

ASTRONOMY

Light of Reddish Star Comes From Its Depths

MUCH of the light from the familiar giant red star Betelgeuse in the constellation of Orion comes from its depths, not its surface.

Dr. Walter S. Adams, director of the Carnegie Institution's Mt. Wilson Observatory in California, discovered new features of the star's spectrum photographed with a powerful spectrograph attached to the famous Mt. Wilson 100-inch telescope. Dark lines of the spectrum appeared to be doubled, due to a narrow bright line in the middle of those dark spaces caused by light absorption in the star's atmosphere. This reversal showed that much of the star's light came from great depths within it.

The density of the giant red star is only about a thousandth part that of air. This previously established fact is supported by the new researches.

Science News Letter, June 5, 1937

CHEMISTRY

Add Rare Jobs; Water Smeller for Cities

KEEP an eye on the pages of your newspapers and an ear on those radio programs featuring interviews with people of odd occupations. Probably you will soon hear about the first official "water smeller" in the nation. Henry Laughlin of Tyrone, Pa., has just been appointed to that position by one of the chemical companies which makes activated carbon that serves so usefully in taking the odors out of the water supply of over a thousand cities and towns of the land.

Among Mr. Laughlin's accomplishments is the ability to turn on the faucet in a city and simply by smelling the water indicate its palatability. He is also claimed to have an odor "memory" which allows him to identify water from a city once he has smelled of it previously.

Although people seldom realize it, safe and palatable water can no longer be classed along with air as one of those "free" things in life. Processing America's water costs a billion dollars a year.

Water from a river, so often the source for an industrial inland city, has to have mud and other sediment removed by filtering, settling and precipitation. That it must be freed of harmful germs goes without saying. Moreover, the ultimate

users of the water are becoming more vociferous in their demands for the removal of odors and tastes that lower palatability. The days are rapidly diminishing when a city could simply mix chlorine with the water and make it safe, at least, no matter how it looked or tasted.

And that is where America's first "water smeller" comes in. His job is to advise cities and towns on the removal of odors from their water supply.

Science News Letter, June 5, 1937

MEDICINE

20th Century Needs vs. 10th Century Superstitions

MANY a man who rides proudly in a stream-lined motor car might as well be jolting along in a two-wheeled mediaeval wagon, so far as his ideas of how to take care of his health are concerned.

Maybe he scorns the primitive man's witch doctor, but he still demands some mystery mixed with his medicine. Prescriptions written in Latin, for example, are sometimes valued more than simple word-of-mouth directions from the doctor. Even more general is the feeling that the doctor must give the patient some medicine. How many persons are satisfied to follow directions to stay in bed and await recovery without medicine? Only those with superior intelligence, in the opinion of Dr. Harry S. Mustard, director of the Eastern Health District in Baltimore.

A certain childlike readiness to be fooled may be an all right attitude toward amusements. It is dangerous and may even be disastrous when it comes to health.

One tragic consequence of this attitude of mind is illustrated by the case of a child who developed epileptic attacks following a blow on the head. A simple operation could have cured this child. Although the family was poor, neighbors raised enough money to send him with his father from their mountain home to the city where an outstanding brain surgeon was ready to give his services free.

On the train, the father was persuaded by a fellow traveller to abandon the operation and take the child to a special kind of doctor in the traveller's home town. By a system of rubbing and adjustments, it was claimed, this doctor could cure the lad. He was taken to this doctor and now is a chronic, helpless invalid.

Science News Letter, June 5, 1937

IN SCIENCE

ENTOMOLOGY

13-Year "Locusts" Are Now Swarming in South

IF DURING the next few weeks you are motoring on the roads in states along the Lower Mississippi, don't be alarmed if you hear a sound like distant fire sirens, or see swarms of insects that look like triple-sized bumblebees. They are quite harmless thirteen-year cicadas, often mis-called locusts.

The area where the big bugs may be seen covers practically all of Missouri, Arkansas, and Mississippi, the northern half of Louisiana, southern Illinois and Indiana, and eastern Kentucky and Tennessee. The insects appear there every thirteen years. They appear in other parts of the South in other years.

The thirteen-year cicada differs from its seventeen-year cousin of the North only in the four-year difference between the long periods they spend underground before their brief emergence into the upper world to mate, lay their eggs, and die. They spend thirteen years underground and about a month above it. These two species are the longest-lived insects known.

The thirteen-year cicada is a close relative of the common harvest-fly or dog-day cicada. It is a big, thick-bodied, brown creature, with wide, transparent wings. Each forewing bears a W-shaped mark near its tip.

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RADIO

Noise From Interstellar Space Bars Short Waves

THE noise that originates in the interstellar spaces of the universe is generally the ultimate barrier to receiving signals on very short waves, K. G. Jansky of the Bell Telephone Laboratories told the meeting of the International Scientific Radio Union and the Institute of Radio Engineers. Some years ago Mr. Jansky discovered static coming out of the depths of the universe. In the absence of man-made interference the usable signal strength is usually limited by this astronomical interference.

