justification for rashness, some special warning should be given. The basic fact to remember at all times is that any irradiation is bad, and therefore irradiation should be used only if it can be assumed that the good will outweigh the bad. Certainly our descendants should be protected by our avoiding the irradiation of the gonads of any person until he is past the procreative age. Also, the society as a whole should be protected against a general increase in background irradiation. The existence of worse practices cannot be an excuse for perpetrating a bad one.

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News and Notes

Science News

The United Nations Educational, Scientific and Cultural Organization is sponsoring the establishment of an **International Computation Center** in Rome. The convention setting up the center will come into force when 10 states have ratified or formally accepted it. So far four countries—Belgium, Ceylon, Italy, and Japan—have deposited ratifications or instruments of unconditional acceptance. The convention has been signed by eight states: Egypt, Greece, Iraq, Israel, Liberia, Mexico, the Netherlands, and Turkey.

The projected center, a laboratory equipped with the best available mechanical devices for calculation, will have three main functions: scientific research, training of experts through a system of fellowships, and the provision of services to organizations and persons who, under certain conditions, will be authorized to request calculations required to solve unusually complex scientific, technical, administrative, or financial problems.

In cooperation with the Royal Australian Air Force, the U.S. Air Force is to operate an inland **meteorological research station** near Alice Springs, Australia. This station will supply information to scientists at the Woomera rocket range in South Australia, and at the new weapons-testing site at Maralinga, Australia, 50 mi north of the transcontinental railway, midway between Kingoonya and Leakin. Atomic clouds that form above the Maralinga range are expected to drift in the direction of the new station in central Australia.

Two species of imported parasitic flies may aid in **sugarcane borer control,** the U.S. Department of Agriculture reports. After 2 years of tests, research entomologists at the USDA Sugarcane Field Station, Houma, La., describe the parasites as "promising" for gaining partial control of the destructive sugarcane insect, and some Louisiana cane growers have imported and released the flies in their fields.

One of the flies—*Metagonistylum minense*—came originally from the Amazon; the other—*Lixophaga diatraeae*—from Cuba. Both attack the borer in the same way. They deposit their eggs near the entrances of holes made by the borers in the sugarcane stalks. The eggs hatch almost immediately into maggots that move into the holes and destroy the borers.

In cooperative research with the Louisiana Agricultural Experiment Station, USDA's Agricultural Research Service has successfully imported these flies from Trinidad and established them on at least four Louisiana sugarcane plantations. A year after their release on one plantation, the parasitic flies achieved 75 percent borer control. New generations of the flies had migrated as far as 2 mi from the original release point.

Investigators speak in terms of "partial" control, because they anticipate that, as with other parasitic insects, populations of these flies will tend to ebb and flow as they are influenced by host abundance and prevailing weather. However, even some help would be welcome to growers, who must pay about $9 an acre annually to have their cane dusted with insecticides for borer control. Dusting is justified if 7 shoots of cane in 100 ft of row are infested. If parasites could reduce the infestation to below 6 infested shoots per 100 ft of row, at least one and perhaps two of the seasonal dustings could be eliminated.

General Motors Research Laboratories Division and the Medical College of South Carolina have announced development of the **electrostethograph,** a device that makes it possible to study heart sounds that are inaudible through a stethoscope. The new machine utilizes both an oscilloscope and a direct-writing mechanism. The patient lies on a foam rubber mattress that absorbs any interference vibrations, and the recording is made through a small flat disc that is placed on the chest.

Yale University has announced the acquisition of the ***Codex Paneth,*** a 1378-page volume that is believed to have been the entire medical library of the University of Prague when it was founded in 1347. The work comprises 42 separate texts that represent

a cross section of all medical knowledge available at the beginning of the 14th century. For more than 70 years, the *Codex* has been owned by the Paneth family of Germany, its most recent owner having been director Friedrich A. Paneth of the Max Planck Institute, Heidelberg. The volume was presented to the Yale medical library by 60 of the library's associates.

Albert M. Day, assistant to the director of the U.S. Fish and Wildlife Service who retires this month, will head a study of **North American waterfowl** for the Arctic Institute of North America. Work on preliminary aspects of the investigation, to be sponsored by the institute with the support of private contributors, will commence 16 June at the institute's Washington, D.C., office.

The purpose of the project is to study the programs and policies of all land and water-use agencies that directly or indirectly affect the breeding, protection, and perpetuation of waterfowl on the continent.

