News and Notes

The Physiology of Mammalian Germ Cells

In a Ciba conference held in London June 17–20 upon the topic "The Physiology of Mammalian Germ Cells," 24 papers were given by workers from six countries under the rotating chairmanship of John Hammond and S. J. Folley.

Papers and discussions came back again and again to the need for a good criterion for fertilization of the egg, and for cell division as opposed to fragmentation. Venge took the view that real fertilization consists of the fusion of male and female pronuclei, but, from a practical standpoint, this is not easily demonstrated. Hartman and others considered that an egg was fertilized if spermatozoa could be found within the zona pellucida. The problem is important, since much work is now being directed toward finding out why so many eggs fail, especially in cattle, during the first few cell divisions. Egg transplantation techniques usually involve exposure of the oviduct, and the lowered local temperature that results may induce parthenogenesis; this is another reason why good criteria are urgently needed.

Eggs shed by the use of gonadotrophic hormones while an active corpus luteum is present are low in fertilizability, and the reason is not clear, according to Casida. It may be linked to the ease with which the uterus becomes infected at this stage of the cycle. In his view it is not due to failure of spermatozoa to reach the eggs. Asdell suggested that more information is needed upon the condition of the egg in induced ovulations, whether or not it had shed the first polar body. He pointed out that rodent eggs are much more readily fertilized than the eggs of domestic animals. Adams reported that, in egg transplantation work, the age of the donor rabbit is immaterial for effective fertilization and transplantation, but that immaturity of the recipient is harmful. Chang reported that eggs had been successfully implanted into doe rabbits after they had been flown across the Atlantic. Willett spoke on successful transplants of bovine eggs.

Low-temperature storage of spermatozoa is now practical, but species differ in the best methods of applying the technique. Parkes and Polge have found that fowl and human spermatozoa withstand deep-freezing well, but the rabbit sperms are very sensitive, whereas bull sperms are intermediate. An important factor in obtaining success is the use of glycerol in the diluent, a factor that was discovered accidentally. Other saccharides do not have a protective effect. Mann expressed the view that the specific protective action of glycerol may be due to its influence upon the physical state of the mixture during cooling. Slow reduction in temperature is another important factor in using the technique.

Another lively discussion arose round the problem of ovum neogenesis from the germinal epithelium. Audrey Smith has found that ova are destroyed when ovarian fragments are deep-frozen, but that they are soon regenerated when the fragments are implanted into recipient does, or are cultured. In Zuckerman's experience this may occur when the germinal epithelium is completely destroyed, and he urged that one cannot be certain of the facts unless complete counts are made in the experimental tissues.

Material progress was reported in the field of sperm metabolism. Mann has found species differences in inositol content of semen. In species with high inositol, fructose is low, and vice versa. Kok produced evidence to show that the salt/sugar ratio is important for sperm survival. Gassner has isolated various amino acids in the accessory fluids by chromatography. They decrease in amount after either castration or vasectomy and in each case they are restored by injecting testosterone propionate—a difficult result to explain. Lundquist has investigated the enzymes of human semen and has found a proteolytic enzyme allied to aminopeptidase that has the effect of increasing the amino acid content. The significance of the presence of amino acids in semen now arises. Lundquist also reported the presence of an enzyme that appears to be pepsin, but, since the optimum pH of pepsin is below 4, its use is problematical. It is absent from bovine semen. Mann has also been investigating the role of a hexokinase, concerned in fructolysis, in sperm metabolism. Lord Rothschild, in a paper upon the energetics of sperm movement, pointed out the importance of high-energy phosphate in fructolysis. He regards the energy produced anaerobically in this process as the important output for the spermatozoon and expressed the view that aerobic metabolism exists solely to "mop up" lactic acid. Mann doubted whether this is the sole function of aerobic metabolism, since the energy produced in this process is much greater than that produced by anaerobic fructolysis. McLeod, too, questioned Rothschild's hypothesis, pointing out that the energy output by spermatozoa is much greater than is needed for their motility. He believes they have other functions requiring energy. In human semen, he said, practically all metabolism is anaerobic. The discussion, in general, showed the danger of applying results obtained with one species to another.

Lord Rothschild also reported some interesting experiments on sperm movements, which have been investigated by stroboscopic methods. Sea urchin spermatozoa travel in loops, whereas bull spermatozoa travel in intermittent tracks, possibly because they turn over as they swim. He said that chemotaxis is found in the plant kingdom only, not in the animal kingdom, and that sperms find the eggs by other means.

This conference once more showed the superiority of small meetings in which adequate discussion can be carried on among workers interested in a fairly spe-

cialized field. The director of the Ciba Foundation, G. E. W. Wolstenholme, is to be congratulated upon the organization that produces such successful symposia. The proceedings are to be published soon.

