# Meetings and Societies

## Developmental Biology

Development and growth used to be studied mainly in separate compartments, as embryology, or plant physiology, or nutrition, or oncology; as seriation of stages of chick embryos; as cell division in fish eggs or plant root tips; as growth curve of children; as hormone response of plumage; as spread of a fungus; as repair of a broken bone or the swelling of a diseased spleen. Yet, in reality, all of these are merely isolated aspects of one broad, continuous spectrum of phenomena, varied manifestations of the same basic principles and elementary processes: multiplication of organic mass (growth), diversification of that mass (differentiation), pattern formation (morphogenesis), progressive change (maturation and aging), and the repair or reproduction of patterns after disturbance (regulation and regeneration).

This unity of subject matter in the field of developmental biology has received renewed emphasis in a major and highly successful undertaking, organized in 1956, known as the "Developmental Biology Conference Series 1956." It consisted of a series of coordinated and interdisciplinary conferences, symposia, and workshops, held in the United States from early June to mid-October. These were organized under the sponsorship of the Biology Council (Paul Weiss, chairman) of the Division of Biology and Agriculture, National Academy of Sciences-National Research Council, with the generous financial support of the American Cancer Society, American Cyanamid Company, Atomic Energy Commission, U.S. Departments of the Air Force, Army, and Navy (Medical Services), Diamond Alkali Company, Fulbright Fellowship Program, International Union of Biological Sciences, Merck and Company, Inc., National Institutes of Health, National Science Foundation, U.S. Office of Naval Research, Chas. Pfizer and Company, Inc., the Rockefeller Foundation, Rohm and Haas Company, E. R. Squibb and Sons, U.S. Department of State, and certain private donors.

Between 200 and 300 American experts and 54 from overseas (the latter representing 19 countries) participated,

by invitation, in these events. The participants represented the fields of anatomy, biochemistry, biometry, biophysics, botany, cytology, embryology, endocrinology, genetics, histology, immunology, microbiology, neurology, nutrition, oncology, pathology, physiology, radiology, surgery, and zoology.

The following 13 coordinated meetings comprised the series: Conference of the Oak Ridge National Laboratory on Biocolloids, Oak Ridge, Tenn., 12-14 Apr.; Cold Spring Harbor Symposium on Gene Action in Relation to Development, Long Island Biological Association, New York, 4-12 June; Workshop in Developmental Biology, Bar Harbor, Me., 18-28 June; International Congress of Developmental Biology, with symposia on "Regeneration of vertebrates" and "Embryonic nutritional requirements and utilization," Brown University, Providence, R.I., 23-26 July; International Symposium on Cytodifferentiation, Brown University, Providence, R.I., 27-31 July; Work Conference on Environmental Influences on Prenatal Mammalian Development, R. B. Jackson Memorial Laboratory, Bar Harbor, Me., 2-4 Aug.; Work Conference on Immunology and Development, R. B. Jackson Memorial Laboratory, Bar Harbor, Me., 7-9 Aug.; Work Conference on Physiology of Insect Development, Growth, and Metamorphosis, Macdonald College, Ste. Anne de Bellevue, Quebec, Canada, 14-16 Aug.; Work Conference on Dynamics of Proliferating Tissues (with Emphasis on Hematopoiesis), Brookhaven National Laboratory, New York, 5-8 Sept.; Work Conference on Endocrines in Development, Shelter Island, New York, 11-13 Sept.; Work Conference on Mitogenesis, Argonne National Laboratory, Lemont, Ill., 24-26 Sept.; Work Conference on Biological Foundations of Wound Healing and Tissue Repair, Rockefeller Institute for Medical Research, New York, 2-4 Oct.; and Tissue Culture Association Decennial, Woodstock, Vt., 8-12 Oct. Of these events, 10 (all but the first two and the last in the foregoing list) were organized and administered by the Biology Council, Division of Biology and Agriculture, National Academy of Sciences-National Research Council.

