

ASTRONOMY

Discoverer of Pluto Gets First Slosson Award

CLYDE TOMBAUGH, the young Kansas astronomer who discovered the planet Pluto last year at the Lowell Observatory, will become a student at Kansas University as the first recipient of a scholarship founded in memory of another Kansas scientist who made his mark, the late Dr. Edwin E. Slosson, first director of Science Service.

The Edwin Emery Slosson scholarship was recently founded at Dr. Slosson's alma mater by his widow, Mrs. May Preston Slosson, and his son, Prof. Preston Slosson of the University of Michigan. Mr. Tombaugh, designated as its first beneficiary, has never attended college. He finished a high school course, followed astronomy as a hobby, and finally was offered a position at the Lowell Observatory where his skill with the photographic telescope resulted in the finding of the long-sought trans-Neptunian planet and gained him a place in the astronomical hall of fame.

Because of a certain program of work which he had undertaken at the observatory, Mr. Tombaugh has been granted a year's leave of absence by Kansas University before he takes up his studies there. He will receive the Slosson scholarship during his entire four-year course.

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ORDNANCE

Army Officers to Test New High Velocity Rifle

ORDNANCE officers of the U. S. Army are investigating the claims of H. Gerlich, German arms inventor, to sensational new velocities obtained with his newest cartridge, enabling a rifle-armed infantryman to put a tank out of action. Steps have been taken to obtain one of his rifles, which will be subjected to tests.

Herr Gerlich is well known as the developer of a line of successful high-velocity sporting rifles, which depend on small-calibered bullets moving at tearing speeds for their effect, rather than on slower, heavy, smashing missiles. Tests have been made in the past with a .28-caliber bullet at velocities of around 4,000 feet a second; the present claim is to an increase in velocity up to more than 5000 feet a second.

Ordnance officers expressed considerable curiosity and some doubts regarding

the price at which such velocities can be obtained with present type rifles and without a radical change in type of propelling powder. Velocities of 5000 feet a second and more can be obtained, even with much larger projectiles than the ordinary small-arms bullet. The long-range gun that shelled Paris during the war had a muzzle velocity of more than 5000 feet a second on its eight-inch shells. But this velocity was purchased at a price: after about three dozen shots the lining of the gun, particularly near the powder chamber, was so eroded by the intense heat and pressure of the firing that the piece had to be relined.

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CHEMISTRY—BOTANY

Single Oxygen Atom Turns Rose Geraniums Salmon

THAT SOME GERANIUM flowers are rose pink and others salmon color is merely a matter of a slight change in a chemical formula. The chemical substances which cause these colors are nearly but not quite identical, it has been shown by R. Scott Moncrieff at the Sir William Dunn School of Biochemistry of Cambridge University.

Mr. Moncrieff has shown that the difference between the molecules causing the color in these two flowers is due to a single atom of oxygen. In a formula containing 22 carbons, 30 hydrogens and 13 oxygens the addition of one oxygen atom brings about the change in hue.

The two pigments also occur in certain varieties of dahlias and the purple aster.

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PSEUDO-MEDICINE

Blunt Needles Thrust Into Sick Koreans to End Pain

STICKING blunt copper needles called "chims" into the body of a patient is one of the queer customs of old-time doctors of Korea, reported to the *American Journal of Surgery* by Dr. A. G. Anderson, of Pyongyang, Korea.

The needles are quite blunt at both ends, vary in length from three-quarters of an inch to about four inches, and are about the thickness of the lead refills for lead pencils. They are used to treat pain or swelling or both, particularly of the joints. They are driven into the abdominal cavity by main force, two or three at a sitting.

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IN SCIENCE

ARCHAEOLOGY

Bronze Age Ruins Found Near Dead Sea

RUINS of an extensive Bronze Age town have been found in the lower Jordan valley, about four miles north of the Dead Sea, by an expedition of the Pontifical Biblical Institute. From metal and stone tools and pottery fragments it has been possible to work out a date of between 2500 and 1900 B. C. for the settlement.

The history of a major disaster was found written in a deep layer of ashes, in which a lower stratum of the ruins was buried. This had been leveled off with sand, and a second town built on the remains of the first. That the original inhabitants, or at least people of the same race, were the rebuilders is evidenced by the identity of the implements and pottery in both settlements.

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CLIMATOLOGY-ARCHAEOLOGY

Changing Climate May Have Pushed Corn Belt to West

DO THE GREAT Indian mounds of the Hopewell culture, known best in Ohio, indicate that a drier climate prevailed there a few hundred years ago?

Prof. Paul B. Sears, of the University of Oklahoma, raises this question in *Science*, calling attention to the fact that the mound builder civilization depended primarily on the cultivation of corn, and that the Ohio center of the Hopewell culture, the highest development of the moundbuilder life, lay well to the east of the present corn belt center, which is near the Iowa-Illinois boundary.

This raises the further interesting question, which Prof. Sears does not undertake to answer, of whether the Ohio moundbuilders were driven westward by a climate that favored the development of forests and the warlike tribes of hunters that dwelt in them, or whether they lingered until the coming of the whites and the firearm traffic made their enemies strong enough to prevail against them.

