

tude of the Calendars" (an odd term) "would render them almost useless, but for their complete indices and introductory historical matter" (i., 9). The truth is, Mr. Aubrey's learning is chiefly second-hand; and his mental attitude is like that of scores of his predecessors. A history of the People he does not give us; he gives us only a crowd of disconnected facts and observations, put together in chapters by themselves at the end of each section of political history, in the good old semi-enlightened fashion. Take two sufficient instances. England in the Middle Ages was an agricultural country; from the point of view of social evolution, therefore, the one all-important subject of mediæval history is the condition of the peasants. Mr. Aubrey returns to it again and again for a few sentences, but the most intelligent reader might be defied to construct out of them a clear picture of the situation—for the simple reason that Mr. Aubrey has no clear understanding of it himself. He may have turned over the pages, he cannot have given any sustained thought even to the books he parades in his Bibliographical List. Vinogradoff would have saved him from repeating the old fiction about *villeins regardant* and *in gross* (i., 168)—a small matter, but significant.

England, again, is "the classic land" of "the great industry." "The Industrial Revolution" has profoundly affected the lives of tens of millions of Englishmen. Will it be believed that to the inventions in the textile industries and their effects Mr. Aubrey devotes in all some forty-four lines (iii., 246, 292), about as many as are given to George III.'s lunacy (iii., 243); fewer and far less impressive than those on "the progress of invention" in Mr. S. R. Gardiner's book, which professes only to supply the wants of schoolboys ('Student's History,' 814-818)? The point need not be labored. In dealing with political history Mr. Aubrey does avoid unnecessary detail; names and dates are mercifully few. But he has not really risen above the political point of view, and his work is essentially conventional.

The Cell in Development and Inheritance.
By Edmund B. Wilson. Macmillan. 8vo, pp. xvi, 371. 1896.

THIS volume is one of the very best scientific manuals published in America, and is sure of a rapid recognition and generous welcome, not in this country alone, but in Europe also. Its importance depends first upon the subject, and second upon the author's presentation. The subject is of course as old as the cell-theory itself, but the observations upon which our present views are based have been made almost wholly within the last twenty years, and most of them within the last ten years. These observations have brought a whole series of new conceptions before the scientific world—conceptions which bear upon the fundamental questions of biology, and are equally significant to zoologists, botanists, and philosophers. We are confronted with new theories of generation, of sexuality, of heredity, of growth, and of the chemistry of living matter, and all created out of a wealth of new discoveries unparalleled in any other domain of biology. As a rule, zoologists and botanists pursue their independent ways; but in the domain of cell phenomena they have worked during the last dozen years in true collaboration, earning thus great rewards.

Treatises on the cell as the unit of vital phenomena have been recently published in German by Oskar Hertwig, and in French by Hen-

neguy, both authorities of the highest rank, who have won reputation by these works. These have a strong impress of their respective authors. That which marks Wilson's book is precisely the absence of the personal element. He gives, not special arguments in favor of his own views, or fuller presentations of his own researches, which have been important, but a well-proportioned and balanced summary, in which his own work is measured fairly with that of others. This mental impartiality has bestowed a special value upon the author's digest of the hundreds of investigations he has epitomized, and is displayed again in the very large number of exact citations which he gives. For these citations he has adopted the system of Mark and Minpt, which is simple, concise, and precise, and mars the text very slightly. The list of authorities is imposing, for it covers thirteen closely printed pages, although it includes only the titles of works actually referred to in the text. A noteworthy characteristic of the book is its thoroughness. Prof. Wilson shows an extensive personal familiarity not only with the phenomena which he discusses, but also with the observations and opinions of numerous other investigators.

As regards the forms of presentation and the style, the author excels. His treatise is of course not addressed to the general reader, but to persons having at least some knowledge of cells. To such readers the chapters will be clear, interesting, and instructive. The new technical terms, which are unfortunately rather numerous, are explained as they first occur, and are also gathered in a glossary at the end of the volume. The definitions in the glossary are almost uniformly admirable.