Science News Letter, June 5, 1937

E FIELDS

MEDICINE

Chemical Cure for Gonorrhea Reported

POSSIBILITY of conquering the second Hush-Hush Plague, gonorrhea, by a new chemical treatment appears in the report of Drs. John E. Dees and J. A. C. Colston, Johns Hopkins Hospital, Baltimore, to the American Medical Association in Chicago.

Sixteen out of nineteen patients were cured by treatment with sulfanilamide. In all but two of these recovery occurred within less than a week.

The treatment is still in the experimental stage, the Baltimore physicians point out, but they state that their results, together with the reduction in hospital expenses for previously used methods of treating this widespread condition have impressed them profoundly. They recommend careful use of sulfanilamide in clinics where large numbers of gonorrhea patients can be closely watched so that accurate evaluation of the treatment can be made.

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PHYSICS

Brandy Aged in Six Days By Electrical Method

A PROCESS by which brandy can be aged in six days instead of months is reported by government chemists to the American Chemical Society. A small electric current and the use of electrified atoms of silver make possible "a flavor of rather smooth, delicate character," says the announcement.

Raw apple brandy and fortified wines were used in the experiments which were carried out at the Geneva, N. Y., experiment station of the U. S. Department of Agriculture. The chemical analysis of the results was done in Washington. E. Arthur Beavens, Harry E. Goresline and E. K. Nelson were the chemist team which did the work.

So efficient is the system of letting the liquor flow slowly between two silver electrodes and making the liquor conduct a small electric current that it will even give raw alcohol mixed half and

half with water a vanillin-like aroma and remove most of the raw flavor.

Economic basis of the work is the need for a way to shorten the aging period which now means holding large quantities of liquor in storage with the accompanying stagnation of financial investments and loss due to leakage and evaporation.

Blindfold tests with professional brandy tasters led them to choose the treated over the untreated brandy. Samples were also submitted to people who had never tasted brandy and likewise led them to choose the treated brandy as more pleasing and mellow.

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ASTRONOMY

Famous Comet Now Showing Variations in Brightness

DISPLAYING large and rapid fluctuations in brightness, Comet Schwassman-Wachmann has been located on photographic plates taken by Prof. G. Van Biesbroeck with the 24-inch reflecting telescope of Yerkes Observatory, Williams Bay, Wis.

After being found on a plate taken May 6, the Yerkes astronomers traced it back to as early as Jan. 18, when it was 17th magnitude, which is very faint. On May 15 it was 13.5 magnitude and only two days later it was a whole magnitude fainter.

Never is this comet seen with the unaided eye. It is also noted for the fact that it remains in telescopic view of the earth throughout circumnavigation of the sun.

Known technically as Comet 1925 II, it is noted for such fluctuations in brightness as have just been reported by Dr. Otto Struve, director of Yerkes Observatory. The variations in brightness are remarkable in a comet so far from the sun. It is seven times as far from the sun as the earth and spends its time circling the sun about a half billion miles away, traveling between the orbits of Jupiter and Saturn. It is probably the first comet that is observable all the way round its orbit.

The German team of astronomers, Schwassman-Wachmann, have discovered many comets and as a result there is more than one Schwassmann-Wachmann comet. This particular comet was first discovered by them in 1927, but it has been given the designation 1925 II. This is because it was nearest the sun in 1925 and it was the second comet of that year to pass perihelion.

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OCEANOGRAPHY

Screen Star's Yacht Becomes Science Laboratory

THE SEAGOING yacht *Serena*, formerly the property of Lewis Stone, noted screen actor, has been purchased for the Scripps Institution of Oceanography by Robert Scripps, son and nephew of its two founders and head of the Scripps-Howard Newspaper Alliance. The vessel will replace the Institution's former floating laboratory, the yacht *Scripps*, burned on Nov. 13, 1936, after a mysterious explosion.

The new yacht is larger and faster than the *Scripps*, being 106 feet long as against 65 feet for the older boat. She is able to navigate under either power or sail.

Dr. H. Sverdrup, director of the Scripps Institution, is having her overhauled for her new work. Part of the luxurious staterooms are being ripped out, to be replaced with laboratory rooms. Deep sea drags and a 120,000-foot cable reel for work at great depths will be installed. Fuel tanks are being enlarged to increase the cruising radius.

The new vessel will be ready for her first scientific cruise early this summer.

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OCEANOGRAPHY

Polar Over-Winterers To Study Mystery Current

RUSSIA'S four Polar over-winterers will endeavor to solve, among other scientific problems, a riddle first propounded by a Norwegian forerunner, the great Fritjof Nansen.

Forty-four years ago, while sailing poleward in his stout ship, the *Fram*, Nansen discovered a powerful sea current flowing from the Atlantic into the Arctic, at a depth of from 700 to 2300 feet. It was warmer and saltier than Arctic ocean water.

The four scientists on the floe will check the extent to which this current penetrates into the central part of the Arctic Ocean, and will also ascertain more accurately its depth and dimensions, states Tass.

Another unknown quantity in the question-book of the Arctic is the depth of the ocean's basin at the pole. It has been commonly asserted that it is 12,000 to 16,000 feet to the bottom, but nobody really knows. The Four on the Floe will try to get accurate soundings.

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