CLIMATOLOGY

Climatic Change Puzzle

Variations in amount of heat received from sun due to wobbling in earth's motion are "real," but alone do not account for Ice Ages, new orbital calculations show.

➤ HOW WOBBLING of the earth's motion around the sun changes our climate over thousands of years is a puzzle scientists are still trying to solve.

New calculations on changes in the earth's orbit for the last 1,000,000 years have just been revealed by Drs. Dirk Brouwer and A. J. J. van Woerkom of the Yale University Observatory, New Haven, Conn. They show variations in the amount of heat received from the sun that are "real and must have affected climatic conditions."

Yet the same new figures also show that the changes in the earth's orbit alone cannot account for the Ice Ages, recently fairly accurately dated by the radioactive carbon calendar.

The puzzle is not a new one for scientists. The theory that changes in the earth's motion around the sun can account for the Ice Ages was originally proposed in 1875 by the Scottish scientist James Croll. Later it was modified by the Yugoslav astronomer, Milankovitch, and the Yale astronomers now have again examined the problem.

For latitudes such as the United States, the amount of heat received from the sun in the summer season varies with a period of 21,000 years, their new calculations show. During this cycle, the date of the earth's closest approach to the sun, now early in January, runs through the year. Lake deposits found in the western United States have a similar 21,000-year cycle.

For higher latitudes, the main variation in heat received from the sun is due to changes in obliquity, which is the tilt of the earth's equator to the plane of the earth's orbit. Small changes in the obliquity can cause "significant changes in the amount of heat received by the earth," the scientists state.

At a latitude of 65 degrees north, about on a line with Nome, Alaska, changes can amount to as much as a two and a half percent difference in the amount of heat received for the summer half of the year. Four sharp dips were found during the last 300,000 years, and these were thought to be related by those who favored the Milankovitch theory to the times of advances of great glacial ice sheets. The dips occurred at about the same time in the northern and southern hemispheres, but are not close enough to the actual dates to account for the Ice Ages.

It is known that there have been a number of separate glacial advances, which geologists generally divide into only four or five periods. These ice advances have been separated by long interglacial stages with relatively warmer climates. It is believed that we are now living in the closing stage of a glacial period.

Science News Letter, June 7, 1952

PSYCHOLOGY

Popular Grandmas Must Be Helpful Around Home

➤ GRANDMA, IF she wants to make a hit with her college student granddaughters, must keep up with world affairs, but she must also be helpful around the home. She must remember her grandchildren with special little attentions, but must be independent and not all wrapped up in the children.

What young girls like and dislike about their grandmothers was revealed to Dr. Ruth Staples, psychologist of the University of Nebraska, Lincoln, Neb., when she questioned 107 college women.

The greatest number, 46.7%, mentioned liking a grandmother who is considerate of others. A total of 44.9% liked her for making and doing special things and the same proportion mentioned that she adjusts to changes in customs and ideas; almost as many appreciate her enjoying the grandchildren's interests and accomplishments.

Leading cause of dislike is her interference with or criticism of parental discipline. Almost as unpopular is a tendency to nag and boss.

In spite of their pleasure in thoughtful gifts from grandma, the girls do not like to feel that grandmother is using the gift to bid for affection. They do not like the grandmother who is snoopy or prying or who tries to run everything.

They appreciate the grandmother to whom they can go for wise guidance and understanding; they do not want her to try to appear younger than she is.

Details of the study are reported to the American Home Economics Association in the JOURNAL OF HOME ECONOMICS (May).

Science News Letter, June 7, 1952

DIRECT POSITIVE IMAGE— A shadowed electron micrograph, printed directly on reversing photographic paper, shows the platelets of carbide, or cementite, that have been extracted from steel, magnified 40,000 times. The replica surface is the reverse of the steel surface, the depressions being actually projections on the original specimen.

MEDICINE

Isoniazid New Name For New Anti-TB Drug

➤ THAT NEW anti-TB drug you have been reading about has been called by six or seven different names. The World Health Organization has decided to end the confusion, if possible, by establishing one common, non-proprietary name for use the world over.

Isoniazid is the name WHO has picked, the office of the U. S. Pharmacopoeia, New York, has announced.

Chemical names for the drug are isonicotinic acid hydrazide and isonicotinyl hydrazide. Some doctors have shortened these to INAH and INH. Trade names for the drug are Nydrazid (Squibb) and Rimifon (Hoffmann-LaRoche).

Science News Letter, June 7, 1952

METEOROLOGY

Hurricane Watch Begins June 16 in Caribbean

➤ PLANS HAVE been completed for this season's hurricane watch and it will go into effect June 16. The hurricane watch is a joint project of the U. S. Navy, Air Force and Weather Bureau.

Average date for the first hurricane of the season is about the end of July. Last year, however, a new record was set when a hurricane developed east of Florida on May 16. None had started so early since records have been kept.

Officials assure that, if a hurricane develops before June 16, the planes and radar necessary to track it can be mobilized and

put into operation almost instantaneously, as was done last year.

It is not yet possible to predict that a hurricane will start at such and such a time or in such and such an area, but once it starts, perhaps around the Cape Verde islands, it is soon spotted and tracked until it dies.

Navy or Air Force planes take off from Florida fields and fly to the storm. They penetrate the gale-like winds of the hurricane right through its most violent phases until they reach the usually calm "eye" or center of the storm. On the entire trip measurements of air pressure, wind velocity and the strength and direction of both the winds and the hurricane as a whole are taken and radioed back to the mainland. When the storm is within range, about 200 miles, radar can supplement the dangerous work of the planes.

