



**LITTLE ADELIE PENGUINS**—Whole armies of these small flightless birds occupy long stretches of Antarctica's rocky coast.

eons, to test the practicability of using these birds as message bearers under frigid-zone conditions. They were the first pigeons to be flown over Antarctica.

On the trial flights the birds proved two things: that the pigeons actually could find their way back to their home roosts on shipboard, and that they could escape their winged enemies. There are no hawks in Antarctica, but a flesh-eating bird of the gull family, called the skua, takes their place. Once three of the pigeons left the ship on a flight, and were chased out of sight by five hungry skuas. After a couple of hours they returned, with the skuas nowhere

in sight. They had outraced the predator birds so completely that the skuas didn't even figure as also-rans.

So much attention has been paid to penguins that one may get the impression that they are the only birds to be found in Antarctica. This is not at all the case, Mr. Davis states: in addition to the skuas already mentioned there are three species of petrel, cormorant, sheath-bill, kelp gull and Antarctic tern. These are all summer residents only; having wings, they are able to fly north when winter comes. The flightless penguins have to get through the fury of the Antarctic winter as best they can.

*Science News Letter, May 15, 1948*

ASTRONOMY

## U. S. To See Nine Eclipses

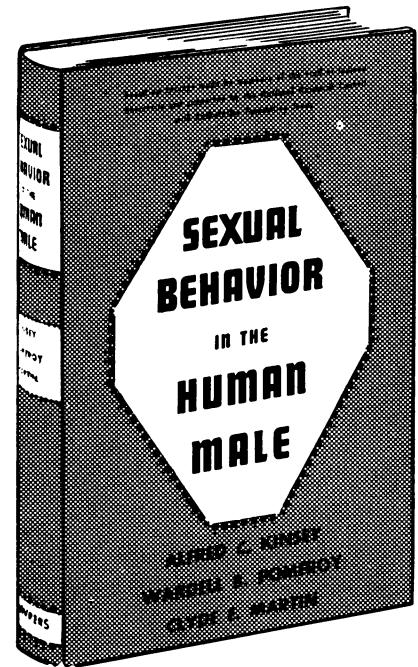
► NINE total eclipses of the sun will be visible somewhere in the continental United States during the next hundred years.

The next total eclipse scheduled for observation in this country is that of June 30, 1954. At that time the sun will rise eclipsed for some people in Nebraska. The path of totality will then pass through South Dakota, Minnesota and Wisconsin, cross Lake Superior and continue on into Canada.

The dates of other eclipses to be visible from the United States are as fol-

lows: Oct. 2, 1959; July 20, 1963; March 7, 1970; Feb. 26, 1979; Aug. 21, 2017; April 8, 2024; Aug. 23, 2044; and Aug. 12, 2045. As the paths of totality of some of these eclipses cross within this country, in a few regions the sun may be seen totally eclipsed twice within the next century.

From 1900 to 2050, totality for 15 eclipses falls somewhere within the United States. Thus within this 150-year period, a total eclipse is seen somewhere in this country about once every ten years, calculates Dr. C. H. Clemin-



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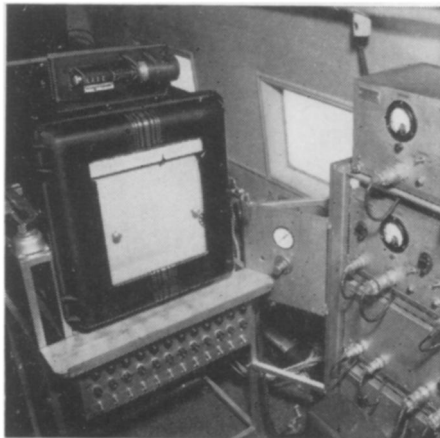
# Do You Know?

A family of five needs about 3,000 pounds of fruit and vegetables a year.

The *artesian* well takes its name from Artois, France, the ancient Artesium; the name actually refers to the method by which the well is bored, not to whether it runs water or not.

