The Meaning of Evolution. By SAMUEL CHRISTIAN SCHMUCKER, Ph.D. New York, The Macmillan Company. 1913. 12mo. Pp. 298.

This is a very readable book upon what is no longer a new theme. Following a literary "foreword" the pre-Darwinian history of evolution is sketched as a background for Darwin and Wallace. The historical chapter about Darwin presents the essentials of his career in a charmingly vivid and sympathetic manner. Then follows the "Underlying Idea" of natural selection as the method of evolution illustrated largely by means of the English sparrow, of which the author incidentally says (p. 84): "This pestiferous creature should be exterminated . . . but personally I am taking no share in his destruction . . . I confess that it would be with regret that I should see him disappear from the landscape."

Chapters IV. and V. deal with adaptation for the individual and for the species. The general attitude toward Lamarck is occasionally rather more conciliatory than the militant Weismannian would approve of, but this is not to be wondered at in one who is proud of having been a student of Professor Cope. It seems to be very easy to drop into Lamarckian explanations for adaptation. For instance (p. 89): "The modern scientist feels sure not only that the animal is fitted to his work, but that he has been so fitted by the work." It will probably always be a bone of contention whether the exercise of an organ determines its structure or the structure of an organ sets the limits to its exercise.

With respect to protective coloration and sexual selection the author proposes to retain the Darwinian interpretation until something better arises in spite of the recent loss of confidence in the adequacy of these explanations.

The three succeeding chapters upon "Life in the Past," "How the Mammals Developed," and "The Story of the Horse" marshal in review some of the classified evidence in support of animal evolution, while Chapter IX. takes up "Evolutionary Theories Since Darwin."

In this last chapter Weismann, whose name will doubtless be correctly spelled in subsequent editions, is justly given prominence because his "work has made us cautious and prevented our lightly accepting a belief in the influence of the environment." Moritz Wagner and Romanes with their isolation theories and the orthogenists receive attention, and finally Hugo deVries with mutation closes the chapter.

The book could have been written fifteen years ago so far as any analysis of the significant bearing which Mendelism or the pure-line theory of Johannsen has upon the question of evolution.

Chapter X. turns optimistically to the "Future Evolution of Man" and is sociological rather than biological in its treatment, while the final chapter, "Science and the Book" gives the impression that the professor has stepped out of the class room and is speaking to a church audience and speaking withal extremely well.

The word "Evolution" has lost most of its incendiary character of a generation ago yet there are no doubt many in whose minds it still stands contrasted with religion and the Bible as a faith-destroying invention of godless scientists. To all such persons this book is a welcome message of reassurance and peace while to others who no longer need to be convinced of the essential truth of the evolutionary processes, the pages will be turned with approving delight.

Dr. Schmucker has stated the facts of the case in clear non-technical language with much literary grace and with scientific accuracy, consequently the book is well adapted to a wide range of readers even outside the biologically initiated.

H. E. WALTER

BROWN UNIVERSITY

Animals of the Past. By FREDERICK A. LUCAS. American Museum of Natural History, Handbook series No. 4. New York. 1913. Pp. xx + 266, with a frontispiece and 50 full-page and text figures.

This volume is an exact reprint of Lucas's