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Scientists in the News

Holger Arbman, of Lund University, is the leader of an expedition to the Bikaner Desert, west of Delhi, where the Bronze Age cities of that region will be studied. The expedition hopes to take back to Sweden a considerable number of ceramic objects for comparative study.

Alexander W. Bouchal, biochemist and graduate of Pennsylvania State, has joined the research staff of the Colgate-Palmolive-Peet Company, Jersey City.

Philip A. Boyer, associate medical director of Schenley Laboratories, Inc., has been appointed a member of the Committee on Resident Fellowships of the American College of Chest Physicians. Purpose of the committee is to establish fellowships in the U. S. for physicians from other countries.

J. H. U. Brown, assistant professor of physiology at the University of North Carolina School of Medicine, has accepted a position as associate professor of physiology at Emory University School of Medicine.

Edward Bernard Bunn, regent of the Georgetown University Dental School and the School for Nursing, has been appointed president of the university, succeeding **Hunter Guthrie,** who held the post from early 1949 until last July, when he went on leave. Father Bunn is the 36th president of the 163-year-old Jesuit university. He was president of Loyola College from 1938 to 1947. Since 1947 he has served as director general of studies for Jesuit colleges in the Maryland Province of the order.

Thomas H. Clark, Logan professor of paleontology, has been appointed chairman of the Department of Geology at McGill University, replacing **J. J. O'Neil,** who has retired.

Eric T. B. Gross, professor of electric power systems engineering at Illinois Institute of Technology, has been elected national vice president of Eta Kappa Nu, electrical engineering honor society. He will automatically become president next year.

Frederic Keffer has joined the University of Pittsburgh as assistant professor of physics. He was formerly at the University of California.

William T. Kirk has been appointed international director of International Social Service. In his new post he will direct the organization's worldwide social service program while continuing to head its American branch. International Social Service, founded in 1924, maintains consultative status with the Economic and Social Council of the United Nations.

Roland E. Kremers, until recently connected with the Central Laboratories Division of General Foods, has been appointed research associate in organic chemistry at the Institute of Paper Chemistry. Dr. Kremers became associated with General Foods as research chemist, and at its Central Laboratories Division since 1939 he has been successively in charge of organic research, assistant manager, and manager of basic research.

Edward Mallinckrodt, Jr., chairman of the board of the Mallinckrodt Chemical Works, St. Louis, has won the 1952 Midwest Award of the American Chemical Society's St. Louis Section. The Midwest Award, consisting of an inscribed gold medallion, is conferred annually upon a scientist of the Middle West in recognition of "meritorious contributions to the advancement of pure or applied chemistry or chemical education."

The seventh annual James Greenwood Lecture in Neuro-Surgery will be given on Nov. 24 at the University of Texas Medical Branch, Galveston, by **Herbert Olivecrona,** professor of neurosurgery at the University of Stockholm. Professor Olivecrona will talk on "The Treatment of Arteriovenous Aneurisms of the Brain."

Samuel White Patterson has retired as professor of education at Hunter College. On the staff of the college since 1930, Dr. Patterson plans to devote his time to research.

Henri Polak has been appointed scientific attaché at the Netherlands Embassy, Washington, D. C., succeeding **John J. Verschuur,** who has held this position since Jan. 1.

Mark M. Ravitch, associate professor of surgery at the Johns Hopkins School of Medicine, has been made full-time surgeon and head of the Department of Surgery at Mount Sinai Hospital.

Elizabeth Healy Ross, specialist in psychiatric social work, has been named to the new position of deputy chief of the Children's Bureau. She will work under Martha M. Eliot directing the bureau's research into child life and administration of grants to states for improving children's health.

Heyworth N. Sanford has been appointed acting head of the Department of Pediatrics in the University of Illinois College of Medicine, filling the vacancy created when **Henry G. Poncher** resigned (SCIENCE, **115**, 346 [1952]). Dr. Sanford has been a member of the university faculty since 1941, when he was appointed clinical associate professor of pediatrics. His association with Rush Medical College and Presbyterian Hospital dates back to 1928.

M. G. Van Campen, director of organic chemistry, the Wm. S. Merrell Company, Cincinnati, has been elected chairman of the Division of Medicinal Chemistry of the American Chemical Society.

Education

The **Army Medical Service Graduate School** will present a five-day course in "Medical Aspects of Nuclear Energy" Nov. 17–21 at Walter Reed Army Medical Center. Among the instructors will be E. DeCoursey, Wm. Stone, R. Hinners, and R. Gerstell.

