AERONAUTICS

Penpoint Pinpoints Plane By Drawing on Map Area

➤ A NEW navigational device for British fighter planes and helicopters has been developed.

A moving pen shows the pilot exactly where he is by drawing his position continuously on a map of the area he is flying over. When he flies off the map, the pen "stores up" the plane's flight path. When the plane re-enters the mapped area, the pen pinpoints the plane at the proper spot.

The map-marking aid is the latest feature of the Decca Flight Log. Its map case is about the size of a telephone directory, but not as thick. Its electronic brain, which gives instructions to the moving pen, weighs about 60 pounds, but a 20-pound model currently is being developed for fighters and helicopters.

The Decca aid works on radio signals transmitted from a chain of stations on the ground. This system now covers most of Europe, the Society of British Aircraft Constructors reports.

The new aid may be highly useful to helicopters that will be squeezing in and out of congested areas. Engineers currently are trying to create a helicopter model to show enlarged details of the landing sites. The moving pen would travel over these enlarged sections at the proper speed, switching back to a slower speed for the regular-scaled map. Such enlarged views could show the pilot more clearly the details and hazards of the landing area.

Science News Letter, April 10, 1954

ASTRONOMY

March H-Bomb Explosion Could Be Seen From Mars

➤ IF THERE had been intelligent life on Mars peering at the earth through telescopes, either one of the March hydrogen bomb explosions could have been spotted. (See p. 227.)

From the red planet, it would have appeared suddenly "as an increasingly large cloud spot mushrooming out," then dissipating, Dr. E. C. Slipher of the Lowell Observatory, Flagstaff, Ariz., said in Washington. The cloud's mushroom shape and the flash probably could not be seen.

However, scientists who attended a meeting of the International Mars Committee in Washington do not hold much hope of intelligent life on Mars. It would be a startling enough discovery, Dr. Harold Urey of the University of Chicago pointed out, to find positive proof of life on Mars, not human life but plant life such as mosses and lichens.

This would mean, he said, that life appears wherever conditions are "right," and that life on earth is not unique. If plant life is definitely found to exist on Mars, then chances are good for higher forms of life on other planets revolving around other stars, or suns.

Most astronomers now agree that the seasonal color changes seen on the Martian surface are probably due to vegetation, but this is a "logical supposition," which they hope to prove this summer when the red planet approaches within 40,000,000 miles of the earth.

Finding the particular spectrum line made by chlorophyll, the green pigment of earth plants, would be the most likely proof, Dr. Slipher said. In the case of such a discovery, he promised world-wide notification "within five minutes."

Studies being conducted by the International Mars Committee at 17 astronomical observatories around the world during the next six months could furnish a guidebook for future visitors to the red planet, if anyone gathered all the results and put them together, Dr. Slipher said.

Weathermen here on earth would get useful information about our weather if this summer's continuous, around-the-world survey of Mars yielded evidence that solar radiation had a direct effect upon the red planet's atmosphere.

Science News Letter, April 10, 1954

MEDICINE

Probe City Air for Lung Cancer Cause

➤ THE AIR of our cities and industrial centers should be probed to see whether cancer-causing chemicals in it are responsible for the increase in numbers of lung cancer cases in recent years, Dr. Paul Kotin and associates of the University of Southern California and the Los Angeles County Air Pollution Control District urge.

When chemicals from the air of Los Angeles during smog and non-smog periods were painted on black mice, skin tumors appeared in the animals within 15 months, these scientists found.

Skin tumors and cancers also developed on black mice after painting with gasoline engine exhaust products.

The scientists point out that: a disproportionate rise in lung cancer has been noted in city population groups; the air contains cancer-producing substances; and the accelerated rate of lung cancer frequency parallels most dramatically the industrialization of our society with its accompanying increase in air pollution.

"The introduction of the gasoline engine as the most prominent source of motive power is one of the chief characteristics of this industrialization, and, in consequence, petroleum combustion and oxidation products have become one of the main air-pollutant materials. The experimental carcinogenicity of certain of these products has been established, and suspicion must be directed to them in relation to the lung cancer increase," they state.

The studies are reported in the American Medical Association's *Archives of Industrial Hygiene and Occupational Medicine* by Drs. Kotin, Hans L. Falk, Paul Mader and Miss Marilyn Thomas.

