sents a comparison of chemical and enzymatic oxidases.

In "Aktivierung von Aminosäuren," Wieland and Pfleiderer discuss the many mechanisms by which amino acids must be activated before they can participate in biosynthetic reactions. Special attention is given to chloride, mercaptan, and phosphate derivatives. Much attention is devoted to the mechanism of activation of amino acids by adenosinetriphosphate and the types of reactions which activated amino acids may undergo.

Kimmel and Smith, in discussing "The properties of papain," describe in detail their method of preparing crystalline papain and mercuripapain from dried papaya latex. The physical and chemical properties of the enzyme as well as its specificity toward proteins and synthetic substrates are reviewed. A consideration of the kinetics of the enzyme permits the authors to speculate on the nature of the active groups and the mode of action of papain.

In "Les voies principales de l'assimilation et dissimilation de l'azote chez les animaux" Braunstein reviews almost all of the reactions undergone by nitrogenous compounds in animals. Special attention is paid to amino acids with reference to their transamination and their deamination to keto acids and ammonia. Urea synthesis from ammonia and carbon dioxide is also reviewed and the comparative aspects of the biochemistry of nitrogen compounds in animals are discussed in detail.

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The Origins of the English Library. Raymond Irwin. Allen and Unwin, London, 1958. 255 pp. 25 s.

Few things are more perishable than books. The volumes which swell the libraries of the world are, in greatest part, the product of only the last century and a half; by contrast, the entire remains of man's first 5000 years of literary activity before the invention of printing are contained in a few rooms in a relatively small number of libraries. Their paucity is impressive evidence of the hazards which have at all times beset books and learning—hazards so numerous and so destructive that the wonder is not that so little learning was transmitted through the ages but so much.

It is out of wonder at the almost incredible fact of the transmission of knowledge under the onslaughts of fire and water, insects and molds, war and civil disorder, barbarism and orthodoxy, economic depression and simple lack of interest—and out of a curiosity about how it happened—that the present book is written. Since the writer is director of the school of librarianship and archives at the University of London, his special interest is in the role which libraries have played in the process through which the stockpile of knowledge, though suffering from erosion here and there, has, as a whole, withstood the erosion and been delivered—for the time being, safely—into our hands. And he has taken the English reader and user of libraries as the example of the modern beneficiary of this process.

If the facts of the history of scholarship are in general difficult to find and must rest to a large degree upon inference and conjecture, this is doubly true of the history of libraries. For libraries, as contributory agencies rather than ends in themselves, are generally little noticed; ("There is also a library," was Strabo's laconic addendum—quoted by Irwin—to a description of the harbor, gymnasium, paved streets, and other really remarkable features of Smyrna in the first century B.C.). And if they are infrequently noted in their heyday, libraries are even less likely to merit obituaries (thus, the fate of the greatest of the libraries of antiquity, that of Alexandria, is still a matter of conjecture). As contributory agencies, rarely do they supply *acta* for their country's chronicles (though the Alexandrine library was a notable exception in this respect, with its near-achievement of its aim to assemble all of the literature of the then known world, its primacy in the exploitation of the bibliographic art, and its participation in the editing of Homer and the translation of the Septuagint). Rather, the facts regarding the existence, the contents, and—more important—the use and impact of libraries must rest upon comments like Strabo's, upon passages from letters between scholars, and upon scraps from ecclesiastical inventories and monastic rules. Even when the use of books is apparent, it is unsafe to attribute any of the credit to a library.

In these circumstances, Irwin has wisely not attempted to write a documented history of libraries. Rather, he has given us a series of essays in which he has sketched what is known of the role of libraries in the book-based culture which unites the modern to the classical world. For this he has culled ancient and modern literature for references to libraries, for evidences of their use, and for information regarding the habits of readers at various periods under varying conditions of climate, architecture, and methods of illumination. These data he has presented in a series of vignettes which go far toward bringing to life the cultural climate of various times and the conditions under which books have been used and preserved. The result is a happy one: These sketches succeed in enabling the modern, essentially book-based, scholar to see himself, both through similarities and through contrasts, as the lineal successor of a long line of predecessors whose lot—with respect to access to the world's stock of recorded knowledge—he may in some respects deplore but, in other respects, envy; they arouse his gratitude for the mysterious processes which have made possible the inheritance on which he is able to operate and to build, and they provide a reason for hoping that the history of libraries may still be written.

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Selected Writings of John Hughlings Jackson, vol. I, *On Epilepsy and Epileptiform Convulsions.* vol. II, *Evolution and Dissolution of the Nervous System; Speech; Various Papers, Addresses and Lectures.* James Taylor, Ed. Basic Books, New York, 1958. xiv + 500 pp.; viii + 510 pp. $15 per set.

