lived familiarly with men as his fellows; he was brought into intimate relations with few persons, and those were not of a high order of mind. He had no interests outside of himself, except in his mother's welfare; when she died he was left pitiably alone. "I keep my affections alive by reading Shakespeare," he said. What a confession is there! In his later years he cared for a nephew who died, and for the two boys who accompanied him on his journey to the East, his attachment to whom is touching by its very singularity. This poverty of his personal experience and the silence Buckle kept concerning his intellectual life make his biography meagre in substance. The extent of his reading, the tenacity of his memory, the brilliancy of his conversation, and his skill in chess are spoken of at length; many letters are given, but the greater number of them, although about literary matters, are as purely business letters as if they concerned groceries; a detailed account of his travels is also printed. It would be unfair, perhaps, to judge Buckle by what is here reported of his talk; his tone is often too strikingly like that of a man forced to reply to the commonplaces of mediocrity. If his conversational powers were brilliant, he was in a dull mood when he visited these companions; there is not a saying here which is worth preservation. It is a misfortune that Buckle did not have an equal friend, for his life would have been enriched thereby, and our knowledge of him might have been more adequate. As it was, he did not unveil himself to any one; and consequently his truest biography, the record of his real life, must be read in his great work, — the history which, notwithstanding its errors, was and is a powerful intellectual influence, and will remain a monument of a young man's self-contained devotion to a philosophic end, extraordinary in any age and unexampled in our own.

Mr. Darwin's preliminary notice of his grandfather which is prefixed to Dr. Krause's essay,[1] and occupies the larger half of the volume, is a model of simple, compact, and entertaining biography. In the first pages the presence of the eighteenth century is felt, and before one has read far he discovers that Erasmus Darwin had a large share of that capacity for vigorous work, that heartiness and hardihood, that broad common sense and incisive worldly prudence, which marked the Englishmen of that age. He was a man of many affairs. He was a physician whom his profession complained of for being a philosopher, and a philosopher whom his contemporaries in philosophy sneered at as a doctor; he was, besides, a poet whom Cowper gracefully ranked before himself. In medicine he was not only famous as a practitioner, but he anticipated the future by his theory of the use of stimulants in fevers and of the treatment of the insane, and by his acquaintance with the relation between convulsion and insanity, and with the facts recently discovered by Rosenthal in his experiments upon the blood. In philosophy he investigated many of the problems which his grandson has solved in regard to "adaptation, the protective arrangement of animals and plants, sexual selection, insectivorous plants," and the like. Of course it is not meant that he established his hypotheses, or that his views did not materially differ from those now held. In such speculation he was the precursor of Lamarck, and Dr. Krause feels justified in saying that "he was the first who proposed and consistently carried out a well-rounded theory with regard to the development of the living world, — a merit which shines forth most brilliantly when we compare with

[1] *Erasmus Darwin.* By ERNST KRAUSE. Translated from the German by W. S. DALLAS. With a Preliminary Notice by CHARLES DARWIN. Portrait and Wood-Cuts. New York: D. Appleton & Co. 1880.

it the vacillating and confused attempts of Buffon, Linnæus, and Goethe." He was not content, however, with the investigation of nature, but, although a disbeliever in revelation, he sometimes speculated upon religious rather than scientific matters. His argument in favor of the goodness of God as shown in the law of the survival of the fittest is curious. "Beasts of prey," he says, "more easily catch and conquer the aged and infirm, and the young ones are defended by their parents. . . . By this contrivance more pleasurable sensation exists in the world. . . . Old organizations are transmigrated into young ones. . . . Death cannot so properly be called positive evil as the termination of good." Hence he concludes all the strata of the world "are monuments of the past felicity of organized nature, and consequently of the benevolence of the Deity!" Such passages, however, are very few, and it was not on their account, but because of his scientific views, that the word "Darwinize" was coined to express the greatest rashness and uselessness of speculative inquiry. As a poet no one would now give him any rank; but Horace Walpole, that gentleman whose taste was the quintessence of eighteenth-century refinement, said of one passage, beginning,

> "'Let there be light!' proclaimed the Almighty Lord.
> Astonished chaos heard the potent word,"

that it was "the most sublime passage in any author, or in any of the few languages with which I am acquainted." Even Dr. Krause says that hardly any similar attempt since the time of Lucretius has been so successful. Mr. Darwin's estimate of his ancestor's poetic work as an example of extraordinary command of language for the presentation of visible objects to the mind is, however, the highest praise which the judgment of our generation will approve.

