ASTRONOMY

New Star Visible In Northern Heavens

➤ LOOK IN THE northern heavens to see a new exploding star that burst forth early on the morning of Feb. 9. The famous nova of 1866, T. Coronae Borsalis was in intervening years a tenth magnitude star, far below naked eye visibility. Suddenly it increased in brightness many hundred times, reaching a magnitude of three and two-tenths, Dr. Armin Deutsch of Yerkes Observatory, discovered.

The discovery, reported by Dr. Otto Struve of Yerkes Observatory, showed that this star, a faint member of the constellation of the northern crown, had again become a nova. Study of the star's spectrum betrayed that it was expanding at the rate of 2500 miles (4000 kilometers) a second.

Astronomers will follow the star closely to discover why stars not only suddenly increase in brightness, but do so more than once. There are several other recurrent novae on record, including T Pyxidis, which burst forth for the fourth time in 1943.

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MEDICINE

A-Bomb Tracer Chemicals Used in Medical Research

➤ ATOMIC "TRACER" research indicates that carbon monoxide cannot be utilized by the human body in combination with oxygen to form carbon dioxide.

The research, performed by the University of California Aero-Medical Unit and recently removed from the war secrets list, was done with radioactive carbon monoxide produced in the 60-inch Berkeley cyclotron.

Purpose of the experiments was to determine whether the safe level of carbon monoxide in airplane cockpits, tanks, etc., could be changed in favor of higher tolerance. The research did not indicate this could be done.

Human subjects were allowed to breathe radioactive carbon monoxide followed by 100% oxygen. A bag containing soda lime was then placed over their mouths. In the event carbon monoxide was combined with oxygen to form carbon dioxide, the radio carbon in the latter would be collected from the breath in the lime.

Only a negligible quantity of radio carbon was collected, so little in fact that it indicated no carbon monoxide was utilized in the formation of carbon dioxide.

Short-lived radioactive carbon, known as Carbon 11, was used in the experiments. This isotope of carbon has a half-life of only 21 minutes, allowing experimenters only a few hours to work with it.

The researchers are withholding final judgment on the formation of carbon dioxide until experiments can be done with long-lived radioactive carbon, known as Carbon 14. With this isotope, long and complicated experiments can be done.

The research was done by Dr. John Lawrence, who was head of the Aero-Medical Unit and who has returned to peacetime research as head of the biological research program in the Berkeley radiation laboratory, and Dr. Cornelius Tobias, a member of the laboratory staff. Dr. Joseph G. Hamilton, of the radiation laboratory, prepared the radio carbon monoxide. The work was done under an OSRD contract.

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PHYSICS

Submerged Submarines To Have Communication

➤ SUBMARINES of the future may receive orders from distant land bases and sent reports of their operations while submerged, says D. W. R. McKinley, a Canadian physicist of the Radio Branch, National Research Laboratories. (*Canadian Journal of Research*).

Mr. McKinley reports investigations that show transmitting stations radiating many thousands of watts of power should be able to send signals to submerged craft many hundreds of miles away. He adds that the undersea craft should be able to send back signals from below the surface of the water.

The Canadian investigator declares that the use of electromagnetic radiation by airplanes as a sort of "underwater radar" for locating submerged submarines is not practical. But he finds that a land station, such as that at Rugby, England, radiating 500,000 watts, should be able to send signals that could be detected by a submarine 1,000 miles at sea.

Development of communications with undersea craft, combined with discoveries permitting submarines to remain underwater for longer periods, may make possible huge undersea fleets operating in conjunction with surface ships.

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IN SCIEN

CHEMISTRY

TB Germs Killed By Mold Products

➤ TUBERCULOSIS germs from patients in far advanced stages of the disease have been killed by a chemical extracted from mold, Dr. Isadore E. Gerber and Milton Gross, of the Hudson County, N. J., Tuberculosis Hospital report (*Science*, Feb. 8).

The mold substance is called mycocidin. It was obtained from a mold belonging to a group of *Aspergillaceae*. Whether it will ever become a remedy for tuberculosis is not indicated in the scientific report.

Growth of the disease-causing TB germs in glass tubes was completely checked by mycocidin. Germs that had been exposed to mycocidin in these tubes were injected into guinea pigs in amounts that ordinarily would cause fatal tuberculosis in the animals. The animals remained well and at death showed no signs of tuberculosis.

The activity of mycocidin against other kinds of disease germs is being tested and efforts are being made to obtain it in pure form.

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CHEMISTRY

Vitaly Khlopin Receives 200,000 Ruble Award

➤ THE FIRST CLASS Stalin award of 200,000 rubles has been made to Vitaly Khlopin, member of the USSR Academy of Science and director of its radium institute, in recognition of his contributions to the science of radioactivity. Dr. Khlopin is internationally known for his research work in the chemistry of radioactive substances and in the use of radioactive preparations as applied in the medical field.

The Radium Institute of the USSR Academy of Science is now one of the world's most progressive institutions in which radioactive phenomena are studied. Its work under Academician Khlopin has greatly influenced the development of the radium industry in the Soviet Union, which uses home-produced raw material.