The subject-matter is divided into an introduction and nine chapters, as follows: i., General Sketch of the Cell; ii., Cell-Division; iii., Germ Cells; iv., Fertilization of the Ovum; v., Reduction of the Chromosomes, Oögenesis, and Spermatogenesis; vi., Some Problems of Cell-Organization; vii., Some Aspects of Cell-Chemistry and Cell-Physiology; viii., Cell-Division and Development; ix., Theories of Inheritance and Development. Each of these topics is well analyzed, and the often conflicting views are adequately given. It is here that Prof. Wilson's good temper and sound judgment reveal themselves advantageously. In such a book it is important to express the author's estimate of the value of diverging opinions, to assist the reader to decide which view is at the time most plausible, or, when this is impossible, at least clearly to state that the evidence is insufficient. It will be found that Prof. Wilson has met these demands with conspicuous conscientiousness and yet temperately.

The defects which we have found relate to minor points. Thus, Weismann is erroneously quoted as one of the founders of the view that the nucleus is the organ of heredity (p. 5); Purkinje and Oken should be cited in connection with the history of the cell-doctrine; the quantitative relations of the protoplasm to the nucleus should be noticed. It is, however, better to leave such petty criticisms, for it is a truer service to the reader to emphasize the very great merits of a work which does the highest credit to American science. The mechanical appearance of the volume is good. The typography is clear and the illustrations, which are numerous, are well printed and they have been well chosen. A large proportion are original. A double index (of authors cited and of subjects), prepared with much care, facilitates looking up any special point.

The volume is the fourth of the Columbia University Biological Series, and will certainly go far towards sustaining and increasing the reputation of Columbia as one of the three or four best University centres for biological research in America. In conclusion, we may say that students and investigators of biology, in whatever department they may be working, ought to be familiar with this important work.

John Wellborn Root: A Study of his Life and Work. By Harriet Monroe. Boston: Houghton, Mifflin & Co. 1896.

THIS square octavo volume of 290 pages is devoted to the life of an architect of most interesting personality, who had much to do with the furnishing of the great West with considerable buildings. There is no doubt of the originality of conception and vigor of design which Root showed in his work. He was one of the few who designed as a trained instinct bids them in view of the requirements of a structure, and the plan which those requirements have brought into being. Yet it can hardly be said that anything portrayed in these pages is likely to be considered a monument of architecture such as the world will desire to preserve.

The chapter which deals with Root's ideas of modern architecture contains many of the architect's own sayings, extracts from papers, and the like, which are full of sound sense. In one of these extracts he says plainly that whenever in the world there has been "a period or style of architecture worth preserving, its inner spirit was so closely fitted to the age wherein it flourished that the style could not be fully preserved, either by people who immediately succeeded it, or by us after many years." This cogent sentence he elucidates by very intelligible and very persuasive examples. Had it been possible for a large sense of propriety to embody itself at once in architectural results, Root would have been the man to bring about such a change in our architecture as the times required. Indeed, he was in a very large sense that which the West needed most, namely, the man who would persuade intending builders to give up galvanized iron cornices and jig-saw ornament, as the author of this book says, and to demand of them sounder and more serious methods of building.

The succeeding chapter is devoted to Root's work and its results, and in these two chapters lies the value of the book for other readers than those who were his friends and associates. The rest of the volume is an interesting biography of a man who lived a simple and straightforward life of work and thought, but it is of no special value as illustrating the surroundings of the man, either in his boyhood in the South or in his manhood spent in the West. The appendix, written by Mr. Henry Van Brunt, serves at once as a friendly and cordial criticism of the book and an obituary notice of its subject. Mr. Van Brunt refers to a list, which he has by him, of the work done by the firm of Burnham & Root, and sums it up. This final statement is of a certainly surprising number of important buildings: "forty-four structures of a public character, such as office-buildings, hotels, churches, apartment-buildings, schools, railway stations, etc., in Chicago; twenty-five of the same classes elsewhere; eight buildings to cost from \$400,000 to \$1,000,000 each, in course of erection, and one hundred and twenty residences of the first class." Assuredly this is a

remarkable record for eighteen years, and it is probably true, as Mr. Van Brunt asserts, that "there are fewer indications in this series of the forcing of structure into archaeological or academic moulds than can be found in any modern European examples of corresponding buildings." The question which remains unanswered, and which the future only can answer, is how far this serious effort will be crowned with the success which it merits.