While the sportsman's "take" of wild ducks and geese is carefully controlled under treaties among the United States, Canada, and Mexico, increasing pressures upon waterfowl habitat resulting from the elimination of marshlands continue to cause concern among conservationists. The Arctic Institute is interested in this problem because the birds are of basic economic value to some 150,000 Eskimos and Indians in the arctic and subarctic regions of Canada and Alaska. Before adequate measures can be formulated to meet waterfowls needs, a thorough evaluation of the present situation is indicated.

Reports from the waterfowl research project are expected to cover such subjects as the effect on waterfowl of progressive drainage of swamps, marshlands, and prairie potholes for agricultural and commercial purposes; of large water impoundments such as TVA; and of the increasing encroachments of civilization in the far North, particularly during the summer months when the birds are nesting. The location and extent of present waterfowl refuges will be studied, and consideration given to the relationship between the loss of waterfowl habitat and the alarming reduction of ground water levels in certain areas.

The complete **plans of the first nuclear reactor** can be purchased from the U.S. Commissioner of Patents for 25 ct. The first patent ever issued for the device that made use of atomic energy possible was granted to the late Enrico Fermi, Nobel laureate, and Leo Szilard of the department of biophysics at the University of Chicago. Containing 27 sheets of drawings and 30 sheets of printed matter, the reactor patent is comparable to a textbook on atomic energy. The documents contain some details that have not been published heretofore. Among these are (i) an explanation of "danger coefficients," those factors that might be dangerous or that might inhibit the continuation of a chain reaction; (ii) an explanation of "exponential pile," that is, the geometry of the nuclear pile that must be constructed so that the neutron density declines exponentially with distance from the source; (iii) two methods for calculating pile design; (iv) three reactor designs—one with a solid moderator, one with a liquid moderator, and one with a beryllium moderator.

In their 10½-year-old application, Fermi and Szilard stated:

> We have discovered certain essential principles required for the successful construction and operation of self-sustaining neutron chain reacting systems (known as neutronic reactors) with the production of power in the form of heat.

In concluding their description, the men said: "With modifications, the reactors herein described can also be used as sources of power in useful form."

Successful **long-distance radio transmission** at frequencies in the 30- to 40-Mcy/sec band was announced at the convention of the Institute of Radio Engineers in New York. High power, about 30 kw, is required to transmit the signals. U.S. armed forces have been using the new system since January 1954 for communication between Goose Bay, Labrador, and Thule, Greenland, by way of Sondrestrom, south central Greenland.

The new high-power system of radio propagation at very high frequencies is subject to less atmospheric interference than conventional short-wave systems, which operate at frequencies in the 3- to 30-Mcy/sec band. The 30- to 40-Mcy/sec band is now used for low-power, short-range transmission—Army field telephones, police broadcasts, and industrial communication. Most of the radio-frequency power in the new method is lost, but some is reflected in the lower part of the E layer of the ionosphere. This portion is received by high-gain directional antennas.

The scientists who first reported experimental discovery of the new type of radio propagation were D. K. Bailey, R. Bateman, and G. F. Montgomery of the National Bureau of Standards; L. V. Berkner of Associated Universities, Upton, N.Y.; H. G. Booker of Cornell University; E. M. Purcell of Harvard University; W. W. Salisbury of Collins Radio Co., Cedar Rapids, Iowa; and J. B. Wiesner of Massachusetts Institute of Technology.

This year Ruth Patrick, curator of limnology in the Academy of Natural Sciences of Philadelphia, will lead an **expedition to the Amazon River in South America** for the purpose of studying the biological pattern of the stream. For 8 years she and her staff of biologists have been studying North American rivers. To advance knowledge of what constitutes a healthy stream, it is necessary to examine a tropical river for comparisons. The expedition is sponsored by the Catherwood Foundation, of which Cummins Catherwood, of Bryn Mawr, Pa., is president. This foundation has been supporting the academy's research extensively, one important phase being development of the Catherwood diatometer, an instrument originated by the academy. It is used in the collection of diatoms, which provide an index to the biological condition of a stream.

An advance party left by air 30 May for Lima, Peru; it consisted of Patrick, Matthew Hohn, assistant curator, and H. Radclyffe Roberts, director of the academy. From Lima they will fly over the Andes and into the Amazon basin of Brazil for the purpose of locating stations for the scientific collecting and field laboratory work that will be done in the fall by an academy team that will consist of biologists, chemists, and bacteriologists.

