Meetings

Biophysics

At the general assembly of the International Union of Pure and Applied Physics, which took place in Rome in September 1957, some discussion arose on the desirability of setting up a commission on biophysics within that union. An *ad hoc* committee consisting of R. H. Bolt (United States), A. Joffe (U.S.S.R.), and G. B. B. M. Sutherland (Great Britain) was appointed to look into the matter. This committee recommended (among other things) that an international conference on biophysics be held, which would bring together a representative selection of physicists and biologists and so allow wider discussion of the need for an international organization in biophysics and of the form it might take if its establishment were deemed desirable. The executive committee of the IUPAP endorsed this recommendation in 1958 and asked that the conference be held in 1959. This conference was held in Cambridge, England, from 6 to 9 July, and was attended by over 150 physicists, biophysicists, and biologists from 16 different countries.

In order to have as representative a gathering as possible, the organizers of the conference decided it would be best to have a series of authoritative lectures on a wide variety of topics, illustrating the contribution which physics is making to certain important problems in biology. The proceedings of this conference will not be published, since there was relatively little new material presented, one of the main purposes of the conference being that of enabling biophysicists engaged on very different problems to know more about what their colleagues are doing and to exchange ideas.

The conference was opened by A. V. Hill, who emphasized that biophysics is much more than the mere use of physical instruments and techniques in biological problems. In so far as it can be defined (and this is a very controversial matter), it is rather a method of thinking or a method of attack in which physical and biological concepts are blended in the investigation of vital processes. Linus Pauling (Pasadena) then spoke on the contribution of physics to our knowledge of protein structure; he was followed by M. Delbruck (Pasadena), who spoke on the structural aspects of molecular genetics.

The second day was devoted to papers on the contribution of physics to the study of muscle (D. R. Wilkie of University College, London); on the mechanism of nervous conduction (A. L. Hodgkin of Cambridge); and on virus structure and replication (Robley Williams of the University of California at Berkeley and E. Kellenberger of Geneva). Interesting papers were also presented on anomalous magnetic properties of nucleic acid (by Blumenfeld of Moscow) and on the relation between fibrous protein configurations and their chemical structure (by K. Andreeva of Moscow).

On the morning of the third day a general discussion was held on whether there is a need for an international organization in biophysics and on what form such an organization should take. A brief account of this discussion is given below. The other two papers presented that day were on physical methods of investigating cell structure (A. Engstrom of Stockholm) and on the physical analysis of visual mechanisms (W. A. H. Rushton of Cambridge and K. O. Donner of Helsinki).

On the morning of the last day, papers were given on the storage and transmission of information in the mammalian brain (Delisle Burns of Montreal) and on the effects of ionizing radiation on living cells (L. H. Gray of London). The afternoon session was devoted to a general discussion on the organization of teaching and research in biophysics. This discussion was opened by J. T. Randall (of London), who strongly emphasized the need for greater recognition of biophysics in universities. This provoked a very lively discussion in which several physiologists expressed their concern lest formalizing the study of biophysics in universities might have harmful effects on departments of physiology.

All of the main lectures were followed by interesting discussions—possibly all the more interesting because it had been agreed beforehand that no record would be made of the discussion. Indeed, the rather informal nature of the whole meeting seemed to meet with general approval.

The discussion on the international organization of biophysics lasted 2 hours. Although widely divergent views on the need and the best form for such an organization were forcibly expressed, a surprising degree of unanimity was revealed when the voting took place. Most of the first hour was devoted to arguments for and against setting up any form of international organization. The majority in favor of establishing some form of organization was approximately ten to one. As a result of the subsequent discussion, three possible forms of organization were proposed: (i) that special commissions in biophysics be established independently inside two or more of the present international unions (for example, Physics, Physiology, or Biology); (ii) that steps be taken to establish an affiliated commission (similar to that in optics) in association with the International Union of Pure and Applied Physics; (iii) that an independent international organization in biophysics be created which might eventually apply for admission to the International Council of Scientific Unions.