With these observations, a clear picture of the path of the hurricane can be made and predictions as to which way it will go in the future are possible. Thus residents of threatened areas can be warned in time to take the necessary precautions.

Science News Letter, June 7, 1952

PHYSICS

Wind: 1,100 Miles Per Hour At 65 to 100 Miles Up

➤ WINDS OF more than 1,100 miles an hour—a world's record—have been measured 65 to 100 miles high in the sky.

The announcement was made by Dr. G. J. Phillips, Cavendish Laboratory, Cambridge, England, and was the result of work done in England, Canada and here. Two National Bureau of Standards scientists, C. D. Salzberg and Reynold Greenstone, handled the American portion of the investigation.

Changes in the speed of wind that high up seem to be associated with magnetic storms, Mr. Greenstone told SCIENCE SERVICE. Dr. Phillips measured his record-breaking windstorm during a magnetic storm on Oct. 28, 1949. However, his finding was not announced until now.

The speed of winds up that far, in what scientists call the ionosphere, is measured by radar-like instruments that assess the electronic activity. Average winds at that altitude travel between 150 and 200 miles per hour.

Space ship navigators need worry very little about these speedy winds. A thousand-mile-an-hour wind at 65 miles altitude would only have the force of a one-mile-an-hour wind at sea level. This was figured out by Mr. Greenstone, taking into account the fact that there is about one-millionth the amount of air at that height for the wind to push around.

Dr. Phillips reported his findings in the JOURNAL OF ATMOSPHERIC AND TERRESTRIAL PHYSICS.

Science News Letter, June 7, 1952

MEDICINE

Drug Hope Aids TB Patients

Even patients who do not get the new anti-tuberculosis drug, isoniazid, are helped by it since many who might leave hospital, stay in hope of getting it.

➤ THE NEW anti-tuberculosis drug, isoniazid or INAH for short, is helping many tuberculosis patients who so far have not gotten any of the drug.

This important benefit from the drug and newspaper publicity about it was brought out by Dr. R. J. Anderson of the U. S. Public Health Service at the meeting of the National Tuberculosis Association in Boston.

The patients being helped are those who would leave hospitals against medical advice. Because they have heard about the new drug, they are willing to remain in the hospitals in the hope of getting it later. Meanwhile, they may benefit from the rest and other treatment they have been getting, though the slow improvement under such treatment is often discouraging.

A second kind of by-product benefit Dr. Anderson foresees from the new drug is the increased stimulus it should give to finding and bringing under treatment the 150,000 persons in the United States who have active TB and do not know it.

"INAH has put tuberculosis on the front pages, dramatically bringing it to the attention of the people," Dr. Anderson said.

"Many members of the general public believed the disease vanquished years ago. Regardless of the efficacy of INAH, I think we would be wise to make capital of the renewed interest in tuberculosis which announcement of the drug has engendered."

The "lock and key" method of getting patients with tuberculosis under treatment and away from the community where their germs endanger others has proved successful in Seattle, Wash., Dr. Cedric Northrop, tuberculosis control officer of the Washington State Department of Health, declared.

Patients who refused treatment or tried to leave hospitals against medical advice are usually kept in locked wards for two weeks at Firland Sanatorium, Dr. Northrop said. Then they are transferred to the regular wards, subject to good behavior.

The patients thus forcibly isolated have not become bitter or antagonistic. On the contrary, Dr. Northrop reported, almost all of those isolated by legal measures proved tractable and capable of being managed when they learned they could be restrained if they failed to cooperate.

INAH is "not the quick and easy way to cure TB," Dr. Ross L. McLean of the Veterans Administration, Washington, D. C., declared in summing up VA hospital experience with it so far.

"But its failure to live up to the early ballyhoo and the emergence of resistance is no reason," he declared, "to turn about and chuck it in the waste basket.

"It is certainly at least next in line to streptomycin in effectiveness and there remains," he emphasized, "a vast potential field of usefulness to be explored."

Science News Letter, June 7, 1952

CHEMISTRY

Battery Separator Stops Loss From Drying Wrinkles

➤ A NON-WRINKLE type of automobile storage battery separator is expected to result from research being done by Dr. Arthur B. Anderson of the University of California's forest products laboratory, Berkeley, Calif. It may help to lower prices of batteries.

At the present time, wood separators in car batteries must be kept wet from the time they are chemically treated by the manufacturer for removal of certain compounds until they are installed in batteries. If they dry out, they wrinkle so badly they are useless.

Based on previous experiments in drying lumber by solvent seasoning process, Dr. Anderson has satisfactorily dried a few of the separators so that they remain perfectly flat and smooth.

The drying process is a simple one of soaking the separators in a special liquid which replaces the water. When the liquid dries out, the wood does not warp or crack.

Dr. Anderson is now drying more of the wooden pieces for actual tests in batteries. Dry separators would be easier to handle.

Science News Letter, June 7, 1952

AERO-MEDICINE

Pilots Warned Against Use of Reducing Drug

➤ PILOTS WORRYING about their waist lines had better do their reducing without use of drugs such as amphetamine, benzedrine and dexedrine, the Civil Aeronautics Administration has warned.

Two fatal accidents in England involving pilots who were dieting and taking dexedrine in an effort to lose weight led to the CAA warning and a similar one to Canadian pilots from the Director of Air Services of Canada.

Science News Letter, June 7, 1952