and continues so through the noon hour. The intensity of the reaction gradually decreases after 1:30 P.M., becoming feeble again at approximately 4:30 P.M. For this study, single joined pairs were isolated as soon as formed and then placed in the microcompression chamber for observation.

In conjugation the three pregamic divisions occur as follows at 25° C.: completion of first division, approximately 14 hours after mating; completion of second division, an hour after the first; the third division, involving exchange of pronuclei and syngamy, 16–18 hours after mating. One can see that the micronuclear product, which remains near the paroral region after the first and second divisions, generally is the one destined to undergo a succeeding division. The one farthest from that region degenerates. The dividing spindle of the third pregamic division is seen to arrange itself at nearly right angles to the long axis of the conjugant and press against the membrane at the point of crossing. It takes about 20 minutes for the migratory pole of the spindle to pass from one conjugant to the other. Cyclosis in each conjugant is slower than usual, and crystals are seen to bunch themselves around the dividing spindles.

After syngamy, the three amphinuclear (metagamic) divisions are completed, respectively, as follows: the first, approximately 20 hours after mating; the second, 22 hours; and the third, 24 hours. Conjugants frequently are seen completing the third amphinuclear division at the time of separation 24 hours after mating. All of the time relationships given here were recorded at a temperature of 25° C. and differ widely from those of Hamburger (*3*). Temperature is an important factor regarding the length of time the animals remain joined together in the process.

It is noteworthy that in no case was a visible transfer of cytoplasm or of zoochlorellae observed during the conjugation of these mating types.

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News and Notes

The recently organized Emergency Committee of Atomic Scientists of which Albert Einstein is president and Harold C. Urey is vice president, met on 17 November in Princeton, New Jersey, to devise means of raising a $1,000,000 educational fund to aid in enlightening the public on the social implications of nuclear energy. The Committee has announced six objectives of the educational campaign and various members of the committee and others are available to speak on these points in various parts of the country.

The six statements of fact follow:

1) Atomic bombs can now be made cheaply and in large number. They will become more destructive.

2) There is no military defense against atomic bombs and none is to be expected.

3) Other nations can rediscover our secret processes by themselves.

4) Preparedness against atomic war is futile, and if attempted, will ruin the structure of our social order.

5) If war breaks out, atomic bombs will be used, and they will surely destroy our civilization.

6) There is no solution to this problem except international control of atomic energy and ultimately, the elimination of war.

Aside from Prof. Einstein and Dr. Urey, the other members of the Committee are: Selig Hecht, Columbia University; Victor F. Weisskopf, Massachusetts Institute of Technology; Leo S. Szilard, University of Chicago; Hans A. Bethe, Cornell University; Thorfin R. Hogness, University of Chicago; Philip M. Morse, on leave from Massachusetts Institute of Technology; and Linus Pauling, University of California.

A Committee on a Junior Scientists' Assembly, with Morris Meister, president of the National Association of Science Teachers, as chairman, has recently been appointed by the AAAS. This Committee is working to bring together young scientists who are still in the midst of their scientific training, so that they may share their experiences and opinions. The Assembly of Junior Scientists was planned in realization of the increasing importance of the role of young scientists. Many young persons during the war were taken directly from their studies and placed on important research teams where they assumed great responsibility. Most of these young men and women have now returned to school and are in a position to look back at their recent secondary studies and evaluate them for teachers and for science-minded high school pupils. They are also looking ahead toward

their work as scientists in a period of unparalleled technological advancement.

The theme for the first meeting of the Junior Scientists' Assembly is: "The Young Scientist Looks at Education and at His Work." This meeting will be held at 2:30 P.M. on 27 December, in the Lobby Ballroom of the Bradford Hotel, Boston. Those invited to participate in the panel discussion include winners of the Science Talent Search, honorary members of the AAAS from the Junior Academies of Sciences, former members of science clubs, and individuals whose initial progress in scientific work has been outstanding.