Except for the International Congress

of Developmental Biology, at which the participants presented formal papers, all meetings followed an informal roundtable pattern of procedure. In each, anywhere from 15 to 35 investigators from various disciplines, under the programing guidance of a chairman, devoted themselves not primarily to a display of their individual research products but to a concerted review and evaluation of the bearing that the content of each specialty might have on crucial issues in the field of developmental biology. The major objectives throughout were the critical distillation of all available knowledge on a given problem, the clarification of concepts, and the resolution of incongruities and inconsistencies in the views that were current in different areas. Thus was provided the setting for a unique group exercise in which each participant contributed his share to the unification, strengthening, and elucidation developmental biology and from which he, in turn, gained fresh orientation for his own specialized tasks.

The resultant free give-and-take of information, illustrations, questions, criticisms, and conclusions not only revealed many existing gaps in knowledge and understanding but, at the same time, furnished fresh pointers on ways to fill those gaps by specific experiment or reinterpretation. No less productive than the bringing out of constructive suggestions was the weeding out of misunderstandings that were rooted in the deficiencies of past interdisciplinary correlation. In several of the events (particularly in the Bar Harbor workshop and the Brown University series) advanced students took part as auditors and active discussants and thus benefited directly. Mature investigators were likewise impressed with the advantages of this type of conference, which significantly supplements the more common practice of holding group conferences and symposia on specialized topics of great current interest by bringing together investigators from many disciplines, in ever new combinations, for the clarification of basic

On the technical side, progress toward realization of this objective resulted from the fact that many of the participants were enlisted in more than one conference-some in as many as five. In this way, their contributions could be brought to bear on a great variety of problems in different contexts, and their own views, in turn, could be enriched by exposure to new perspectives. On the practical side, this participation in several separate events by the same individuals made it possible to invite a considerably larger number of participants from abroad than would have been possible with the limited funds that were available had each made his trip in order to be present on a single occasion. Concomitantly, this enabled them to extend their stay in the United States and to visit numerous laboratories, to the mutual advantage of the visitors and of the laboratories.

On the whole, the success of this undertaking makes it seem advisable to repeat it in other fields, for this scheme of holding a series of interrelated and coordinated conferences seems to fill a real need—that of meetings whose scope is half-way between that of the mammoth international congresses at one extreme and that of the small and independent single-purpose conferences at the other.

Plans for publishing the proceedings of the conferences in a single series are under way. These will be either in the form of third-person reports by recorders who were especially appointed to each conference or of condensed and edited transcripts of the discussion.

PAUL WEISS

Rockefeller Institute for Medical Research

# Electrical Techniques in Medicine and Biology

Electrical and electronic techniques in medicine and biology will be discussed by electrical engineers, physicians, biologists, electronic instrumentologists, radiation physicists, and psychologists at the tenth annual conference on Electrical Techniques in Medicine and Biology, which will meet in Boston, Mass., 6–8 Nov. The conference is being sponsored by the American Institute of Electrical Engineers, the Instrument Society of America, and the Boston chapter of the Professional Group on Medical Electronics of the Institute of Radio Engineers

Three morning scientific sessions and an evening panel discussion, on "Education and Research in Biophysical Engineering," are planned. The scientific sessions will include a symposium on "Problems in Sensory Perception and Replacement," and technical sessions on "Instrumentation for Circulation Research," and "Membrane Potentials and Ionic Transfer Phenomena." The registration secretary is Donald E. Williamson, Williamson Development Co., Inc., West Concord, Mass.

## Soil Science in Southeast Asia

In celebration of its tenth anniversary, the Soil Science Society of the Philippines is sponsoring the first Southeast Asia Soil Science Conference in Manila, 9–22 Dec. The theme of the conference is "The Importance of Soil Science in the Agricultural Development of the

Southeast Asian Countries." Problems in the management of tropical soils and means for increasing the productive capacity of these soils will be discussed. Papers will be presented in the following subjects: soil physics and mechanics; soil genesis, morphology, cartography, land classification, and soil evaluation; soil chemistry and clay mineralogy; soil extension work and agronomic education; soil fertility, fertilizer and plant nutrition; drainage and irrigation; forest and pasture land; and farm mechanization and tillage.

