

## GENERAL SCIENCE

## New Research Tool For Arctic Living

► A NEW research tool has been made available to scientists and the armed services to aid them in understanding, living in and defending the far northern regions of the world. (See p. 268.)

It is the "Arctic Bibliography," prepared by the Arctic Institute of North America with the joint support of the Army, Navy and Air Force. Within its three bound volumes and 4,500 pages are listed and summarized more than 20,000 scientific papers and reports pertaining to the Arctic and also official documents, books of exploration and general magazine articles.

The bibliography is the work of a Directing Committee under the direction of Dr. Henry B. Collins of the Smithsonian Institution. The editor is Marie Tremaine.

Included are publications in English and in foreign languages, particularly Russian and Scandinavian, relating to the Arctic and pertaining to natural resources, industrial development, native peoples, social and economic conditions, health and medicine, plant and animal life, agriculture, geography, geophysics, geology, glaciology and meteorology. The last-named subject is of especial importance in the United States, because the Arctic is the birthplace of our weather.

Previously, the most recent complete bibliography of the Arctic was published in Vienna in 1878. The three volumes bring the bibliography up to date through 1949. It is available at the Government Printing Office at a price of \$12.75 for the three-volume set. A fourth volume is now in press and a fifth volume, now in preparation, will cover material through 1953.

Science News Letter, October 24, 1953

## METEOROLOGY

## Minneapolis Best for Viewing June Eclipse

► THE BEST spot for viewing next June's eclipse of the sun is Minneapolis, Dr. E. M. Brooks of St. Louis University predicts. There the early morning sky is less often overcast and the air is relatively dry, his studies of weather in past years along the eclipse path have shown.

Nevertheless, the chance that the eclipse will be visible from Minneapolis is less than 50%. At other spots along the eclipse path, however, the chances of good observing weather are even less.

Dr. Brooks' study was made to help astronomers pick now their best site for seeing the total blackout of the sun due on June 30, 1954. The most reliable plan, he suggests, is to fly an airplane above any low clouds present on eclipse day. No meteorologist, Dr. Brooks warns, can give a reliable weather forecast until a few days before the date.

Since astronomers must make plans and

set up their equipment weeks in advance, past records must be used to make estimates of future observing weather.

Seven of the most accessible sites along the total eclipse path were investigated by Dr. Brooks. Totality will be visible in the United States across an area running from northeastern Nebraska across South Dakota, Iowa, Minnesota, Wisconsin, upper Michigan and the provinces of Ontario and Quebec in Canada before passing over the Labrador coast.

Dr. Brooks tabulated weather reports over the last five years from U. S. Weather Bureau daily maps for June and over six years for July for each day at 6:30 a.m., closest weather-reporting hour to the eclipse, scheduled to begin about 5:00 a.m. CST. The sites considered were Spencer, Iowa, Minneapolis, Park Falls, Wis., Calumet, Mich., and White River, Kapuskasing and Moosonee, Ontario.

Of the sites considered, Park Falls was found to be the best for photographing the eclipse, although Minneapolis gave the best chance at visual observation. For photographing sky objects, including the sun, the sky should be completely clear, the relative humidity should be as low as possible, and the sun and the moon should be at least five degrees above the horizon.

Science News Letter, October 24, 1953

## ENGINEERING

## Future Highway Building May Involve Night Work

► ROAD BUILDERS soon may work the clock around to complete new ribbons of asphalt and concrete to link busy American cities.

Taking a tip from dam builders who pour concrete at night with the same ease that they pour it during the day, New York highway construction engineers tried out a 'round-the-clock program, with time out for rush hour traffic, in recent work on the Long Island Northern State Parkway.

The experiments were so successful that the New York State Thruway Authority now plans to let a contract for another project. Under the contract, work crews will plug away at their task 24 hours a day.

The Long Island Parkway resurfacing project involved the placement of 40,000 tons of asphalt. To expedite both traffic and resurfacing, part of the road was closed after 9 a.m., and was not reopened until 4 p.m., when the afternoon exodus from New York City began. After 8:30 p.m., traffic again was diverted to parallel roads so crews could resume work until 6 a.m.

During the periods when the road was open to traffic, gasoline trucks filled the fuel tanks of the highway machines while other trucks brought up surfacing materials.

