of the duty of the scientist as a leader in education, and of trends in this area.

This is a very readable account of a full and satisfying career. It was a fitting compliment that Corner's official retirement as director of the department of embryology of the Carnegie Institution of Washington, in December 1955, was followed immediately by his appointment as historian of the Rockefeller Institute for Medical Research.

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Atmospheric Explorations. Papers of the Benjamin Franklin Memorial Symposium of the American Academy of Arts and Sciences. Henry G. Houghton, Ed. Technology Press of Massachusetts Institute of Technology and Wiley, New York; Chapman & Hall, London, 1958. x + 125 pp. Illus. $6.50.

The five scientists represented in this small book on atmospheric electricity and the upper atmosphere are active along the "cutting edge" of atmospheric research. They know their subjects, and they believe that they have something worth while to say. These qualities insure a good technical book.

Henry Houghton of Massachusetts Institute of Technology has edited papers presented at the Benjamin Franklin Memorial Symposium of the American Academy of Arts and Sciences, in 1956, by Ross Gunn of the U.S. Weather Bureau, Joachim P. Kuettner of the Geophysical Research Directorate, Leonard B. Loeb of the University of California, Harry Wexler of the U.S. Weather Bureau, and Henry G. Booker of Cornell University.

Gunn reports that the charge distribution on cloud droplets and on rain is to be explained by diffusion of atmospheric ions, and he presents the relevant quantitative theory; he brings a simple and rational order to a problem which has often been discussed in a complex and confusing manner. Kuettner discusses some aspects of the problem of charge segregation in thunderstorms and presents his quantitative ideas about the crucial processes; this important problem still appears to be characterized by interesting and puzzling data unsupported by a solid theoretical structure. Loeb, to whom chief credit is due for the explanation of the mechanism of lightning, here gives further evidence of the similarity between lightning and the electric spark. Wexler presents some of his current thinking on large-scale upper-atmosphere local temperature changes (he attributes them to adiabatic changes accompanying large-scale cyclonic systems) and the question of upward or downward propagation of large-scale disturbances (he favors upward propagation but recognizes that downward propagation is conceivable). Booker describes nine phenomena associated with the scattering of radio waves by the ionosphere which are not easily explained. He suggests that atmospheric turbulence in the ionosphere may provide the key to their explanation but recognizes that no quantitative theory exists.

The scientific study of the atmosphere presents a number of trying difficulties; not the least of these is the fact that, whereas activity in recent years has been rather great, progress has been disproportionately small. The result has been that the good work tends to get lost in the abundance of indifferent work. Some of the most important problems today appear to be enmeshed in tangled chains of suppositions and in endless data which are never quite complete or quite accurate enough. It is in facing this situation and in trying to overcome it in a limited field that *Atmospheric Explorations* has made its most important contribution. Other books with similar objectives by equally eminent and capable scientists are needed to clarify and unify other of the most important atmospheric problems.

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Admission Requirements of American Medical Colleges, Including Canada, 1958–59. Compiled by Helen Hofer Gee and E. Shepley Nourse. Association of American Medical Colleges, Evanston, 1958. viii + 227 pp. $2.

This new edition of *Admission Requirements of American Medical Colleges* contains the latest official information on premedical preparation in general and the requirements of each medical school in the United States and Canada.

Students seeking vocational guidance will find useful information on the specific requirements and costs for each school.

New Books

Advances in Enzymology and Related Subjects. vol. XX. F. F. Nord, Ed. Interscience, New York, 1958. 495 pp. $12.50.

The Birds. Oskar Heinroth and Katharina Heinroth. Translated by Michael Cullen. University of Michigan Press, Ann Arbor, 1958 (published as *Aus Dem Leben Der Voegel,* Springer, Berlin, ed. 2, 1955). 181 pp. $5.

A Century of Darwin. S. A. Barnett. Harvard Univ. Press, Cambridge, Mass., 1958. 392 pp. $5.75.

The Changing Face of New England. Betty Flanders Thomson. Macmillan, New York, 1958. 197 pp. $3.75.

Ebb and Flow. The tides of earth, air, and water. Albert Defant. Translated by A. J. Pomerans. University of Michigan Press, Ann Arbor, 1958 (published as *Ebbe und Flut des Meeres der Atmosphäre und der Erdfeste,* Springer, Berlin, 1953). 121 pp. $4.

Elementary Statistical Physics. C. Kittel. Wiley, New York; Chapman & Hall, London, 1958. 238 pp. $8.

The Exploration of Time. R. N. C. Bowen. Philosophical Library, New York, 1958. 150 pp. $6.

The Fertility of American Women. Wilson H. Grabill, Clyde V. Kiser, Pascal K. Whelpton. Wiley, New York; Chapman & Hall, London, 1958. 464 pp. $9.50.

Fluid Dynamics and Heat Transfer. James G. Knudsen and Donald L. Katz. McGraw-Hill, New York, 1958. 585 pp. $12.50.

The Genetic Basis of Selection. I. Michael Lerner. Wiley, New York; Chapman & Hall, London, 1958. 314 pp. $8.

The Idea of Freedom. A dialectical examination of the conceptions of freedom. Mortimer J. Adler. Doubleday, Garden City, N.Y., 1958. 716 pp. $7.50.

Industrial Evolution of Columbus, Ohio. Bureau of Business Research Monogr. No. 93. Henry L. Hunker. Ohio State Univ. Press, Columbus, 1958. 285 pp. $4.

Influence of Temperature on Biological Systems. Incorporating papers presented at a symposium held at the University of Connecticut, Storrs, Connecticut, on 27–28 August 1956. Sponsored and published under the auspices of the Society of General Physiologists, with the support of the National Institutes of Health. Frank H. Johnson, Ed. American Physiological Society, Washington, 1957. 289 pp.

The Infra-red Spectra of Complex Molecules. L. J. Bellamy. Methuen, London; Wiley, New York, 1958. 438 pp. $8.

An Introduction to the Theory of Integration. Adriaan C. Zaanen. North-Holland, Amsterdam; Interscience, New York, 1958. 263 pp. $7.25.

Human Dissection. Its drama and struggle. A. M. Lassek. Thomas, Springfield, Ill., 1958. 320 pp. $6.50.

Konstitution und Vorkommen der organischen Pflanzenstoffe (exclusive Alkaloide). Walter Karrer. Birkhauser, Basel, Switzerland, 1958. 1207 pp. F. 136.

Looking at the Stars. Michael Ovenden. Philosophical Library, New York, 1958. 192 pp. $4.75.

Metals and Enzyme Activity. Biochemical Society Symposium No. 15 held at the University of Leeds on 13 July 1956. E. M. Crook, Ed. Cambridge Univ. Press, New York, 1958. 102 pp. $3.75.

Methods of Testing Chemicals on Insects. vol. I. Harold H. Shepard. Burgess, Minneapolis, Minn., 1958. 356 pp. $5.

The New Chemotherapy in Mental Illness. The history, pharmacology and clinical experiences with rauwolfia, phenothiazine, azacyclonol, mephenesin, hydroxyzine and benactyzine preparations. Hirsch L. Gordon, Ed. Philosophical Library, New York, 1958. 779 pp. $12.