Three men have **left for Japan** to discuss the peacetime uses of atomic energy with Japanese businessmen, industrialists, and scientists. The mission consists of John Jay Hopkins, chairman of the board and president of the General Dynamics Corp., which built the first two atomic-powered submarines; Ernest O. Lawrence, University of California Nobel laureate in physics; and Lawrence R. Hafstad, former director of the division of reactor development for the Atomic Energy Commission and now director of the atomic energy division of the Chase National Bank in New York. The invitation to visit Japan, which was endorsed by Japanese Government officials, was extended earlier this year by Matsuraro Shoriki, Toyko newspaper publisher and businessman.

Scientists in the News

Chie Nakane, a Japanese woman anthropologist, and **Asta Ekenvall** of Sweden have been chosen from 77 applicants representing 13 countries as the first recipients of the Swedish Elin Wägner scholarship for research on "Woman's role in history." They will receive Kr. 5000 each. Nakane will study the remains of a matriarchal society in Assam and Malabar, and Ekenvall will investigate women's intellectual creative contributions to Western culture.

The Willard Gibbs medal, one of the highest awards in chemistry, was presented on 20 May to **Farrington Daniels,** University of Wisconsin chemistry professor, at the annual dinner of the Chicago section of the American Chemical Society. The medal is awarded annually by the society to a chemist whose achievements have been particularly outstanding. In the years since it was established—1910—the medal has been given to eight men who became Nobel prize winners.

James A. Halsted has been appointed chief of professional services at the Veterans Administration Hospital, Syracuse, N.Y., and associate professor of medicine at the State University of New York College of Medicine at Syracuse. He was formerly a member of the staff at the Veterans Administration Hospital in Los Angeles and on the faculty of the University of California Medical Center.

Franklin V. Taylor, head of the engineering psychology branch at the Naval Research Laboratory and acting head of the engineering psychology branch at the Office of Naval Research, will leave in mid-June for Cambridge, England, where he will work under Frederick Bartlett of the Applied Psychology Unit, Medical Research Council of Great Britain. As an additional duty, Taylor will survey the progress of engineering psychology in Europe for ONR.

P. Piganiol, director of research, St. Gobain, Chauny and Cirey, France, spoke on 2 June at the Polytechnic Institute of Brooklyn on "Progress in polymer research in France."

Lady Dhanvanthi Rama Rau of India received the Albert and Mary Lasker award from the Planned Parenthood Federation of America at its 35th annual luncheon in New York on 6 May. The citation said:

> As Chairman of the International Planned Parenthood Federation, she has combined the pioneer child spacing experience of America and Europe with the profound needs and insights of the Orient to give a new vitality to the entire movement. . . . She has displayed a genius for breaking the right tradition at the right moment. . . .

Alfred H. Stanton, assistant professor of psychiatry at Boston University School of Medicine, has been appointed psychiatrist-in-chief of the McLean Hospital, Waverley, Mass., and associate professor of psychiatry, Harvard Medical School. Stanton, an authority on social psychiatry, at present is also chief of the psychiatric closed ward section of the Boston Veterans Administration Hospital. He will take over his new duties in the near future at the McLean Hospital, which is a division of the Massachusetts General Hospital, a teaching hospital associated with the Harvard Medical School.

Charles L. Critchfield, professor of physics at the University of Minnesota, has been appointed director of scientific research for the Convair Division of General Dynamics Corp. He was one of 14 scientists recently announced as consultants for Convair. A mathematical physicist, much of his work has been in the theories of nuclear reactions, transmutations in stars, and nuclear forces and in the electron-positron pair theory of nuclear forces.

Richard W. Tiecke, former deputy chief of the oral pathology branch of the Armed Forces Institute of Pathology, Washington, D.C., has been appointed associate professor in the department of pathology at Northwestern University. In addition to conducting research in oral cancer and teaching at the dental school, he will serve on the consulting staffs of several Chicago hospitals that are affiliated with the university.

Robert F. Thomson, head of the metallurgy department of the research laboratories division of the General Motors Corp., has received the John A. Penton gold medal from the American Foundrymen's Society. The award, one of the society's highest honors, was presented for "outstanding contributions to the society and the industry in foundry research, particularly in the field of light metals."

