

logical mutants of *Neurospora* and their potential value as tools in the biochemical study of morphogenesis and development. A. Srb (Cornell University) pointed out the interesting possibilities of the peak (biscuit) mutants which have drastic effects on ascosporeogenesis in the homozygous condition and Sussman described extensive studies on the clock mutants which reveal a circadian rhythm.

The late David Bonner (University of California) chaired the session on gene action in which the discussion centered on the nature of enzyme subunits, their genetic specification, interaction, and enzymatic activities. Evidence for glutamic acid dehydrogenase (J. Fincham, John Innes Institute, England), invertase (Metzenberg), and tryptophan synthetase (Bonner) points toward alteration of tertiary structure by point mutations. Studies of tryptophan synthetase at La Jolla suggest that one polypeptide subunit may be involved in more than one enzymatic function, as does that on malic acid dehydrogenase-aspartate amino transferase (K. Munkres, Yale University) and that on carbamylphosphosynthetase and aspartic transcarbamylase (V. Woodward, Rice University). The concept of gene-enzyme relationships was further complicated by J. DeMoss' (University of California, San Diego) description of interaction between the gene products of the *trp-1* and *trp-2* loci, which are unlinked but both of which contribute subunits to anthranilate synthetase. The subunit from *trp-1* also acts as indole glycerol phosphate synthetase.

In discussions on the genetic basis of regulation R. Barratt (Dartmouth College) and B. Sanwal (University of Manitoba) reported on the glutamic acid dehydrogenases. R. Davis (University of Michigan) discussed the interrelationships of arginine and pyrimidine biosynthesis and the evidence for two isolated pathways of carbamyl phosphate synthesis. Reissig noted his work on regulation in these pathways; he utilizes his technique for detecting different *pyr-3* mutants with widely varying levels of enzyme activity. In discussing regulation in the leucine pathways, Gross said unlinked genes appear to be under coordinate control. Bonner presented the hypothesis that the central portion of the *trp-3* (*td*) locus appears to serve a regulatory function over both the right and left portions of this genetic region.

The final session dealt with allelic complementation. J. Fincham, chair-

man, surveyed the existing data on complementation mechanisms and presented the results of extensive work on the mechanism of complementation between *am* mutants (glutamic acid dehydrogenase). In vitro complementation studies in the adenylosuccinase system were discussed by D. Woodward (Stanford University). Y. Suyama (University of California, San Diego) noted differences between in vivo and in vitro complementation in the tryptophan synthetase system. The above systems appear to involve the activation of polypeptide subunits through the formation of hybrid polymeric proteins. However, Wainwright presented evidence from his cell-free tryptophan synthetase-forming system that complementation may occur at the stage of polypeptide synthesis in this case.

B. Webber (Oak Ridge National Laboratory) and A. Ahmed and N. Giles (both of Yale University) discussed biochemical, genetic, and complementation studies dealing with the structure and function of the complex *hist-3* region which they conclude consists of three cistrons functionally coordinated in an operon. The session closed with a general discussion of the relationships between genetic and complementation maps and their interpretation.

No extensive publication of the proceedings of the meeting will be undertaken. A more extensive summary of the meetings will appear in the *Neurospora Newsletter* which is circulated to all persons interested in the field.

Travel to the meetings and the presentation in the *Neurospora Newsletter* was supported by the National Science Foundation. The host institution, Rice University, generously provided facilities, food, and lodging for the participants during their stay in Houston.

BARBARA J. BACHMANN
Department of Microbiology, Yale
University, New Haven, Connecticut

American Association for the History of Medicine

The history of public health and psychiatry and a broad range of other medical historical subjects were reviewed at the 37th annual meeting of the American Association for the History of Medicine, Washington, D.C., 30 April–2 May 1964. Approximately 200 medical historians attended sessions held at the National Library of Medicine,

the National Institutes of Health, and the Smithsonian Institution's new Museum of History and Technology.