Neither of the first two proposals received more than three votes. The third proposal was carried by an overwhelming majority. It was agreed that it was neither practicable nor desirable for the new organization to be created at the 1959 meeting. National biophysical societies already exist in various countries, and these will presumably act as nuclei from which an international society will emerge. However, in order to provide a focus for communication, the meeting designated a provisional secretary (Professor R. H. Bolt, National Science Foundation, Washington 25, D.C.), to whom inquiries and suggestions may be sent.

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Note

* On leave from Massachusetts Institute of Technology.

Forthcoming Events

April

4–8. American Meteorological Soc., 3rd applied meteorology conf., Santa Barbara, Calif. (H. G. Houghton, AMS, Dept. of Meteorology, Massachusetts Inst. of Technology, Cambridge 39.)

4–8. American Soc. of Mechanical Engineers, New York, N.Y. (D. B. MacDougall, ASME, 29 W. 39 St., New York.)

4–9. American College of Physicians, San Francisco, Calif. (E. R. Loveland. 4200 Pine St., Philadelphia 4.)

5–7. Instrument Soc. of America (Natl. Chemical and Petroleum Symp.), Rochester, N.Y. (H. S. Kindler, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

5–7. Naval Structural Mechanics, 2nd symp., Providence, R.I. (E. H. Lee, Brown Univ., Providence.)

5–14. American Chemical Soc., natl., Cleveland, Ohio. (A. T. Winstead, ACS, 1155 16 St., NW, Washington 6.)

6. The Allergic Child, symp., New Haven, Conn. (V. L. Szanton, Hospital of St. Raphael, New Haven 11.)

6–8. Biochemistry and Pharmacology of Compounds Derived from Marine Organisms, symp., New York, N.Y. (R. F. Nigrelli, Dept. of Marine Biochemistry and Ecology, New York Aquarium, Seaside Park, Eighth St. and Surf Ave., Brooklyn 24, N.Y.)

6–8. Hyper-Environments—Space Frontier (Inst. of Environmental Scientists), Los Angeles, Calif. (M. S. Christensen, IES, 6251 Marita St., Long Beach 15, Calif.)

6–8. Radiofrequency Spectroscopy Group, Nottingham, England. (J. E. Ingram, RSG, c/o Dept. of Electronics. Telecommunications and Radio Engineering, Univ. of Southampton, England.)

6–8. Structural Design of Space Vehicles, conf., Santa Barbara, Calif. (A. F. Denham, 925 Book Bldg., Detroit 26, Mich.)

6–9. Mineral Processing, intern. cong., London, England. (B. W. Kerrigan, Institution of Mining and Metallurgy, 44 Portland Pl., London, W.1, England.)

7–8 Cathode Protection, European symp., Frankfort am Main, Germany. (Secrétariat du Symposium, Deutsche Gesellschaft fur Metallkunde, Alteburgerstrasse 402, Koln-Marienburg, Germany.)

7–8. Municipal and Industrial Waste, 9th southern conf., Raleigh, N.C. (C. Smallwood, Jr., North Carolina State College, Extension Div., Box 5125, Raleigh.)

7–9. American Assoc. of Railway Surgeons, Chicago, Ill. (C. C. Guy, 5800 Stoney Island Ave., Chicago 37.)

7–9. Association of Surgeons of Great Britain and Ireland, Birmingham, England. (F. A. R. Stammers, 47 Lincolns Inn Fields, London, W.C.2, England.)

7–9. Optical Soc. of America, Washington, D.C. (K. S. Gibson, OSA, Natl. Bureau of Standards, Washington 25.)

8–9. American Assoc. of University Professors, Detroit, Mich. (P. R. David, Univ. of Oklahoma, Norman.)

8–9. New Mexico Acad. of Science, Socorro. (K. G. Melgaard, P.O. Box 546, University Park, N.M.)

8–9. Southern Soc. for Philosophy and Psychology, Biloxi, Miss. (E. Henderson, Florida State Univ. Tallahassee.)

8–11. American Dermatological Assoc., Boca Raton, Fla. (W. M. Sams, 308 Ingraham Bldg., Miami 32, Fla.)