# **World Metallurgical Congress**

The second World Metallurgical Congress will take place in Chicago, Ill., 2–8 Nov. under the sponsorship of the American Society for Metals. The 39th National Metals Exposition will be held simultaneously.

There will be more than 170 technical presentations. The American Society for Metals has scheduled 129 papers and discussions. Fifty of these are included in the technical program; 42 in the Atomic Energy Commission sessions on thorium, welding, and metallography; 20 in seminars on metal characteristics, and 17 in international panels presenting some 120 United States, Canadian and overseas metal scientists.

The Metals Division of the American Institute of Mining and Metallurgical Engineers will sponsor 22 symposiums, seminars, and papers. The Society for Nondestructive Testing, which will hold its second international conference in conjunction with the Metals Congress, is presenting 10 major sessions in 3 days. The Industrial Heading Equipment Association will present six technical papers; the Metal Powder Association, three papers; and the Special Libraries Association, three papers.

#### **Trace Elements**

A symposium on the Metabolic Role of Trace Elements in Plants, Animals, and Microorganisms, will be held 14–16 Oct. at Wooster, Ohio, in conjunction with the 75th anniversary celebration of the Ohio Agricultural Experiment Station.

Fourteen experts, including two from overseas, will discuss first the general role of trace minerals in plants, animals, and lower life, and then problems concerning specific elements, including manganese, selenium, cobalt, boron, iodine, molybdenum, vanadium, copper, zinc, and iron

Andre Pirson of the Botanical Institute of the University of Marburg, West Germany, will speak on the part manganese plays in the well-being of living things, and E. J. Underwood, a member of the staff of the University of Western Australia at Nedlands, will present a general discussion of the importance of trace elements to animals.

# **Forthcoming Events**

New York 20.)

#### November

7-9. American Documentation Inst., annual, Chicago, Ill. (C. G. LaHood, Jr., Library of Congress, Washington 25.)

11-13. Radio Fall Meeting, IRE, Toronto, Ont., Canada. (V. Graham, RETMA, 11 W. 42 St., New York 26.) 11-14. American Petroleum Inst., 37th annual, Chicago, Ill. (API, 50 W. 50 St.,

11-15. American Public Health Assoc., 85th annual, Cleveland, Ohio. (R. M. Atwater, APHA, 1790 Broadway, New York 19.)

11-15. American Soc. of Professional Biologists, annual, with American Public Health Assoc., Cleveland, Ohio. (A. F. Borg, Dept. of Bacteriology, Kansas State College, Manhattan.)

13-15. American Meteorological Soc., College Station, Tex. (K. C. Spengler, AMS, 3 Joy St., Boston 8, Mass.)

13-15. Clinical Chemistry Symp., Cleveland, Ohio. (F. E. Bunts Educational Inst., Cleveland, Clinic Foundation, 2020 E. 93 St., Cleveland 6.)

13-15. Standards, 8th national conf., San Francisco, Calif. (American Standards Assoc., 70 E. 45 St., New York 17.)

13-16. Society of Naval Architects and Marine Engineers, 65th annual, New York. (W. N. Landers, SNAME, 74 Trinity Pl., New York 6.)

14-15. Operations Research Soc. of America, Pittsburgh, Pa. (M. L. Ernst, Box 2176, Potomac Sta., Alexandria, Va.)

14-16. American Inst. of Mining, Metallurgical, and Petroleum Engineers, semiannual, Chicago, Ill. (H. N. Appleton, AIME, 29 W. 39 St., New York 18.)

14-16. American Soc. of Refrigerating Engineers, Chicago, Ill. (R. C. Cross, ASRE, 234 Fifth Ave., New York 1.)

14-16. Inter-Society Cytology Council, annual scientific, Augusta, Ga. (P. F. Fletcher, 634 N. Grand Ave., St. Louis 3, Mo.)