BOOKS OF THE WEEK.

America and the Americans. From a French Point of View. Scribners. \$1.25.
Bordeaux, Henry. La Vie et l'Art: Sentiments et Idées de ce Temps. Paris: Perrin & Cie.
Boughton, Prof. Willis. History of Ancient Peoples. Putnam's. \$2.
Buckley, Rev. J. M. A History of Methodism in the United States. V. I. I. Christian Literature Co. \$2.50.
Carter, A. C. B. The Year's Art. 1897. London: J. S. Virtue & Co.; New York: Brentano's.
Cassell's Complete Pocket-Guide to Europe. 1897. Cassell Publishing Co. \$1.50.

Cattaneo, Raffaele. Architecture in Italy from the Sixth to the Eleventh Century. London: Unwin; New York: Truslove & Comba.
Chambers, R. W. With the Band. Stone & Kimball. \$1.25.
Evans, Mrs. Elizabeth E. Ferdinand Lassalle and Helene von Dünigues: A Modern Tragedy. London: Sonnenschein & Co.
Farmer, J. E. Essays on French History. Putnam's. \$1.25.
Fawcett, Edgar. A Romance of Old New York. Philadelphia: J. B. Lippincott Co. \$1.
Fels, W. W. Natural Law in the Business World. New York: The Author. 25c.
Florenz, K., and Lloyd, A. Poetical Greetings from the Far East: Japanese Poems. Tokyo: T. Rosegawa.
Gayard, Charles. A Diplomat in London: Letters and Notes, 1871-1877. Henry Holt & Co. \$1.25.
Giles, Marie F. The End of the Journey. G. W. Dillingham. 50c.
Holland, Olive. A Writer of Fiction. Boston: Cope-land & Day. \$1.
Hoppin, Prof. J. M. Greek Art on Greek Soil. Boston: Houghton, Mifflin & Co. \$2.
Johnston, Prof. Alexander, and Woodburn, Prof. J. A. American Orations. Vol. IV. Putnam's. \$25.
Knapp, Harriet L. Miriam's Tower. G. W. Dillingham. 50c.
Lanza, Clara. Horace Everett. G. W. Dillingham. \$1.50.
Litchfield, Grace D. In the Crucible. Putnam's. \$1.25.
Mach, Prof. Ernst. Contributions to the Analysis of the Sensations. Chicago: Open Court Publishing Co. \$1.25.

Mercer, H. C. Researches upon the Antiquity of Man in the Delaware Valley and the Eastern United States. Boston: Ginn & Co. \$2.
Montgomery, J. Z. Modern Book-keeping. Maynard, Merrill & Co. \$30.
Ozanam, Frédéric. Dante and Catholic Philosophy. New York: Cathedral Library Association. \$1.50.
Papers and Speeches at the Seventeenth Church Congress held in Norfolk, Va. Whittaker. \$1.
Phillipotts, Eden. Lying Prophets. New York: P. F. Collier. 25c.
Philpot, Mrs. J. H. The Sacred Tree; or, The Tree in Religion and Myth. Macmillan. \$3.
Pictet, Raoul. Etude Critique du Matérialisme et du Spiritualisme par la Physique Expérimentale. Paris: Félix Alcan.
Prowse, D. W. A History of Newfoundland. 2d ed., revised and corrected. London: Eyre & Spottiswoode; New York: Brentano's.
Russell, Israel C. Glaciers of North America. Boston: Ginn & Co. \$1.00.
Sharp, Archibald. Bicycles and Tricycles: An Elementary Treatise on their Design and Construction. Longmans, Green & Co. \$4.
Smyth, J. P. The Divine Library: Suggestions how to Read the Bible. James Pott & Co.
Standing, Jonas and Reason, Will. In the Land of Tolstol. Whittaker. \$2.
Storrs, L. A. Koheteth: A Novel. G. W. Dillingham. \$1.
Stumps, Rev. Joseph. Life of Philip Melancthon. Reading, Pa.: Pilger Publishing House.
The Coming of Chloe. By the "Duchess." Philadelphia: J. B. Lippincott Co. \$1.25.

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