

GEOGRAPHY

South Pole Discovered Fifty Years Ago

► A HALF CENTURY ago Roald Amundsen, one of Norway's great explorers, stood on a wind-swept plateau of Antarctic ice and through astronomical calculations determined he was the first to reach earth's southernmost extremity. That was on Dec. 14, 1911.

Today the South Pole is inhabited for at least part of the year. An international celebration in honor of the Amundsen discovery was held there Oct. 30 when representatives of the United States, Norway, Great Britain and New Zealand were landed by navy ski-plane. Flags were raised, and plaques were dedicated in honor of the South Pole discovery.

Capt. Robert Falcon Scott, British explorer, discovered the South Pole independently on Jan. 18, 1912, a little more than a month after Amundsen's arrival. Scott and his party all perished on their return journey.

Historic record of the South Pole discovery shows that Roald Amundsen set out from his base at Framheim at about 77½ degrees south in the Bay of Whales on Oct. 18, 1911, together with Olav Bjaaland, Helmer Hanssen, Sverre Hassel and Oscar Wisting. They went straight south, and reached the Pole area on Dec. 14, encircling the Pole during the following two days and returning to their base on Jan. 26, 1912. Scott, starting from Ross Island at about 77½ degrees south, a fortnight later than Amundsen, reached the Pole together with E. A. Wilson, H. R. Bowers, L. E. G. Oates, and E. Evans, on Jan. 18, 1912.

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PUBLIC HEALTH

Pregnant Women Not Hurt by X-rays

► PREGNANT WOMEN are not harmed by X-rays. A study of 8,000 women and their 40,000 children over a 15-year period in England and Scotland showed no genetic harm or resulting leukemia following X-ray during the mothers' pregnancy.

Prof. Sir Austin Bradford-Hill of the London School of Hygiene and Tropical Medicine, London, England, said at the National Naval Medical Center, Bethesda, Md., that the hazards of X-rays during pregnancy have apparently been overestimated.

Women who had been X-rayed in eight large hospitals—four in London and four in Edinburgh, Scotland—were studied in the follow-up.

A second follow-up study was made of 433 women who had worked three years with luminous watch dials coated with radium. Here, too, no adverse effects were seen although the women had painted the dials with no special protection from radium.

A third study still in progress shows that

"appreciable amounts" of radiation are reaching the gonads (sex glands) from mass X-ray studies where people are lined up routinely.

Physicists are being sent to clinics and hospitals to measure the radiation dosage being received by patients. They have found that when patients are lined up, a considerable amount of radiation is received not only by the patient being X-rayed but also by the patient standing behind him.

Recommendations are for using the smallest necessary amount of radiation. X-rays are preferred to fluoroscopy since the fluoroscope affects a larger area. X-rays should be "coned down" to the actual area of a fracture, for example, so they do not affect the entire extremity. Operators and all in the vicinity of X-rays should be protected, the investigators advise.

Since radiation damage may not appear in the first generation, Sir Austin's studies will continue during a long period.

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TECHNOLOGY

Rear Lighting System Increases Auto Safety

► AMERICAN automobiles will have a new safety feature when rear turn and stop signal lights that are brighter in daylight hours, but lower in brightness at night, are installed.

This "dual intensity" system will increase the daylight brightness of the signals two to four times, but the brightness will be lowered automatically when headlights are turned on, reducing glare for the drivers of the cars behind.

The Automotive Manufacturers' Association intends to adopt the system, but has set no date. Extensive changes will be required in automotive electrical circuits. Engineers at Westinghouse Electric Corporation, Bloomfield, N. J., have devised a two-filament light bulb and a lighting fixture that prevents use of the wrong bulb in a dual intensity installation.

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MEDICINE

World's Largest Medical Library Dedicated

► THE WORLD'S largest medical library has been dedicated as a unit of the immense medical research complex at Bethesda, Md. The new building will cost \$7,300,000 completely furnished.

The National Library of Medicine, containing more than a million books, will serve as a storehouse of medical knowledge dating back to the early days of medicine. The library was formerly housed in an old building in Washington, D.C., that was shared with the Army Medical Museum.

