

Entire skeletons with almost every bone in place show how tranquilly and thoroughly the remains of the early Tertiary vertebrates were entombed in the mud of the lakes on whose shores and waters they lived.

A. G.

#### CHRONOLOGICAL HISTORY OF PLANTS

*Chronological History of Plants: Man's Record of his own Existence illustrated through their Names, Uses, and Companionship.* By Charles Pickering, M.D. (Boston: Little, Brown, and Co.; London: Trübner and Co., 1879.)

THIS is an extraordinary book, difficult alike to characterise and to review. It is a monument of enormous labour and erudition, but it is not easy to discover the plan upon which it is compiled, and it certainly does not fulfil the promise of its title. A "chronological history of plants" would be an interesting and valuable work, if understood to mean a history of the ages and countries in which particular plants have been introduced from abroad, or those of home growth first adapted to the use of man. This, indeed, is the work which Dr. Pickering seems to have contemplated; it is not, however, the work which he has accomplished.

Neither the historian, the philologist, nor the botanist will be satisfied with the huge volume now presented to them. Dates are given with a show of minute accuracy which the materials for ascertaining them unfortunately do not justify. Thus, to go no further than the second page, we find the mysterious paragraph, "Second generation, September 1st, 4234, among living men." As similar entries occur on the following page, with the names of Enoch, Irad, and other descendants of Cain attached to them, I suppose the paragraph must be interpreted to mean that the second generation of living men first saw light on the 1st of September, B.C. 4234. How Dr. Pickering knew this I cannot imagine. If we turn over a few leaves we find the dates of the early Egyptian kings set down with equal minuteness, and, it must be added, with an equally small show of reason. Dr. Pickering even knows the exact dates of the antediluvian monarchs of Babylonia, though he has forgotten the right name of the town of Pantibibla, from which several of them were said to have come. His knowledge of the heroic age of Greece is equally precise. Thus he tells us that in 1290 B.C. Jasus was "succeeded by Crotopus, son of Agenor, and now ninth King of Argos;" and then follows some interesting information about the Pelasgians and their wanderings.

Dr. Pickering's philology is not less remarkable than his chronology. He shocks the Hebrew scholar by calling *tzón* ("sheep") *tzan*, of which, by the way, he says that it was "regarded even by Dicaearchus as probably the first animal domesticated"—a statement likely to be disputed by those who have occupied themselves with the history of the domestication of animals. Under the year 1720 B.C., he remarks that "the northern language from which certain Greek words were taken probably at this time in existence"—a statement which will be new to most philologists and Greek scholars. Naturally he has never heard of the explanation of the word *foxglove*,

which makes it a popular corruption of *folk's-gleed*, or "row of bells."

But it is the botanist who has most reason to complain of Dr. Pickering's work. Instead of a "chronological history of plants," he finds the names and notices of various specimens of the vegetable world catalogued in the most arbitrary way under dates which have little or no connection with the age in which they were first known or used by man. So far as the earlier half of the book is concerned, the notices might in most instances have been as well entered on another page as that on which they are actually found. Why, for instance, should the *Artemisia absinthium* or the *Iris sambucina* be described under the date 1734 B.C., and what possible connection can there be between 1203 B.C. and the *Phragmites communis*? The only relation that can generally be traced between the dates and the plants recorded under them is little better than a pun. Because the almond or *luz*, which Dr. Pickering calls *luz*, is mentioned in Genesis xxx. 37, it is recorded under the year 1506 B.C., the year in which Joseph was "born to Jacob and Rachel;" because a brick from the small pyramid of Dashur was discovered to contain the straw of the jointed charlock and field pea, an account of these plants is given under the year 2079 B.C., the assumed date of the building of the pyramid; and the mention of "Pelagius establishing himself as king in Arcadia" in 1354 B.C. calls up a description of the *Quercus esculus*. As a set-off against this learned trifling, a vast quantity of matter is introduced which has nothing to do with plants and their history. Thus it would be quite intelligible if the author had given a list of those Egyptian hieroglyphics which represent plants, but the long, though imperfect, catalogue of hieroglyphic characters of all kinds which he actually has given, though fitted for a treatise on Egyptian grammar, is certainly out of place in a history of the vegetable world.

There is only one explanation that can be offered for the character of this extraordinary volume. Dr. Pickering was an able and learned scholar, trained in scientific methods and capable, as is proved by his "Races of Man," of producing good scientific work. But his "Chronological History of Plants" has been published since his death, and has consequently not had the benefit of his own compilation and revision. It consists simply of the notes he collected during a long course of voluminous reading, arranged, not upon any scientific plan, but under the convenient headings of his common-place book. The student may possibly construct a chronological history of plants out of them, but such a history does not exist at present. The volume is a mine of materials which, thanks to a careful index, can be easily used, though considerable caution is required in doing so. As it stands, however, it is hardly better than a mass of undigested and ill-arranged facts, mixed up with dates and statements calculated to send a shudder through the sensitive frame of the critical historian. Posthumous works are not unfrequently the most cruel injury that can be inflicted by friends upon the memory of the dead, and it is hardly likely that Dr. Pickering would have relished the appearance of his elaborate notes in precisely their present form.

A. H. SAYCE