

ASTRONOMY

Eclipsed Star's Light

► LIGHT FROM the smaller, hotter star of 31 Cygni was still shining through the rarefied atmosphere of its gigantic companion five or six weeks after the smaller star was no longer hidden behind its big brother.

"During several weeks before and after the eclipse, the hot star was behind various layers of the enormously extended atmosphere of the cool supergiant," Dr. Dean B. McLaughlin of the University of Michigan Observatory reported to members of the American Astronomical Society meeting at the Warner and Swasey Observatory in Cleveland.

The supergiant is about 30 times as far across as its smaller companion. Its diameter is at least 150 times that of the sun; that of the hotter star only five times as great.

The smaller star is many times hotter than its supergiant companion. It has a temperature of about 18,000 degrees Centigrade, as compared with only 4,000 degrees for the cooler star.

These two strangely-mated stars in the constellation of Cygnus, the swan, take a little over ten years to complete their

swing around each other. Last fall's eclipse, the first to be studied, enabled astronomers at the Dominion Astrophysical Observatory, Victoria, B. C., to calculate the giant's size.

Only recently have astronomers suspected that 31 Cygni was an eclipsing double star. A year ago Dr. McLaughlin noted that the star's spectrum about a decade ago was similar to that of a few other supergiant eclipsing systems at the time when the light of the hot star shines through the atmosphere of the cool one.

He suggested that early this past fall the smaller star of 31 Cygni either would probably be eclipsed or would miss being eclipsed rather closely. Observations both at Victoria and Ann Arbor proved that the star is an eclipsing double star.

The star's spectrum, from which astronomers discover its composition, was also discussed. Dr. Andrew McKellar and G. J. Odgers of the Dominion Astrophysical Observatory and Dr. L. H. Aller of the University of Michigan discussed particularly ionized calcium in the giant star's atmosphere.

Science News Letter, January 5, 1952

MEDICINE

Hip Disease Slows Growth

► WHEN THE growth center of the hip joint is attacked by disease, growth in general will be slowed and there will also be troublesome irregularities in tooth development, scientists at the Newington Home and Hospital for Crippled Children in Connecticut have discovered.

This combination of growth disorders, they find, is common to persons of white European stock but apparently is absent in the Negro, American Indian and Chinese.

These findings were reported by Dr. Charles Weer Goff of Yale School of Medicine, New Haven, Conn., at the meeting

of the American Association for the Advancement of Science in Philadelphia.

Poliomyelitis slows growth both specifically and in general, Dr. Goff and associates have found.

Children with the brain injury that makes them "spastics," as they are commonly called, are short in stature. Curvature of the spine is quite common in these youngsters and they always show imbalance of growth.

Chemical studies of the blood of children are now being made at Newington Hospital in the hope of learning more about normal and abnormal growth. The level of the alkaline phosphatase in the blood plasma may turn out to be a useful sign of slowing growth, since the source of chemical is new bone-forming tissue.

"Posture, of course, influences and is influenced by growth in many ways," Dr. Goff declared.

Science News Letter, January 5, 1952

BIOCHEMISTRY

Search for Anti-Cancer Drug Leads to Insect Poison

► DISCOVERY THAT the insect poison, rotenone, has "some promise" as a possible anti-cancer drug was announced by Dr. Ivor Cornman of George Washington Uni-

versity, Washington, D. C., and Dr. Edward F. Rogers of Merck and Co., Rahway, N. J., at the meeting of the American Association for the Advancement of Science in Philadelphia.

"Rotenone is not presented as a cancer cure," the scientists warned.

It has not been tried on animal or human cancers. But it does slow the division of sea urchin eggs and since cell division is the way cancers grow, a chemical that slows this process is looked on as at least potentially an anti-cancer chemical. Rotenone's effect on sea urchin eggs, moreover, shows up when the insect killer is used at the great dilution of two parts in a billion. This means it is very potent.

An antidote for rotenone poisoning may exist in vitamin E or alpha tocopherol. The scientists discovered this in trying to find more about how rotenone works to slow sea urchin egg division. When this cell division was slowed to one hour by rotenone, the hour delay could be brought down to 10 minutes by vitamin E. A 12-minute delay caused by rotenone could be wiped out completely by alpha tocopherol.

Rotenone, the research suggests, may act as an anti-vitamin.

Right now the scientists do not feel they have a cancer cure, but they do believe their researches are getting them nearer to understanding the chemistry involved in cell division. When this is better understood, a drug to stop cancer growth by cell division may be found.

Science News Letter, January 5, 1952

INVENTION

Infra-Red Radiation For Orchard Protection

► INFRA-RED RAYS, from a radiant heater, to protect orchards from late spring and early fall frosts promise better protection than other methods long used, including the familiar oil-burning smudge pots.

Patent 2,577,410 was issued to Arthur W. Farrall, East Lansing, Mich., for this radiant heater. Rights are assigned to Research Corporation, New York.

Science News Letter, January 5, 1952

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