

## ASTRONOMY

**Unusual Gas Discovered  
In Head Of Comet**

➤ **OBSERVATIONS** on the star-like nucleus of Comet Whipple 2, which was recently visible near the Big Dipper, has led to the discovery of a gaseous compound hitherto unidentified in comets. It is the fragmentary molecule  $\text{NH}_2$  produced when hydrogen or methane burns in the flame with nitrous oxide. Although luminous bands of  $\text{NH}_2$  have been previously observed in the spectra of other comets, it was their extraordinary strength in Comet Whipple 2 that led to their identification. The observations were made by Dr. R. Minkowski with the 60-inch reflecting telescope of the Mt. Wilson Observatory.

The only other bands in the comet's spectrum besides those of  $\text{NH}_2$  that could be identified with certainty were those of the carbon molecule,  $\text{C}_2$ , which were first described by Swan in the spectrum of the candle flame in 1857. The carbon bands, however, have long been known in comets.

Many other bands in Comet Whipple 2 were observed which could not be identified with known gaseous compounds, which serves to emphasize the peculiar conditions that must prevail in the nuclei of comets.

*Science News Letter, May 1, 1943*

## BOTANY

**Mechanism By Which Auxins  
Stimulate Growth Found**

➤ **DISCOVERY** of the fundamental mechanism by which the hormone-like substances called auxins induce roots to grow on plant cuttings, affect the growth of the whole plant and produce parthenocarp is announced by Prof. H. C. Eyster, of the University of South Dakota. (*Science*, April 16.)

"The mechanism," he states, "is fundamentally the release of diastase, and possibly sucrase and other enzymes, from the protein colloidal substances to which they are normally attached."

Diastase, familiar to many a dyspepsia sufferer, is one of the enzymes that act on starches, aiding in their digestion. When these enzymes are bound by adsorption onto a protein colloid, they are partly and considerably inactivated. When they are released by auxins or other substances, they can play a more active part in aiding digestion in the plant cells and thus stimulate plant growth.

"Daylight with its ultraviolet and blue-indigo-violet light components is very potent in accelerating the rapidity with which enzymes are bound to a colloidal carrier, consequently making the enzymes less free to act," Dr. Eyster explains. "Artificial light has very little influence, as expressed also in its reaction on growth of plants. Since there was more rapid digestion by the charcoal-bound diastase in the dark than in the light, this explains the greater growth of the stem tip on the shaded side than on the illuminated side.

"Growth substances merely aid in releasing the enzyme from the colloid, especially after it has been rather securely adsorbed by the influence of many continuous hours of strong natural illumination. This explains why growth substances are not specific, but include a great variety of substances from the indole compounds to ethylene and carbon monoxide. Any substance which releases the digestive enzyme from its colloidal carrier, or slows the rate at which the enzymes are being bound to the colloid, without unduly upsetting any vital process, can apparently act as a growth substance.

"Light is effective in building up food reserves for the plant, and in causing the digestive enzymes to be bound to their colloidal carriers more securely. Auxin releases the enzyme from its colloidal base and makes it free to act."

*Science News Letter, May 1, 1943*

## DENTISTRY

**Dental Priorities Proposed  
For High School Students**

➤ **NO LOST TIME** between the call to the service and the beginning of actual training because of needed dental work would be necessary if plans proposed to the American Dental Association were put into effect.

Dental priorities for high school students is the proposal. Dentists throughout the country were urged to give preference over all other patients to high school boys and girls about to enter the armed services or to be employed in war industries.

"Never before has such a chance for achievement been presented to our profession," Dr. E. W. Morris, chairman of the association's Council on Dental Health, has reported.

The plan contemplates the use of 500 newly organized councils on dental health throughout the nation.

*Science News Letter, May 1, 1943*

**IN SCIEN**

## ASTRONOMY

**New Comet Discovered  
By Finnish Woman**

➤ **A NEW COMET** has been discovered by Miss L. Oterma, Finnish woman astronomer of Turku Observatory, who is credited with discovering two comets last year.

The comet was first seen on April 8 in the constellation of Virgo, which is now easily visible in our evening sky. It is of the fifteenth magnitude and therefore far too faint to be seen without telescopic aid. The new comet is near the celestial equator and moving west.

Harvard Observatory, American clearing house for astronomical reports, received word of the discovery by way of Denmark and Sweden. On April 8 at five p.m. EWT, the comet's right ascension was 12 hours, 19 minutes, and its declination plus 1 degree, 12 minutes.

*Science News Letter, May 1, 1943*

## ENTOMOLOGY

**Cattle Lice Annihilated  
By Phenothiazine**

➤ **COMPLETE** annihilation of both short and long nosed cattle lice results from applying the synthetic drug phenothiazine on infested animals, research results (*Science*, April 16) show.

A 100% mortality rate of the sucking insects resulted from trials conducted on a dozen animals by H. S. Telford, J. H. Longwell and Prof. J. A. Munro of the North Dakota Agricultural Experiment Station. The drug was applied as a dust mixed with an equal quantity of flour.

Chewing lice, another type of cattle pest, also stopped feeding and were found scattered through the hair of the cattle. But hopes of a double-barreled action were dashed when the chewing lice were back on the job the next day.

Further experiments showed that both kinds of lice could be eliminated by adding two parts of sodium fluosilicate to the insecticidal mixture.

