ASTRONOMY

First Comet of 1948 Has Been Discovered

➤ THE first comet of 1948 has been discovered. A faint new one, it was spotted in the constellation of Hercules.

Of the tenth magnitude and thus far too faint to be seen with the naked eye or binoculars, the comet has a noticeable tail. It is heading northeast.

Comet "1948 a" will be known as Comet Mrkos after its European discoverer, Antonin Mrkos. It was spotted at 4:40 a.m. Greenwich Civil Time on Jan. 18, or shortly before midnight Eastern Standard Time, Jan. 17, according to Dr. Antonin Becvar, director of the Astrophysical Observatory at Skaluate Pleso, Czechoslovakia, who himself discovered a new comet last year. Its discovery was announced in a cablegram from Miss J. M. Vinter Hansen of Copenhagen University Observatory, to Harvard College Observatory, clearinghouse for astronomical information in the Western Hemisphere.

When found the comet's right ascension was 16 hours, 41.8 minutes, its declination plus nine degrees, 45 minutes. Its daily motion is plus three minutes 32 seconds in right ascension, plus 28 minutes in declination.

Science News Letter, January 31, 1948

PHYSICS

Miniature Geiger Counter Designed for Close Work

➤ A GEIGER counter with a tube only one inch long and less than that in outside diameter has been designed by Drs. Nello Pace, Robert Loevinger and Enrique Strajman of the University of California. It is designed for measuring radioactivity from single organs, or even parts of large organs, in man and the larger animals.

Details of its construction and use are given in the journal, *Science,* (Jan 16).

Science News Letter, January 31, 1948

ORTHOPEDICS

Hip Bone Yields Better Grafts Than Leg Bone

➤ BONE grafts taken from the hip, or iliac, bone make better grafts than those taken from a leg bone, Dr. I. S. McReynolds of Houston, Tex., declared at the meeting of the American Academy of Orthopedic Surgeons in Chicago.

"Iliac bone is meshy and porous and thus allows better contact with the body fluids which nourish the transplanted bone," he explained. "This meshy type of bone contains large numbers of bone-forming cells and when used as small chip grafts some of the transplanted chips survive immediately, begin to grow, and form new bone."

Grafts from hip bones are less liable to infection, he added.

Fewer serious complications occurred when grafts were taken from the hip than when taken from the leg bone. Frequently the leg bone, from which a graft has been taken, breaks, Dr. McReynolds said.

In one study during the war iliac bone was used in 65 operations over a four-year period with only three known failures of the iliac bone grafts.

Science News Letter, January 31, 1948

ANTHROPOLOGY

World's Most Valuable Fossils Shown in New York

➤ THE world's most valuable collection of early human and pre-human remains has been opened to the public at the American Museum of Natural History in New York. It consists of fossils representing a giant ape-man, *Gigantopithecus,* a half-million-year-old giant who was undoubtedly human, *Meganthropus,* and an ordinary-sized human being only a quarter of a million years old, *Homo soloensis.* With them, for comparison, is the skull of a primitive Australian bushman.

The priceless fossils were all found in Java shortly before the war by a German-born citizen of the Netherlands, Dr. G. H. R. von Koenigswald. After enduring Japanese captivity until after VJ day, he brought his rescued treasures to this country a little over a year ago. At the end of their showing in New York, they will be taken to the Netherlands, since they are all the property of that country's government.

The *Homo soloensis* skull has been given the nickname of "Hirohito's birthday present" because it was taken to Japan during the war, found in the Emperor's palace by a young American officer, and brought back to this country to rejoin its "family." This human species is regarded as an Asiatic cousin of *Homo neandertalensis,* the famous Neandertal man of Europe.

In all, 11 of these Solo skulls were found, in the valley of the Solo river, all in one place. No skeletal bones were found, and all the skulls had holes in them. It looks like the world's number one "whodunit."

Science News Letter, January 31, 1948

IN SCIENC

BACTERIOLOGY

Bacteria, Fungus Spores, Caught in High Arctic Air

➤ FRESH evidence that bacteria and the spores of fungi are carried by high-altitude winds in Arctic regions has been obtained by three McGill University biologists, Prof. Nicholas Polunin, Prof. S. M. Pady and Prof. C. D. Kelly of Montreal. Sticky-coated glass plates and microscope slides were held out of the window of a plane flying at 5,000 feet at regular intervals during a flight from Victoria Island, off the Arctic coast of Canada, to Edmonton, Alberta. Subsequent growth of the bacteria, and germination of the spores, proved them to be alive.

The only previous high-altitude germ collection of this kind made in the Arctic was a series taken by Col. C. A Lindbergh over Greenland in 1933. Unfortunately, the results of this earlier collection were never fully evaluated, because the biologist who had undertaken to do so, Dr. Fred C. Meier of the U. S. Department of Agricuture, lost his life in an air crash before he could complete the work.

The three McGill scientists announce preliminary results in the British journal, *Nature* (Dec. 20, 1947), and state that details will be published elsewhere at a later date.

Science News Letter, January 31, 1948

CHEMISTRY

Chemical Test for 2,4-D Gives Wine-Purple Color

➤ A NEW chemical test for the presence of the weed-killer, 2,4-D, in extremely small amounts has been developed by Prof. Virgil H. Freed of the Oregon Agricultural Experiment Station.

The material suspected of carrying the plant poison is first thoroughly dried in a test tube. A few crystals of chromotropic acid are placed with it, then a small amount of concentrated sulfuric acid.

