

ASTRONOMY

First Artificial Planet Named by Astronomers

► MECHTA, the Soviet rocket now orbiting around the sun, may be called "dream" by the Russians (Mechta means "dream" in Russian), but to astronomers it will be officially known as "Artificial Planet 1." (See SNL, Jan. 17, pp. 37 and 41.)

This word was received from Harvard College Observatory, clearing house for astronomical information in the Western Hemisphere.

Drs. G. Veis and C. Whitney of the Smithsonian Astrophysical Observatory have, however, calculated it was in the constellation of Libra on Jan. 15, based on information about Mechta's orbit supplied by the Russians.

Science News Letter, January 24, 1959

SOCIOLOGY

Desegregation Hardest Where Negroes Are Few

► DESEGREGATION of the schools is not made more difficult by a proportionately large number of Negro children, Rev. James F. Muldowney, S.J., sociologist of Wheeling College, Wheeling, W. Va., told the American Catholic Sociological Society meeting in Notre Dame, Ind.

Just about the worst climate for school desegregation, he said, is a predominantly rural area with few Negroes living in segregated sections, where the integration was forced by local court order.

The best prospect for an easy adjustment is a large city with clear residential segregation where more than a quarter of the population are Negroes and which has voluntarily accepted the Supreme Court's decision.

Academic difference between white and Negro students is not a significant factor in the ease or difficulty of transition, Father Muldowney found.

Chances are improved for a relatively easy desegregation when white teachers have become acquainted with Negro teachers in biracial professional meetings.

Overt resistance to school desegregation rarely appears among high school students without adult encouragement, Father Muldowney found.

He based his conclusion on a study of desegregation in five communities of five different states which had compulsory racial segregation before the Supreme Court decision of 1954.

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FISHERIES

Air Curtain Corrals Schools of Herring

► A CURTAIN of air bubbles may mean school is out when it comes to fishing for herring.

Maine fishermen have successfully used the air curtain to corral good-sized herring catches where no fish had been caught for several weeks.

Earlier trials, conducted by the U. S. Bu-

reau of Commercial Fisheries, had shown that the movements of Atlantic herring schools could be influenced by an air bubble curtain. Using equipment that consists mainly of a 1,200-foot length of flexible plastic pipe, with holes drilled at one-foot intervals and two air compressors supplying air at each end, Government researchers found they were able to herd herring right into the fishermen's waiting seines.

"It is considered significant," the researchers reported, "that the several nights of operation of this equipment resulted in the catching of a volume of herring which, valued at \$1.00 per bushel . . . were worth approximately twice the cost of the major components of the equipment. It appears quite unlikely that any of these fish could have been caught without the use of such gear."

Factors such as deep water, boat traffic, swift tides, or debris which often make it impossible to use nets and other seine gear have no effect on the use of an air curtain, they also pointed out.

Seine and air curtain sets made during six nights yielded a total of 5,350 bushels of herring, the fisheries experts reported. Aerial observations were made to determine the locations of the herring schools.

Various improvements are possible that would increase the catch, the researchers said. A 2,400- or 3,000-foot air curtain would be better in a larger number of fishing areas; a lighter curtain, one made with smaller air holes, would probably give as good "corralling" results.

Science News Letter, January 24, 1959

ENGINEERING

Direct Dialing of Office Extensions Now Routine

► IT IS now possible for an outside caller to dial directly the extension he wants in the huge headquarters office of E. I. du Pont de Nemours & Co., Inc.

America's third exchange for direct dialing to a specific desk has been installed at Wilmington, Del. Others are in American Telephone and Telegraph Company's main New York offices and at the Boeing Airplane Company offices, Seattle, Wash.

Under the new "Direct Inward Dialing" system, a company is assigned an exchange, such as Liberty 4. To reach a specific party, the caller dials LI 4, followed by the extension number.

If the calling party does not know the extension number, he still can call the main switchboard by dialing the company's number listed in the telephone directory.

Long distance calls placed under the new system will be billed at usual station-to-station rates, an A.T.&T. official said, although such calls specifying an extension number would have been billed at higher person-to-person rates under the former system.

He said the new system will save time and handling on calls and shorten the use of telephone circuits. Besides, he added, when the customer finds it easier to call a specific party, he will use the telephone more frequently.