Herbert Riehl of the department of meteorology, University of Chicago, will join the staff of the University of Colorado's High Altitude Observatory at Boulder, 27 June–15 Aug. The appointment was made possible by the Munitalp Foundation, whose director of research, Vincent J. Schaefer, is well known for his interest and research in matters related to jet-stream phenomena. Riehl's work at Boulder will be closely related to the scientific program of the foundation. He will conduct a special seminar on problems of solar-weather relationships, jet-stream formation, and other problems of the general circulation of the earth's atmosphere, and he will carry out research in solar-weather relationships.

Albert G. Hogan, professor of animal nutrition and chairman of the department of agricultural chemistry, University of Missouri, was honored by friends, colleagues, and former students at a dinner held in Columbia on 21 May. Hogan will retire this year after 35 years of service at the University of Missouri. At the dinner his former students presented the university with a portrait, and the Hales and Hunter Co. of Chicago announced the establishment of a graduate fellowship in his name.

Harry N. Holmes, emeritus professor of chemistry at Oberlin College and former president of the American Chemical Society, has received the James Flack Norris award of the society's Northeastern Section. The award, which consists of a medal, a scroll, and approximately $1000, is conferred biennially to recognize "outstanding achievement in the teaching of chemistry."

James D. Hardy, associate professor of surgery at the University of Tennessee College of Medicine, will become professor and head of the department of surgery at the University of Mississippi on 1 June. Mississippi will open a new 4-year medical school in September.

T. H. Goodding, professor of agronomy, has received the University of Nebraska Foundation Award for Distinguished Teaching in the physical and technologic sciences. This award, which consists of a medal and $1000, was presented to Goodding at the 27th Annual Honors Convocation. Goodding joined the university's staff in 1917 as an agricultural extension specialist.

Two appointments have been announced by the American Cancer Society. **Harry M. Weaver,** former research director of the National Foundation for Infantile Paralysis and until recently a research consultant for A.C.S., has been named the society's administrator for research; and **Frederick W. Nordsiek** has been made executive officer of the research department.

The first in a series of annual lectures in memory of **Rollin Turner Woodyatt,** internationally known Chicago physician, medical teacher, and investigator, was given on 20 May under the auspices of Northwestern University Medical School. **Evarts A. Graham,** emeritus professor of surgery at Washington University, St. Louis, Mo., and a close friend of Woodyatt, delivered the initial memorial lectures. Woodyatt, who died in 1953, devoted his professional life to the study of diabetes and was well known for his achievements in the care of diabetic patients.

Mary F. Blade, first and only woman teacher of engineering at Cooper Union, has been named director of Cooper Union's 1000-acre Green Engineering Camp at Ringwood, N.J. Blade has also been promoted to associate professor of mechanical engineering. Her appointment at Ringwood is effective on 1 Sept., when she will succeed **J. Merriam Peterson,** director of the camp since 1943. He has requested to be relieved in order to be able to devote more time to his work in chemical engineering.

Meetings

The 1955 annual meeting of the **Association for Computing Machinery** will take place in Philadelphia at the University of Pennsylvania 14–16 Sept. It is open to nonmembers of the association. The primary effort of the convention will be directed toward bringing the scientist and businessman together to discuss on an equal basis their particular progress and problems in connection with automatic computing and data-handling machines.

To this end, a series of papers reflecting the latest thinking in linear programming, logical and machine design, numerical analysis, and business applications and management techniques will be presented.

As an added opportunity for personal contact and the informal exchange of ideas, the association has planned a series of luncheons and discussion groups featuring well-known speakers. The subjects discussed will concern: computers in scientific applications; computers in industrial control and automation; computer application for accounting and management; the future of computers.

The association will consider papers for approval up to 15 June. Three copies of abstracts of not more than 120 words should be sent to the chairman of the program committee, Professor J. P. Nash, Digital Computer Laboratory, University of Illinois. Each paper will be limited to 20 minutes. The chairman of the local arrangements committee is Morris Rubinoff, Moore School, University of Pennsylvania.

It has been announced that the **Montreal Corrosion Symposium** will be held 15–16 Sept. at the Sheraton-Mount Royal Hotel in Montreal. This symposium is jointly sponsored by the National Research Council's Associate Committee on Corrosion, the Montreal Section of the National Association of Corrosion Engineers, and the Protective Coatings Division of the Chemical Institute of Canada.

The preliminary list of papers indicates that there will be participants from Halifax to Vancouver as well as from the United States. Among the subjects

to be discussed are corrosion of copper and gold alloys by ammonia solutions; fundamental testing of marine paints, and a review of present marine corrosion problems; fundamentals of pulp digester corrosion; fretting corrosion; corrosion aspects of plant design; cathodic protection; surface preparation of metals; and practical aspects of corrosion in the railway industry.

