specific effects—such as muscular degeneration, decalcification of bone and renal deposition of the excess calcium due to immobility, or circulatory decompensations as a function of fluid-balance disturbance—can be predicted on the basis of prior research and physicochemical theory, and when problems of measurement and transmission of measurements of relevant physiological parameters in flight have been solved, the data collected on short orbital flights, for few individuals, and in a context where hardware testing is the primary concern, can be expected to give only a first-approximation answer to questions of the interrelationships between the various states of physiological systems.

Finally, the necessity for return of the voyagers to the full richness of the terrestrial environment, it was seen, raises a fundamental and almost paradoxical question of the degree to which adaptation to the unquestionably strange micro-system of a space vehicle may interfere with readjustment to the earth's surface. Although not made explicit, a foreshadowing of problems of boundary-crossing to a point of physical no return was evident in discussions of the possibility that the human organism may adapt all too well to the alien environment of space.

With this serious question in mind the theme for the third conference, the life-threatening effects of minimum ecological conditions on cardiovascular, renal, and cerebral function, was established by the chairman, W. O. Fenn, of the University of Rochester.

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Biophysics

With A. Engström presiding, the second General Assembly of the International Organization for Pure and Applied Biophysics (IOPAB) met in Paris, 23 June 1964, during the international meetings of its special commissions on Cell and Membrane Biophysics and on Biophysics of Communication and Control Processes (*1*). The preliminary steps taken by the first Assembly in Stockholm in 1961 (*2, 3*) were confirmed, and the following 24 adherents were ratified: Argentina, Austria, Belgium, Brazil, Canada, China (Taiwan), Czechoslovakia,

Denmark, France, Germany (Deutsche Gesellschaft für Biophysik and the German Academy of Sciences at Berlin), Hungary, India, Israel, Japan, Netherlands, Norway, Rumania, Sweden, Switzerland, United Kingdom, United States, U.S.S.R., and Venezuela.

Adhering bodies are national societies for biophysics or national academies of sciences. The United States adheres through its National Academy of Sciences, which has set up a National Committee for Pure and Applied Biophysics whose members are selected nominees of some five national societies interested in biophysics. They are Thomas F. Anderson, chairman, Max A. Lauffer, Jr., vice-chairman, Edward Ford MacNichol, Jr., Alexander Rich, Robert L. Schoenfeld, Warren K. Sinclair, A. C. Young, and Raymond E. Zirkle. As officers of IOPAB or of its special commissions, A. K. Solomon, Walter A. Rosenblith, and Robley C. Williams are ex officio members.

Much of the real work of IOPAB is to be done by its semiautonomous special commissions, each covering a special branch of biophysics. In Paris the constitutions and memberships of three such commissions were ratified by the General Assembly: Cell and Membrane Biophysics (R. D. Keynes, Cambridge, England, presiding); Biophysics of Communication and Control Processes (W. A. Rosenblith, Cambridge, Massachusetts); and Molecular Biophysics (R. C. Williams, Berkeley, California). The Assembly also authorized the Council to form a special commission on Radiation Biophysics; adhering bodies are being asked to communicate their nominations for membership to the IOPAB's secretary-general.

The statutes of IOPAB provide for a second class of commissions, affiliated commissions, to permit the adherence of already-existing international groups in biophysics. A petition for admission of the International Organization of Medical Physics was approved, as was a similar petition by the Institute of Electrical and Electronics Engineers, which becomes affiliated with IOPAB through its relevant professional groups. In addition, IOPAB has relations with various international unions.

The first meeting of IOPAB was held in Cambridge, England, in 1959, sponsored by the International Union of Pure and Applied Physics. Currently both the International Union of Biochemistry and the International Union of Physiological Sciences have representatives on the special commissions of IOPAB.

Recognizing the difficulties of unifying education in biophysics, the Assembly requested M. Kotani (Japan) to form an *ad hoc* Committee on Educational Studies together with F. Hutchinson (New Haven, Connecticut) and others whom they may wish to co-opt.

The relative merits of open congresses as opposed to smaller invitational meetings were discussed at some length. Both types of meetings are obviously justifiable. The smaller meetings permit thorough discussions of specific problems by active research workers in closely related fields; open congresses, even though unwieldy, are particularly valuable for educating young scientists and for cross fertilization between scientists in relatively unrelated fields. Fortunately, the structure of IOPAB provides for both types of meeting: the autonomous special commissions can organize the types of meetings

they deem appropriate at any time, while large, open congresses can comprise both short, contributed papers and educational symposia on topics that have developed to a stage of general interest. The Assembly accepted by acclamation an invitation from the Austrian delegation to hold its next international congress in Vienna in September 1966.

The new officers and council members elected include: John C. Kendrew (U.K.), vice-president, succeeding A. Katchalsky (Israel) who becomes president; and A. Engström (Sweden), retiring president, now honorary vice-president. Gordon Sutherland (U.K.), retiring honorary vice-president, was thanked by acclamation for his successful efforts in helping to launch the Organization and frame its statutes. A. K. Solomon remains secretary-general until 1967; communications regarding IOPAB should be addressed to him at the Biophysical Laboratory, Harvard Medical School, Boston 15, Massachusetts.

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References

1. L. D. Harmon and F. M. Snell, *Science* **146**, 276 (1964).
2. R. H. Bolt and G. B. B. M. Sutherland, *ibid.* **131**, 742 (1960).
3. G. B. B. M. Sutherland, *Nature* **198**, 1141 (1963).

Forthcoming Events

January

18–20. **Solar Radiation Simulation,** intern. conf., Los Angeles, Calif. (H. F. Sander, Inst. of Environmental Science, 34 S. Main St., Mount Prospect, Ill.)

19. American Inst. of **Mining, Metallurgical,** and **Petroleum** Engineers, Metallurgical Soc., 7th mechanical working conf., Pittsburgh, Pa. (R. W. Shearman, Secretary, Metallurgical Soc. of AIME, 345 E. 47 St., New York 10017)

19. **Cor Pulmonale,** New York Heart Assoc., New York, N.Y. (NYHA, 10 Columbus Circle, New York 10019)

19–20. **Die Design and Press Tooling** Conf., American Soc. of Tool and Manufacturing Engineers, Hartford, Conn. (M. Zapico, Asst. Conf. Director, ASTME, 10700 Puritan Ave., Detroit 38, Mich.)

20–22. **Instrumentation,** College Station, Tex. (P. T. Eubank, Chemical Engineering Dept., Texas A&M Univ., College Station)

20–23. National Soc. of **Professional Engineers,** New Orleans, La. (P. H. Robbins, 2029 K St., NW, Washington, D.C.)

22. **Bibliographical** Soc. of America, New York, N.Y. (Mrs. H. C. Ralph, P.O. Box 397, Grand Central Station, New York 10017)