Some 3,200 *fire towers* and lookout stations of the U. S. Forest Service are to serve aviators in the future; they are being marked as a safety aid to the visual flyers by the Civil Aeronautics Administration.

The mixture of *chemicals* known as 3-amino-phthalhydrazide and sodium perborate is quite stable when dry but when dropped in water it gives a visible glow; wartime seaplane pilots used the mixture to estimate their height above the water.



Speedomax instrument in an airplane, recording variations in the earth's magnetic field.

## High-Speed Recording by SPEEDOMAX Helps Solve Testing Problems

Exceptional speed and sensitivity enable the Speedomax Recorder pictured above to chart the output of a magnetometer during oil-surveying operations. These same qualities make the instrument highly useful in spectroscopy, X-ray diffraction studies, measurement of sun-spot activity, recording weather data from radiosondes and other tests.

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Jr. Ad. N-420 (1b)

shaw of Griffith Observatory, Los Angeles. The average width of the path from which totality may be seen is about 100 miles.

The last total eclipse of the sun visible in this country was that of July 9, 1945.

Since the turn of the century, for people in a few choice regions of the United States the moon has completely hidden the sun on the following dates: May 28, 1900; June 8, 1918; Sept. 10, 1923; Jan. 24, 1925; Aug. 31, 1932.

*Science News Letter, May 15, 1948*

### ACOUSTICS

## Moth Chewing Through Fabric Is Recorded

➤ THE sound of a "moth chewing through a fabric" has been preserved on a phonograph record by Cornell University scientists.

The scientists last year produced an album of 72 bird songs. Their latest is an album of eight sides featuring the calls of 26 varieties of frogs and toads. But the moth record was made on special request—from an advertising agency with a client selling mothballs.

Getting a moth to chew at the right time and place proved to be the greatest difficulty. This was overcome by sewing the larva in a tiny cloth sack. It had to chew its way out.

And what does a moth chewing cloth sound like? "Someone eating corn flakes," reports one of the scientists, Prof. Paul Kellogg.

*Science News Letter, May 15, 1948*

### ENGINEERING

## Single-Sideband Receiver Applied to Communication

➤ A NEW communication system employing recently developed radio single-sideband techniques offers simplified apparatus and improved performance, Donald E. Norgaard, General Electric Co., Schenectady, N. Y., told the joint meeting of the International Scientific Radio Union and the Institute of Radio Engineers meeting in Washington.

The sideband is a radio wave traveling side by side with the so-called carrier, or principal wave, the steady signal which is radiated by conventional transmitters. The sideband is caused by the carrier wave. This carrier signal changes in strength with the speech or music being sent. In radio language it has amplitude modulation. This modulation sets up the additional waves which are immediately adjacent to the carrier wave. They are ordinarily so close that they

cannot be distinguished from it.

The new development covers both transmission and receiving equipment, Mr. Norgaard stated. When the single-sideband receiver alone is employed on conventional transmission, distortion caused by selective fading is eliminated.

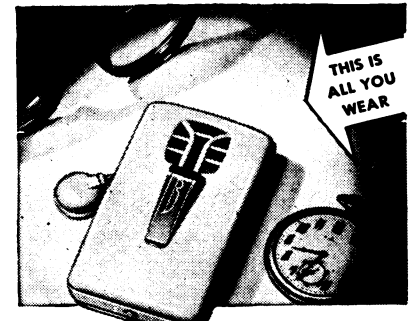
Optional choice of the sideband to be received allows reduction or elimination of interference. For this reason, the single-sideband receiver should find immediate public acceptance whenever reception over moderate or long distances is required with a minimum of interference.

Complete single-sideband operation permits exactly twice the number of transmission channels over present practice, he continued, with a system improvement in each channel. Transmitter efficiency under these circumstances is higher than that of any other system of voice communication by radio.

These factors have resulted in a communication program by the U. S. armed services and United Nations of virtually exclusively single-sideband operation.

*Science News Letter, May 15, 1948*

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