But besides being a physician, philosopher, and poet, Erasmus Darwin found time for many subordinate pursuits. In mechanical invention he was especially ingenious. He made a contrivance for grinding flints, and left "schemes and sketches for an improved lamp, . . . a manifold writer, a knitting loom, a weighing machine, a surveying machine, a flying bird," and for many other inventions, some of which, such as his plan of a canal lock and a rotatory pump, have since been used under improved forms. He contrived a talking-machine and a peculiar kind of carriage. Indeed, his genius in this direction seems to have been as great as in other ways. He also founded a philosophical society, supported the cause of temperance among the first, suggested theatrical devices for the parliamentary orators who attacked the slave-trade, and gave much time to private charity. Occasionally his benevolence brought him strange returns of gratitude, as when the horse-jockey stole into his chamber at night to tell him not to bet on the favorite, and when the highwayman let him pass without demanding his purse. These private pursuits added to his professional and literary labors made his life a full one; but he kept at work until death, at the age of seventy, and said to his son, who advised him to retire from active duties, "It is a dangerous experiment, and generally ends either in drunkenness or hypochondriacism."

The glimpses of his personality and the scraps of his conversation which are here given are all of interest, and throw light upon his character. There is nothing better than the tolerably well-known epigram reported by Mr. Edgeworth: "A fool, Mr. Edgeworth, you know, is a man who never tried an experiment in his life;" but there are other sayings from the same mint. His letters show the keenness of his mind. One must go to Dickens for anything like the frank, worldly wisdom of his advice to the young apothecary, which one can

hardly read as a sober production even of that age. Living at that time, he met Dr. Johnson, as a matter of course. It is not difficult to fancy the interview between the two, which tradition reports was not agreeable to either of them. It is easy to fancy, too, his majesty George the Third repeating over and over, "Why does not Dr. Darwin come to London? He shall be my physician if he comes." The aged doctor would not go to the court, but kept on in the old way. It is not only George the Third and Dr. Johnson, and card-tables, copies of verses, and country manners, which give to this biography the true tone of the time. Dr. Darwin was himself a most characteristic product of the age, although in so many and so important ways he was a prophet of the age to come. He was not quite so well satisfied with his period, however, as most of his contemporaries. "Common sense," he said, "would be improving when men left off wearing as much flour on their heads as would make a pudding; when women left off wearing rings in their ears, like savages wear nose-rings; and when fire-grates were no longer made of polished steel." Some of these changes have come to pass; but the eighteenth century is still held up as the era of common sense, from which this generation may learn wisdom. Mr. Darwin has compressed so much into this small volume that it is useless to attempt to give more than a fragmentary idea of what it contains. In view of the frequent mention of Erasmus Darwin in modern scientific books, the account of his work was well worth relating from a purely historical point of view, as in Dr. Krause's excellent essay; and to this the biographical notice is a valuable and extremely interesting addition.

The last biography to be noticed is that of Elihu Burritt.[1] He was as complete a contrast to Darwin as Buckle was to Channing. He was an extraordinarily unpractical man. He was attached to visionary philanthropic causes, for the advancement of which he gave his mature manhood. At a comparatively early period he left off the study of languages, by which he first won notice; and although his perseverance in the effort to raise himself from a blacksmith's forge to the higher walks of literature deserves to be remembered with great praise, yet it is justly doubted whether his mastery of the great number of languages he endeavored to acquire was real, and it is clear that they were of no practical use to him. He enlisted himself in the peace movement, and went about the world to agitate the cause. He gained a varied experience, he met many illustrious men, but he never saw any practical result of his labors. The only measure of which he secured the adoption was the establishment of ocean penny-postage, and for that he deserves recognition beside Sir Rowland Hill as a benefactor of mankind. The numerous volumes he published were nearly all of passing interest; his literary criticism was valueless. He exhibited the same qualities in private as in public life; he was attractive, amiable, and benevolent. He will be remembered as the self-made scholar and as the missionary of philanthropy; these two aspects of his life are pleasantly and simply presented by his biographer.

[1] *Elihu Burritt.* A Memorial Volume, containing a Sketch of his Life and Labors, with Selections from his Writings and Lectures, and Extracts from his Private Journals in Europe and America. Edited by CHARLES NORTHEND, A. M. New York: D. Appleton & Co.