The tube is then heated carefully for about two minutes. If 2,4-D or one of its close chemical relatives is present, the liquid changes color to pink or wine-purple.

Science News Letter, January 31, 1948

E FIELDS

MEDICINE

Night Attacks of Asthma Relieved with New Drug

➤ A NEW synthetic drug which holds promise of relieving the night suffering of asthma-afflicted persons is reported by Dr. Milton M. Hartman of San Francisco in the *Annals of Allergy* (Nov.-Dec. 1947).

Of 60 patients treated with the drug known as compound No. 887, approximately 80%, with a moderately severe form of the disease, "benefited from the use of the drug," according to Dr. Hartman.

It was not possible to get complete relief of asthma attacks in all of these patients because the drug produced a feeling of "dopiness" in the patients when given in too large doses. The ideal dose, declared Dr. Hartman, is from 0.1 gram to 0.2 gram every four hours.

The sedative effect of the drug somewhat limits its usefulness during the day but makes it good to take before going to bed. Its sedative effect and its ability to check wheezing, shortness of breath and coughing enables the patient to get a good night's sleep.

The chemical name for this drug is beta-diethylaminoethyl 9,10-dihydroanthracene-9-carboxylate hydrochloride.

Science News Letter, January 31, 1948

CHEMISTRY—ORDNANCE

Poison Gas Rockets Predicted for Next War

➤ POISON gas, rather than atom bombs, may be in the long-range rockets that will descend on American cities if that much-discussed next war materializes, Col. Ludlow King, president of the Chemical Corps Association, suggests in the *Chemical Corps Journal* (Jan.).

Poison gases, he declares, "are from a very objective and realistic point of view, perhaps the most inexpensive casualty producer presently known. The cost of the two atomic bombs dropped on Japan could procure sufficient toxic gas to bring complete devastation to the populaces of a thousand cities the size of Hiroshima."

The Nazis did not use poison gases during World War II because they are obsolete, as many persons now think, but because they knew that we were prepared to retaliate in kind, many times over, Col. King declares. But for this deterring consideration, the Germans could have mined with gas the inundated areas over which our troops had to pass in the Normandy landings, and spread a thin film of liquid gas over the water, multiplying our casualties a thousandfold.

In the same issue, an unsigned article states that the Japanese were well armed with poison gases during the war, but that they deliberately deprived their troops of chances to use them because of fear of American reprisals.

Science News Letter, January 31, 1948

ENGINEERING

New Slope-Design Features Lessen Danger of Slides

➤ MODERN engineering, based on laboratory studies, greatly lessens danger from slides of the earth banks of shipping canals, the American Society of Civil Engineers was told at its meeting in New York. The discussion centered around present proposals to replace the Panama canal with a sea-level structure.

Special slope-design treatment can produce slopes which not only would be stable under static loading, but which would resist dynamic forces so effectively that large explosions would not be expected to close even the deep sea-level Panama canal if constructed.

Apparatus developed and tests performed to investigate the strength of soils and soft rocks under dynamic loads were described by Dr. Arthur Casagrande and W. L. Shannon, of Harvard University, who have recently conducted tests of strength of soils under contract with the special engineering committee of the Panama canal.

The proposed sea-level canal would be virtually indestructible, even by atomic bombing, Col. James H. Stratton, supervising engineer of the Panama canal special engineering division, told the group. It would cost close to $2,500,000,000, and would taken ten years to construct. But it would serve future needs of interoceanic commerce and national defense for many years to come.

"A sea-level canal at Panama constructed by the conversion of the existing lock canal could not be destroyed by the enemy," he declared. "Only the atomic bomb could cause significant interruption in service, and then for not more than a few weeks. Navigation would be practicable in the sea-level canal even though tidal currents were not regulated."

Science News Letter, January 31, 1948

MEDICINE

New Lead to Prevention of Diabetes Seen by Nobelist

➤ A NEW lead to the possible prevention of diabetes may come from recent rat experiments, Dr. Bernardo Houssay of Buenos Aires, co-winner of a 1947 Nobel Prize, declared in a lecture at the University of California.

When the pancreas, gland which produces insulin, is removed, two or three months elapse before diabetes develops in the rats, Dr. Houssay reported. During this time the animal's blood sugar is normal.

The two to three month period is equal to several years in the human life span. And there is a possibility, Dr. Houssay thinks, that the same pre-diabetic period without symptoms exists in man.

"If it does occur," he said, "it gives a great advantage for diagnosing the condition and so preventing the progress of the disease by maintaining or increasing the functional capacity of the degenerating pancreas. Studies in this direction might be of extraordinary importance in the prevention of diabetes."

Science News Letter, January 31, 1948

AGRICULTURE

Plant Disease Forecasting New Government Service

➤ FORECASTING the spread of plant diseases, so that farmers may prepare for preventive spraying, is the newest service to be undertaken by the U. S. Department of Agriculture. An experimental program will be carried out this year at three regional centers, whose data will be forwarded to the Department's laboratories at Beltsville, Md., for coordination.

The regional reporting centers will be at Ames, Iowa, serving a great triangle of states from the Dakotas to Michigan to Missouri; at Newark, Del., serving states from Ohio to Maryland to New England; and at Raleigh, N. C., covering the 13 states of the South, from Kentucky to the Gulf and from Texas to Virginia.

Observations this season will be made on late blight of potatoes and tomatoes, blue mold of tobacco, and downy mildew of cucumbers, squashes, pumpkins and melons. Relations between occurrence and spread of these diseases and weather and other environmental factors will be studied.

Science News Letter, January 31, 1948