Meetings

Subcellular Particles

The 13th annual meeting of the Society of General Physiologists was held at the Marine Biological Laboratory, Woods Hole, Mass., 9–11 June. Contributed papers were presented, and the annual business meeting was held, 9 June. A symposium organized by Teru Hayashi of Columbia University on the "Function of Subcellular Particles" was held 10–11 June.

The society has, from its birth, brought together animal, plant, and microbial physiologists to discuss functions of cells which are common to all organisms. This policy has resulted in interesting and stimulating symposia, often revealing relations between different fields which had not been appreciated. This year's symposium served to bring to the attention of general physiologists recent developments in the study of functional aspects of subcellular particles, particularly the biochemical activities of these entities. On the other hand, the biochemists had an opportunity to become acquainted with the effects of surface and structural factors in biochemical reactions. Arrangements have been made to publish the 1958 symposium in the monograph series of the American Physiological Society. Four previous symposia sponsored by the Society of General Physiologists have been published in this series.

The tone of the symposium was set in a critical review by the first speaker, A. B. Novikoff (Albert Einstein College of Medicine). His comprehensive examination of the work of various investigators working on the physiology of submicroscopic structures put the problems facing workers in this field in sharp focus. The next two speakers of the initial session dealt with the effects of surfaces as structural factors and their effect on biochemical reactions. A. D. McLaren and K. L. Babcock (University of California) presented striking evidence of localized differences in *p*H at intracellular interfaces and gave examples of the effect of such differences on biochemical reactions. The nonapplicability of classical kinetics for these phenomena was stressed. S. Siegel (Rochester University) then presented experimental evidence for the view that surfaces per se, depending on their nature, may act as "catalytic agents" for such physicochemical reactions as the polymerization of certain substances, such as lignin. He showed clearly that the formation of lignin in the plant and in in vitro systems is dependent on the same surface factors.

In the second session, G. E. Palade (Rockefeller Institute), with a series of technically brilliant electron micrographs, illustrated the morphological changes of subcellular particles correlated with the physiological condition of the cells. Especially noteworthy were the changes in the zymogen granules of the pancreas and changes in the endoplasmic reticulum depending on the secretory activity of the cells. He was followed by E. L. Kuff (National Institutes of Health), who presented work on the isolation and identification of the Golgi apparatus and the biochemical properties of this subcellular entity. D. E. Green (University of Wisconsin) next summarized the work of the Wisconsin group on the fragmentation and analysis of the mitochondrion. He postulated that the mitochondrion is composed of subunits which can be separated by mechanical means, each subunit being composed of enzyme moieties separable only by drastic chemical means. Most interesting was the prominence given to the lipoproteins and their possible function, especially in the electron transport particle. He concluded that the molecular parts of the mitochondrion appeared to be held in a stable structure, and that their reactions did not seem to depend on thermal collisions, as in a free solution.

The final paper of this session, by M.

Kamen and J. Newton (Brandeis University), dealt with their investigations on photosynthesis phosphorylation in bacterial chromatophores. They compared the activity of their bacterial particle system with the particulates from green plants and found that, despite the anaerobic nature of the bacteria, definite similarities existed. A promising immunochemical technique opening the way to a molecular localization of the active portions of the particulates was also described.

Christian DuDuve (Louvain, Belgium) gave a comprehensive review of the concept of the lysosome as an intracellular particle containing hydrolase enzymes. He first outlined the evidence for the concept and then the evidence pointing to the possible function of lysosomes in the cell in digestion (as related to pinocytosis), autolysis, and necrosis. DuDuve was followed by Mary Stephenson, who, together with J. Littlefield, L. Hecht, R. B. Loftfield, and P. C. Zamecnik (Harvard University), presented a summary of the reactions preceding the advent of the ribonucleoprotein particle in protein synthesis. They envisage a reaction which involves, first, the activation of the amino acid by a specific enzyme, requiring adenosinetriphosphate; second, a soluble ribonucleic acid which incorporates specific nucleotide end groupings and which then can bind the amino acids. This soluble ribonucleic acid can then, presumably, transfer the bound amino acids to microsomal ribonucleic acid and microsomal protein.

