

## ASTRONOMY

## New Object in Sky Seen From Johannesburg

**A** DIFFUSE object, possibly a new comet, has been discovered in the southern hemisphere skies by Dr. Cyril Jackson, astronomer at the Union Observatory, Johannesburg in Africa. It is twelfth magnitude. News of the discovery was received by Harvard College Observatory.

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## PSYCHOLOGY

## Touch on "False" Lip Felt in Wrong Place

**T**HE INTERESTING problem of where sensations in transplanted bits of skin would be "felt" by the patient have often been the subject of surmise in fiction, and have now been made the subject of scientific research reported to the Southern Society for Philosophy and Psychology by Dr. Lyle H. Lanier and Beverly Douglas of Vanderbilt University.

They reported the case of a patient who had had the right half of the lower lip torn away in an accident. A new lip was made by cutting skin from the cheek without cutting it completely free and pivoting it around into place on the lip. Thus the nerve supply was not completely severed, and sensations on the new lip were localized by the patient as being out on the cheek.

The patient, however, oriented himself after several months and now judges the place of sensation correctly.

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## MEDICINE

## Heavy Water Seems of No Value Against Cancer

**A**NY HOPE that scientists may have entertained about the use of the new heavy water in treating cancer has dimmed because of experiments reported to the American Chemical Society by Dr. H. C. Urey of Columbia University, one of the trio of discoverers of the deuterium or heavy hydrogen contained in heavy water.

Cancer tissues were given doses of heavy water by Dr. G. Failla at Memorial Hospital, New York City, a leading cancer research center. The very first experiment encouraged Dr. Failla because a beautiful kill was obtained with twenty per cent. water. But when

thirty per cent. water was tried the cancer tissues remained viable and transplantable as ever. When the twenty per cent. water experiment was repeated after repurification of the water, it too gave negative results.

Heavy water fed to wheat seedlings gave exactly the same results as ordinary light water when the conditions were otherwise the same.

Dr. Urey is now convinced that most if not all the harmful effects of heavy water to living things have been due to impurities in heavy water, especially metallic compounds.

While chemists are now working with pure double-weight hydrogen or deuterium, Dr. Urey sees little hope of the isolation of the triple-weight hydrogen, the discovery of which has just been announced. Dr. Urey accepts the existence of tritium hydrogen, but it probably exists in nature only as a few parts per billion parts of ordinary hydrogen. To isolate it would probably cost millions of dollars a gram.

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## CHEMISTRY

## Resin Extracted From Abandoned Pine Stumps

**S**TUMPS, covering mile after mile of the flat cutover pinelands of the South, used to be only myriad monuments of waste. Now, thanks to chemical engineering research, they are sources of wealth.

At the meeting of the American Chemical Society in St. Petersburg, Fla., R. C. Palmer told how science has squeezed gold out of the remnants of former forests. Mr. Palmer is now at the British Columbia experiment station at Summerland, B. C., but was formerly located in northern Florida, where the steam extraction of turpentine and resin is extensively practiced.

The first step in the chemical salvage of stumps, he explained, is to chew them up in a mechanical grinder. Live steam is then turned on the mass, carrying off the natural terpene oils, which include pine oil as well as turpentine. Then a volatile solvent such as naphtha is added, to dissolve the rosin in the wood. When the rosin has been extracted, live steam is again introduced, this time to recover the naphtha for reuse. This leaves nothing but the dry shredded wood, which is commonly used for fuel, though the manufacture of a new type of wallboard is furnishing a more profitable outlet for part of it.

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# IN SCIENCE

## ASTRONOMY

## Camera Records Telescope Pouring

See Front Cover

**T**HE BEAUTIFULLY blended picture of light and shadow on the front cover of this week's SCIENCE NEWS LETTER shows a 400-pound ladle of molten glass being taken from the huge furnace at the Corning Glass Works to be poured into the mold of the 200-inch disk for the new reflecting telescope of the California Institute of Technology. (SNL, March 31, '34, p. 195) The photograph was taken by James Stokley, Science Service astronomical staff writer.

Through the furnace door to the left, which is just closing, one may glimpse the interior of the furnace at a temperature of 2800 degrees Fahrenheit. Filmy wisps of glass starting to cool as they contact the air can be seen hanging from the edge of the ladle, and the man with the hook is about to remove them.

The ladle is pictured at the beginning of its journey by overhead trolley to the mold nearby. Three ladles were used, each filled from a separate door of the furnace, and about 100 ladle-fulls were poured.

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## NUTRITION—CHEMISTRY

## Milk Makes Plants' Green Good Vitamin A Source

**C**HLOROPHYLL, the stuff that makes leaves green, makes a good source of vitamin A, but only when taken along with milk. This discovery was reported to the American Chemical Society by Prof. O. D. Abbott of the University of Florida. Fed alone, chlorophyll and two of its chemical derivatives did not help anemic laboratory rats on a deficient diet, but when the milk was added the formation of red blood cells was promoted.

Xanthophyll, a yellow coloring matter also found in plants, proved of no dietary value to mammals but apparently could be a substitute for carotene in keeping hens healthy.

