

CATCHES SUN'S HISSES—This solid metal disk is used at the Naval Research Laboratory to collect the sun's radio waves.

guest worker at the National Bureau of Standards, found from Mr. Covington's records a marked correlation between radiations received at 10 centimeter wave length and solar activity.

In the visible region, spots appear much darker than the rest of the sun because they are radiating less energy. But at 10 centimeters, Mr. Dennis finds sunspots radiate great amounts of radio energy and thus are many times "brighter" than the rest of the sun.

His analysis shows that the solar radio energy is proportional to the size and number of visible spots, and to the magnetic field of the individual spots.

In Australia, J. L. Pawsey of the Council of Scientific and Industrial Research used an ingenious interference technique to show by direct measurements that radio waves actually come from sunspots. Normally, not just one section of the sun's disk, but all of the energy radiated by the whole disk is studied. In England also, M. Ryle and D. D. Vonberg of the Cavendish Laboratory, Cambridge, have been concentrating on energy radiated by the spots.

The sun explored by radio waves is slightly larger than that seen visually. We see energy originating in the bright photosphere; we hear waves coming from the sun's outer surface or corona. Thus science has a new tool for estimating the temperature of various layers of the sun. And radio waves show a much hotter solar atmosphere than its fiery disk indicates.

At centimeter wave lengths, the sun appears to have a bright limb and dark center. During the recent total eclipse, as

much as four percent of the sun's energy continued to reach the earth during totality.

Sunspots sometimes can be found by radio a day or so before they are carried far enough around the sun's edge to be seen visually.

Thus we are beginning to learn much about the sun, source of our heat, light and other energy. Hisses from the sun are attracting the attention of an ever-increasing number of radio engineers, astronomers and others anxious to use this new means of exploring our nearest star.

Today men listen to the static from the sun, and attempt to discover what the noises mean. Instruments and brains are at work—many more will soon be pressed into service in the United States and throughout the world.

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ANTHROPOLOGY

Upper Right Leg Bone Is New Man-Ape Clue

► AN UPPER RIGHT leg bone found in South Africa is the latest link in the evidence showing that the man-ape, a creature higher than the modern apes and lower than the most primitive man, walked erect on its hind feet.

The bone was brought back by Dr. Frank Peabody, of the University of California's African Expedition.

The man-ape, which was first discovered by Dr. Robert Broom of the Transvaal Museum in South Africa, had a larger brain capacity than modern apes and an almost

human pelvis. There is a possibility, Dr. Peabody said, that the man-ape was contemporary with the early forms of man and that it may have lived as late as the early ice age. The ice age which was tens of thousands of years ago is still comparatively recent in terms of the age of life on the earth.

Although Dr. Broom reported that the man-ape could use its hands for the manipulation of tools and weapons, Dr. Peabody found no evidence that he used implements or fire.

Three tons of fossils were shipped to the University of California by the expedition. An analysis of the animal fossils may

WHITHER AMERICAN SCIENTISTS?

Will they keep on knuckling under to the military . . . the "loyalty" boards . . . the Un-Amer. Activities Committee . . . the whole war-ward hysteria?

The scientists' problem of patriotism in the atomic age—can they be loyal to both science and the politicians running the state? . . . Must science remain "the drab and slut of capitalism" (Vernon Parrington)?

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CARL DREHER, engineer and writer, probes these and related questions in the central feature in the latest pamphlet of Louis Adamic's "Trends & Tides" (T&T) Series. Just Out.

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Do You Know?

Some 5,000 Australian *orchids* are now being sent weekly to the United States.

Wool is a cool-country commodity in both production and use.

Storage batteries and electrical cable coverings consume about half the *lead* used in the United States.

Experiments to obtain *rayon* from eucalyptus gum fiber are under way in Australia.

The *virus* of foot-and-mouth disease, so destructive to cattle, very rarely affects human beings.

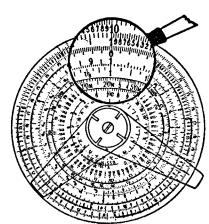
Chipmunks living on the Mammoth Hot Springs Terraces in Yellowstone Park drink hot water from the springs and seem to like the hottest water best.