9–10. Histochemical Soc., 11th annual, New York, N.Y. (H. W. Deane, Albert Einstein College of Medicine, Bronx 61, N.Y.)

10–11. American Soc. for Artificial Internal Organs, Chicago, Ill. (C. K. Kirby, ASFAIO, 3400 Spruce St., Philadelphia 4, Pa.)

11–13. American College of Surgeons, Minneapolis. Minn. (H. P. Saunders, 40 E. Erie St., Chicago 11, Ill.)

11–13. Electrical Engineering in Space Technology, 1st conf. (AIEE), Dallas, Tex. (B. J. Wilson, Naval Research Laboratory, Washington, D.C.)

11–13. Forest Tree Growth, intern. conf., Tucson, Ariz. (Forest Tree Growth Conf., Laboratory of Tree-Ring Research, Univ. of Arizona, Tucson.)

11–14. American College Personnel Assoc., Philadelphia, Pa. (M. D. Hardee, Florida State Univ., Tallahassee.)

11–14. American Meteorological Soc., 8th weather radar conf., San Francisco, Calif. (H. G. Houghton, AMS, Dept. of Meteorology, Massachusetts Inst. of Technology, Cambridge 39.)

11–15. American Assoc. of Immunologists, Chicago, Ill. (C. Howe, Columbia Univ., College of Physicians and Surgeons, New York 22.)

11–15. American Inst. of Nutrition, Chicago, Ill. (G. M. Briggs, Div. of General Medical Sciences, National Institutes of Health, Bethesda, Md.)

11–15. American Physiological Soc., Chicago, Ill. (R. G. Daggs, 9650 Wisconsin Ave., NW, Washington 14.)

11–15. American Soc. for Experimental Pathology, Chicago, Ill. (F. J. A. McManus, Univ. of Alabama Medical Center, Birmingham.)

11–15. American Soc. for Pharmacology and Experimental Therapeutics, Chicago, Ill. (K. H. Beyer, Merck, Sharp & Dohme Research Laboratories, West Point, Pa.)

11–15. Federation of American Socs. for Experimental Biology, Chicago, Ill. (M. O. Lee, 9650 Wisconsin Ave., NW, Washington 14.)

11–16. American Assoc. of Anatomists, New York, N.Y. (L. B. Flexner, Dept. of Anatomy, School of Medicine, Univ. of Pennsylvania, Philadelphia 4.)

11–16. American Soc. of Biological Chemists, Chicago, Ill. (F. W. Putnam, Dept. of Biochemistry, Univ. of Florida, Gainesville.)

11–16. Anatomical Congress, 7th intern., New York, N.Y. (D. W. Fawcett, Dept. of Anatomy, Harvard Medical School, Boston 15, Mass.)

11–16. Congress of Anatomy, 7th intern., New York, N.Y. (J. C. Hinsey, New York Hospital, Cornell Medical Center, 525 East 68 Street, New York 21, N.Y.)

12–13. Microbial Genetics, symp., London, England. (B. W. Lacey, Soc. for General Microbiology, Dept. of Bacteriology, Westminster Medical School, London, S.W.1.)

13–15. American Public Health Assoc. (Southern Branch), Memphis, Tenn. (L. M. Groves. Shelby County Health Dept., Memphis.)

15–16. Eastern Psychological Assoc., New York, N.Y. (C. H. Rush, Standard Oil Co. (N.J.), Rockefeller Plaza, New York, N.Y.)

16. Pennsylvania Acad. of Science, Williamsport. (K. B. Hoover, Messiah College, Grantham, Pa.)

18–19. Radioactivity in Man, Measurements and Effects of Internal Gamma Ray Emitting Radiosotopes, AAAS symp., Nashville, Tenn. (G. R. Meneely, School

of Medicine, Vanderbilt Univ., Nashville 5.)

18–21. American Astronomical Soc., Pittsburgh, Pa. (J. A. Hynek, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge 38, Mass.)

18–22. Association of American Geographers, Dallas, Tex. (A. C. Gerlach, Map Div., Library of Congress, Washington 25.)