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# CE FIELDS

CHEMISTRY

## Cancer, Sex, Vitamin, Drug Have Chemical Similarity

**C**ANCER, sex, one of the vitamins and certain drugs all have a chemical kinship to each other, Prof. Marston T. Bogert of Columbia University reported to the American Chemical Society. In the course of his investigation of the polycyclic hydrocarbons, which are highly complex compounds of carbon and hydrogen, he found that one group of atoms, known as the phenanthrene nucleus, is present in the tarry substances that provoke one form of cancer, in both male and female hormones, in vitamin D, and in some of the alkaloids like those of the morphine group.

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MEDICINE

## Syphilis Not Imported By Columbus' Sailors

**S**YPHILIS, that great and still-obscure scourge of civilization, was not among the things brought back from the New World by Columbus' sailors when they returned to Spain in 1493. So declares Prof. Karl Sudhoff of the University of Leipzig, after a careful re-examination of the medical aspects of the early discovery literature.

Accounts were published of every imaginable detail of the voyage and the voyagers, on the occasions of their receptions by the monarchs of Spain and Portugal in March, 1493. The physicians of the Spanish and Portuguese cities were at that time probably the best in Europe and their scientific curiosity was keen; yet they have no word to say of any new ailment among the sailors of the expedition, who had been reported as in excellent health by their commander when they sailed away several months before.

The nearest date to Columbus' return, on which a recognizable description of syphilis in a Spanish port was written, was 1494, when a Sicilian physician, Nicolo Squillacio, mentioned in a letter "the new death that has come down

out of Gaul." Not until nearly a generation after Columbus' voyage was any attempt made to attach the responsibility for the disease to adventures of his sailors in the Caribbean Islands.

Prof. Sudhoff, however, does believe that syphilis existed in America prior to 1492. He cites the researches of Dr. H. U. Williams at the University of Buffalo, on human remains of pre-Columbian date found far inland in such places as Peru and interior North America, as affording conclusive evidence to this effect. Syphilis, he believes, has been of world-wide distribution since very early times, and he holds that it came to America with the first migrations of Mongoloid man via the Bering Strait route of invasion.

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ARCHAEOLOGY

## Removing Front Teeth Palestine Style 13,000 B.C.

**M**EMBERS of the Natufian race who lived in Palestine some 15,000 years ago, seem to have had the habit of removing the two front teeth before reaching the adult stage, it is stated by Prof. George Grant MacCurdy of Yale University, director of the American School of Prehistoric Research.

These Natufians were fond of ornaments, such as beads and pendants, Prof. MacCurdy said. Some of their bone sickle hafts were beautifully carved to represent animal forms. They had apparently learned their first lessons in simple agriculture, but had no domestic animals; neither had they learned the art of pottery making.

Some sixty skeletons of the Natufians are included in an exhibition now being held in the British Museum of the important Palestinian prehistoric remains found by six joint expeditions of the American School of Prehistoric Research and the British School of Archaeology in Jerusalem. Specimens exhibited come from a group of three caves in the Wady Mughara or Valley of the Caves at the foot of Mount Carmel, looking over the Plain of Sharon to the sea. There are also exhibited rare specimens from the Cave of Kebara, ten miles farther south.

The three Wady-Mughara caves reveal at least thirteen culture levels, beginning with the early part of the Old Stone Age. Prof. MacCurdy said that at least 100,000 years have elapsed since man inhabited the lowest level.

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ENDOCRINOLOGY

## Fighting Glands Larger In Wild Animals Than in Man

**T**HE ADRENAL glands, which mobilize the body's forces for action when danger suddenly threatens, are relatively larger in wild animals than in man, Drs. George and Robert Crile of the Cleveland Clinic reported to the American Association of Anatomists.

The adrenals weigh two or three times as much as the thyroid gland in animals living in the wild state. This ratio is higher in those animals whose survival depends on sudden outbursts of energy in fight or flight, the Cleveland surgeons learned from a study of 600 wild and domestic animals.

The thyroid gland, together with the brain and adrenals, are known to play definite roles in directing the energy of the body to meet different situations, Dr. Crile explained.

In contrast to the wild animals, man, whose energy must be maintained at a constant high level throughout his life, has a thyroid gland weighing about twice as much as the adrenals.

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CHEMISTRY

## Textile Wastes Easily Made Harmless in Water

**P**OLLUTION of rivers and other bodies of water by at least one type of industrial wastes, the discards of the textile printing and dyeing industries, can be easily and cheaply avoided. Foster D. Snell, Brooklyn consulting chemist, pointed out to the American Chemical Society how these waste liquors can be made harmless to fish and plant life in streams by adding to every thousand gallons four pounds of copperas and four pounds of lime, at a cost of less than five cents for each thousand gallons.

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BIOCHEMISTRY

## Goldfish Live Normally In Dilute Heavy Water

**G**OLDFISH live normally and happily in dilute heavy water, Drs. G. Hevesy and E. Hofer of the Institute of Physical Chemistry of Freiburg, Germany, report in *Nature*. Other investigators had previously found that life processes were slowed by deuterium water and some lower animals killed.

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