The building is on five levels occupying an area of 231,560 square feet.

However, there will be room for only 1,120,000 books, and at the present rate of increase an addition will probably have to be built in about ten years.

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IN SCIENCE

ANIMAL HUSBANDRY

Pigs Have Ulcers; Due to Tension?

► ULCERS in pigs have become a serious problem and they may be caused by the fast pace of life that today's pigs lead.

Prof. R. G. Grummer, chairman of the University of Wisconsin's animal husbandry department, reports that a four-year study under a National Institute of Health grant is underway to determine if a pig's ulcers are similar to ulcers in people. Dr. Tadeusz Kowalszyk, university associate professor of veterinary science, who will head the study, believes there is a relationship, pointing out that pigs, like people, eat everything.

Modern pigs are kept in confinement, and this may become a source of tension that causes ulcers. Although no cure has been found, it is possible that pigs would respond to a diet rich in cream, just as people do.

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PHYSIOLOGY

Complex Brain Selection Of Impulses Studied

► THE WAY in which the brain selects specific impulses from the shower of impulses coming from all parts of the body is being studied at the University of California, Los Angeles.

According to Dr. Mary A. B. Brazier of UCLA's Brain Research Institute, there is increasing interest in the theory that the brain does this on a probabilistic basis.

This means that the brain may assess the probability that a message is important enough to be acted on by matching it against messages it has already experienced.

Hundreds of nerves are constantly bringing myriads of impulses to the brain indicating which sense organs are being stimulated and how intensely they are being stimulated, Dr. Brazier points out.

There are other, far more subtle shades of sensation, such as the hue of a color, the pitch of a sound and the pattern of a Braille word. Some nerves even deliver impulses without outside stimulation.

The questions the brain must answer in an instant are which messages are more significant and which can be safely ignored.

Dr. Brazier has studied these brain processes by averaging the brain's electrical activity in man and animals by various computer methods. Computer data analysis supports the idea that the brain matches incoming messages against its continuous activity, which incorporates previous experience.

Any marked deviation from the profile of this activity carries sufficient information to cause the brain to act.

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E FIELDS

MEDICINE

Clue Seen to Cause of Kidney Cancer in Man

➤ A CLUE to one of the causes of kidney cancer in man is reported by a London pathologist working on the cancer-causing properties of lead compounds in laboratory animals.

So far the cause of kidney cancer in man is unknown, but Dr. Cuthbert E. Dukes, a consultant at St. Mark's Hospital, London, reports in *The Lancet* that new avenues of research are opening up.

For the past two years Dr. Dukes has been doing research at the Chester Beatty Research Institute in London, where lead acetate has been fed to rats with resulting kidney cancer.

"It may be found that other chemicals, when added to the food of susceptible animals, will eventually result in the production of renal tumors and so provide a clue to one of the causes of cancer of the kidney in man," Dr. Dukes said.

Other clues to the cause of kidney cancer, he believes, may lie in research on occupational hazards such as handling dyes and chemicals. Viruses and female hormones are other agents that have produced kidney cancer in laboratory animals.

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TECHNOLOGY

Computers Can Assist Practicing Physicians

➤ THE TIME is coming when practicing physicians will be able to dial a telephone and obtain a wide variety of medical information from a computer, a California psychologist predicted.

Dr. Robert W. Harrington, manager, biomedical systems department, Systems Development Corporation, Santa Monica, Calif., told a preliminary meeting of the 1961 Eastern Joint Computer Conference in Washington, D. C., that a computer system in hospitals would not only be economically feasible but would be an absolute necessity.

Computers are especially valuable in providing quick information on patients with long-term chronic diseases, Dr. Harrington said.

"We have pretty well licked the acute diseases with modern drugs," he said, "but the volumes of data about the chronically ill patient need to be made less cumbersome and time-consuming."

Dr. Harrington said computers could be used to reduce admission procedures, get information quickly to wards when needed, and store temperature, pulse and respiration records so they could be easily retrieved.

"It may be possible to develop norms for individuals so corrective trends may be

taken before the time of treatment," he explained.

Automated pharmacies and laboratories may lie in the near future, and computers may soon aid in medical education, the psychologist said. However, he added that no computer can do research.

