

ent kinds of particles are coming into the atmosphere will be attacked by a combined effort of meteorologists, oceanographers and upper air physicists. Experiments from the satellite will be included.

Glaciers, Frozen Libraries

A library of past atmospheric events is frozen in glaciers. By taking borings and studying the dust and chemical composition of various layers, scientists hope to learn what has happened to the earth over the past 1,000 years or more.

Glaciers cover about ten percent of the world's land area, and in the past have covered up to three times this area. How fast they form and how rapidly they disappear is one of the problems to be studied.

Scientists hope also to learn whether glaciers are now receding or growing.

Slow-growing lichens found right next to the ice in Antarctica indicates there probably has not been a recession in Queen Maud Land in many years, but conclusive proof is needed. Some of the glaciers on the white continent are 10,000 feet deep, and probably took 5,000 years to form.

The glaciological studies will also help to establish the earth's heat balance more accurately.

One factor affecting the heat balance is the amount of carbon dioxide in the atmosphere, and this will be measured for clues concerning whether or not the world is warming up. Reports indicate the carbon dioxide content of air has increased 10% in the last 50 years.

An increase of 20% would result in a considerable change in climate—northern cities would become warmer, for instance, and rainfall patterns could make deserts of southern California and a good part of Texas.

All these measurements, and many more, to be made during IGY will contribute to man's knowledge of his environment. (See SNL, June 8, p. 362.)

Meteorological Investigations

Extra effort will be exerted on specified days, known as world meteorological intervals, to take particular measurements. These intervals are a series of ten consecutive days each three months, including the solstice or equinox day.

Upper air soundings will be increased and special attention will be given to reaching extra high altitudes at that time. Most of the rocket launchings planned for the IGY are scheduled for these ten-day intervals.

Although there are thousands of meteorological stations scattered throughout the world, most of them take only surface observations and are mainly clustered within inhabited regions. Only a few hundred take vertical soundings that reveal the true three-dimensional structure of the earth's atmosphere.

Because it is impossible, even with the combined resources of all 70 nations participating officially or unofficially in IGY,

to fill in all the immense gaps in the weather observation network, particularly over the oceans, the Arctic and most of the Southern Hemisphere, attention is being concentrated on several pole-to-pole lines of upper air meteorological stations.

These lines are located at 70 to 80 degrees west, 10 degrees east, 75 degrees east and 140 degrees east. To complete the southern positions of these lines, new stations were built where necessary.

In addition a complete surface and upper air meteorological program has been set up in the Antarctic, making possible for the first time a thorough exploration of weather there.

The United States runs the Antarctica Weather Central, distributing information to all nations with bases there.

Besides obtaining measurements in areas heretofore unexplored, special readings will be made of the amount of ozone in the vertical air column overhead. Although the ozone content is exceedingly minute, its presence is essential because it shields life from the destructive effects of certain ultra-violet radiations.

Ozone can also serve as a "tracer" for meteorological motions, both vertically and horizontally.

The emphasis on obtaining meteorological data from high levels of the atmosphere will shed further light on the origin and location of the high-speed, narrow rivers of air known as the jet stream. These wind systems, because of their swiftness, are assuming great importance in aircraft navigation and design.

The major pole-to-pole chains form a kind of coordinate system by which the movement of atmospheric disturbances of all kinds can be observed and mapped.

One undoubted outcome of the many measurements during IGY will be improved weather forecasting.

Science News Letter, June 15, 1957

ANTHROPOLOGY

Women Carry Their Fat Outside Their Frames

► THE WEIGHT of fat is about the same on men as on women, but the women carry more on the outside of their frames, Dr. Stanley M. Garn, anthropologist of the Fels Research Institute, Antioch College, Yellow Springs, Ohio, reports in *Science* (May 31).

Measurements of fat were made on 107 healthy women aged from 20 to 60 and compared with measurements on 81 men of equal age range. This was done by picking up the rolls of fat that can be picked up on various parts of the body, such as the famous "inner tube" around the waist, and measuring them. Out of nine sites measured, the fat rolls were larger on women for all but two.

When, however, the weight of the body fat in proportion to total body weight was estimated, it was not markedly different for the two sexes.

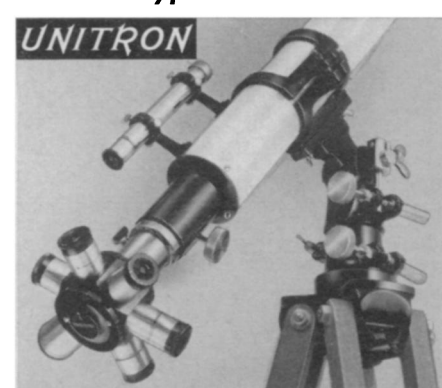
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