17-22. Radiological Soc. of North America, annual, Chicago, Ill. (D. S. Childs, 713 E. Genesee St., Syracuse, N.Y.)

18-21. Magnetism and Magnetic Materials Conf., Washington, D.C. (L. R. Maxwell, U.S. Naval Ordnance Lab., White Oak, Silver Spring, Md.)

18-22. American Soc. of Agronomy, annual, Atlanta, Ga. (L. G. Monthey, ASA, 2702 Monroe St., Madison, Wis.)

18-22. Citrus Virus Diseases Conf., Riverside, Calif. (J. M. Wallace, Dept. of Plant Pathology, Univ. of California, Riverside.)

18-9. Pacific Science Cong., 9th, Bangkok, Thailand. (Pacific Science Board, National Research Council, 2101 Constitution Ave., NW, Washington 25.)



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20-22. Structure of the Nucleus, chemical research conf., Houston, Tex. (W. O. Milligan, Rob't. A. Welch Foundation, P.O. Box 1892, Houston 1.)

20-24. National Assoc. for Mental Health, annual, Atlantic City, N.J. (NAMH), 10 Columbus Circle, New City, N.J. York 19.)

22. Tritium in Tracer Applications, symp., New York. (Symp. Committee, New England Nuclear Corp., 575 Albany St., Boston 18, Mass.)

22. Ultraviolet Scanning Microscopy Symp., Philadelphia, Pa. (H. K. Schlegelmilch, RCA Victor TV Div., Bldg. 204-2 Section 219, Cherry Hill, Camden 8, N.J.)

22-23. Tennessee Acad. of Science, 67th annual, Memphis. (W. G. Holladay, Physics Dept., Vanderbilt Univ., Nashville, Tenn.)

25-27. American Acad. for Cerebral Palsy, 11th annual, New Orleans, La. (R. R. Rembolt, Iowa Hospital-School State University of Iowa, Iowa City.)

25-27. Physics and Dynamics of Fluids, APS, Bethlehem, Pa. (F. N. Frenkiel, Applied Physics Lab., Johns Hopkins Univ., Silver Spring, Md.)

26-28. Central Assoc. of Science and Mathematics Teachers, 57th annual, Chicago, Ill. (L. Panush, Henry Ford High School, Detroit 19, Michigan.)

28-29. American Physical Soc., St. Louis, Mo. (K. K. Darrow, Columbia Univ., New York 27.)

29-30. American Soc. of Animal Production, annual, Chicago, Ill. (H. H. Stonaker, Animal Husbandry Dept., Colorado State Univ., Fort Collins.)

#### December

1-6. American Soc. of Mechanical Engineers, annual, New York, N.Y. (C. E. Davies, ASME, 29 W. 39 St., New York 18.)

1-15. Bahamas Medical Conf., 4th, Nassau, Bahamas. (B. L. Frank, 1290 Pine Ave., W. Montreal, Que., Canada.)

2-5. Entomological Soc. of America, annual, Memphis, Tenn. (R. H. Nelson, ESA, 1530 P St., NW, Washington 5.)

3-4. Human Factors in Systems Engineering, symp., Philadelphia, Pa. (C. Fowler, American Electronic Labs., 121 N. 7 St., Philadelphia.)

4-8. American Psychoanalytic Assoc., New York, N.Y. (J. N. McVeigh, APA, 36 W. 44 St., New York 36.)

4-10. American Acad. of Optometry, annual, Chicago, Ill. (C. C. Koch, 1506-1508 Foshay Tower, Minneapolis 2,

5-7. Texas Acad. of Science, annual, Dallas. (G. C. Parker, Education Dept., Texas A&M College, College Station.)

6-7. Oklahoma Acad. of Science, annual, Enid. (J. T. Self, Dept. of Zoology, Univ. of Oklahoma, Norman.)

7-8. American Acad. of Dental Medicine, New York, N.Y. (S. Ross, 136 E. 36th St., New York 16.)