James Shannon (director, National Institutes of Health) served as discussant for a major symposium on the "Federal Government and Health Research, 1900–1960," held at NIH under the chairmanship of Philip Sapir (National Institute of Mental Health). George Rosen (Columbia University School of Public Health) discussed "Patterns of health research in the United States" and noted that at the start of the 20th century not one well-equipped, well-endowed institution for research in medicine existed in the United States. He then reviewed how the spectacular growth in the scope and quality of American medical research since 1900 culminated in the broad programs of the National Institutes of Health. Rosen pointed to the concept of a "critical level" in history—to periods of relative quiescence in which dynamic forces exist in an unstable equilibrium. Such periods existed in U.S. health research in 1900, in the 1930's, and again after World War II. During the years from the turn of the century, the federal government has gradually replaced other agencies in the stimulation and support of health research. James Cassedy (Division of Research Grants, NIH) then discussed "The registration area as a health research resource," and explored the federal-state relationship and the development of national vital statistics from 1885 to 1915. So poor were the standards of U.S. death registration towards the end of the 19th century, that it was not unusual to find listed such interesting causes of death as "suicide" by an infant less than a year old, and an elderly man's death occasioned by "puerperal hemorrhage!" Jeanne Brand (National Institute of Mental Health) traced the historical factors which enabled passage of the National Mental Health Act of 1946 and noted the impact of this legislation upon the wide-ranging Public Health Service program in support of mental health research. The final paper in the symposium, by Hunter Dupree (University of California), dealt with "The structure of the government-university partnership after World War II." Dupree posed the question of how an historian could best tackle the period 1945–50—the years in which the government-university partnership took clear shape. He noted the difficulties with relation to vast and multiple source

materials, to agency sensitivities to policy issues with current implications, and the problem of confidentiality. One of the major characteristics of today's government-university partnership, Dupree pointed out, is that the scientist can have the essential decisions on whether his research should or should not be supported made by national panels of his peers, rather than by a local university administration.

In his commentary to this "hot-history" symposium, Shannon pointed to the need for a coherent set of consciously developed principles which would relate the federal government to the totality of our institutions of higher learning. The constituent agencies which compose the federal government have used the university world for their own purposes, and, to an extent, by so doing have subverted the university in its normal evolution. Noting that he believed the relationship between the federal government and the universities to be a good one, Shannon still felt that it would be useful to explore further any possible deficits in that relationship.

Among the afternoon sessions at NIH, which were chaired by John B. de C. M. Saunders (chancellor, University of California, San Francisco Medical Center) were a series of four papers on psychiatric history including Iago Galdston's "The incubation dream, a psychiatric incursion into medical history"; Walter Riese's (Glen Allen, Virginia) "Descartes as a psychotherapist"; and, for the first time in the Association's history, two papers on the technique and problems of oral history, with Harlan Philipps and Saul Benison as speakers.

The National Library of Medicine was the setting for an address by the president of the Association, Lloyd G. Stevenson, on "New diseases," and for a series of papers on 18th and 19th century medicine and medical personages. The Association was welcomed by the new Director of the National Library of Medicine, Martin Cummings. John Blake (Chief, NLM's Division of the History of Medicine) presented the Garrison Lecture on "Women and medicine in ante-bellum America." (The Garrison Lecture is given annually in honor of Fielding H. Garrison.) Blake traced the difficulties met by the American women who pioneered as physicians in the years 1849 to 1861 and related their efforts to the broader 19th century movement for women's rights.

The annual dinner was preceded by

a cocktail party given in honor of the Association by the Washington Society for the History of Medicine. Leona Baumgartner (Agency for International Development), in an after-dinner speech, discussed the population problem and the history of medicine. She felt that the broad medico-social, demographic problems occasioned by the population explosion in underdeveloped countries were worthy of attention by medical historians.

The final sessions of the meeting were held at the Smithsonian's Museum of History and Technology. In welcoming the Association to the new museum, Frank A. Taylor (director, U.S. National Museum) expressed the hope that closer liaison would develop in the future between medical historians and the Museum of History and Technology.

J. L. BRAND

*National Institute of Mental Health,
Bethesda, Maryland*

Forthcoming Events

July

26-31. **Mineralogical Soc. of America**, Bozeman, Mont. (G. Switzer, MSA, U.S. Natl. Museum, Washington, D.C. 20560)

26-31. **Pharmacology, Teachers' Seminar**, Univ. of Connecticut, Storrs. (M. H. Malone, School of Pharmacy, Univ. of Connecticut, Storrs)

26-1. **Biochemistry**, 6th intern. congr., New York, N.Y. (R. A. Harte, 6th Intern. Biochemistry Congr., 9650 Wisconsin Ave., NW, Washington, D.C. 20014)

27-28. **International Cartographic Assoc.**, 2nd general assembly, London, England. (D. E. Imhof, Kartographisches Institut, Eidgenössische Technische Hochschule, Zurich, Switzerland)

