

ASTRONOMY

Amateurs Watch Famous Variable Star SS Cygni

"THE NIGHT has a thousand eyes" is strikingly true today, for all over the world, even in war-torn and curfewed countries, amateur variable star observers are keeping their vigil of those fickle stars known as variables. This is reported by Leon Campbell, recorder of the American Association of Variable Star Observers.

The light variations of the unpredictable star called SS Cygni, have been watched continuously since the star's discovery by Miss L. D. Wells at Harvard in 1896. Since then, nearly 60,000 estimates of this star's brightness have been received, representing the observations of over 500 observers, some of whom have watched the star for 20 years or more.

Normally a 12th-magnitude star, about every 50 days SS Cygni bursts forth and becomes 20 or 30 times brighter, reaching nearly the 8th magnitude. Over 330 such outbursts have been recorded, some lasting only a few days, while others stretch over several weeks. But in 1933-34, the star decided not to follow its usual pattern at all. Although there are many stars somewhat like it, SS Cygni is a real mystery to astronomers, who are hard put to it to find an explanation for its peculiar behavior.

Meanwhile, the variable star observers, all of them amateurs, keep up a constant watch of this and over 500 other stars, supplying valuable records for theoretical astronomers to ponder over.

Science News Letter, July 11, 1942

ORNITHOLOGY

Bird Raises Umbrella Over Its Head When "Mad"

A BIRD that raises a feather umbrella over its head when it "gets mad" is due to become a resident of the New York Zoological Park some time this summer. Charles Cordier, collector for the Zoo, reports from Costa Rica that he has succeeded in capturing and taming a pair of umbrella birds, which he will bring with him on his return to this country. This species, though well known to scientists, has never been seen in captivity anywhere in the world, so far as available records show.

The umbrella bird is a good-sized sooty-black bird, about ten inches in height. Its chief point of interest is its umbrella-shaped crest of feathers, which

it expands when it is annoyed or angry.

Mr. Cordier had trouble in securing his specimens. When he arrived at the almost inaccessible uplands where the birds live, he found that the nets he brought with him were not of the right size for their capture. So he used bird-lime, a sticky stuff that holds birds' feet as flypaper catches flies.

The first bird he captured, after three weeks of effort, got away, Mr. Cordier reports:

"After cleaning the bird for an hour, I tied its wings up with adhesive tape from a five-and-ten cent store, and the bird got away in a fraction of a second."

On the same day, however, he captured a female bird, and a few days later a fine male, which he fed by hand for ten days until it got over its initial fright and began to feed on wild berries. It is now quite tame.

Science News Letter, July 11, 1942

AGRICULTURE

Sandblasting Becomes "Ersatz" for Chlorine

SANDBLASTING may become the wartime "ersatz" for the chlorine bleaching process used in preparing California walnuts for market. Bleaching is done not merely to make the walnuts look more attractive, but to disclose shell defects not visible on unbleached nuts. The fruit products laboratory of the University of California College of Agriculture is now working on the sandblasting process. It bleaches the shells satisfactorily; the problem now is to keep fine sand grains from sifting into the nuts through cracks in the shells.

Science News Letter, July 11, 1942

SEISMOLOGY

Chilean Earthquake Centered in Mountains

THE EARTHQUAKE felt in Santiago, Chile, on Monday, June 29, had its epicenter in the mountains about 80 miles south of the city, seismologists of the U. S. Coast and Geodetic Survey informed Science Service after examining data obtained by observatories of the Jesuit Seismological Association at St. Louis University, St. Louis, Mo., and Georgetown University.

The epicenter was located near 34.5 degrees south latitude, 70.5 degrees west longitude. The shock, which was described as "strong", began at 2:26.4 a.m., E.W.T.

Science News Letter, July 11, 1942

IN SCIENCE

MEDICINE

To Keep Young-Looking Go in For Lots of Rest

IF YOU want to keep young-looking and fit after forty, forget about the wrinkle creams and the face masks and the daily dozen of exercises. Go in for rest. Learn to conserve your strength. Remember how grandmother used to preach the virtue of a "beauty nap" before a big party? There are few big parties now, but even before the war few spared time for a beauty nap.

Maybe you have seen pictures of primitive women, in tribes where the men hunt and loaf and the women do all the work. You could hardly believe that the wrinkled, dried skin and dull eyes belonged to a woman who was really young in years, probably half the age she looked. She furnishes excellent proof of the premature breakdown of living cells, Dr. Peter J. Steincrohn points out in his new book, *You Don't Have to Exercise* (Doubleday Doran).

Loss of youthful appearance is just one result of such a premature breakdown of living cells. These cells make up every part of the body, not only the skin, but the bones, the muscles, the heart and blood vessels and all the rest. If you drive yourself to work like a pack horse, you will not only look old before your time, you will feel and be old and perhaps die before your time.

Very few American women do heavy physical labor such as that done by the primitive woman. But they may be working just as hard, in the sense of expending as much energy, even if they do nothing more than manage a household with servants, go shopping, or perhaps serve on a few committees. And after forty, Dr. Steincrohn warns, we must learn to conserve our energy to remain young looking, healthy and fit.

All of us must work harder and longer than ever now to help win the war. This is all the more reason for conserving every bit of energy, for avoiding unnecessary exertion such as setting-up exercises or strenuous gymnastics, and for planning our days to give more time for rest which renews our strength.