With the publication of this two-volume set, totaling over 1000 pages, the principal writings of John Hughlings Jackson, a distinguished clinical neurologist and neuropsychiatrist, are again available, after being long out of print. Hughlings Jackson was one of the very first "great clinicians" to utilize his rich clinical material and experience to study the mind-brain problem. Students of neurological science will find in these collected papers an invaluable reservoir of informative case histories, shrewd diagnostic inference, and interpretation of the beginnings of a dynamic model of brain functioning which provided amply for digital and analog concepts several decades before these terms were invented.

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The Story of Archaeology. Agnes Allen. Philosophical Library, New York, 1958. 245 pp. Illus. $4.75.

When the reader lets his eye stray from the title page to the opposite flyleaf, to read there that Agnes Allen has also written *The Story of Clothes, The Story of the Highway,* and so on, he will entertain the gloomiest anticipations of another hack work by an author whose style will reveal clandestine associations with Hollywood, or television, or the "digest" form of belles-lettres. He will have a pleasant surprise, since the author is British, and therefore literate. *The*

Story of Archaeology is well written; still better, its contents are well chosen and reasonably accurate. It is clearly written for young people, and for them it is just about perfect. But for adults, as well, it would be hard to name a better general treatment of archeology; the only really annoying juvenile phrases are those of the "the man called Rawlinson" sort.

The book, sensibly, begins by explaining how ancient sites were buried. Then, starting with the Old Stone Age, Neolithic barrows, and Stonehenge, the author proceeds to the European Bronze Age. The largest portion of the book is properly devoted to Egypt and Mesopotamia, but Troy, Cnossus, and Pompeii get their share of attention and there are two chapters on New World archeology. While we lament some omissions, the wonder is that so much of public interest has been included.

I regret the emphasis on tomb-digging and the recovery of gold objects. Although both are certainly rated high by the public, a good archeologist always prefers a settlement site to a tomb, while the discovery of gold is often a headache for all concerned.

The third millenium B.C. dates for Egypt and Mesopotamia are all too early and suggest the use of out-of-date sources. I noted a few odd mistakes: faience, for the archeologist, is not "glazed pottery" (page 112) but blue frit; the capital of the Hittites was Hattusas, not Hattosos (page 141); not everyone believes that Elgin "rescued" the Parthenon marbles (page 197); Herculaneum was *not* covered by lava (page 199); the ruts in Pompeian streets were not "made by wheeled traffic" (page 205) but were purposely cut to form tracks.

Finally, it would be splendid if all today's archeologists conformed to Agnes Allen's strict specifications (page 232). Alas, most of them don't!

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New Books

Einführung in Theorie und Anwendung der Laplace-Transformation. Ein lehrbuch fur studierende der mathematik, physik und ingenieurwissenschaft. Gustav Doetsch. Birkhauser, Basel, Switzerland, 1958. 301 pp. F. 39.40.

Electromagnetism and Relativity. With particular reference to moving media and electromagnetic induction. E. G. Cullwick. Longmans, Green, New York, 1957. 322 pp. $12.50.

Elements of Geology. James H. Zumberge. Wiley, New York; Chapman & Hall, London, 1958. 390 pp. $5.50.

Races of Africa. C. G. Seligman. Oxford Univ. Press, New York, ed. 3, 1957. 236 pp. $1.50.

Encyclopedia of Chemistry (supplement). George L. Clark, Ed. Reinhold, New York; Chapman & Hall, London, 1958. 335 pp. $10.

Environmental Sanitation. Joseph A. Salvato, Jr. Wiley, New York; Chapman & Hall, London, 1958. 673 pp. $12.

Experimental Pharmacodynamics. T. Koppanyi and A. G. Karczmar. Burgess, Minneapolis, Minn., ed. 2, 1958. 258 pp.

Free Radicals. Collected papers of Francis Owen Rice. Catholic Univ. of America Press, Washington, D.C., 1958. 278 pp. $5.

Godel's Proof. Ernest Nagel and James R. Newman. New York Univ. Press, New York, 1958. 127 pp. Paper, $1.75; cloth, $2.95.

The Golden Trade of the Moors. E. W. Bovill. Oxford Univ. Press, London, 1958. 290 pp. In the preface the author states that this book has been written in response to requests for a new edition of his *Caravans of the Old Sahara* (London, 1933). "It covers the same field and tells the same story, but not in quite the same way. . . . The need to rewrite the whole book was plainly inescapable."

Handbook of Chemical Microscopy. vol. 1. Principles and use of microscopes and accessories. Physical methods for the study of chemical problems. Emile Monnin Chamot and Clyde Walter Mason. Wiley, New York; Chapman & Hall, London, ed. 3, 1958. 514 pp. $14.

Handbook of Physics. E. U. Condon and Hugh Odishaw, Eds. McGraw-Hill, New York, 1958. 1530 pp. $25.

Introduction à l'étude des variétés kählériennes. Publications de l'Institut de Mathématique de l'Université de Nancago. vol. VI. André Weil. Hermann, Paris, 1958 (order from Pierre Berès, 681 Fifth Avenue, New York). 175 pp.

An Introduction to Fluid Dynamics. G. Temple. Clarendon Press, Oxford Univ. Press, London, 1958. 206 pp. $4.

