News of Science

Sex Determination

After a quarter-century since the Russian biologist V. N. Shreder first reported that male-determining and female-determining spermatozoa of the rabbit could be separated by electrophoresis, a vexatious period marked by conflicting reports, M. J. Gordon of the University of California appears to have finally settled the question [*Proc. Natl. Acad. Sci. U.S.* (October 1957)]. In 31 litters produced after artificial insemination either with sperm that traveled to the cathode or with sperm that traveled to the anode, the former produced 51 males as against 29 females, the latter 62 females as against 25 males. A difference of such magnitude would be expected to occur by chance in less than one trial per thousand.

The spermatozoa can be observed migrating tailfirst toward the anode or the cathode, and when the polarity of the electrodes is changed, they mutually reverse their direction of travel. Human spermatozoa have likewise been observed previously to migrate tailfirst in an electric field. Although the success in producing males at will was only 63.7 percent and in producing females at will only 71.3 percent, the techniques of separation and insemination are being improved and may eventually lead to a high degree of control over sex determination. The obvious problems that are likely to arise if successful control of human sex determination becomes practicable as a result of such experiments make one wonder whether human beings have yet acquired the wisdom to make use of such wide powers.—B.G.

Who Can Aid Visiting Geneticists?

A number of geneticists from abroad will be coming to the International Genetics Congress in Montreal, 20–27 August 1958. Undoubtedly, some of them can come before the congress and some can stay after the congress. Undoubtedly, also, some would like to visit laboratories in the United States, but to do so they will need dollars.

The Travel Assistance Committee for the congress is anxious to know which laboratories would like to help foreign geneticists by inviting one or more either to give a lecture or to come as a consultant on research. Institutions with funds available for such lectures or consultations should communicate as soon as possible, preferably *before 1 December,* with Harriet B. Creighton, Department of Botany and Bacteriology, Wellesley College, Wellesley 80, Mass.

Science Talent Search

High school seniors throughout the country are competing for awards and scholarships totaling $34,250 in the 17th annual Westinghouse Science Talent Search. Because of an expanded grant recently announced by the Westinghouse Educational Foundation, the amount to be awarded to the winners this year will be more than three times larger than the $11,000 distributed each year in the past.

The search is administered by Science Service. Last year more than 20,000 students entered the contest. From the thousands of applicants, the judges select 40 national winners, who then attend the 5-day Science Talent Institute in Washington, D.C., and compete for the top five scholarships. The entire trip is free of expense to the 40 students.

Cadaver Shortage

A six-part program has been proposed by a committee of the National Society for Medical Research to relieve the increasingly serious shortage of cadavers, a shortage that threatens the quality of medical education in the United States. Oliver P. Jones, head of the anatomy department at University of Buffalo Medical School, and chairman of the committee, says that a majority of medical colleges report that they are unable to obtain enough bodies to teach efficiently, and that some schools have been forced to drop such important courses as surgical anatomy.

The committee's proposed program suggests: (i) a survey of public opinion toward anatomical studies; (ii) a series of conferences with religious leaders, public welfare administrators, undertakers, hospital superintendents, and other persons concerned with the disposition of bodies; (iii) a program of education for persons in the health professions; (iv) a general public educational program; (v) the drafting of modern laws making bodies available through bequest (in 39 states, a person's body is not his own to give after death); and (vi) the establishment of a legal reference service, with standardized forms and procedures for bequeathing a body to a medical school. In the opinion survey, a depth-interview study that will discover underlying sentiments has been proposed. Results of the study will provide a foundation for the other five elements of the program.

The University of Buffalo alone operated its anatomy department last year 23 cadavers short of the number necessary for adequate instruction. It was not able to give anatomical instruction to nurses and people in the public health fields. The department used 37 bodies to instruct 68 dental and 80 medical students. This meant four students to each body—and soon a larger number of students will have to be assigned.

U.S.–U.S.S.R. Populations

The populations of both the United States and the Soviet Union are apparently growing at a steady rather than an explosive rate, with the U.S.S.R. expected to retain its present lead, according to a recent report by the Population Reference Bureau, Washington, D.C. The bureau stressed the word "apparently" in connection with Russian population figures, since no one knows for sure how many Soviet citizens there are. For this reason there will be great interest in the Soviet census that is scheduled to begin in January 1959.

The last time complete census figures were published was in 1926, 31 years ago. In 1937, the Stalin regime denounced and abrogated the census results and ordered another census. Only scattered findings from this census were disclosed in 1939. Based on an official Soviet estimate recently released to the United Nations, the U.S.S.R. population of today is around 205 million; the U.S. population is about 172 million.

The bureau's analysis of available information indicates that the Russian birth rate now stands just about at the same level as the United States birth rate. A generation ago, birth rate trends in the U.S.S.R. and the United States were in opposite directions. In 1926, the Russian birth rate stood at 44 per 1000; it had declined to 33 by 1940; and it fell

to 26.5 in 1950. The United States birth rate was 24.2 per 1000 in 1926; fell to 19.4 by 1940; rose to 26.0 in 1947; and since 1950 has stabilized at around 25.

From 1950 through 1955, the rate of natural increase—the difference between the birth rate and the death rate—has been slightly higher for the U.S.S.R. than for the United States. In 1955 it was 1.7 in the U.S.S.R. and 1.6 in the United States.