American *railroads* operate a "navy" consisting of some 2,000 units; they are largely ferries, tugboats, car floats, barges and lighters used in harbor and ferry operations.

Sweet potato contains a rich store of carotene which gives it the yellow color but changes in the body to vitamin A; it also contains vitamins B and C, and starch and sugar which furnish high energy or fuel value.

The use of *lithium* has greatly increased, partly as a result of wartime developments; in the form of metal, salts or alloys, it is used in pyrotechnics, welding and ceramics, as a grease for airplane engines, and in removing oxygen from heat-treating furnaces.

A commercial product known as *Lignosite* is made by a refinement of ethyl alcohol produced by fermentation of the waste liquor in wood pulp mills; it is nearly pure calcium lignin sulfonate and is valuable in the cement and adhesive industries.



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lead to the determination of the times when these animals lived. Fossil plants also will help in determining the periods when various plants and animals flourished in South Africa.

A large collection of fossils from Karroo,

near the southern tip of Africa, where there are rich deposits of certain periods, contains mammal-like reptiles which bridge the gap between reptiles and mammals in evolution.

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GENERAL SCIENCE

Mental Battle for Peace

► A MENTAL BATTLE for world peace was fought in Boston, as leaders in education, science and culture opened sessions with one eye on Paris and the other on their plans for defending peace in the minds of men.

Assistant Secretary of State George W. Allen, opening UNESCO National Commission sessions, challenged American scientists to find any middle ground between subjection of scientific beliefs to the dictates of political dogma, as in Soviet Russia, and the traditional freedom of science. He similarly asked world churchmen where is the middle ground between East and West on freedom of religion.

Denounce one-party dictatorship in Russia, Secretary Allen demanded of Progressive Party candidate Wallace, by inference.

Told by Secretary Allen that "It is entirely possible for capitalism and com-

munism to exist in the world side by side," but that democracy and totalitarianism cannot do so, the conference turned to such details as reconstruction of devastated laboratories and colleges, teaching everybody to read and write, and keeping world news for press and radio free and uncensored.

President Milton S. Eisenhower of Kansas State College, speaking as chairman of the U. S. UNESCO Commission of One Hundred, said this group must be a militant organizing force for peace, despite gloomy prospects at Paris.

At the meeting scientists heard proposals for international observatories and laboratories, better exchange of information, more interchange of scientists between various nations, and greater attention to conservation and increase of world food supplies for the growing world population.

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MEDICINE

Don't Burp the Baby

► DON'T "BURP" the baby. This advice, contrary to that in all the baby books, was given by Dr. William F. Burdick, associate professor of pediatrics at Georgetown University School of Medicine, at the meeting in Washington of the Medical Society of the District of Columbia.

Twins who at two and one-half months started vomiting most and sometimes all of their feedings were cited as an example of the trouble burping can cause. Their mother reported she never put the babies down until they got up their "bubbles," even though it sometimes took 15 minutes. When she was persuaded to let them suck without interruption until they seemed satisfied and then to put them down without burping, their vomiting stopped.

If baby shows discomfort, there may be some value to the burping procedure, Dr. Burdick said, but he thinks it is often carried too far. It takes a reversal of the normal peristaltic movement of the digestive tract to achieve a burp, he pointed out. The same reversal occurs in vomiting. This may explain the vomiting of some babies. Or, he suggested, they may vomit from resentment over being forced to burp.

Put the newborn baby's cheek against his mother's breast the first time he is brought in to nurse. This, Dr. Burdick advised, will

avoid some feeding troubles. It will let the baby's "rooting" reflex come into play. Feeling the smooth surface, he will start rooting with his mouth for the nipple. Dr. Burdick criticized the practice of nurses who grasp baby's cheek and try to turn his head toward the nipple. The reflex in this case makes the baby turn toward the nurse's palm instead of the breast.

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RADIO

New Device Checks Up on Radio Station Frequency

► A NEW DEVICE that can detect a difference of five electrical impulses in a million has been developed to reveal when a radio station is broadcasting off its assigned frequency.

Developed by General Electric Company engineers, the new AM station monitor uses a new type of electronic circuit. The monitor checks up on amplitude of broadcast waves and the power being transmitted, as well as measuring frequency.

About the size of an egg crate, the monitor is relatively small for such equipment.

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