

ASTRONOMY

Finns Find Comets

One turns out to be often-mistaken Schwassmann-Wachmann 1, but the other is new. News came by postcard that travelled for eight months.

➤ APPARENTLY a cablegram sent to Harvard College Observatory last February failed to reach there, for it was not until this month that Harvard Observatory received four routine post cards mailed from the international astronomical union headquarters in Copenhagen last spring.

The first of these, circular 900, tells of the discovery of a new comet by Miss L. Oterma at Turku Observatory in Finland. The card is dated February 20, but she made the discovery on February 12. The comet was of the 15th magnitude, which puts it beyond the observation of amateur telescopes. But it is just as important to astronomers as though it were of naked eye brilliance. The other three post cards, circulars 901, 902, and 903, contain further observations of the new comet and a prediction of its future positions.

By a strange coincidence, circular 901 also contains a complete series of predicted positions for comet Schwassmann-Wachmann 1, but the European astronomers apparently overlooked it completely

this September, for on Sept. 11 the observatory at Lund, Sweden, sent a wire to Harvard that a new comet of 13th magnitude had been discovered, also by Miss Oterma. However, this turned out to be in precisely the position predicted by circular 901 for comet Schwassmann-Wachmann 1. This occasioned the remark by an American astronomer that this comet ought to carry a red flag, so often has it been mistaken for a new one.

From the elements published by the Turku Observatory on the comet discovered last February, Dr. F. L. Whipple of Harvard computes its position to be in the constellation of Cancer, the crab, just east of the cluster which is visible to the naked eye. A powerful telescope would be needed to detect the new comet as it should still be about 15th magnitude. On October 24, its predicted position was in right ascension 8 hours 36 minutes and declination plus 20.3 degrees. Cancer rises in the eastern sky about midnight during the next month.

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PUBLIC HEALTH

Program for Safety

➤ A GRAPHIC DESCRIPTION of the dangers connected with the handling of metals in American industry and the suggestion of an eight-point program to eliminate them were made by Dr. Robert A. Kehoe, of the University of Cincinnati College of Medicine, at the meeting on Industrial Health and Medicine in Wartime in the Yale School of Medicine, New Haven.

"In a large measure this is a war of metals," said Dr. Kehoe, "and metals are being used increasingly for the weapons of war, the machinery to make those weapons and in chemicals for certain purposes.

"The toxicity of metals is not always well understood but it is at least clear that some metals combine with the essential components of protoplasm, thus interfering with the workings of body cells.

"Some metals are poisonous because they form volatile chemical compounds which can be inhaled in high concentrations, notably arsine from arsenic. Others are poisonous because they are easily soluble in watery liquids and dissolve readily in the intestinal juices, becoming easily absorbed in the bloodstream. Again, a metal often occurs in combination with a more toxic substance and may be less hazardous than its partner—for example, lead arsenate."

He pointed out that once metals are inside the system, they are redistributed throughout the body in certain organs. Among these the liver is preeminent and in the case of more prolonged storage, the bony skeleton may become the most important storage depot.

How long metals remain stored depends on a number of factors, including rates of breakdown of chemical com-

pounds, rate of metabolic renewal of the tissue involved, and the form in which the poison occurs.

Variations in the poisonous effect of metals depend on abnormally high concentrations, marked individual differences among men and the type of compound in which the metal occurs.

Dr. Kehoe outlined means of measuring the degree of exposures in terms of the toxic metal concentration, correlating these measurements with physiological effects and finding the established limits of safety.

He said that exposure can be controlled with the following eight practices: 1. plant design to segregate more hazardous operations; 2. enclosed operations and properly designed equipment; 3. adequate ventilation with air-conditioning wherever possible; 4. housekeeping and maintenance; 5. protective equipment and sanitation; 6. instruction and regulations; 7. supervision of work and workmen; 8. general hygienic instruction of workmen.

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NUTRITION

Walnuts Found To Be High in Vitamin C

➤ TWICE the amount of vitamin C you need for a day is contained in a single pickled walnut weighing slightly over half an ounce, three English scientists, Magnus Pyke, Ronald Melville and Henry Sarson, report to the English scientific journal, *Nature*.

Here in America with abundant supplies of oranges, tomatoes and other fruits and vegetables, we do not need to worry much about sources of this vitamin, needed to prevent scurvy, but in England since the war housewives have had to turn to home-grown sources of the vitamin, such as rose hips and black currants.

The fact that unripe walnuts contain large amounts of vitamin C was apparently first discovered by a Russian scientist. The English scientists examined other kinds of nuts, including hickory, almond and horse chestnuts, but none of these contained as much vitamin C as walnuts. The vitamin content of the nut is at its highest at the stage of development when the kernel is soft and just before the formation of the shell.

Weight for weight, walnuts contain about 24 times as much vitamin C as orange juice, according to the English report.

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