Science News Letter, April 10, 1954

IN SCIEN

MEDICINE

Special Polio Virus May Attack Heart

➤ THE POSSIBLE existence of a special strain of poliomyelitis virus that attacks the heart is suggested by Drs. G. F. Kipkie and J. S. M. McAuley of Queen's University and Kingston General Hospital, Kingston, Ont.

The kind of heart trouble called myocarditis, which is an inflammation of the heart muscle, causes death in polio more often than is generally supposed, the two doctors point out. In fatal bulbar spinal polio, almost half the patients, 42%, suffered this acute heart inflammation, according to one authority.

The Kingston doctors report a case of fatal bulbar polio in which there was an extremely rapid pulse with failure of the circulation. Post mortem examination showed the enlarged heart as well as the changes of bulbar polio in the brain.

Whether this heart condition has been overlooked in the past, or whether it results from a different strain of polio virus with affinity for internal organs cannot now be determined, the doctors state in *The Canadian Medical Association Journal* (Mar.).

Science News Letter, April 10, 1954

MEDICINE

Coconut Water Can Be Fed by Vein

➤ LATEST ADDITION to the food patients can be given through their veins when too sick to eat is coconut water. It furnishes fluid plus potassium, chloride (salt ingredient), phosphate, sugars, magnesium, calcium and proteins.

Its use in remote areas or under military emergencies, when supplies of the more usual sugar and salt solutions for vein feeding have been interrupted, is suggested by Dr. Ben Eiseman of Denver.

Preliminary experiments in Bangkok, Thailand, and in St. Louis have shown its possibilities, he reports in the *Archives of Surgery*. A total of 26 infusions into the veins of 21 persons have been given without any serious reactions.

If strict sterilization is enforced, there is no bacterial or fungal contamination from coconut water. The coconut water is obtained by withdrawing the fluid from the nut through a tube inserted in the eye of the nut. The fluid is then filtered to drain off any particles of coconut meat.

Dr. Eiseman stressed that the present study was too limited to make definite conclusions, but that further study is warranted.

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CE FIELDS

AERONAUTICS

Safer Private Flying With Added Equipment

➤ EXECUTIVES AND businessmen who fly in private planes will be safer if the aircraft manufacturers give these planes the following standard equipment: shoulder harness, stall warning indicator, improved directional indicator and modern lighting.

This was suggested by Col. Donaldson W. Kingsley, U.S.A.F.R., Hastings, Nebr., at the meeting of the Aero Medical Association in Washington.

Flying by executive and business aircraft came to nearly 40% of all private flying in 1951. It exceeded that of scheduled airline carriers by more than one million hours. However, the accident fatality rate was about 1 to 25 in favor of the scheduled carrier, Col. Kingsley reported.

All persons securing pilot's certificates, he said, should be required to have a course in radio communication and orientation. Such students should have at least two hours of instrument instruction. This should be enough to show them how dangerous instrument flight is and should keep unqualified pilots from attempting such flights.

Keeping records of each flight instructor as to the number of pilots certified by him and their accident record was a further safe flying suggestion given by Col. Kingsley.

Col. Kingsley thinks the fatal accident rate may be cut in half within two years if such procedures are carried out.

Science News Letter, April 10, 1954

CHEMISTRY

Chemists Predict Safer, Better Insect Killers

➤ HOW TO poison pests without killing plants they feed on or men who make the poisons claimed the attention of chemists at the meeting of the American Chemical Society in Kansas City, Mo.

Insects may die because the farmer sprays the insecticide directly on them, because they eat the poison clinging to the surface of the leaf they chew, or because the plant they feed on has taken into its juices substances harmless to the plant but deadly to the bug.

Methods for measuring residues of such chemicals in plants were reported to the meeting by industrial and government scientists. The toxicity of organic phosphorus compounds is greatest in phosphates and phosphonates, Jiro K. Kodama, Hamilton H. Anderson and Charles Henri Hine of the University of California School of Medicine, San Francisco, said. The effects are cholinesterase inhibition, degeneration of the nervous system and irritation of the surface tissue.

Deaths have results from swallowing these chemicals but not from handling them, the California scientists said.