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IN SCIENCE

ORNITHOLOGY

Southwest England Birds More Energetic Singers

► BRITISH BIRDS that come from the southwestern part of England are probably more energetic singers than their eastern cousins, D. R. Barber of Sidmouth, Devon, reports.

He kept detailed records of the chaffinches' songs for three breeding seasons, he reports in *Nature* (Jan. 10). Using thousands of individual bird's songs, the researcher computed the "song ratio"—the total singing time divided by total silent period for ten-day periods in the breeding season.

As the peak of the breeding season approached, there is also a "significant increase of the time spent by each bird in actual song," he noted.

Birds from Cambridge, in eastern England, sang for 2.3 seconds on the average with a 15-second rest period. In contrast, birds from Sidmouth, in the southwest, sang for 2.1 seconds with only an 8.2-second rest period.

"These results suggest that significant differences in the level of breeding song activity may well exist between bird populations in different parts of the country," the researcher concludes. The common chaffinch, *Fringilla coelebs*, was the bird studied.

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ENGINEERING

Robots Help Write "Personal" Notes

► A HOUSEWIFE in Bismarck, N. D., opens a letter postmarked Washington, D. C., and, wetting her thumb, runs it across the signature. The ink smears.

Then she turns the letter over and runs a practiced finger over the paper. The surface is rough with the imprint of genuine typewriting. A happy smile comes over her face as she exclaims, "Why, he sent me a personal letter!"

This scene, repeated thousands of times every week across the nation, is the end product of machines gaining wide use on Capitol Hill. The signature is by machine. The typing is from perforated tapes or sheets operating somewhat like the old player piano in principle. But the result appears to be the real thing.

Robotyper Corporation of Hendersonville, N. C., estimates about 700 of its automatic typing machines are now in use by members of the Senate and House; and Friden, Inc., of San Leandro, Calif., claims upwards of 150 of its Flexowriters have been sold to lawmakers. The latter machine also embosses address plates automatically.

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CE FIELDS

BIOLOGY

Chromosome X in Man 3 Times Larger Than Y

► THE CHROMOSOME that helps determine sex in humans, the X chromosome, has been found to be three times larger than the Y chromosome.

Since the female has two X chromosomes while the male has one X and one Y, this may help explain some of the differences between the sexes, two geneticists report.

As a consequence of the larger size of the X chromosome, the human female cell is about four percent greater than the male in chromosome volume. Thus, the female has a "substantially richer genetic capacity." Drs. J. H. Tjio and T. T. Puck say in the *Proceedings of the National Academy of Sciences* (Dec. 1958) that this may contribute to the female's greater longevity.

Other differences, such as those in response to X-ray irradiation and the nature of malignant growths, might be explained by the sex chromosome size difference, the geneticists believe.

Drs. Tjio and Puck, respectively of the Estacion Experimental de Aula Dei, Zaragoza, Spain, and the University of Colorado Medical Center, Denver, also studied the number of chromosomes found in human cells. Further evidence was reported that the "real" somatic, or body cell, chromosome number of humans is 46. Previously it was believed to be 48.

Cells from various organs in 13 persons were analyzed and exact chromosome counts performed on almost 2,000 cells. More than 95% of these revealed 46 chromosomes, the scientists report.

They also divided the chromosomes into eight groups on the basis of size, position of the centromere and the possession of a satellite body. (The centromere is a small round body that divides the chromosome into "arms" and is believed to play the important role of "nucleolar organizer" in cell division.)

A total of 74 individuals have now been studied whose chromosome count is 46.

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NATURAL RESOURCES

Western U.S. Yields Major Valuable Deposits

► PARTS of western United States, only recently developed commercially, contain major deposits of minerals and chemicals valuable to our national economy.

The problem involved in exploiting our strategic western resources is the scarcity and high cost of transportation, V. E. Larson of Food Machinery and Chemical Corporation, Pocatello, Idaho, told scientists at the American Institute of Chemical Engineers meeting in Salt Lake City.

The western region, which Mr. Larson described as those states generally bordering the Rocky Mountains, holds vast deposits of oil, oil shale, natural gas and coal. There is a great abundance of limestone, phosphate-bearing rock, sulfur, salt, sand and soda ash-bearing trona.