Within six and a half weeks, the 40,000 tons of asphalt were laid on the highway which normally carries 60,000 vehicles a day.

Science News Letter, October 24, 1953



## MEDICINE

## Sleeping Medicines in Permanent Solutions

► GOOD RESULTS in trials of sleeping medicines put up in permanent solutions are reported by Drs. David C. English and Rudolf Leiser of Wayne County General Hospital, Eloise, Mich.

One, not yet released for general use, contains sodium amyral in a special glycol-water base. Injected into the veins, it gave the same sedative and sleep-inducing effects as sodium amyral solution freshly made, as is now necessary practice. The new preparation takes effect more slowly when injected into the muscles, but the total effect is the same, the Eloise doctors report.

A related sedative medicine, sodium secenal, has been prepared in a similar solvent and has now been released for general use. This was used on 30 patients with excellent results, the doctors report in the *American Journal of Psychiatry* (Oct.)

One advantage of the new forms of the medicines is that in emergencies no valuable time need be lost in preparing solutions for injections. The medicines have to be prepared immediately before use when used in water solution because the chemicals gradually decompose in water.

The new preparations were tried on 105 psychiatric patients at Wayne County General Hospital. The preparations are made by Eli Lilly Company.

Science News Letter, October 24, 1953

## PHYSICS

## Sun Can Heat Houses But Two Systems Needed

► SUNLIGHT CAN be used to heat a house now most of the time, if the owner is willing to install an extra heating plant, a solar one and one of the conventional sort that will take care of cloudy days.

Solar power plants will both heat and cool houses in southern United States within 10 years, it was predicted at the symposium on the utilization of solar energy in Madison, Wis.

"Sun worshippers," as scientists call themselves, are studying energy sources for a hundred or a thousand years in the future. Energy availability is partly a matter of how much we are willing to pay for it.

Scientists cannot tell whether solar or nuclear (atomic) power will come into use first when the oil and coal begin to be exhausted a few decades from now. Energy used by the world's civilization is increasing at the extraordinary rate of three percent a year.

Science News Letter, October 24, 1953

# CE FIELDS

## PHYSICS

### 300 Man-Years of Work To Complete Cosmotron

► MORE THAN 300 man-years of work were required to complete the cosmotron, giant atom smasher at the Brookhaven National Laboratory, officials have revealed.

The total cost for development, design, construction and testing was about \$7,000,000, Dr. M. Hildred Blewett, editor of the first comprehensive report on the project, states. The magnet and its power supply, and the building and auxiliary equipment cost about one-half of the total, he estimates.

Construction of the cosmotron was officially begun in July, 1948. Protons, the hearts of hydrogen atoms, were "first injected into the completed cosmotron in March, 1952," Dr. Leland J. Haworth, director of the Laboratory, reports. Circuits are now being constructed to raise the energies of the protons to about three billion electron volts, he reports in the *Review of Scientific Instruments* (Sept.).

Science News Letter, October 24, 1953

## ARCHAEOLOGY

### Find Jewel-Like Tools Of Pre-Eskimo People

► FRESH EVIDENCE of a migration of man or at least of his ideas all the way from Europe through Siberia, Alaska and Canada to Greenland is just reported by Dr. J. Louis Giddings Jr., of the University of Pennsylvania.

Newest link in the chain of this pole-girdling migration is a collection of tiny, delicately made engraving tools found by Dr. Giddings near the west coast of Hudson Bay on North Knife River, Manitoba. Precisely formed from white chalcedony and agate, these little tools are of the type known to archaeologists as burins and originally thought peculiar to Stone Age man in Europe. About five years ago Dr. Giddings found burins like these at Cape Denbigh, Alaska.

Since no organic remains were found with the Knife River burins, it is impossible to say just how old they are. Dr. Giddings estimates that they could be "anywhere from 1,000 to 10,000 years" old.

It is apparent, however, Dr. Giddings says, that the Knife River people preceded the Dorset culture, the earliest known Eskimos.

It was an Indian with the picturesque name of Jawbone who made the original discovery of the Knife River burins. Jawbone gathered up about 20 of the implements and took them to the town of

Churchill and gave them to Mrs. Irwin H. Smith, an amateur scientist there.