8-11. American Inst. of Chemical Engineers, annual, Chicago, Ill. (F. J. Van Antwerpen, AIChE, 25 W. 45 St., New York 36.)

9-11. Fluorides Symp., Cincinnati, Ohio. (Secretary, Inst. of Industrial Health, Kettering Laboratory, Eden and Bethesda Aves., Cincinnati 19.)

9-13. Eastern Joint Computer Conf., Washington, D.C. (H. H. Goode, Dept. of Electrical Engr., Univ. of Michigan, Ann Arbor.)

9-22. Southeast Asia Soil Science Conf., 1st, Manila, Philippines. (I. G. Valencia, Bureau of Soils, P.O. Box 1848, Manila.)

13-14. Association for Research in Nervous and Mental Disease, 37th annual, New York, N.Y. (R. J. Masselink, 700 W. 168 St., New York 32.)

17-19. Nuclear Sizes and Density Distributions Conference, Stanford, Calif. (R. Hofstadter, Stanford Univ., Stanford, Calif.)

19-21. American Physical Soc., Stanford, Calif. (W. A. Nierenberg, Univ. of California, Berkeley 4.)

26-27. Northwest Scientific Assoc., annual, Spokane, Wash. (W. B. Merriam, Geography Dept., State College of Washington, Pullman.)

26-30. American Assoc. for the Advancement of Science, annual, Indianapolis, Ind. (R. L. Taylor, AAAS, 1515 Massachusetts Ave., NW, Washington 5.)

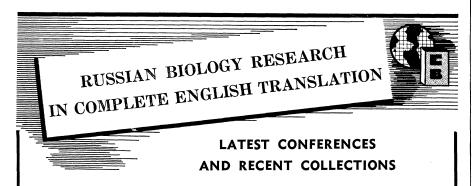
27. Association for Symbolic Logic., Cambridge, Mass. (J. Barlaz, Rutgers Univ., New Brunswick, N.J.)

(See issue of 20 September for comprehensive list)

# **EQUIPMENT NEWS**

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to Science, Room 740, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).

- PROJECTING MICROSCOPE, manufactured in Switzerland, displays image on a 7-in.diameter ground-glass screen. Magnifications are selectable from 7 to 2000. The image may be seen through an eyepiece as well as on the ground-glass screen without making any changes in the instrument. Features and accessories include bright- and dark-field illumination by transmitted or reflected light, polarizing equipment, mechanical stages, and photographic attachments. Available models include a comparing projector for direct comparison of two specimens on the same screen. Projection onto an outside screen for classroom demonstration can also be accomplished. (Alfred Hofmann and Co., Dept. S653)
- CAPACITANCE MEASURING DEVICE is used with the manufacturer's pressure and displacement transducers. Frequency response is ±5 percent from 0 to 15 kcy/sec. Capacitance is sensed by its effect on the resonance of a tuned circuit of which it is a component. The device is designed to plug into the Tektronix-530 and -540 series oscilloscopes. (Photocon Research Products, Dept. S656)
- GAS PURIFIER, automatic in operation, delivers hydrogen with an oxygen content of less than 1 part per million and a dew point better than 100°F. Water is removed by two drying towers that are alternately switched into the gas stream. Oxygen is removed by catalytic reaction with hydrogen at room temperature. The equipment can be used with nitrogen, argon, helium, carbon dioxide, and saturated hydrocarbons. (Baker and Co., Inc., Dept. S658)
- HIGH-VOLTAGE SOURCE provides an adjustable potential from 0 to 15 kv. Two voltage ranges, 0 to 1.5 kv and 0 to 15,000 kv, as well as two current ranges, 0 to 100 µa and 0 to 500 µa, are provided. Input may be 115 v a-c or 24 to 30 v d-c. Insulation resistance can be read to approximately 5000 Mohm. (Harvey-Wells Electronics, Inc., Dept. S647)
- DUAL-PEN RECORDER is of the self-balancing potentiometer type. Chart width of 5 in. is shared by two pens. The span of each pen is adjustable between 25 and 75 percent of full chart width.



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