Polynucleotide synthesis, studied *in situ* by high-resolution autoradiographic techniques, was presented by J. H. Taylor and P. Woods (Columbia University). They demonstrated that tritiated cytidine appears first in the nucleolus (although with longer incubation periods the label appears in the chromosomes also). They concluded that polynucleotide synthesis, presumably ribonucleic acid, as indicated by ribonuclease digestion, takes place in the nucleolus.

The final paper of the symposium was presented by V. Allfrey (Rockefeller Institute) and dealt with the biochemical properties of the isolated nucleus. Activities including amino acid uptake and turnover of energy-rich phosphate could be demonstrated. A lively discussion of the conditions for centrifugal isolation of the nuclei and retention of these biochemical activities, and of an interesting salt dependence of the isolated nuclei, followed the presentation of the paper.

Results of the mail balloting for officers and council were announced at the business meeting. C. Ladd Prosser became president, and William D. McElroy was elected vice president. A. C. Giese and T. Hayashi were elected to serve 2-year terms as councilors.

The abstracts of the contributed papers are to be published as a supplement in the October issue of the *Journal of Cellular and Comparative Physiology.*

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Forthcoming Events

February

9–11. American Acad. of Allergy, Chicago, Ill. (B. Rose, Royal Victoria Hospital, Montreal, P.Q., Canada.)

9–11. Nature of Coal, symp., Bihar, India. (Director, Central Fuel Research Inst., P. O. Fuel Research Inst., Dhanbad District, Bihar.)

9–24. Pneumoconiosis, intern, conf., Johannesburg, South Africa. (S.A.C.S.I.R., 18 London House, Loveday St., Johannesburg, S.A.)

11–13. American Acad. of Occupational Medicine, Boston, Mass. (L. Blaney, 1608 Walnut St., Philadelphia, Pa.)

12–13. Solid State Circuits Conf., Philadelphia, Pa. (A. B. Stern, General Electric Co., Bldg. 3, Syracuse, N.Y.)

14. Short Range Navigation Aids, Montreal, Canada. (Intern. Civil Avia-

tion Organization, Maison de l'aviation internationale, Montreal.)

14–21. Planned Parenthood, 6th intern. conf., New Delhi, India. (Secretary, 1 Metropolitan House, Dadabhari, Naoroji Rd., Bombay 1, India.)

15–19. American Inst. of Mining, Metallurgical, and Petroleum Engineers, annual, San Francisco, Calif. (E. O. Kirkendall, AIME, 29 W. 39 St., New York 18.)

16–19. Problems in Field Studies in Mental Disorders, intern. work conf., New York, N.Y. (J. Zubin, American Psychopathological Assoc., 722 W. 168 St., New York 32.)

20–21. Epidemiology in Mental Disorders, annual meeting of the American Psychopathological Assoc., New York, N.Y. (J. Zubin, APA, 722 W. 168 St., New York 32.)

23–27. American Concrete Inst., 55th annual, Los Angeles, Calif. (W. A. Maples, A.C.I., 18263 W. McNichols Rd., Detroit 19, Mich.)

25–26. Midwest Industrial Radioisotopes Conf., Manhattan, Kan. (J. Kitchens, Dept. of Continuing Education, Kansas State College, Manhattan.)

25–27. Biophysical Soc., annual, Pittsburgh, Pa. (G. Felsenfeld, Dept. of Biophysics, Univ. of Pittsburgh, 325 Clapp Hall, Pittsburgh 13.)

26–28. American Acad. of Forensic Sciences, annual, Chicago, Ill. (W. J. R. Camp, AAFS, 1853 W. Polk St., Chicago 12.)

26–28. Genetics and Cancer, 13th annual symp. on fundamental cancer research, Houston, Tex. (Editorial Office, Univ. of Texas, M. D. Anderson Hospital and Tumor Inst. Texas Medical Center, Houston 25.)

27–1. National Wildlife Federation, 23rd annual convention, New York, N.Y. (NWF, 232 Carroll St., NW, Washington 12.)

March

1–2. Pennsylvania Acad. of Sciences, Gettysburg. (K. Dearolf, Public Museum and Art Gallery, Reading, Pa.)

1–5. Gas Turbine Power Conf., Cincinnati, Ohio. (O. B. Schier, ASME, 29 W. 39 St., New York, N.Y.)