In addition, Mr. Larson reported there are "adequate amounts" of copper, lead, zinc, iron and other metals.

The region's basic problems are the lack of transportation facilities and the long distance to market.

"Many good properties are undeveloped because it is not economically feasible to build a road or railroad into the property," he told the chemical engineers. In addition, "frequently freight costs to market are higher than the value of the ore" at the mine.

Science News Letter, January 24, 1959

PUBLIC HEALTH

Flu Vaccination Urged For Cardiac Patients

► INFLUENZA vaccination for persons with heart and blood vessel diseases was recommended by the U. S. Public Health Service and the American Heart Association.

Influenza can be a serious threat to persons with heart conditions. It is frequently a dangerous illness that may result in death, Drs. Leroy E. Burney, Surgeon General of the Public Health Service, and Francis L. Chamberlain, president of the American Heart Association, said in a joint statement.

"We urge heart patients to seek the advice of their physicians with respect to obtaining the protection that vaccination will give," they stated.

Experience has shown patients with heart or lung diseases are more susceptible to the hazards of influenza than is the general population.

Science News Letter, January 24, 1959

EDUCATION

1958 Frosh Engineering Enrollment Below 1957

► FEWER COLLEGE freshmen enrolled in engineering curriculums this past fall than at the same time in 1957.

After increasing steadily for seven years in a row, freshman engineering enrollment in colleges and universities of the United States and its outlying parts fell off sharply at the beginning of this school year, Arthur S. Flemming, Secretary of Health, Education and Welfare, reported.

First-year enrollments in engineering climbed to 78,757 in the fall of 1957. Last fall, enrollment tumbled 11% to 70,129.

Dr. Flemming called this a serious setback in a field of education vital to our national security in a period of revolutionary technological change. Total undergraduate enrollment in engineering subjects also dipped by 4.4%.

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VETERINARY SCIENCE

Oxygen Piped Into Ailing Animals by New Method

► A NEW METHOD of piping oxygen to sick animals has been developed by Dr. Tadeusz Kowalczyk, a University of Wisconsin veterinary scientist.

Dr. Kowalczyk discovered the method while attempting a last resort treatment of a cow with bronchial pneumonia, after drugs and antibiotics had failed. He inserted a small tube in one of the cow's nostrils and passed pure oxygen into her lungs. The animal recovered rapidly as the result of the treatment.

The veterinary scientist has used the method since with other animals with good results. Veterinarians see future use for the method in treating animals suffering from diseases ranging all the way from pneumonia and anemia to certain types of allergy and poisoning.

Previous methods of giving oxygen to animals have involved the use of masks or oxygen tents. Masks require complex equipment and, in addition to being uncomfortable, also frighten the animal. Oxygen tents are expensive, difficult to use, and their use carries an explosion hazard.

In contrast, the method developed by Dr. Kowalczyk has the advantages of safety, simplicity and ease of set-up. The only equipment necessary is an oxygen tank with pressure and low regulators and a length of flexible plastic tubing.

One end of the tube is lubricated and inserted in the animal's nostril, and the tube is then taped to the animal's nose. A flexible band suspends the tube from the animal's stall. This leaves the animal free to lie down, move about, or even eat, and still receive oxygen at the same time.

Science News Letter, January 24, 1959

PHYSIOLOGY

Polarized Light Aids Bees in Flight

► BEES AND other arthropods, spiders and lobsters among them, use the reflections from polarized light, rather than the light itself, to communicate and navigate in their hives.

This means that, contrary to scientists' expectations, they probably lack a special sensory mechanism in their eyes.

Experiments reported to the American Association for the Advancement of Science indicate that these animals "must respond to brightness of reflections and that these reflections depend on polarization." Bees that cannot see overhead light can still orient themselves to polarized light, Edward R. Baylor of the Oceanographic Institution, Woods Hole, Mass., said.

However, when the lower part of a bee's eyes are painted over with a shellac-like substance so that it cannot see reflected light, the bee is unable to orient herself. Prof. Frederick E. Smith of the University of Michigan worked on the experiment with Mr. Baylor.

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