Woodrow Krieger, president of Douglas Oil Company of California, is the sponsor of the Loma Linda School of Tropical and Preventive Medicine expedition to the Galápagos to collect data and fish specimens in a study of poisonous fishes, sharks, and other noxious marine animals. The expedition party of 14 will leave Los Angeles Nov. 25 aboard Mr. Krieger's yacht, *Observer,* which will serve as a floating base. The investigations are the continuation of a five-year project, under the leadership of Bruce Halstead, which has been supported by grants from the U. S. Public Health Service and the Office of Naval Research.

The **Maryland Institute of Metals** has been organized at The Johns Hopkins University to stimulate interest in applied and scholastic aspects of metallurgy. The institute is open to all interested persons in the Baltimore and Washington areas. At the first meeting, held Oct. 28, Neng-Kuan Chen, of the Hopkins faculty, discussed the use of the x-ray as a microscope. Rolfe Pottberg has been elected president; Robert Maddin, secretary; and Lee Weitzenkorn, adviser.

Massachusetts Institute of Technology has established a Division of Biochemistry in the Department of Biology, to begin operation on July 1, 1953. John M. Buchanan, professor of physiological chemistry at the University of Pennsylvania, has been appointed professor and head of the division.

Temple University is presenting a series of chemistry lectures which began on Nov. 5, with Jesse P. Greenstein as speaker. Other speakers will be W. Conard Fernelius (Jan. 15); George B. Kistiakowsky (Feb. 5), Charles D. Coryell (Mar. 5), and Herbert Brown (Apr. 9).

Union College will be the locale Nov. 12–13 of a conference of the New York Educational Television Institute, sponsored by the Association of Colleges and Universities of the State of New York. The Fund for Adult Education has financed the two-day workshop, and General Electric Company has supplied the technical equipment. Live demonstrations will present "The Living Blackboard," New York City School System program, and a typical program from Syracuse University.

The **U. S. Weather Bureau** has moved from the U. S. Courthouse in Chicago to the University of Chicago in order to make use of the university's Department of Meteorology, of which Horace R. Byers is chairman. Sverre Petterssen, Norwegian forecaster, is joining the faculty and will work closely with the bureau. His appointment was financed by the Air Force.

Grants and Fellowships

Ethyl Corporation has increased its grants for graduate work from 12 to 21. As in past years, the 1952–53 fellowships were awarded in fields related to the petroleum, chemical, and automotive industries.

The **Lalor Foundation,** through a grant to the Marine Biological Laboratory, Woods Hole, Mass., is offering a limited number of postdoctoral fellowships in biochemistry, biophysics, and physiology, designed primarily for young scientists who wish to work not less than two consecutive months during the summer in investigations at Woods Hole. The stipend is intended to cover laboratory fees, travel, and living expenses. For full information and application blanks (returnable *Dec. 31*), address the Woods Hole laboratory director.

The **National Heart Institute,** USPHS, is conducting a research training program in enzyme chemistry at the Institute for Enzyme Research, University of Wisconsin, under the direction of D. E. Green and H. A. Lardy. Stipends conform to those in effect for postdoctorate research fellows of the Public Health Service. Full information may be obtained from the institute.

In the Laboratories

Consolidated Engineering Corporation has added the following to its engineering and research staffs: Wilson S. Brubaker, of Westinghouse Electric Corporation, as senior research physicist; and Paul Brock, of Reeves Instrument Corporation, as engineering mathematician.

W. R. Grace & Co. has formed the **Grace Chemical Company,** a wholly owned subsidiary, for the production of petrochemicals. The company has purchased a 277-acre site near Memphis, Tenn., where ground has been broken for an $18,000,000 plant to be in operation by 1954. Among directors of the new company are Charles E. Wilson (chairman), Robert T. Haslam, Bradley Dewey, and Edwin R. Gilliland, MIT dean of engineering. Plant manager will be John Carriere, manager of engineering and construction at the Hanford AEC works.

Kennecott Copper Corporation has elected Leslie G. Jenness, of the Humko Company, as a vice president. Dr. Jenness will be in charge of research.

The following scientists have joined the staff of **Los Alamos Scientific Laboratory:** George H. Blount, Edward M. Fryer, and Hugh K. Jennings, physicists; Frederick W. DuBois, chemist; and Kenneth W. Korpi, meteorologist.

The **Naval Research Laboratory** is completing the construction of additional facilities for research in nuclear physics, the first major expansion since the end of World War II. Two new buildings will provide about 40,000 square feet of space.

Meetings and Elections

The **American Academy of Optometry** will hold its annual meeting at the Hotel Seneca, Rochester, N. Y., Dec. 6–9. In addition to many special and invited papers, each of five academy sections has arranged its own six-hour program. To celebrate the 100th anniversary of the founding of the Bausch & Lomb Optical Company, a luncheon and special trip through the plant have been arranged for Dec. 9.

