yerkes Observatory reported to the Academy as the result of a new study of the abundance of the elements.

Iron and nickel together represent 36.5% of the earth's weight, with oxygen 30.7%, silicon 15.4%, magnesium 11.8%, and only 5.6% for all the other elements.

## Save Cancer Patients' Lives

► **BY CUTTING** out the adrenal glands some cases of cancer of various sorts are greatly improved, and the lives of patients saved, Dr. Charles Huggins, University of Chicago, reported to the National Academy.

Twenty-eight patients have been given this treatment followed by administration of cortisone acetate and common salt to replace the normal functions of the adrenal glands.

In seven patients with prostatic cancer there were three remissions, two with appreciable improvement, one case with no effect and one death.

In seven cases of breast cancer, three patients had significant remissions, one patient was slightly improved; there was one post-operative death, and the advance of the disease seemed unimpeded in two.

Among the other patients treated there were two cases of metastases in the lungs which responded favorably.

## Atomic World for Society

► **IT IS** an atomic world, even in human relations and the structure of society.

Prof. George P. Murdock, Yale anthropologist, in a paper before the National Academy likened man and woman to two basic types of human atoms, each with several phases, which are infancy, childhood, maturity and senescence.

In maturity, these two kinds of human atoms, Dr. Murdock said, "have a special affinity for each other, producing marriage and a localized family organization in every known society."

Male and female can unite in only three combinations, he explained. There is monogamy. There is polygamy, which is plurality of wives, and also polyandry, in which the woman has more than one husband at the same time.

There are four modes of residence and three rules of descent classified by anthropologists. The local group may be migratory or sedentary. They may or may not be linked to others by political bonds.

All the factors may be taken mathematically in permutations and combinations to define the limited number of fundamental structural or molecular systems of human society, Dr. Murdock has found.

He finds that all the 3,000 to 4,000 known human societies can be fitted into this scheme, much as the chemist can write a formula for each of the compounds that he analyzes.

## Time Aids Propaganda Effect

► **PROPAGANDA** MAY have more effect in changing opinions after a lapse of time than it does right away. The reason why was explained at the meeting of the National Academy of Sciences.

The listener may be suspicious of the source and refuse to accept what is told him. After a while he forgets where he heard the yarn but remembers the story itself. At this point he may begin to believe it.

Experiments to test this theory were reported to Academy members by Dr. Carl I. Hovland, of Yale University.

Identical material was presented to different groups of listeners, but was credited to sources of varying credibility. When the material was said to come from trustworthy sources, opinion changes dropped off to agree with the normal rate of forgetting. But when untrustworthy, opinion changes actually increased with lapse of time.

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