centers of Europe are associated with large population centers, in Mesoamerica in Preclassic times there may have been a less intimate connection between economic factors, population numbers, and religion. The authors' assignment of the site to the Formative or Preclassic period of Mesoamerica runs contrary to "the opinion of some earlier writers who believed that elaborate systems of sociopolitical or socioreligious controls, as manifested by major construction projects, did not come into being until the Classic period" (page 269).

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Evolution by Natural Selection. Charles Darwin and Alfred Russell Wallace. Cambridge University Press, New York, 1958. viii + 288 pp. $4.75.

Among the spate of books published to celebrate the centenary of the publication of the *Origin of Species,* this volume occupies a special place. Over half of the book consists of an annotated and complete reprinting of Darwin's lengthy "Essay" of 1844, long virtually unavailable, in which he set forth his views about the causes and evidences of evolution with a comprehensiveness and a logical force that would have made writing of the *Origin* itself seem superfluous to a lesser man. This is the solid document Darwin entrusted to his wife with explicit written instructions for its publication in case he should die before completing the *Origin.*

Also included are Darwin's 47-page "Sketch" of 1842, an apparently unpolished but reasonably complete treatment of his theory; the famous Wallace-Darwin papers of 1858; a letter from Darwin to Asa Gray at Harvard; and, finally, an informative introduction to most of these documents, written in 1909 by Darwin's son Francis. Gavin de Beer has furnished an up-to-date and readable foreword.

For an American, special interest attaches to the Asa Gray letter, in which Darwin expounds and apologizes for his theory in, for him, an incredibly brief space. It is to be regretted that neither this book nor the recent *Darwin Reader* by M. Bates and P. S. Humphrey (Scribner, New York, 1956) includes the "P.S." at the end of this letter, for in it Darwin distinguishes between natural selection and the then unknown laws of what we now call mutations, which Darwin terms "all important" in providing the "groundwork for selection to act on."

No one can read these "essays" without being struck by the great importance Darwin gave to the relationship between the production of new breeds of domestic plants and animals by selective breeding and the evolution of new species by natural selection. The material on the evolution of animal behavior and instincts makes good reading now that Tinbergen and his school have reconferred scientific respectability on this important field. Because these essays preceded the publication of the *Origin* by a decade and a half, they serve as links between Darwin and his predecessors. Of them de Beer well says, "none of these precursors was able to compel attention, let alone adherence, to these views; and it is because of the completeness of his demonstration of the fact of evolution, and of the method by which it has been brought about, that the world owes its debt to Darwin."

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New Books

Anatomy and Physiology. vol. 1. Cells, tissues, integument; skeletal, muscular, and digestive systems; blood, lymph, and circulatory system (College Outline Series). Edwin B. Steen and Ashley Montagu. Barnes & Noble, New York, 1959. 347 pp. Paper, $2.50.

Annual Review of Plant Physiology. vol. 10. Leonard Machlis, Ed. Annual Reviews, Palo Alto, Calif., 1959. 490 pp. $7. Contents: "Prefatory chapter," W. J. Chandler; "Foliar absorption of mineral nutrients," S. H. Wittwer and F. G. Teubner; "Leaf proteins," N. W. Pirie; "Light-induced reactions of bacterial chromatophores and their relation to photosynthesis," A. W. Frenkel; "The structure of the chloroplast," J. J. Wolken; "Active transport of salt into plant tissue," G. G. Laties; "Respiratory mechanisms in higher plants," D. P. Hackett; "Photoperiodic control of floral induction," J. Doorenbos and S. J. Wellensiek; "The lignins," R. E. Kremers; "Fat metabolism in higher plants," P. K. Stumpf and C. Bradbeer; "The pine tree," N. T. Mirov and R. G. Stanley; "Physiology of virus diseases," F. C. Bawden; "Plant chemotherapy," A. E. Dimond and J. G. Horsfall; "The macronutrient elements," T. C. Broyer and P. R. Stout; "Nitrogen nutrition," R. H. Burris; "Metabolism of carbon compounds," M. Gibbs; "The chemical regulation of growth (some substances and extracts which induce growth and morphogenesis)," F. C. Steward and E. M. Shantz; "Auxins and fungi," H. E. Gruen; "Phototropism and phototaxis," J. Reinert.

The Chemistry and Technology of Cereals as Food and Feed. Samuel A. Matz, Ed. Avi Publishing, Westport, Conn., 1959. 747 pp.

Circuit Theory of Linear Noisy Networks. Herman A. Haus and Richard B. Adler. Technology Press of Massachusetts Inst. of Technology and Wiley, New York; Chapman & Hall, London, 1959. 91 pp. $4.50

Elements of Materials Science. An introductory text for engineering students. Lawrence H. Van Vlack. Addison-Wesley, Reading, Mass., 1959. 544 pp. $8.50.

The Emergence of the German Dye Industry. Studies in the Social Sciences, vol. 44. John Joseph Beer. Univ. of Illinois Press, Urbana, 1959. 175 pp. Paper, $3.50; cloth, $4.50.

Evolution of Nervous Control from Primitive Organisms to Man. A symposium. Publ. No. 52. Allan D. Bass, Ed. AAAS, Washington 5, 1959. 238 pp. Members (prepaid), $5; nonmembers, $5.75.

Experiment Perilous. Physicians and patients facing the unknown. Renee C. Fox. Free Press, Glencoe, Ill., 1959. 262 pp. $5.

Families in Treatment. From the viewpoint of the patient, clinician, and the researcher. Erika Chance. Basic Books, New York, 1959. 252 pp. $5.50.

Family Planning, Sterility, and Population Growth. Ronald Freedman, Pascal K. Whelpton, Arthur A. Campbell. McGraw-Hill, New York, 1959. 526 pp. $9.50.

Optical Mineralogy. Paul F. Kerr. McGraw-Hill, New York, ed. 3, 1959. 456 pp. $8.50.

Pigment Cell Biology. Proceedings of the fourth conference on the biology of normal and atypical pigment cell growth. Myron Gordon, Ed. Academic Press, New York, 1959. 661 pp. $13.50.

A Primer of Programming for Digital Computers. Marshal H. Wrubel. McGraw-Hill, New York, 1959. 245 pp. $7.50.

Principles of Direct-Current Machines. Alexander S. Langsdorf. McGraw-Hill, New York, ed. 6, 1959. 380 pp. $8.50.

Proceedings of the First National Biophysics Conference. Henry Quastler and Harold J. Morowitz, Eds. Yale Univ. Press, New Haven, 1959. 784 pp.

Programming for Digital Computers. Joachim Jeenel. McGraw-Hill, New York, 1959. 525 pp. $12.

Research Techniques in Human Engineering. Alphonse Chapanis. Johns Hopkins Press, Baltimore, 1959. 328 pp. $6.

Russian for the Scientist. John Turkevich and Ludmilla B. Turkevich. Van Nostrand, Princeton, N.J., 1959. 265 pp. $5.95.

A Short Course in Organic Chemistry. Harold Hart and Robert D. Schuetz. Houghton Mifflin, Boston, Mass., 1959. 346 pp. $6.

A Symposium on Molecular Biology. Raymond E. Zirkle, Ed. Univ. of Chicago Press, Chicago, Ill., 1959. 356 pp. $7.50.