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CE FIELDS

ZOOLOGY

Dozen Dwarf Chameleons At Zoo in Washington

See Front Cover

➤ A DOZEN DWARF chameleons from North Africa, guaranteed to keep up with any color changes except those of a Congressman's mind in election year, have been received at the National Zoological Park in Washington, D. C. They are among the rarest of lizards, and have never before been represented in the collections at this zoo. Among their other peculiarities is the fact that they bring forth their young alive instead of laying eggs—a rather unusual thing among lizards. One of the lizards is shown in the photograph by Fremont Davis, Science Service staff photographer, on the front cover of this SCIENCE NEWS LETTER.

Along with the North African specimens came some from South Africa—half-a-dozen spiny-tailed lizards.

From West Africa came a gift of half-a-dozen assorted specimens of the world's deadliest serpents: two African cobras, two rhinoceros vipers and two Gaboon vipers. With these were two burrowing pythons, which are non-poisonous constrictor snakes, and one broad-nosed crocodile. All these were collected and sent to Director William M. Mann by Forest Officer G. S. Cansdale, of the Gold Coast.

The two pythons are in a way the most interesting specimens in the lot, Dr. Mann stated. They do not have tapering tails like most snakes, so that they are sometimes called stump-tailed pythons. So blunt are their tails that it is not easy to tell at a glance which end of the snake the head is on.

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AERONAUTICS-CARTOGRAPHY

Aeronautical Maps Will Be Of the American Type

➤ NEW AERONAUTICAL maps of much of the world will be of the American type, using the same symbols and color markings, the Civil Aeronautics Administration has announced. It was decided also at an international meeting in Montreal, CAA says, to base the World Aeronautical Charts on the standard American one-to-a-million-scale military aviation chart.

The use of these familiar symbols and color markings will be helpful to American pilots flying abroad. Flyers of many Allied countries have used or are familiar with American type aeronautical maps. This fact makes their worldwide adoption logical.

Some changes will be necessary, Kenneth Keefe of CAA states, to meet special conditions found outside the United States, and were agreed upon at the international meeting. For example, he said, forest areas in England and much of Europe are sharply defined and permanent. Therefore the meeting recommended use of green to show these wooded areas on European charts, whereas green will continue to symbolize land areas close to sea level on most charts of this hemisphere.

Towns marked with their names on roofs or other conspicuous spots will have their names underlined, Mr. Keefe explained, with magenta on the world air maps. Markers outside of town limits will be indicated by an "M" in a square.

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ZOOLOGY

Small Sand Crabs Devour Stranded Jellyfish

➤ SMALL SAND CRABS that live in millions in the beaches of Hawaii help keep the shoreline tidied up by devouring the dead bodies of stranded Portuguese men-of-war, which are a peculiar type of jellyfish that drift in countless numbers on the ocean surface in the warmer parts of the world. Dr. David D. Bonnet of the University of Hawaii tells of this peculiar feeding habit of the sand crabs in *Science* (Feb. 1.)

He discovered it in the course of an investigation of the Portuguese men-of-war, which are nuisances to bathers because of the painful stings they inflict on contacting living flesh. Their stranded bodies seemed to be much less numerous than should have been expected. On seeking the cause for this disappearance, he found it was due to the sand crabs. These small crustaceans automatically provide burial for the jellyfish, because they habitually remain buried in the sand themselves, with only their tiny eyes showing, and they feed on the Portuguese men-of-war, which seem to constitute their only food, by "eating up at them" from underneath.

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ASTRONOMY

Faint Comet Discovered At Vatican Observatory

➤ A NINTH MAGNITUDE comet was discovered in the constellation of Ursa Major, the great bear, on Feb. 2 by M. Timmers of the Vatican Observatory. The newly discovered comet may be seen throughout the next few months by those who search for it with a small telescope.

The comet is not expected, however, to become brighter than the eighth magnitude. Although it will be nearest the sun about April 18, it is at present as close to the earth as it will ever get.

On Feb. 21 the comet is expected to have a right ascension of 9 hours 1 minute, and a declination of 61 degrees 49 minutes. This position was calculated by Dr. Leland E. Cunningham of Aberdeen, Md., who received reports of observations of the comet from Yerkes Observatory of the University of Chicago, Lick Observatory of the University of California, and Lowell Observatory at Flagstaff, Ariz.

On March 1 the comet's right ascension is predicted to be 8 hours 30.3 minutes and its declination 67 degrees 37 minutes. Around May 10, when it will be in the vicinity of the North Star, the comet will have probably faded to eleventh mignitude.

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CHEMISTRY

Durable Glazes on Chintz Developed with Resins

➤ DURABLE GLAZES on chintz, cotton fabric printed with colored designs, can be obtained through the use of relatively new resins developed by the American Cyanamid Company's textile resin division. Chintzes treated with the resin can be washed without loss of glaze, and also without noticeable shrinkage because the new finish greatly limits shrinking.

The resins are melamine formaldehyde compounds. Through their use it is now possible to obtain high-gloss glazes that will withstand boiling for a half hour in soapy water, it is claimed, and which are also immune to dry cleaning processes. Another important effect of the treatment with melamine resin is to limit the shrinkage to less than 2% in length or width. Melamine resin treatments are used also for controlling the shrinkage of wool fabrics.

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