through the seed for several generations. But, of course, Lysenko himself does not believe in chimeras.

The final blasts on this notable occasion were directed at the dependence of Mendelism-Morganism on chance. It is imperative to quote these statements, which illuminate the entire Soviet attitude toward science:

"All the so-called laws of Mendelism-Morganism are *based entirely on the idea of chance.*"

" 'Gene' mutations . . . appear fortuitously . . . the direction of the process of mutation is also fortuitous. Proceeding from these invented fortuities, the Morganists base their experiments, too, on a fortuitous choice of substances that might act as mutation factors, believing that they are thereby acting on their postulated hereditary substance, which is just a figment of their imagination, and hoping thereby to obtain fortuitously what may by chance prove to be of use. According to Morganism, the separation of the so-called maternal and paternal chromosomes at reduction divisions is also a matter of pure chance. Fertilization . . . does not occur selectively, but by the chance meeting of germ cells. . . .

"*On the whole, living nature appears to the Morganists as a medley of fortuitous, isolated phenomena, without any necessary connections and subject to no laws.* Chance remains supreme."

"Unable to reveal the laws of living nature, the Morganists . . . reduce biological science to mere statistics. . . . Mendelism-Morganism is built entirely on chance; this 'science' therefore denies the existence of necessary relationships in living nature and condemns practical workers to fruitless waiting. There is no effectiveness in such science. With such a science it is impossible to plan, to work toward a definite goal; it rules out scientific foresight. . . . Physics and chemistry have been rid of fortuities. That is why they have become exact sciences. . . . *By ridding our science of Mendelism-Morganism-Weismannism we will expel fortuities from biological science.* We must firmly remember that *science is the enemy of chance.*"

"Long live the party of Lenin and Stalin, which discovered Michurin for the world and created all the conditions for the progress of advanced materialist biology in our country." (Italics in original.)

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The Royal Society Empire Scientific Conference, June–July 1946. (2 vols.) Edinburgh, Scotland: Morrison and Gibb Ltd., 1948. Vol. I: 828 pp.; Vol. II: 707 pp. (Illustrated.) 2: 2: 0 net.

The Empire Scientific Conference had its beginnings in discussions by representatives of the British Ministry of Supply and the British Commonwealth Scientific Office in Washington with representatives of the Royal Society. Following a conference called by officers of the Royal Society and attended by representatives of Canada, Australia, New Zealand, South Africa, and India, a British Commonwealth Science Committee was set up under the chairmanship of Sir Henry Dale and with Dr. Alexander King as Secretary. The report of this Committee, published in April 1943, proposed an Empire Scientific Conference to be convened as soon as possible after the war. In January 1945, expenses for the Conference were allocated by the Treasury in the amount of £15,000. A Policy Committee for the Conference began work early in 1945 under the chairmanship of Sir Alfred Egerton. The Conference itself took place June–July 1946, in London, Cambridge, and Oxford. There were 114 delegates representing different countries within the British Commonwealth. The larger delegations included: Australia—9, Canada—15, India—14, South Africa—7, and United Kingdom—38. The Steering Committee, composed of 12 leading scientists, included Sir Robert Robinson, president of the Royal Society, and the four other chief officers of the Society, and was under the chairmanship of Sir Henry Tizard. The Conference was organized mainly around 15 major scientific topics for each of which a steering group was appointed with a chairman, a recorder, and from six to ten other representative scientists as committeemen. The first three days were devoted to a stock-taking review of scientific organization: 1) in the United Kingdom; 2) in Canada, New Zealand, and the Colonial Empire; and 3) in Australia, South Africa, and India. Volume I, pages 43–298, presents the prepared papers, discussions, charts, and tabular matter relative to the organization of scientific research and much concerning current (1946) research.

In reviewing such a large report it is possible only to give an outline. Six of the fifteen main topics of the Conference are reported in about 500 pages of Volume I. These topics in order are: A—Outstanding Problems in Agricultural Science in the Empire; B1—Medical Science: Physiological and Psychological Factors Affecting Human Life and Work under Tropical Conditions and in Industry; B2—Etiology and Control of Infectious and Transmissible Diseases, particularly those which are insect-borne; C—Science of Nutrition, including Nutritional Status of the Indigenous Peoples of the Colonies; D—Aerial Mapping, including the Use of Radio Technique in Ordnance Survey; and E—Measures for Improving Scientific Information Services, including Indexing, Abstracting, Special Libraries, and Microfilms. Each of these sections begins with a listing of the personnel of the steering group, followed by a brief digest of the report on the subject, a general statement, and finally, the Conference recommendations in reference to research and further development.

