

They also find that the temperature varies—at some altitudes it is extremely hot and at others extremely cold.

Their calculations depend not alone on the observations they have been able to collect. Chemical and physical reactions can occur in the stuff that makes up the atmosphere. How this atmosphere is changed by the sun and the movement of the earth affects the weather.

Because this is so important, weathermen would like to see high flying balloons carry other instruments into the sky. There are natural radioactive tracer materials way up there—a Geiger counter could indicate their presence.

Sun's Effects Studied

And meteorologists are lifting their eyes even higher. They are studying the sun. The amount of heat we receive from the sun, whether our oceans or our land receive it, its effect on the components of the atmosphere, how much of it does not get through our atmosphere to us, how it affects the circulation of the air—all these are important to our knowledge of the weather.

What goes on within the sun itself is getting attention. Many scientists have suggested connections between sunspots and our weather.

In addition to moving upward, weathermen are moving north and south. The north has received more attention than the

tropics, but it is the belief of Jerome Namias, chief of the Extended Forecast Section of the Weather Bureau, that more information, particularly about what goes on in the air 10,000 to 40,000 feet above the equator, is necessary to good long-range forecasting.

In the Arctic, the Air Force flies every other day to the North Pole and back to Alaska checking weather conditions. The Weather Bureau, in cooperation with Canada and our Air Force, has stations in the Arctic which send data to Washington.

The air, at least up to 40,000 feet, moves in a great circle around the northern hemisphere from west to east. As the atmosphere in the tropics heats up and that in the Arctic grows colder, pressure is put on this current which bends it in north-south wave patterns. This causes changes in our weather, allowing heat to come north and cold to spill out of the Arctic. If that did not happen, the tropics would grow hotter and the north pole colder and colder.

This method of nature to keep the weather in balance is the reason why observations of the weather both to the north and the south of us as well as high above us are important.

As the weathermen reach farther out for information, they continue to gain new knowledge of how our weather is formed. More accurate predictions thus made possible for ever longer periods of time into the future will affect almost everything we do.

Science News Letter, January 12, 1952

ANTHROPOLOGY

Asiatics Found America?

► VOYAGERS FROM Indonesia and Indochina may have "discovered" America by crossing the Pacific 700 years before Columbus and some 300 years before the Vikings.

This is the opinion of Dr. Gordon Ekholm, associate curator of anthropology of the American Museum of Natural History in New York. He bases his opinion on the existence of marks of the culture of southeast Asia in Mexico and Central America dating from about 700 A.D.

Columns and balustrades with a serpent motif, found at Chichen Itza in Mexico, he says, are almost identical with columns and balustrades found in Java. Types of thrones and the manner in which artists handled the lotus motif are similar too, he pointed out.

Dr. Ekholm is not sure how the southeast Asians got to what the archaeologists call "Middle America." He points out that voyages were made from India to Indonesia and Indochina in ships which could carry 200 people and stay out of sight of land for 60 days as far back as 400 A.D.

His findings, he says, indicate a "complex of traits" which have no antecedents in Middle America, but which are similar to traits found in southeast Asia. Dr. Ekholm believes that there must have been various

contacts over a period of years after 700 A.D. The motifs, he thinks, have a sort of Buddhist or Hindu character about them.

Science News Letter, January 12, 1952

MEDICINE

Penicillin Saves Lockjaw Victims

► PENICILLIN CAN help save lives threatened by tetanus, or lockjaw, the deadly infection which can get into war wounds as well as those made by stepping on a nail.

The famous mold remedy can wipe out the tetanus infection in most cases within 24 hours after injections of it have been started, four Puerto Rican scientists report in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Dec. 22). The four are Drs. R. S. Diaz-Rivera, Emilio Ramirez, Eduardo R. Pons, Jr., and Mercedes V. Torregrosa, all of San Juan.

Antitoxin is needed to neutralize the toxin, or poison, produced by the tetanus germs, they point out. But penicillin helps save patients by stopping growth of more germs, thus preventing more toxin getting into the patient's body. Wound cleansing and sedatives were also used.

Science News Letter, January 12, 1952

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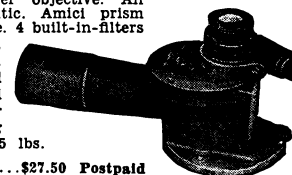
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