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E FIELDS

VITAL STATISTICS

Girl Babies More Likely to Be Born Alive Than Boys

A FEW MORE boys than girls are born every year in the United States, but baby boys have less chance of being born alive than baby girls, it appears from statistical studies.

Dr. William Walter Greulich, of the University of Colorado, has just reported to *Science* that of the babies born dead each year in a certain area, there are about 135 males to every 100 females. Of babies born alive, there are about 105 or 106 males to every 100 females.

During the first four or five months of pregnancy, the mortality among male embryos is very high compared with that of female embryos. The sex ratio for the first four months is 357.48 males to 100 females. This drops gradually to the seventh month and then increases, the increase probably being due to the fact that male babies are slightly larger than girls and consequently more subject to fatal injury at birth.

Figures for sex ratios of stillbirths are not very reliable for the early months, but indicate an enormous wastage of male embryos.

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BACTERIOLOGY

Hot Soapsuds Kill Disease Germs Easily, Doctor Says

COMMON ordinary soapsuds, particularly hot ones, are extremely good agents for killing germs, Dr. John E. Walker of Opelika, Ala., has just reported to the American Medical Association at Chicago. The germs of pneumonia, meningitis, diphtheria, syphilis, gonorrhoea, influenza, and the streptococcus germ were all killed in about two minutes by comparatively weak solutions of soap in cool water, Dr. Walker found from his own and other investigations.

The soapsuds compared favorably with many newly-synthesized chemicals in germ-killing power. The brand of soap apparently made no difference, brown laundry soap, floating white soap, perfumed toilet soap, coconut oil and

olive oil soaps and soap made according to the standards of the U. S. Pharmacopoeia were equally effective.

"When properly used for cleaning the hands or for washing eating utensils, soaps are undoubtedly potent factors in preventing the spread of diseases due to these organisms," Dr. Walker concluded.

He added, however, that the germ of typhoid fever and the staphylococcus organism are not destroyed by soaps.

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PHYSICS

Vitamins A and B Print Initials on Photo Plates

TWO of the vitamins, A and B, apparently give off some kind of a radiation that will affect the emulsion on a photographic plate in the same way that light and X-rays do. This is indicated by experiments performed by two women scientists, Sophie Botcharsky of London and Anna Foeringer of Paris.

In the British scientific journal, *Nature*, they report as follows:

"Photographic plates were covered with aluminum foil and letters were cut out of the foil covering the glass side. Extracts of vitamins A and B were used to paint the letters VA and VB on the glass side. The vitamin A used was ether extract of dried ox-liver, the solvent being removed in nitrogen. Vitamin B was water extract of purified brewers' yeast. The plates, wrapped in black paper, were left for three days; on development, clear images of the letters were obtained.

"To confirm the results, vitamins A and B were sealed in two separate glass tubes, and the experiment was repeated. Very sharp images were again obtained.

"An extract of vitamin A prepared in a Paris research laboratory was investigated in the same way. It also gave positive results.

"Two solutions, one ten times stronger than the other, of vitamin A in paraffin oil and vitamin B in water, were compared. The plates showed clearly difference in strength. Control experiments of pure solvents gave unfogged plates.

"It is interesting to note that the effect of vitamin B is similar to that of vitamin A, although the two vitamins are of different origin.

"The experiments were repeated several times, and the same definite effect was present. We are proceeding with our research into these effects."

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PHYSICS

Train Wrecks Averted by New Patrolman of Roads

TELLING what the inside of a sound-looking locomotive rail is like without waiting for a train wreck to disclose a defect, is an achievement of science that is daily saving lives. In a report to the American Institute of Electrical Engineers, H. C. Drake, engineer of Sperry Products of New York, explains how this is accomplished with the detector car, the new safety patrolman of the railroad.

The detector car, which is a small, railway car, moves along the track at six miles per hour when examining rails. It labels the faulty rails whose smooth exterior deceives trackwalkers of the danger lurking in them. Operating on the principle that an electric current flowing through a rail must pass around any break in the metal, the detector car records this electrical deviation and marks the bad spot with a streak of paint.

Early in 1927, it was demonstrated in the laboratory that electricity could be used successfully to diagnose the ills, if any, of steel rails. After months of experimentation the first detector car was constructed for the American Railway Engineering Association.

Since its acceptance in 1928 by this group, detector cars have been placed in use on several railroads, and the number of bad rails located is mute evidence of the disasters averted.

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ORNITHOLOGY

Hailstorm Kills Storks on Errand of Good to Mankind

WHILE ON AN ERRAND of good to man, countless thousands of storks, fabled bird of babyhood, were killed or wounded recently on an African plateau by a hailstorm of violence.

Their errand of good was not the duty of increasing population. The birds were feeding on man's pests, locusts and grasshoppers. So efficient are they as insect consumers that English settlers in South Africa call them the "great locust birds" and protect them by law, says the *African World*.

But man's law cannot save the big white birds from storms, and disasters such as the one which has just been reported are not uncommon occurrences.

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