The annual rate of increase in the U.S.S.R. is high compared with that in most of the countries to the west (France, 0.6 percent; Sweden, 0.5 percent; West Germany, 0.5 percent; United Kingdom, 0.4 percent). It is much lower than the rate in many underdeveloped countries, where the death rate has recently declined rapidly and birth rates have remained high. (The following countries have annual increases of approximately 3 percent a year: Ceylon, Egypt, Malaya, Algeria, and Mexico.)

The bureau's comparison of the two nations' death rates shows fairly parallel downward trends in the postwar years due to medical advances. That Russia's death rate of 8.4 in 1955 was lower than that of the United States (9.3) can be attributed to the relatively younger population of the Soviet Union. The Soviet's total population estimate of 200.2 million as of 1 April 1956 came as a surprise to western demographers, who had estimated the Russian population was considerably higher (216 million).

Soviet Metallurgy

The board of governors of Acta Metallurgica, the national organization which publishes the first technical magazine devoted exclusively to the science of metallury, has announced that beginning in January 1958 it will publish English-language editions of two Russian journals on metallurgy. A contract has been signed by Acta Metallurgica with the Pergamon Institute, a nonprofit foundation for the dissemination of scientific literature, to publish English editions of *The Physics of Metals and Metallurgy* and *The Journal of Abstracts—Metallurgy.*

A recent grant of $23,710 was received by Acta Metallurgica from the National Science Foundation to help defray the cost of preparing the English-language editions of the Soviet journals. Copies of the translations will be made available to technical libraries throughout the western world and to members of the 22 technical societies which participate in Acta Metallurgica. The first editions will be translations of the January 1957 issues of both Russian publications. It is estimated that the English editions of the two monthly publications will total approximately 1500 pages per year.

Radiation Effects Information Center

The Radiation Effects Information Center has been established by the Air Force at Battelle Memorial Institute, Columbus, Ohio, to gather and disseminate data concerning the effects of nuclear radiation on materials and systems that may be required in aircraft of the future. While the center has been organized to support the Air Force's nuclear-propelled aircraft program, its services are being extended to the Army, Navy, Atomic Energy Commission, and other Government agencies, as directed by the Air Force.

Initially, Battelle has assigned a 20-man team of specialists to the new unit. Coordinator of the center is Battelle's C. B. Voldrich, with Robert I. Leininger and Carl J. Lyons serving as assistants. Gilbert F. Arthur of Wright Air Development Center is the task engineer.

Color TV to Teach Mathematics

The first experimental use of color television to teach an academic subject was announced recently by the Advisory Board of Education of the National Academy of Sciences. Using the new closed-circuit color TV facility at Walter Reed Army Medical Center, the University of Maryland is offering 26 lectures on the concepts of calculus to a group of in-service high-school teachers of mathematics and science in the Washington, D.C., area.

The experimental value of the course has been greatly aided by a supporting grant from the Fund for the Advancement of Education of the Ford Foundation. The grant will enable the NAS to introduce a second innovation in audio-visual aids to teaching—color kinescopes of the televised lectures. These color kinescopes provide an opportunity for comparison of various techniques and are essential to evaluation of the experiment. They will later be made available to other suitably equipped institutions for further evaluation tests with student audiences.

Analgesic Drug Awards

The Institute for the Study of Analgesic and Sedative Drugs has announced that applications by research investigators for support of projects to be developed during the fiscal year beginning 1 July 1958 are now being considered. The institute is a nonprofit organization established for the purpose of obtaining basic biological and clinical information on the commonly used non-narcotic analgesic and sedative drugs, including aspirin, acetanilid, acetophenetidin, antipyrine, aminopyrine, N-acetyl p-aminophenol, and the bromides.

The deadline for the filing of applications by prospective research investigators is *28 February 1958.* Information concerning grants and applications for grants may be obtained by writing to The Institute for the Study of Analgesic and Sedative Drugs, Myrtle and McNaughton Streets, Elkhart, Ind.

The African Bushman

The Peabody Museum of Harvard University and the Smithsonian Institution are sponsoring a 6-month expedition to the Kalahari Desert in Africa. The expedition, which is expected to reach its destination sometime this month, will be the last of six visits to study the Bushmen, a small race of people who are an ethnic island in the middle of southern Africa. They live on a sparse basin plateau. They have no husbandry or agriculture but depend instead on hunting and gathering for their food supply.

The recording of native life on film and sound tape was initiated by the first expedition to these remote people, and continued by the other four. Approximately 250,000 feet of film has already been used, and this final expedition is expected to bring the work to a close. In addition, hundreds of reels of tape recordings of music and language have been made.

Eventually the study of the Bushmen will be contained in 25 documentary films. While there have been other films of primitive peoples and cultures, this will be the first time that a definitive work has been done entirely in this medium. The present expedition will fill in gaps in the material now at the Peabody Museum.

The Bushmen are a group distinct from the Bantus, who live all around them. They are short in stature, with extremely curly "pepper corn" hair. Their skin, while dark, has red hues not found among other African peoples. Their language and religion are also distinctive.

They live in small tribal groups of 30 to 100 persons, with a simple family and political organization. The ablest hunter often has the role of leader, though this is thought to be as much a chore as an honor.

The Bushmen have had almost no contact with the outside world. When the first Harvard-Smithsonian expedition arrived, most of the Bushmen saw