Science News Letter, July 11, 1942

E FIELDS

METEOROLOGY

Stalin as Young Man Was Observatory Assistant

JOSEPH STALIN was a junior scientist for a few years when he was a very young man, serving at the Tiflis Observatory, in his native Georgia, as meteorological and magnetic assistant during the years 1898-1901. Stalin was born in 1879.

The notebooks made by the young observer Stalin are still in existence, and are carefully treasured now as prime exhibits for a museum of the history of science in the USSR.

This almost forgotten chapter in the Soviet leader's history was made known by Dr. John Fleming, director of the Department of Terrestrial Magnetism, Carnegie Institution of Washington. The information came by way of London, as a result of the visit there of Dr. N. W. Pushkoff, leading Russian researcher in terrestrial magnetism, on a scientific mission. Dr. Pushkoff told the story to an English colleague, Prof. Sidney Chapman of the Imperial College of Science and Technology, who transmitted it to Dr. Fleming for publication in the *Journal of Terrestrial Magnetism and Atmospheric Electricity*.

Prior to the attack on Russia by the Nazis a year ago, Dr. Pushkoff disclosed, a plan approved by Stalin was under way for the establishment of a national geophysical observatory, patterned after the Carnegie Institution's laboratory. Outbreak of hostilities necessitated postponement of organization and building until after the war.

Science News Letter, July 11, 1942

ASTRONOMY

Arizona Astronomer Finds Atmospheric "Window"

A NEW "window" in the atmosphere has been discovered by Dr. Arthur Adel, of Lowell Observatory. To the American Astronomical Society he has reported the extension of the observable spectrum in the infra-red region from wave-lengths 14 mu (one mu is a millimicron or a millionth of a milli-

meter) to 24 mu, or nearly a whole octave.

Until recently, the long wave-length limit for which we could observe the spectrum of the sun was 14 mu. In July, 1941, Dr. Adel discovered a new spectral region of atmospheric transparency which allowed the obtaining of the sun's spectrum down to 24 mu. This discovery concluded a search he had begun in 1935.

Because of its high density, the atmosphere effectively absorbs great quantities of the light and energy we receive from the sun and the stars. In some cases it does this selectively, that is, for just certain wave lengths of the incoming light. The absorption is accomplished by nitrogen, oxygen, water vapor, and carbon dioxide. The bands of water vapor and carbon dioxide are particularly strong in the infra-red region of the spectrum; however, Dr. Adel has been able to pierce this "fog" in at least this one region.

Science News Letter, July 11, 1942

INVENTION

Seaplanes May Refuel From Floating "Bubbles"

QUICK refueling for submarine-hunting seaplanes and other aircraft is made possible by small filling stations that float on the sea like buoys. These are an invention of two officers of the U. S. Navy, Comdr. Paul E. Pihl and Comdr. Charles F. Coe, who have been awarded U. S. patent 2,287,824.

Time is lost in refueling seaplanes directly from their tenders, because of the small number of aircraft that can come alongside at one time. To obviate this, the two Navy men have devised a balloon-like fabric bag, impregnated with rubber or other waterproof material, into which the gasoline can be poured from the tanks of the tender. It is then lowered into the sea, where it floats like a bubble because gasoline is lighter than water. A suitable anchor keeps it from drifting.

One seaplane tender can fill and set out any desired number of these gasoline "bubbles", at such intervals that the seaplanes can settle down, suck their respective bubbles empty, and take off again with a minimum of time lost.

To keep the balloons from sinking when empty, and also to make filling an easier operation, each one is provided with a flask of compressed carbon dioxide, which is released to keep it inflated and afloat. The balloons can be collapsed for more compact stowage on shipboard.

Science News Letter, July 11, 1942

BACTERIOLOGY

Agar, Laboratory Material Reclaimable for Re-use

AGAR, a jelly-like substance made from seaweed, has been one of the wartime casualties of the laboratory. It is practically a "must" material in certain kinds of laboratory culture, especially in bacteriology, so that the cutting off of its pre-war source, Japan, threatens considerable inconvenience to research workers.

Methods for reclaiming once-used agar for re-use are described (*Science*, July 3) by two Washington research workers who developed their processes independently of each other. The men are Dr. Alden F. Roe of the George Washington University School of Medicine and Dr. Howard I. Thaller of the U. S. Department of Agriculture laboratories at Beltsville, Md.

There are some differences between the two methods, but both share certain essential steps. The discarded cultures are killed by heating thoroughly in a pressure chamber (autoclave), then the melted agar is poured into vessels and the debris removed either by filtering or sedimentation. Finally the jelly-like substance is slowly dried until it is reduced to hard, half-horny sheets that can be stored indefinitely in a dry place. To re-use, it is boiled in water and cooled to the jelly form desired.

Agar has recently come into considerable demand for a "bulk-former" in certain kinds of medicine, but this use is of course stopped entirely now. Laboratory requirements have priority.

Some substitutes for agar have been found, though these are not yet wholly satisfactory to many bacteriologists. A certain amount is also being produced from seaweed in this country, but probably not enough to replace the former imports from Japan.

Science News Letter, July 11, 1942

CHEMISTRY

Chemical Industry Medal Awarded to Harrison Howe

THE 1942 Chemical Industry Medal, one of the highest honors within the gift of American applied chemistry, has been voted by the Society of Chemical Industry to Dr. Harrison E. Howe, editor of the American Chemical Society's journal, *Industrial and Engineering Chemistry*, and a trustee of Science Service. Formal presentation will be made in New York on Nov. 6.

Science News Letter, July 11, 1942