Special effort is being made to call the attention of science teachers and all scientists to the first Junior Scientists' Assembly. The Committee plans to make this Assembly a special feature of AAAS meetings, and it is interested in the cooperation of members of the Association who feel that it is their concern to guide the future of youth in science.

About People

Clifford C. Volkerding has been named associate soil scientist and assistant dean of agriculture at the North Dakota Agricultural College, Fargo. Dr. Volkerding was formerly employed by the Du Pont Company.

Lester R. Aronson, assistant curator, Department of Animal Behavior, American Museum of Natural History, has been appointed acting chairman and associate curator of the Department. Dr. Aronson succeeds Frank A. Beach, who received an appointment as professor of psychology at Yale University.

C. H. Connell, recently a lieutenant colonel in the Sanitary Corps, AUS, is now with the Department of Preventive Medicine and Public Health, University of Texas Medical Branch, Galveston. Dr. Connell was connected with the Department of Municipal and Sanitary Engineering, A. and M. College of Texas, as associate professor prior to his military activity.

Vernon D. Tate, director of the Division of Photographic Archives and Research of the National Archives, Washington, has been appointed librarian of the Massachusetts Institute of Technology, John E. Burchard, director of libraries, announced on 26 October. Dr. Tate will take active charge next July when William N. Seaver, librarian since 1925, retires. Since 1938 Dr. Tate has been editor of the *Journal of Documentary Reproduction.*

E. M. Hildebrand, formerly plant pathologist, Research Department of the Food Machinery Corporation, Dunedin, Florida, has recently joined the staff of Texas A. and M. College as associate professor in the Biology Department.

Arthur H. Compton, chancellor of Washington University, St. Louis, and *W. Albert Noyes,* chairman of the University of Rochester Chemistry Department and president of the American Chemical Society, are attending the first general conference of UNESCO, which opened in Paris on 19 November. Dr. Noyes was appointed by the State Department as scientific adviser, and Dr. Compton is one of the voting delegates.

Visitors From Abroad

Marcel Riesz, of the Lunds Universitets Matematiska Institution, Lund, Sweden, has accepted an invitation as visiting lecturer at the University of Chicago for the winter and spring quarters, 2 January to 13 June 1947. He expects to offer a course on hyperbolic differential equations (wave equations) during the winter quarter. Professor Riesz will also organize a seminar during his term of residence, according to Marshall H. Stone, chairman of the Department of Mathematics.

Sir Lionel Whitby, Regius professor of physic, University of Cambridge, spoke on "Chemotherapy Yesterday and Today" at the Institute of Medicine of Chicago on 18 November.

Paulo Borges, pathological and anatomical laboratory, University of Minas Gerais, Belo Horizante, Brazil, is working at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, under a fellowship from the Institute of International Education.

Announcements

The Lasker Awards for two types of outstanding service in mental hygiene have been conferred on W. Horsley Gantt, Phipps Psychiatric Clinic, Johns Hopkins School of Medicine; Rev. D. R. Sharpe, president of the Ohio Mental Hygiene Association; and Walter Lerch, reporter on the *Cleveland Press.* The presentations were made at the annual luncheon meeting of the National Committee for Mental Hygiene in the Hotel Pennsylvania, New York City, on 31 October.

One award of $500, for experimental investigation into behavior deviation, was presented to Dr. Gantt by James R. Angell, vice-president of the Committee and public service counsellor of the National Broadcasting Company. Jules Masserman, of the Division of Psychiatry, University of Chicago, received honorable mention.

The other award of $500, for efforts to improve hospital care for mental patients, was conferred jointly on Dr. Sharpe and Mr. Lerch by Samuel W. Hamilton, adviser, Mental Hygiene Division, U. S. Public Health Service, and president of the American Psychiatric Association. Albert Deutsch, feature writer on *PM,* received honorable mention.

The Lasker Award of $1,000, established in 1944 by

the Albert and Mary Lasker Foundation, is given annually through the Committee for meritorious service and significant contributions to the promotion of mental health and the increase of public understanding of mental hygiene. Each year the award is made for distinguished service in some special aspect of the field of mental hygiene which is of current significance.