The Junction Transistor and Its Applications. E. Wolfendale, Ed. Macmillan, New York, 1958. 402 pp. $7.50.

Library of Mathematics. Walter Ledermann, Ed. *Linear Equations,* P. M. Cohn, 86 pp.; Sequences and Series, J. A. Green, 86 pp.; *Differential Calculus,* P. J. Hilton, 63 pp.; *Elementary Differential Equations and Operators,* G. E. H. Reuter, 74 pp. Free Press, Glencoe, Ill., 1958. Paper, $1.25 each.

Living Birds of the World. E. Thomas Gilliard. Doubleday, New York, 1958. 400 pp. $12.50.

Living with Stress. Nancy E. Gross. McGraw-Hill, New York, 1958. 219 pp. $3.95.

Methods of Analytical Histology and Histo-Chemistry. Edward Gurr. Leonard Hill, London, 1958. 342 pp. 70s.

Outline of Enzyme Chemistry. J. B. Neilands and Paul K. Stumpf. With a chapter on the synthesis of enzymes by Roger Y. Stanier. Wiley, New York; Chapman & Hall, London, ed. 2, 1958. 423 pp. $8.50.

The Physicist's Conception of Nature. Werner Heisenberg. Translated from the German by Arnold J. Pomerans. Harcourt, Brace, New York, 1958. 192 pp. $3.75.

Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, *but to the publisher or agency sponsoring the publication.)*

Program of the History of American Indians. pt. 1, *Pre-Columbian America.* Social Science Monogr. II. Pedro Armillas. 68 pp. *Middle American Anthropology.* Special symposium of the American Anthropological Association. Social Science Monogr. V. Assembled by Gordon R. Willey, Evon Z. Vogt, Angel Palerm. 60 pp. Pan American Union, Washington, D.C., 1958.

Annotated Bibliography of Applied Physical Anthropology in Human Engineering. WADC Tech. Rept. 56–30. ASTIA Document No. AD-15562. Robert Hansen and Douglas Y. Cornog. H. T. E. Hertzerg, Ed. Aero Medical Laboratory, Air Research and Development Command, Wright-Patterson Air Force Base, Ohio, 1958 (order from ASTIA Documents Service Center, Arlington Hall Station, Arlington 12, Va.). 301 pp.

Flora of Guatemala. Fieldiana: Botany, vol. 24, pt. 1. Paul C. Standley and Julian A. Steyermark, 487 pp. $8. *Early Devonian Fishes from Utah.* pt. III, *Arthrodira.* Fieldiana: Geology, vol. 11, No. 9. Robert H. Denison. 92 pp. $2.50. *New Salamanders of the Family Sirenidae.* From the cretaceous of North America. Fieldiana: Geology, vol. 10, No. 33. Coleman J. Goin and Walter Auffenberg. 10 pp. $0.45. *Birds of Volcán de Chiriquí, Panama.* Fieldiana: Zoology, vol. 36, No. 5. Emmet R. Blake. 78 pp. $1.50. *Some Rare or Little-Known Mexican Coral Snakes.* Fieldiana: Zoology, vol. 39, No. 19. Karl P. Schmidt. 12 pp. $0.25. *Egyptian Snakes of the Genus* Psammophis. Fieldiana: Zoology, vol. 39, No. 18. Hymen Marx. 4 pp. $0.30. *Streblidae from Yemen with Description of One Subspecies of Ascodipteron (Diptera).* Fieldiana: Zoology, vol. 39, No. 17. B. Jobling. 4 pp. $0.15. *Descriptions of Abyssal Benthic Fishes from the Gulf of Mexico.* Fieldiana: Zoology, vol. 39, No. 16. Marion Grey. 92 pp. $0.75. *A Synopsis of Philippine Endomychidae (Coleoptera).* Philippine zoological expedition 1946–1947. Fieldiana: Zoology, vol. 42, No. 3. H. F. Strohecker. 30 pp. $0.75. *Notes on Philippine Mallophaga, I.* Species from Ciconiiformes, Anseriformes, Falconiformes, Galliformes, Gruiformes, and Charadriiformes. Philippine zoological expedition 1946–1947. Fieldiana: Zoology, vol. 42, No. 4. K. C. Emerson and Ronald A. Ward. 12 pp. $0.30. *Stag Beetles (Coleoptera: Lucanidae).* Philippine zoological expedition 1946–1947. Fieldiana: Zoology, vol. 42, No. 5. Bernard Benesh. 12 pp. $0.30. Chicago Natural History Museum, Chicago, Ill.

The Regression of the Node of the Quandrantids. Contributions to Astrophysics, vol. 3, No. 1. Gerald S. Hawkins and Richard B. Southworth. 5 pp. $0.15. *Catalogs of Meteor Radiants.* Contributions to Astrophysics, vol. 3, No. 2. Gerald S. Hawkins. 3 pp. $0.10. Smithsonian Institution, Washington, 1958 (order from Supt. of Documents, GPO, Washington 25).