Nine topics, to which as many full morning sessions were devoted, are reported in Volume II. Briefly listed, these topics were the following: F—Interchange of Scientists, including Discussion on the Future of the Scientific Liaison Offices That Have Been Established during the War; G—Empire Cooperation in Science with Existing and Projected International Organizations; H—Physical Standards and the Use of Units, Terms and Symbols; I—Collection and Interchange of Scientific Records and Experimental Materials, including Discussion of Risks

Involved in the Distribution of Plants, Seeds and Animals; J—Land Utilization and Conservation throughout the Empire; K—The Need for a Coordinated Survey of the Mineral Resources of the Empire; L—Natural Resources of the Empire and the Chemical Industries That Are or Might Be Based on Them; M—Post-War Needs of Fundamental Research; and N—Coordination of Scientific Work within the African Continent.

The Conference in some evening discussions gave consideration and arrived at recommendations in reference to five large topics: Cosmic Rays, Fish Culture, Geochemistry, Hormones, and Fisheries (see Volume II, pages 529–662); the full calendar of the Conference is given on pages 663–677. At the end of each volume there is a complete index for both volumes, comprising about 30 pages. The index gives names of speakers and discussants (not presiding officers and organizing and committee personnel) and of scientific topics of discussion and related entries. A long list of traveling fellowships and scholarships open to students and research workers is provided in Volume II, pages 37–82.

The topic of broadest interest was "morning subject (m)," The Needs of Research in Fundamental Science After the War. The material on this subject for discussion by the delegates consisted of a previously completed report of the Royal Society on Post-War Needs of Fundamental Research, produced by eight committees representing, respectively, Physics, Chemistry, Biology and Biochemistry, Geophysics, Geology, Geography, Meteorology, and Oceanography. The most general recommendations developed were: I) The mechanism for guiding long term research in fundamental science in each country of the Commonwealth should be carefully reviewed in order to foster fertile research work in all important subjects. II) Since needs of the future will require a great increase in the number of scientists, plans for extending basic research in any field should be supported by measures designed, coordinated, and put into operation in the educational system of each country for increasing the number of trained scientists able to carry out such research plans.

This two-volume report is an important and many-sided scientific document. From it one gains an over-all view of the pattern of modern scientific research and development as forming a huge triangle with "university science," "industrial science," and "government science" at its three corners. Science research planners, administrators, financial backers, laboratory workers, educators, and technical and popular science writers will all find the materials in these two volumes worthy of examination and discussion. The report is epochal in the field of assessment, survey, and planning for the advance of science and its applications. It is a model for the preliminary organization and conduct of such conferences, and the Royal Society has again, it seems to the reviewer, demonstrated foresight and outstanding leadership in creating and guiding the Empire Scientific Conference and in making its report available to the public.

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Liberty Hyde Bailey: a story of American plant sciences. Andrew Denny Rodgers, III. Princeton, N. J.: Princeton Univ. Press, 1949. Pp. 506. (Illustrated.) $7.50.

As these words are written Liberty Hyde Bailey is entering the 92nd year of his life, and is still collecting plants, both living and herbarium specimens, still publishing, still reaching out with his mind, at an age when other men, if they are able to think at all, have mentally "retired," with opinions formed and portals closed to the acquisition of any further and considerable body of knowledge. Not so this dean of American botanists, who once said that he had planned to take 25 years to study the science of botany, 25 to practice it, and 25 to enjoy it. Actually, he has, in each quarter-century since his majority, done all three things at once and is still learning, practising, and enjoying a science which no one in his day ever did more to encourage, broaden, and make vivid.

Many men have gone deeper in their branches of botany; no man in America was ever a better all-around botanist. Bailey is most famous, of course, as an editor, geneticist, and teacher, and as the first American to treat horticulture as a serious science, with the broadest social implications. But beyond all this he is a philosopher—having reached the highest thing any scientist can be—who brings together the varied interests of his own and his contemporaries' minds, and from them evolves not a schematic theory of the world as it ought to be, but an attitude toward the world as it is. A man who can accomplish this, and live, too, a happy and noble personal life like Liberty Hyde Bailey's has indeed fulfilled the high destiny that (we like to think) is the function of a man of science.

All this, and more, much more besides, has been told in *Liberty Hyde Bailey*, by Andrew Denny Rodgers, in the fifth title of his scholarly series of biographies that constitute a history of American botany from the days of Torrey and Mr. Rodgers' ancestor, Sullivant, and the era of systematics and exploration a century ago, down to the present with all its diversities and complexities. Those of us who, like the present reviewer, have read every word so far are grateful to Mr. Rodgers for the precision and breadth of treatment, and the understanding appraisal of the botanists who form the subject of his unusual sort of historical writing. At the same time it must be said that, as writing and as history this is, rather, reference work—the materials for a history. As biography it is a compilation—meticulous, thorough, and lucid—but not living portraiture. Nothing is omitted, nothing is highlighted; a reasonable monotone is the result. By comparison, passages from writings of Liberty Hyde Bailey, as quoted in this book, are so full of natural poetry and vitality of thought and phrase as to make one wish that Professor Bailey would write his own biography, even at the cost of further researches upon palms.

Yet we shall all look forward to further titles from Mr. Rodgers' pen. We hope that he will not only continue with his painstaking researches in the present era, but will carry the history of American botany back to the