The first award, given in 1944, was for mental hygiene work related to the war. Col. William C. Menninger, chief consultant in neuropsychiatry, Office of The Surgeon General, U. S. Army, received the award for work done to enhance the mental health of men and women of the armed services while in the service and during the period of rehabilitation. In 1945 the award was conferred jointly on John Rawlings Rees, consultant in psychiatry to the Directorate of Psychiatry of the British Army, and Maj. Gen. G. Brock Chisholm, Deputy Minister of National Health, Federal Department of National Health and Welfare, Canada, for outstanding service in rehabilitation.

NRC News

Merck and Company has made an appropriation of $100,000 to the National Research Council to support a new series of fellowships. It is the purpose of these fellowships to give special training and experience to young men and women who have demonstrated marked ability in research in chemical or biological science and wish to broaden their fields of investigational activity.

Qualifications of applicants: The Merck Fellowships are open only to citizens of the United States. Applicants must produce evidence of training in chemistry or biology equivalent to that represented by the degree of Ph.D., and of unusual talent for experimental research.

Fields of study: All fields of chemistry and biology, including the preclinical medical sciences, are open to applicants for Merck Fellowships. Recognizing that many scientific problems in these fields are of such complexity that a thorough grasp of more than one discipline is required for satisfactory approach toward their solution, the Merck Fellowship Board will give special consideration to those applicants who wish to supplement mastery in one field by becoming competent in another. It is hoped that the capacity for deeper understanding thus acquired may result in new knowledge of the identity and character of cellular processes and concerning the action of chemical substances upon them.

Conditions of appointment: The fellowships will be awarded at annual meetings of the Merck Fellowship Board. To receive consideration at the next meeting, *applications must be filed on or before 15 January 1947*. Applicants may subsequently be requested to appear before the Board for personal interview; in such cases, traveling expenses will be provided by the Board. Fellowship appointments are subject to the condition that after they have been accepted by the applicants, neither place nor general program of work shall be changed without the consent of the Board. Unless otherwise arranged tenure will begin on 1 July 1947; the initial appointment will be for a term of one year, renewable for a second and in exceptional cases for a third.

Merck Fellows will be required to devote their entire time to research and advanced courses of study. Six weeks annually will be allowed for vacation.

Grants: The annual stipends, which will be determined in every case by the Merck Fellowship Board, will be in the range of $2,500 to $5,000. An allowance for necessary travel will be available, and an amount of $500 or more will be provided annually to the institution to which each Fellow is assigned.

Location of work: The fellowship awards are made to individuals for study and research in this country or abroad. The institution in which the Fellow works, and the persons under whom he works, shall be approved by the Board. Fellows will be encouraged to undertake their fellowship work in institutions other than those in which their original training was secured.

Reports: From time to time, as the Board may determine, the persons under whose direction a Fellow is working may be asked to report concerning his or her progress. Before retiring, all Fellows will be required to submit to the Board for record a brief report of the principal results of their research and fellowship experience.

Publication: It is understood that results of work carried out by a Fellow shall be available to the public through accepted scientific channels, without restriction. The publication of the results of an investigation made during the tenure of the fellowship should include a statement indicating that the author is a Merck Fellow in the Natural Sciences under the National Research Council. If publications resulting from work under a fellowship appear, the author is expected to furnish ten reprints of each paper to the Chairman of the Merck Fellowship Board of the National Research Council.

Members of the Merck Fellowship Board are: A. N. Richards, chairman, University of Pennsylvania; George W. Beadle, California Institute of Technology; Hans T. Clarke, Columbia University; George O. Curme, Jr., Carbide and Carbon Chemicals Corporation; René J. Dubos, Rockefeller Institute for Medical Research; The Chairman, National Research Council, *ex officio*. Requests for application blanks or for additional information should be addressed to the

Merck Fellowship Board, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Fellowships in the Medical Sciences, similar to those which have been administered by the Medical Fellowship Board of the National Research Council since 1922, will again be available for the year 1947–48. These fellowships, supported by grants from The Rockefeller Foundation to the NRC, are designed to provide opportunities for training and experience in research in all branches of medical science. They are open to citizens of the United States or Canada who possess an M.D. or Ph.D. degree, and are intended for recent graduates who are not yet professionally established.

