

OCEANOGRAPHY

Seasonal Ocean Level Rise

➤ OVER ALL of the northern oceans there is a "gentle rise" in sea level starting in spring or summer and reaching a high point in fall or winter.

The amount of rise from lowest to highest averages about eight inches, although it varies greatly from place to place, Dr. June G. Patullo of Scripps Institution of Oceanography, La Jolla, Calif., reports in *Research Reviews* (Nov.).

The seasonal variations in sea level are about the same over very long distances, even across oceans.

To find out how the ocean looks on a global scale, Scripps scientists reduced 100,000 values of the mean monthly height of sea level at various places to 5,000. Then they plotted and combined these to get the over-all picture.

The sea surface undergoes changes in shape on many different time scales. The yachtsman recognizes a quick gust of wind by the dark patch of tiny ripples it makes as soon as it touches the sea surface.

On the other hand, the slow loss of water from oceans to icecaps over thousands of years is revealed by benches the water has cut into the edges of the continents.

Until recently, scientists recognized only a few of the variations between these two time scales. They knew of ripples, with fractions of a second between crests; chop, which is several seconds long, and swell, about 20 seconds long.

Then there was a gap up to periods of around 12 to 24 hours, which are the tides. Until the Scripps oceanographers made their study, practically nothing was known about

changes with periods longer than the tides but shorter than the slow changes in sea level that take many years.

The cycle of sea level changes in the Southern Hemisphere is more or less a mirror image of what is observed in the north, Dr. Patullo reports. When sea level is high north of the equator, it is low in the south.

She suggests visualizing the sea surface tilting back and forth throughout the year, with the equator as a sort of fulcrum.

Close inspection of the Northern Hemisphere tide gauge data showed that the oceans are not behaving quite as units. Tide gauges between the equator and a latitude of about 45 degrees north show a maximum height in September, while gauges north of 45 degrees have a maximum in December.

Drs. Walter Munk, Elizabeth Strong and Roger Revelle, director of Scripps Institution of Oceanography, worked with Dr. Patullo.

Science News Letter, December 29, 1956

● RADIO

Saturday, January 5, 1957, 1:45-2:00 p.m., EST.

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

Dr. Yigael Yadin, professor of archaeology, Hebrew University, Jerusalem, Israel, will discuss "The Seventh Dead Sea Scroll."

BIOCHEMISTRY

Body Chemical That Strengthens Heart Action

➤ ISOLATION of a chemical found in mammalian tissue that strengthens heart action in frogs is reported in *Science* (Dec. 14) by researchers at the National Heart Institute, Bethesda, Md.

Named palmitoyl lysocleithin, the chemical's action resembles that of digitalis, a drug widely used as a heart tonic.

Earlier studies with frog hearts have shown that the heart, when isolated from the body, gradually loses force in its contractions.

This type of failure is known to be reversed by either adding digitalis or including the liver in the circulation path of the heart. Mammalian serum was also found to reverse this failure in a frog's heart, the researchers report.

By chemical analysis of mammalian tissue they were able to isolate one of the active ingredients responsible for the digitalis-like effect.

The most abundant source examined was found to be the center portion of beef adrenal glands.

Drs. Elwood Titus, Herbert Weiss and Stephen Hajdu of the National Heart Institute report the work.

Science News Letter, December 29, 1956

MEDICINE

Sex Hormones Relieve Pain of Advanced Cancer

➤ SEX HORMONES offer "profound and gratifying benefits" for breast cancer patients that are beyond the hope of surgery and radiological treatments, Drs. Edward F. Lewison, Frances H. Trimble and Robert S. Ganelin, Johns Hopkins University, report in the *Journal of the American Medical Association* (Dec. 15).

Both androgens and estrogens, male and female sex hormones, relieved pain either partially or completely, and created a sense of well-being in about half of the 133 patients studied. All had advanced breast cancer.

Some of the patients received male hormones only, others female hormones only, and a third group received a combination of the two. All three groups experienced approximately the same amount of pain relief.

The scientists stress the fact that the hormones are certainly not a "cure" for advanced mammary cancer. They only offer relief from pain.

Science News Letter, December 29, 1956



WHITE CRAB—This unusual white specimen is being kept alive by the Oregon Fish Commission because scientists are anxious to see if the abnormality persists when the crab molts.

BIOLOGY

White Crab in Oregon Is Second in Eight Years

➤ A WHITE DUNGENESS CRAB, only the second one seen in some eight years, has been brought into the Shellfish Laboratory of the Oregon Fish Commission, Newport, Ore.

The crab appears normal in every respect except its lack of coloration. It is alive and being kept in the aquarium at the laboratory.

Biologists hope to find out if the abnormality carries over in the new shell after the crab molts. Crabs must shed their shell periodically in order to grow. Molting usually occurs annually in larger crabs during fall months in Oregon waters.

This entirely white, male crab was brought to biologist Lowell D. Marriage at the Shellfish Laboratory by commercial fisherman George Zinsler from Nehalem Bay.

Science News Letter, December 29, 1956

GENETICS

Breeding Tenderness Possibility Tested

➤ THE POSSIBILITY of breeding tenderness on the hoof has been suggested by the U. S. Department of Agriculture.

Research by Government scientists shows that meat tenderness is inherited in animals and can be passed to succeeding generations through selective breeding.

Scientists at the USDA Agricultural Research Center, Beltsville, Md., are currently testing both rabbits and beef cattle for their heritability of tenderness.

They are also trying to develop a quick, reliable test for tenderness that can be used on live animals.

Science News Letter, December 29, 1956