The **American College of Cardiology** is holding a meeting Nov. 7–8 at the Yale University School of Medicine. Three scientific sessions include critical evaluations of electrokymography, microplethysmography, and electrocardiography. There will be papers on vector- and ballistocardography, and other methods of visual and audible registration.

The **American Philosophical Society** is holding its autumn general meeting Nov. 13–14. Speakers include Henri Marceau, Alan J. B. Wace, Frederick Osborn, George N. Shuster, Herbert F. Goodrich, Thorsten Sellin, Homer A. Thompson, David M. S. Watson, Ralph J. Bunche, Albrecht Goetze, Alexandre Koyré, James G. Baker, Llewellyn Woodward, and Edwin J. Cohn. John E. Doerr, of the National Park Service, will present an illustrated lecture.

The National Science Foundation and the University of Rochester will sponsor an **International Conference on High Energy Nuclear Physics** at Rochester, N. Y., Dec. 18–20. About 70 nuclear physicists from the U. S., Canada, and Mexico will meet to discuss recent developments and to plan future studies. The conference will be under the direction of Robert E. Marshak, and Carl D. Anderson, Enrico Fermi, J. Robert Oppenheimer, Eugene P. Wigner, and Bruno Rossi will preside over various sessions. The conference proceedings will be published within a month after the meetings.

The annual meeting of the **Mineralogical Society of America** will be held Nov. 13–15, in conjunction with the annual meeting of the Geological Society of America, at the Hotel Statler, Boston. The Roebling Medal will be presented to Fred E. Wright, of the Geophysical Laboratory, Washington, D. C., and the Mineralogical Society of America Award to F. H. Stewart, University of Durham, England.

The **Nature Conservancy,** meeting in Ithaca, N. Y., elected the following officers: president, Richard H. Pough, of the American Museum of Natural History; secretary, George B. Fell; AAAS Council members, Herbert C. Hanson, of Catholic University, Washington, and Murray F. Buell, of Rutgers University.

A **Western Forestry Conference** will be held at the Empress Hotel, Victoria, B. C., Dec. 10–12. General theme of the international meeting will be "Forestry by the Acre." For full information, address Stuart Moir, Forest Counsel, 712 U. S. National Bank Bldg., Portland, Ore.

Miscellaneous

The **American Society for Metals** has established a Foundation for Education and Research, with an initial endowment of $650,000, for the "advancement and dissemination of scientific knowledge, particularly with respect to the technology of metals." Trustees of the new foundation will be past presidents of the society, rotating in five-year trusteeships dating from their inauguration as presidents. First board consists of Harold K. Work, Arthur E. Focke, Walter E. Jominy, John Chipman, and Ralph L. Wilson. Specific grants will be announced next year.

In a project sponsored by the Society of American Bacteriologists, there is available from the **American Type Culture Collection** the following viruses (*v*) and Rickettsia (*r*): *Herpes simplex* (*v*), influenza A (*v*), influenza B (*v*), poliomyelitis, Lansing strain (*v*), mouse pneumonitis (*v*), *Vaccinia* (mouse neurotropic) (*v*), Rickettsialpox (*r*). Descriptions of the preparations and information on terms for obtaining them will be furnished by the collection, 2029 M St., N.W., Washington 6, D. C.

The **European Council for Nuclear Research** will recommend to its respective governments a 940-acre Swiss site near Lake Geneva for the establishment of a $25,000,000 atomic study center. The ten nations on the council are France, West Germany, Denmark, Switzerland, the Netherlands, Norway, Italy, Belgium, Sweden, and Yugoslavia. Plans call for the building of a synchro-cyclotron and a proton-synchrotron more powerful than any now in existence.

The **National Science Foundation** has compiled a list of 132 forthcoming international and foreign meetings (through December 1955) of interest to American scientists. A limited number of copies are available upon request from scientists and scientific organizations. Revisions will be published from time to time.

An **Isaac Ray Lectureship** has been established in honor of one of the founders of the American Psychiatric Association. A committee of five Fellows of the association has chosen Winfred Overholser, of Saint Elizabeths Hospital, Washington, D. C., as the first lecturer. He will deliver the lectures at Harvard under the sponsorship of the law and medical school faculties on Nov. 13, 14, 17, and 18.

The **Society of the Sigma Xi** has appointed the following national lecturers: Lee E. Farr, of Brookhaven National Laboratory (discussing "The Impact of Nuclear Science on Medicine" Oct. 16–Nov. 25, Indiana to Honolulu); Curt Stern, of the University of California, Berkeley (discussing "Two or Three Bristles, or the Gene in Development" Oct. 16–Nov. 21, Florida to Indiana); and Wallace R. Brode, of the National Bureau of Standards (discussing "Color and Chemical Constitution" Nov. 3–25, Missouri to California).