When Dr. Giddings, making a search of the Far North for just such implements, reached Churchill, Mrs. Smith contacted him and showed him the burins. Dr. Giddings then located Jawbone and hired him to guide him to the site. They went up Hudson Bay about 20 miles to the mouth of Knife River and then took a three-day canoe trip upstream, bucking treacherous rapids all the way. The site was about two miles from the river on a sandy, wind-blown shelf forming an arc around a lake—a small plateau that may have been an ancient river terrace. The tools lay on the surface, laid bare by the winds.

Science News Letter, October 24, 1953

## BIOCHEMISTRY

### Brain Sensitivity to Sugar Linked to Obesity

► CELLS IN the brain which regulate appetite are sensitive to the level of sugar in the blood. When the sugar is low, the brain cells seem to signal for more food and a person eats more. When the sugar level rises, the reverse seems to be true.

Recent evidence favoring this clue to the cause of obesity, or overweight, was cited by Dr. Fredrick J. Stare of Harvard School of Public Health, Boston, in a report to the American Chemical Society.

Obesity, he said, is a disease with multiple causes. It cannot be explained entirely in terms of overeating. The primary cause is unknown, although overweight results from an imbalance between energy intake and expenditure.

Scientists need to find what factor or factors disturb the mechanism regulating food intake to tip the balance in favor of excessive food consumption. Some of these are physical and some psychological and undoubtedly they are related.

Science News Letter, October 24, 1953

## MEDICINE

### Leeches to Blood Banks Theme of New Exhibit

► WHEN YOU go to donate blood to a blood bank, the bloodletting is done by a fine hypodermic needle skillfully inserted into a vein in your arm. Ancient bloodletting, however, was done with stone lancets, leeches and various other instruments and for many purposes other than to build up a blood bank.

A permanent exhibit on bloodletting, called "The Art of Phlebotomy," has opened at the Smithsonian Institution. George Griffenhagen, associate curator of the division of medicine and public health of the Smithsonian's National Museum, has described the exhibit as "encompassing the greatest single factor of the transition period between the witch doctor of the past and the modern physician of today."

Science News Letter, October 24, 1953

## MEDICINE

### Cabbage Concentrate Heals Peptic Ulcers

► A CABBAGE-JUICE concentrate can be used to heal peptic ulcers, Dr. Garnett Cheney of the Stanford School of Medicine reported to the National Gastroenterological Association meeting in Los Angeles.

Thus, instead of drinking a quart of cabbage juice daily, the 100 ulcer patients he treated swallowed only about three tablespoons of the concentrate. Yet their pain vanished within five days, and ulcer craters in most cases healed in an average of 13 to 14 days, about the same time as required when treatment was with the cabbage juice.

Average healing time for ulcer patients under the standard treatment of bland diet and drugs is close to 50 days.

Using cabbage-juice concentrate, patients were allowed to eat whatever cooked foods they pleased. The concentrate has now been completely dehydrated and put into capsules by Merck and Company, and patients are now being tested with such capsules.

Cabbage juice and the concentrates contain large amounts of an unidentified diet factor called vitamin U, which is believed to fortify the digestive tract against the onslaught of pepsin. Pepsin is a digestive enzyme contained in the stomach juices that can bore into tissues and cause ulcers.

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## HERPETOLOGY

### 18 Kinds of Rattlesnakes Is Record Zoo Collection

► THE 18 kinds of rattlesnakes now in residence at the Staten Island zoo set a new record: they are by far the largest assortment of rattlers to be seen in a zoo collection.

The latest addition to the zoo's collection is a rattlesnake from Aruba Island in the Dutch West Indies, rare because it is found nowhere else except on this tiny island. The rattlesnake was a gift from Capt. R. J. Beaujon of Oranjestad, who captured the two specimens displayed in 1937 that were the first to be seen in any zoo.

The Aruba Island rattlesnake is a stunted island form of the South American diamondback. Probably because of its isolation on the windswept Aruba, the rattler attains a maximum length of only two feet and is very pallid in coloration. This fact has given it its scientific name, *Crotalus unicolor*. Very often specimens of this type of rattler are without pattern and are uniformly either pumice gray or sand yellow.

Because Aruba Island is a center of the oil industry, where huge refineries receive oil by pipelines under the sea from the mainland of Venezuela, it is a regular port-of-call for oil tankers, and was of tremendous strategic importance during World War II.

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