The effects of soils, water, oxygen, sunlight and solvents and emulsifiers carrying the dusts and natural enzymes on pesticides and on the corrosion of metal equipment used with them are being studied. Improved insecticides should result.

Science News Letter, April 10, 1954

DENTISTRY

Cleft Palate Repair at Age Four Succeeds Better

➤ DELAY OPERATIONS to repair cleft palates until the child born with this deformity is at least four years old, Dr. T. M. Graber, research director of the Cleft Lip and Palate Institute of Northwestern University, Chicago, advises.

An eight-year study of 250 patients at this institute and at Children's Memorial Hospital, Chicago, showed that operations to repair the cleft palate done while the child is still a young infant result in considerable facial deformity and poor functioning of mouth and jaws.

Waiting until the child is four years old avoids interference with the development of the jaw, Dr. Graber explained in the *Journal of the American Dental Association* (April). By the fifth year, the upper jaw has about completed its growth in width.

"What may be a surgical success when a patient is two years of age, as judged by an esthetic and functional yardstick, may be a complete failure when the patient is 20 years old and the same yardstick is applied," he said.

There are 100,000 young people under 21 years of age in the United States who are victims of congenital cleft lip and palate, Dr. Graber said. He estimated that one child in every 700 is born with the deformity of 10,000 children each year. The incidence is far greater than that of infantile paralysis or cerebral palsy.

Science News Letter, April 10, 1954

BIOCHEMISTRY

Vitamins Fail to Stop Alcoholic's Drinking

➤ VITAMINS, CONTRARY to the hopes of some, will not make a sober abstainer out of an alcoholic, Drs. Ebbe Curtis Hoff and John C. Forbes of the Medical College of Virginia, Richmond, reported in Washington at the conference on drug resistance sponsored by the Office of Naval Research and the University of Pennsylvania.

Over a period of 18 months, they gave a mixture of many vitamins, called a polyvitamin formula, to 100 alcoholic patients. There was no statistically significant difference in abstinence or sobriety between these 100 patients and another 100 control patients who did not get the vitamins.

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ANTHROPOLOGY

Ape-Men More Like Men As Babies Than as Adults

➤ THE ANCIENT ape-men of Africa, whose place on man's family tree is argued among scientists, were more like men as infants and more like the great apes as they grew older.

This is indicated by fresh evidence reported to the American Association of Physical Anthropologists meeting in Yellow Springs, Ohio, by Dr. J. N. Spuhler of the University of Michigan.

Thirty-two measurements were made on the teeth of three types of the South African fossils by Dr. Spuhler, and compared with the teeth of modern man and living great apes. The milk or baby teeth of the fossils are more like the baby teeth of men, he found, but the permanent teeth of the fossils are more like those of the apes.

Averaging the first teeth and permanent teeth, the difference between the fossils and living apes is 10.7 (on a scale from 0 to 100). The difference between the fossils and modern man is a little more, 10.9.

Judging from their teeth, these Australopithecinae, as the fossils are known to scientists, were not apes, Dr. Spuhler concludes. But neither were they true men. They were something quite distinct from either and quite correctly called "ape-men."

Science News Letter, April 10, 1954

GENERAL SCIENCE

Eleanor Roosevelt Lauds Science Fair Program

➤ ELEANOR ROOSEVELT has praised the science fair program, operated by SCIENCE SERVICE, in its efforts to encourage America's youth to pursue careers in science.

Referring specifically to the Northeastern Ohio Science Fair to be held in Cleveland April 23-25, Mrs. Roosevelt said in her syndicated column:

"It is interesting to note that this is considered important for industry, since greater Cleveland has felt sharply the shortage of scientific talents. To me this is particularly important because I was told not long ago that the Soviet Union is graduating more students in science than we are, and unless we look to our laurels they will be overtaking us. Education in certain fields is as important as military preparation."

The Cleveland fair will be one of an anticipated 50 scattered from coast to coast that will send finalists to the National Science Fair at Purdue University May 13-15. The teen-aged scientists will exhibit their scientific handicraft and will compete for national awards.

Through the science fair program, which often carries newspaper sponsorship on the local level, boys and girls are encouraged to undertake scientific projects. Many of these young people have found careers for themselves while exploring the challenge of science.

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