27-30. **Technical Assoc. of the Pulp and Paper Industry**, engineering conf., Seattle, Wash. (TAPPI, 360 Lexington Ave., New York, N.Y. 10017)

27-31. **American Dietetic Assoc.**, 47th annual, Portland, Ore. (ADA, 620 N. Michigan Ave., Chicago, Ill. 60611)

27-21. **Engineering Foundation Research Confs.**, Andover, N.H. (United Engineering Center, 345 E. 47 St., New York, N.Y. 10017)

30-1. **International Soc. for Human and Animal Mycology**, 3rd, Edinburgh, Scotland. (R. Vanbreuseghem, Inst. of Tropical Medicine, 155 rue National, Antwerp, Belgium)

August

2-3. **Ophthalmic Biochemistry**, first intern. conf., Woods Hole, Mass. (S. Lerman, Univ. of Rochester, Rochester, N.Y.)

2-4. **American Assoc. of Colleges of Pharmacy**, New York, N.Y. (C. W.

Bliven, 1507 M St., NW, Washington, D.C. 20005)

2-6. **National Medical Assoc.**, 69th annual, Washington, D.C. (Administrative Secretary, 520 W St., NW, Washington, D.C. 20001)

2-7. **American Pharmaceutical Assoc.**, 111th annual, New York, N.Y. (G. B. Griffenhagen, Div. of Communications, 2215 Constitution Ave., NW, Washington, D.C.)

2-8. **Applied Psychology**, 15th intern. conf., Ljubljana, Yugoslavia. (B. Petz, Inst. of Psychology of Zagreb, Djure Salaja b.b., Zagreb, Yugoslavia)

2-8. **Reactivity of Solids**, 5th intern. symp., Munich, Germany. (B. Stuke, Physikalische-Chemisches Institut, Sophienstr. 11, Munich)

3-5. **Compounds of Interest in Nuclear Reactor Technology**, intern. symp., Boulder, Colo. (J. T. Waber, Los Alamos Scientific Laboratories, P.O. Box 1663, Los Alamos, N.M. 87544)

3-7. **Instrumentation Soc. of America**, instrumentation conf., Geneva, N.Y. (H. S. Kindler, 530 William Penn Place, Pittsburgh, Pa.)

3-7. **World Federation for Mental Health**, 17th annual, Bern, Switzerland. (F. Cloutier, 1, rue Gevray, Geneva, Switzerland)

3-8. **International Years of the Quiet Sun**, regional symp., Buenos Aires, Argentina. (J. G. Roederer, Facultad de Ciencias, Perú 272, Buenos Aires)

3-10. **Anthropologists and Ethnologists**, 7th world conf., Moscow, U.S.S.R. (American Anthropological Assoc., 1530 P St., NW, Washington, D.C. 20005)

3-12. **Botanical Congr.**, 10th intern., Edinburgh, Scotland. (Miss S. C. Penny, 5 Hope Park Sq., Edinburgh 8)

4-7. **Poultry Science Assoc.**, annual, Minneapolis, Minn. (E. L. Johnson, Dept. of Poultry Science, Univ. of Minnesota, St. Paul 55101)

4-17. **Methods of Hydrological Forecasting**, 3rd inter-regional seminar, World Meteorological Organization/UN Economic Commission for Asia and the Far East, Bangkok, Thailand. (WMO, Secretariat, Geneva, Switzerland)

5-7. **Sonic Investigations on Internal Damping in Solids**, symp., London, England (Administration Assistant, Institute of Physics and the Physical Society, 47 Belgrave Square, London, S.W.1)

5-12. **Atmospheric Radiation**, symp., World Meteorological Organization/Intern. Union of Geodesy and Geophysics, Leningrad, U.S.S.R. (Secretariat, WMO, Geneva, Switzerland)

5-15. **High Energy Physics**, 12th intern. conf., Dubna, U.S.S.R. (M. L. Goldberger, Commission on High Energy Nuclear Physics, IUPAC, Princeton Univ., Princeton, N.J. 08540)

6-11. **American Podiatry Assoc.**, New York, N.Y. (F. A. Kalbacher, American Podiatry Assoc., 3301 16th St., NW, Washington, D.C. 20010)

7-14. **Scientific Study on Mental Retardation**, intern. congr., Copenhagen, Denmark. (A. Dupont, Statens Andsvageforsorg, Nyropsgade 28.2, Copenhagen 5)

9-12. **Heat Transfer**, 7th natl. conf.,