An **International Symposium on Macromolecules,** sponsored by the Commission on Macromolecules of the International Union of Pure and Applied Chemistry, will be held in Israel, 3–9 Apr. 1956. Host to this symposium will be the Weizmann Institute of Science, Rehovoth. Papers will be presented in three sections, to be held successively, on (i) general behavior of polymers in solution; (ii) behavior of biocolloids and polyelectrolytes in aqueous solutions; and (iii) the behavior of special polymeric systems. For further information write to Prof. A. Katchalsky, Weizmann Institute of Science, Rehovoth, Israel.

Education

In mid-May ground was broken for construction of a $1-million medical clinic building at **Emory University.** R. Hugh Wood, dean of the medical school, is clinic director. The five-story stucco and limestone structure will face Emory University Hospital and is expected to be completed within the year. Nearby are the recently constructed Woodruff Memorial Research Building, and Aidmore Hospital. Also affiliated with Emory's medical activities are the Glenn Building at Grady Hospital, downtown headquarters of the medical school; the new Grady Hospital that is under construction and which will be staffed by Emory; and a proposed Communicable Disease Center, a six-building project that will go up on a 15-acre tract near the university hospital.

A course in **scientific writing** for teachers of science, teachers of English, and administrators is being offered by the University of Virginia, 5 July–13 Aug. The course will be divided into four major areas of interest: library resources; research techniques and experiments applicable to the high school level; the scientist's problems in writing and speaking; and the practical application of information and technique to teachers' individual problems, such as organizing material for science fairs, writing copy for community exhibits, and advising students on specific projects. Teachers' participation with practicing scientists at top levels is expected to be one of the rewarding features of the course.

A series of **laboratory refresher training courses** will be given at the U.S. Public Health Service Communicable Disease Center during the period July 1955–June 1956. Information and application forms should be requested from the Laboratory Training Services, Communicable Disease Center, P.O. Box 185, Chamblee, Ga.

Physicians from underdeveloped countries who are sponsored by the World Health Organization may now be **trained in the Federal Republic of Germany.** Special schools have been arranged for that purpose at Düsseldorf, Hamburg, Mainz, and Munich. Previously, doctors from these countries have gone to Great Britain and the United States. The expenses involved are paid by WHO.

Miscellaneous

The Wistar Institute of Philadelphia, Pa., plans to discontinue by 1 July the breeding of seven mutant strains of rats (chocolate, chocolate shaggy, yellow black eye, yellow red eye, curly, white shaggy, and mutant albino) developed by the late Helen D. King. These **rats are offered free** to any scientist or institution willing to maintain them for breeding purposes. The numbers of rats available is limited. For information write to Dr. Edmond J. Farris, Wistar Institute of Anatomy and Biology, 36th and Woodland Ave., Philadelphia 4, Pa.

Scenes from Atomic Energy Commission plants in Idaho and Pittsburgh, now unclassified, will be seen publicly for the first time in a new 30-min movie produced and soon to be released by the Westinghouse Electric Corp. Entitled "A Dawn's Early Light" and filmed in both color and black and white, the picture stars Fred MacMurray and features Fay Wray and Jack Dimond. The reel was made with the technical assistance of the U.S. Atomic Energy Commission and the Department of Defense. The film presents stages in the construction of the nuclear power plant for the U.S.S. *Nautilus.* One portion shows the shipment of the reactor core from the AEC's Bettis plant near Pittsburgh to Idaho, where it was installed in a full-scale, land-based model of the *Nautilus* power plant.

"A Dawn's Early Light" is suitable for social, service, and school groups, civic organizations, and professional groups. It is available on loan without charge and can be purchased outright. For information write to the Film Division, Westinghouse Electric Corp., P.O. Box 2278, Pittsburgh 30, Pa.

The **New York Diabetes Association, Inc.,** has moved its offices from 2 E. 103 St. to 270 Park Ave., New York 17.

The **Chemical-Biological Coordination Center** of the National Academy of Sciences–National Research Council has prepared a pamphlet that is designed to help research personnel formulate questions for submission to the center. The pamphlet, which was prepared under the direction of G. Congdon Wood, head of the biology group, lists examples of nearly every type of question that the center has ever received. Entitled *Types of Questions Answered by CBCC,* the publication contains approximately 12 percent of all questions received between December 1952 and March 1955.