18–22. European Soc. of Ophthalmology, 1st cong., Athens, Greece. (P. Velissaropoulis, c/o Ophthalmology Clinic, Faculty of Medicine, 26, rue de l'Université, Athens, Greece.)

19–21. Active Networks and Feedback Systems, 10th intern. symp., New York, N.Y. (H. J. Carlin, Microwave Research Inst., Polytechnic Inst. of Brooklyn, 55 Johnson St., Brooklyn 1, N.Y.)

19–21. American Soc. of Lubrication Engineers, annual, Cincinnati, Ohio. (C. L. Willey, ASLE, 84 E. Randolph St., Chicago, Ill.)

19–22. Metallurgy of Plutonium—session on nuclear fuels, intern, symp., Grenoble, France. (Société Française de Métallurgie, 25, rue de Clichy, Paris, France.)

20–21. Council on Medical Television, 2nd meeting, Bethesda, Md. (J. Mackenzie, Council on Medical Television, 33 E. 68 St., New York 21.)

20–22. Biological Waste Treatment, 3rd conf., New York, N.Y. (W. W. Eckenfelder, Dept. of Civil Engineering, Manhattan College, New York 71.)

20–22. Manned Space Stations Inst. of the Aeronautical Sciences symp., Los Angeles, Calif. (E. Levin, Rand Corp., 1700 Main St., Santa Monica, Calif.)

20–22. Medical Electronics, natl. conf., Houston, Tex. (K. O. Heintz, Humble Oil and Refining Co., Houston.)

20–22. Southwestern Inst. of Radio Engineers, 12th annual, Houston, Tex. (H. E. Childers, College of Medicine, Baylor Univ., Waco, Tex.)

20–23. National Council of Teachers of Mathematics, Ann Arbor, Mich. (M. H. Ahrendt, 1201 16 St., NW, Washington 6.)

20–24. Congress of Gastroenterology, 6th intern., Leyden and Noordwiik aan Zee, Netherlands. (C. Schreuder, 16, Lange Voorhout, The Hague, Netherlands.)

21–23. Association of Southeastern Biologists, New Orleans, La. (H. J. Humm, Dept. of Botany, Duke Univ., Durham, N.C.)

21–28. American Soc. of Tool Engineers, annual, Detroit, Mich. (H. E. Conrad, ASTE, 10700 Puritan Ave., Detroit 38.)

22–23. High-Temperature Resistance and Thermal Degradation of Polymers, symp., London, England. (Symposium Sub-Committee, Plastics and Polymer Group, Soc. of Chemical Industry, 14 Belgrave Sq., London, S.W.1, England.)

24–28. American Ceramic Soc., annual, Philadelphia, Pa. (F. P. Reid, ACS, 4055 N. High St., Columbus 14, Ohio.)

25–27. American Proctologic Soc., Houston, Tex. (N. D. Nigro, 10 Peterboro, Detroit 1, Mich.)

25–27. Canadian Inst. of Mining and Metallurgy, 62nd annual, Toronto, Ontario, Canada. (Secretary-Treasurer, Room 906, Drummond Bldg., 1117 St. Catherine St., Montreal, Canada.)

(See issue of 19 February for comprehensive list)

New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither Science *nor the writer assumes responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to the manufacturer. Include the department number in your inquiry.*

■ HIGH-IMPEDANCE VOLTMETER measures d-c or low-frequency a-c up to 250 volts in 11 ranges. Input impedance is said to be greater than 10^{17} ohms. Output impedance is less than 10 ohms. Voltage-following accuracy is said to be ±0.02 percent at the low impedance output and better at higher impedance output, with over-all accuracy ±2 percent. Accessories include an integrator for d-c analog signals, decade shunt, voltage divider for range extension, charge detector, regulated voltage supply, and precision current regulator. (Halex Inc., Dept. Sci398, 310 East Imperial Highway, El Segundo, Calif.)