The new dusting powder may replace scarce imported insecticides, such as rotenone and pyrethrin.

*Science News Letter, May 1, 1943*

# CE FIELDS

## GENERAL SCIENCE

### Talent Search Winners Given Science Honor

➤ THE SIX Pennsylvania finalists in the Second Annual Science Talent Search for the Westinghouse Scholarships have been elected Honorary Student Members in the Pennsylvania Academy of Science.

This action was announced by Dr. Charles E. Mohr, president of the Pennsylvania Academy of Science. These six students were among the 40 boys and girls invited to Washington by Science Clubs of America as a result of a nationwide competition in which some 15,000 of the top-ranking students in science in American high schools competed.

The students given Honorary Student Memberships together with the high schools they attend are:

Donald Rosswell Harris, Central High School, Johnstown, Pa.; Bernard Louis Strehler, Central High School, Johnstown, Pa.; Charles Poultney Perot, IV, J. P. McCaskey High School, Lancaster, Pa.; Wayne Ellsworth Boop, Matamoras High School, Matamoras, Pa.; Joseph Milton Fox, Overbrook High School, Philadelphia, Pa.; Leonard Charles Kurfuerst, North East Catholic High School, Philadelphia, Pa.

*Science News Letter, May 1, 1943*

## PSYCHOLOGY

### Birth Control Chemicals May Harm Intelligence of Young

➤ THAT SOME of the chemicals widely used in birth control may damage the minds of the baby later "accidentally" born is the warning of research reported (*Journal of Psychology*, April) by Drs. Johnette Dispensa and Richard T. Hornbeck, of Los Angeles City College.

Although their experiments were conducted on rats, they have many implications for humans, the scientists state.

Before mating, the female rats were treated with acid solutions in strengths widely used for contraceptive purposes. Other animals were given solutions of bicarbonate of soda instead of the acids. Baby rats born were later tested for their

ability to learn to run a standard rat maze.

The acid solutions, it was found, resulted in rats with inferior maze-learning ability. Sodium bicarbonate in sufficient strength seemed to be beneficial. It was not suggested that the soda be substituted for the acids, however, because alkaline substitutes are less effective.

Since the sulfa drugs are now so commonly used in medicine, the scientists also tested the effect on the minds of the young when fathers were dosed with sulfanilamide during the breeding period. No damage was observed, but the investigators urge further study along this line.

The research on the effect of acid and alkali solutions on the intelligence of the offspring was a follow-up of earlier research by another scientist that seemed to indicate that use of acid favors birth of male young and alkali, female young.

*Science News Letter, May 1, 1943*

## ASTRONOMY

### Study of "Seven Sisters" Reveals Facts About Gases

➤ A STUDY of the little group of stars known as the Pleiades or Seven Sisters has revealed new facts about the nature of the obscuring clouds of interstellar gas throughout our galactic system.

The study was carried out by Dr. Walter S. Adams with the 100-inch reflector of the Mt. Wilson Observatory.

Nine stars of the Pleiades were selected for observation because their high temperature gave a background against which to detect the dark interstellar clouds.

Dr. Adams found that seven of the nine stars show obscuration by both ionized calcium and hydrocarbon gas; whereas two, Asterope and Merope, show obscuration by ionized hydrocarbon only.

This is the first case found in which lines of one interstellar gas occur without the presence of ionized calcium. Another interesting point is that neutral hydrocarbon which is prominent in many stars is completely missing from the Pleiades.

Dr. Adams concludes that, "The fact that such different interstellar lines are observed in neighboring stars of this small cluster indicates the diversity in the physical condition of the interstellar clouds and perhaps the limited dimensions which these clouds must have."

*Science News Letter, May 1 1943*

## RESOURCES

### New Plastic Expected To Supplement Mica

➤ SYNTHETIC plastic material to supplement the available supply of mica necessary in war-used electrical equipment is promised in the near future. Priorities have been granted for the materials to construct a plant where the synthetic product will be made. The plant will be in production about July 1, it is now expected. The location is necessarily a military secret.

The material is a synthetic polymerized resin. It is reported to have high temperature resistance and low dielectric loss. These properties will permit its use in several types of radio equipment now requiring mica. It will be known under the trade name of Polectron.

This new plastic is a product of the General Aniline and Film Corporation. It has been tested for the corporation by the laboratories of the Massachusetts Institute of Technology and those of one of the large industrial companies making electrical apparatus. It has been tested also at Wright Field.

Much of the mica now in use is obtained from India and Brazil. It has been called by the War Production Board an urgently needed raw material vital to mechanized warfare, and mica users and fabricators were warned many months ago to conserve the supply in every way possible. One ton of the new plastic, fabricated into mica replacement material, will replace from 10 to 15 tons of the imported block mica, it is expected, thus saving much strategic material.

*Science News Letter, May 1 1943*

## HORTICULTURE

### Victory Garden Planted In London Bomb Crater

#### See Front Cover

➤ OLD BILL himself must surely have suggested the site for the novel round Victory Garden shown on the front cover. It is a big bomb crater, blasted through a paved area near Westminster Cathedral in London, and made to yield a high return in vitamins by the English couple seen at work in it. Acknowledgments are due to Herr Goering's brisk young men who pulverized the soil so nicely.

The official British photo of this "better 'ole" was made available in this country through OWI.

*Science News Letter, May 1 1943*