In addition to these fellowships, the Medical Fellowship Board administers two groups of research fellowships, made available through a grant from the National Foundation for Infantile Paralysis, Inc. The first group, open to applicants who hold either the Ph.D. or M.D. degree, is for the purpose of providing opportunities for special training and experience in the study of filtrable viruses. The second group, open only to graduates in medicine who have completed one or more years of hospital experience in clinical surgery and are planning a career in orthopedic surgery, is designed to provide opportunities for training and research in those basic medical sciences which will be of particular value in furthering progress in the field of orthopedic surgery.

A series of fellowships in anesthesiology has been established through a grant from the American Society of Anesthesiologists. These fellowships are offered with a view to fostering a closer union between the clinical practice of anesthesiology and the fundamental disciplines on which anesthesia rests. Applicants must hold the M.D. degree and must have completed one or more years of hospital experience as intern or resident.

The Medical Fellowship Board of the NRC has also under its jurisdiction a number of fellowships of senior grade in internal medicine (Welch Fellowships), virus diseases, orthopedic surgery, and pediatrics, for individuals of proven research ability.

Fellows will be appointed at a meeting of the Medical Fellowship Board early in March 1947. Applications to receive consideration at this meeting must be filed on or before 1 January. Appointments may begin on any date determined by the Board.

For further particulars concerning these fellowships, address the Secretary of the Medical Fellowship Board, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Eleven separate agencies at Harvard University have become concerned in instruction, demonstration, or research in the botanical field during the last 70 years. Nine of these agencies were created by endowments designated for specific objectives. To insure adequate furtherance of these objectives and at the same time to attain greater efficiency in integration and in administration from the point of view of the future welfare of botany as a whole, two new administrative and budgetary areas have been created. One of these, designated "Institute for Research in General Plant Morphology," includes the Gray Herbarium and Library, the Farlow Library and Herbarium, the Herbarium and Library of the Arnold Arboretum, and the collections, libraries, and herbaria of the Botanical Museum. It is concerned with research in taxonomy, phytogeography, paleobotany, mycology, comparative anatomy, developmental morphology, and certain aspects of economic botany. A new, centrally located building will be erected in close proximity to the Biological Laboratories to house these at present widely scattered herbaria, libraries, and collections. The second area, designated "Institute for Research in Experimental and Applied Botany," includes the Arnold Arboretum, the Bussey Institution, the Cabot Foundation, the Harvard Forest, and the Atkins Garden and Research Laboratory in Cuba. It is concerned with research in plant genetics, plant physiology, horticulture, silviculture, and various aspects of economic botany. Other activities will develop as funds permit.

To ensure adequate consideration of the future welfare of botany as a whole and its development in relationship to other biological disciplines, the chairmen of the two areal research bodies, the director of the Museum of Comparative Zoology, the chairman of the Department of Biology, and the director of the Biological Laboratories have been constituted as a Biological Council under the chairmanship of the provost of the University. All major deliberations and recommendations regarding botanical, zoological, and other biological matters will be referred to this body.

The reorganization of botanical activities has thus far involved the following administrative appointments: *Institute for Research in General Plant Morphology*—chairman, Irving W. Bailey; vice-chairman, Hugh M. Raup, and ad interim supervisor of the Herbarium and Library of the Arnold Arboretum, Ivan M. Johnston; *Institute for Research in Experimental and Applied Botany*—chairman, Paul C. Mangelsdorf; vice-chairman, Kenneth V. Thimann; ad interim director, Arnold Arboretum, and supervisor, Bussey Institution, Karl Sax; director, Harvard Forest, Hugh M. Raup; and director, Atkins Garden and Research Laboratory, Arthur G. Kevorkian (see *Science,* 1946, **104**, 204). With the retirement of Elmer D. Merrill from administrative responsibilities at the age of 70, the post of administrator of Botanical Collections has been abolished.