"Computers have the power of contributing new tools to the field of medicine and can advance the power of existing techniques," he said.

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MEDICINE

Shock and Poisoning Treated by Two Drugs

➤ TWO PROMISING drugs, one for treating shock, the other for barbiturate poisoning, are reported in the *Journal of the American Medical Association*, 178:994, 1961.

Physicians will be reading in the official magazine that angiotensin II is the most effective agent now available to return blood pressure to normal levels in cases of shock.

The blood pressure returned to normal in 15 patients treated with intravenous injections of this drug by Drs. Francesco del Greco, and David C. Johnson of Northwestern University Medical School and Pas-savant Memorial Hospital, Chicago.

An increased output of urine (diuresis) by using tromethamine (THAM) was successful in combating drug poisoning, Drs. Reuben C. Balagot, Hideo Tsuji and Max S. Sadove of the University of Illinois' department of surgery, Chicago, report (p. 1000).

Contact lenses should not be worn in heavy industry where there are particles in the air or any chemicals that might injure the eyes, Dr. Hedwig S. Kuhn, ophthalmologist of Hammond, Ind., replies to an inquiring reader (p. 1055).

A physician in Concord, Calif., asked the question as a result of injury to an engineer who wore safety goggles as well as contact lenses.

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ENTOMOLOGY

Lettuce Loopers Starve Themselves

➤ SCIENTISTS at the University of California's department of entomology, Davis, Calif., have developed a compound, "anti-feeding compound 24055," that controls loopers (the larvae of geometrid moths) on lettuce by forcing them to starve themselves. Nontoxic to humans and beneficial insects, the chances are that future generations will not become resistant to the chemical.

It is believed that 24055 is an anti-metabolite; that is, a compound that replaces its natural twin chemically, while not performing some particular function of the metabolism—in this case, eating.

The chemical has also proved effective against clothes moths, according to R. J. Pence of the University.

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PUBLIC HEALTH

High Altitudes of Tests Lessen Immediate Fallout

➤ PRESENT LOW LEVELS of fallout from Russian tests are probably due to the high altitudes reached by the Soviet nuclear explosions, Dr. Lester Machta, U.S. Weather Bureau expert, Washington, D. C., believes.

Present estimates are that debris from the Soviet bombs reached much higher into the troposphere than the debris from the United States and British tests in 1957 and 1958. This would explain, in part, why immediate fallout levels from the Western tests were much higher than that from the Soviet tests to date.

It is also possible as some observers have suggested that the Soviets may have developed a somewhat "cleaner" bomb. However, if the fission yield is similar to previous tests, the spring of 1962 will bring with its rains fallout that will double present levels.

Cloud seeding to direct or modify fallout distribution is impractical, Dr. Machta said. "The area contaminated with fallout particles is so huge that even if local removal were possible by cloud seeding, it would not significantly affect fallout in the rest of the atmosphere."

The principal potential hazard from fallout is the ingestion of radioactivity rather than external skin doses. At present, the only solution lies in avoiding contaminated food or water supplies rather than attempting to control existing atmospheric fallout.

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DERMATOLOGY

Soap and Water Needed For Facial Cleansing

➤ OLD-FASHIONED soap and water are still needed to cleanse the face, a dermatology professor told the American Academy of Dermatology meeting in Chicago.

A penalty for substituting creams, lotions and so-called skin foods for soap and water is often the enormous multiplication of a tiny mite that occurs normally in small numbers on the face of the adult human. The end result is a flushed and pimple-like or pustular face, Dr. Samuel Ayres Jr., of the University of California, Los Angeles, said.

Dr. Ayres reported that patients are usually women. The first thing they notice is a feeling of itchiness, dryness and roughness of the face. They wrongly conclude that their faces need more creams and less washing, which leads to a vicious cycle of still further encouraging the mites, the dermatologist explained.

The mite, known as *Demodex folliculorum*, usually lives a sedentary life. It feeds on the fatty material normally secreted by the oil glands, and produces no particular symptoms.

This skin condition usually disappears rapidly when daily washing with soap and water is resumed and a suitable antiparasitic medication is prescribed.

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