■ NETWORKS for analog operational amplifiers are said to be held to total summing accuracy as high as ±0.005 percent without trimming potentiometers or capacitors. According to the manufacturer, a series network with as many as 10 inputs for a computing amplifier operating at 400 cy/sec may be made with a total in-phase summing error of ±0.01 percent and a total quadrature error of ±0.02 percent. (Julie Research Laboratories, Inc., Dept. Sci403, 556 W. 168 St., New York 32, N.Y.)

■ RADIOMETER is designed for measurement of short pulses of very intense thermal radiation. Water cooling permits the instrument to be used for continuous measurements of the highest intensities currently produced in solar or arc furnaces. The effective area of 0.001 in.^{2} permits exploration of flux distributions. Response time is 0.01 sec. (Arthur C. Ruge Associates Inc., Dept. Sci404, Hudson, N.H.)

■ TAPE TENSIOMETER measures steady-state and transient tensions experienced by magnetic tape in tape recorder transports. Tension range is 0 to 8 lb. Useful dynamic range is said to exceed 60 db, and the instrument is said to respond to transients with rise time of 1 msec or less. Insertion of the tensiometer requires a clear area of ¾ by 3/16 in. and a clearance of ¼ in. between the recorder deck and the tape edge. Both ¼ and ½ in. tapes are accommodated. Output is amplitude modulation of a 2000 cy/sec carrier, the latter supplied by an external oscillator. Sensitivity is about 115 mv/oz with a built-in transistorized amplifier. Direct output is 1.3 mv/oz. (General Kinetics Inc., Dept. Sci409, 555 23rd St. S, Arlington 2, Va.)

■ BLACK BODY, model 403, is designed to emit black-body radiation over the temperature range 500° to 1000°K. The radiation source temperature is said to be maintained within ±1°K despite wide changes in ambient temperature, line voltage variations, transients, and tube aging, by a combination of vacuum-tube amplifier and thyratron circuitry in a power-proportioning temperature controller. (Infrared Standards Laboratory, Dept. Sci408, 10555 Magnolia Ave., Riverside, Calif.)

■ AUTOMATIC TENSION CONTROL for spooling and unspooling of very-fine-gage wire has a tension-control range of 1.5 to 140 gm with winding speeds from 0 to 1000 ft/min for a spool of 2-in. outside diameter. Spool sizes up to 4.5 in. in maximum diameter can be accommodated. Tension is sensed by a spring-controlled dancer arm. Motion of the arm regulates the voltage and phasing of a servomotor to correct changes. An automatic brake stops the mechanism in the event of filament breakage or power failure. (Diehl Manufacturing Co., Dept. Sci418, Somerville, N.J.)

■ PULSE GENERATOR, model PG-3, is a transistorized instrument that produces pulses with rise times said to be shorter than 0.4 nsec (10^{-9} sec). Repetition rate is variable from 20 to 300 pulses per second, fixed at 60 and 120 pulses per second, or externally controlled. Calibrated pulse widths are 1.7, 5, 10 and 20 nsec with other widths obtainable by use of added cable. Pulse amplitude is 0 to +100 volts, adjustable by a ten-turn potentiometer. (Lumatron Electronics, Inc., Dept. Sci410, 68 Urban Ave., Westbury, N.Y.)

■ RECORDING MICROAMMETER has a basic range of 0 to 50 μa d-c with input resistance approximately 200 ohm. Voltage ranges 0 to 10, 50, and 200 mv d-c are also provided. The instrument combines a magnetic amplifier operating on 120-volt, 60-cy/sec power with a permanent-magnet, moving-coil movement. Accuracy is said to be ±2 percent. Chart speeds of ¾ in./hr through 12 in./min are standard in portable or permanently mounted models. (Esterline-Angus Co., Dept. Sci412, Box 596, Indianapolis 6, Ind.)

■ AUTOMATIC WIRE CUTTER cuts hook-up wire and sleeving at the rate of 1000 ft/hr. Length of wire desired from 2.5 to 25 in. is set into the machine by dial. A predetermining counter is set to stop the cutter after any number of pieces up to 500 have been cut. (Electronic Industries, Dept. Sci417, 2624 Perliter St., North Las Vegas, Nev.)

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