8–9. American Broncho-Esophagological Assoc., Hot Springs, Va. (F. J. Putney, 1712 Locust St., Philadelphia, Pa.)

8–9. American Laryngological Assoc., Hot Springs, Va. (J. H. Maxwell, University Hospital, Ann Arbor, Mich.)

8–12. Aviation Conf., Los Angeles, Calif. (O. B. Schier, ASME, 29 W. 39 St., New York, N.Y.)

10–12. American Laryngological, Rhinological and Otological Soc., Hot Springs, Va. (C. S. Nash, 708 Medical Arts Bldg., Rochester 7, N.Y.)

13–14. American Otological Soc., Hot Springs, Va. (L. R. Boies, University Hospital, Minneapolis 14, Minn.)

13–15. Alabama Acad. of Sciences, Auburn, (H. M. Kaylor, Dept. of Physics, Birmingham-Southern College, Birmingham, Ala.)

15–20. American College of Allergists, San Francisco, Calif. (M. C. Harris, 450 Sutter St., San Francisco.)

16–19. American Assoc. of Petroleum Geologists, Soc. of Economic Paleontologists and Mineralogists, 44th annual, Dallas, Tex. (W. A. Waldschmidt, AAPG, 311 Leggett Building, Midland, Tex.)

16–20. American Inst. of Chemical Engineers, Atlantic City, N.J. (F. J. Van Antwerpen, AICE, 25 W. 45 St., New York 36.)

16–20. National Assoc. of Corrosion Engineers, 15th annual conf., Chicago, Ill. (NACE, Southern Standard Bldg., Houston, Tex.)

16–20. Western Metal Exposition and Cong., 11th, Los Angeles, Calif. (R. T. Bayless, 7301 Euclid Ave., Cleveland 3, Ohio.)

17–19. National Health Council, Chicago, Ill. (P. E. Ryan, 1790 Broadway, New York, 19.)

18–25. International Social Science Council, 4th general assembly (by invitation), Paris. France. (C. Levi-Strauss, Secretary-General, International Social Science Council 19. avenue Kleber. Paris.)

19–21. Society for Research in Child Development, NIH, Bethesda, Md. (Miss N. Bayley, Laboratory of Psychology, National Inst. of Mental Health, Bethesda 14, Md.)

23–26. Institute of Radio Engineers, natl. conv., New York, N.Y. (G. L. Haller, IRE, 1 E. 79 St., New York 21.)

24–27. American Meteorological Soc., general, Chicago, Ill. (K. C. Spengler, AMS, 3 Joy Street, Boston, Mass.)

27–28. Michigan Acad. of Sciences, East Lansing. (D. A. Rings, Univ. of Michigan, Dept. of Engineering, Ann Arbor.)

28. South Carolina Acad. of Sciences, Columbia. (H. W. Freeman, Dept. of Biology, Winthrop College, Rock Hill, S.C.)

29–3. Latin American Congress of Chemistry, 7th, Mexico D.F., Mexico. (R. I. Frisbie, Calle Ciprès No. 176, Zone 4, Mexico, D.F.)

30–1. American Orthopsychiatric Assoc., San Francisco, Calif. (M. F. Langer, 1790 Broadway, New York 19.)

30–12. Bahamas Medical Conf., 7th, Nassau. (B. L. Frank, 1290 Pine Ave., W. Montreal, Canada.)

31–2. American Power Conf., 21st annual, Chicago, Ill. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

31–2. Symposium on Millimeter Waves, 9th, New York, N.Y. (H. J. Carlin, Microwave Research Inst., 55 Johnson St., Brooklyn 1, N.Y.)

31–5. International Committee of Military Medicine and Pharmacy, 21st session, Paris, France. (Comité International de Médecine et de Pharmacie Militaires, Hôpital Militaire, 79, rue Saint Laurent, Liège, Belgium.)

April

1–3. American Assoc. of Anatomists, Seattle, Wash. (B. Flexner, Univ. of Pennsylvania Medical School, Philadelphia 4, Pa.)

1–4. National Council of Teachers of Mathematics, Dallas, Tex. (H. T. Karnes, Dept. of Mathematics, Louisiana State Univ., Baton Rouge 3.)

(*See issue of 19 December for comprehensive list*)