

5. They approached the shore mostly during the night, the movement continuing, however, somewhat into the early morning hours. They invaded the houses and the yards, and the tower of the lighthouse up to a certain height, so that we had to brush them away with brooms and shovels, and finally to close the doors and windows, and cover the openings of the water-tanks with canvas and sacking. We lost three tanks of water corrupted by these little creatures. After sunrise they were nearly all killed by the heat, becoming whitish. A few that escaped to the shade lived a few days without growing any larger."

Prof. S. I. Smith of Yale College, to whom the specimens were referred, reports as follows respecting them:—

"The very small crabs from Cape San Antonio, Cuba, are too young and imperfect for precise determination, but are evidently the young, changed from the free-swimming megalops stage of some Grapsoidea crab, probably a species of *Sesarma*. The four specimens are evidently all of the same species. They measure between four and five millimetres in width of carapax."

R. RATHBUN.

TYPES OF ETHICAL THEORY.

DR. MARTINEAU (it is a pleasure to remember that this country had the honor of giving him his title) has already reached his fourscore years, yet his work shows no sign either of labor or of sorrow. Its characteristics are indeed precisely the reverse of these: they are facility and optimism. There is the same dignified eloquence which made George Eliot write, in 1853, "James Martineau transcends himself in beauty of imagery." There is the same calm faith which has always possessed him in the outcome of the philosophical controversies of the time. For forty years he has stood quite alone among English theists in his breadth of sympathy and his sweep of style; and there is much pathos to many a grateful student in the words with which he dismisses this work, hoping to deal with further problems, "in case the evening twilight of life should linger a little longer with me, and leave my powers of industry still unspent."

It is impossible to review such a book as this with any completeness, within the limits which must be here observed. It is the ripened fruit of a lifetime, and it must be recognized, as has been done by the *Spectator*, as the most important ethical work of this generation. It traces the great types of ethical theory, advancing with "many com-

panions, stately or keen, severe or facile, mystic or humane," until the view of the author is set in final and striking contrast with that of the so-called English school. Here, to most readers, is the central interest of the book. It is Kantian ethics in the hands of a master of style over against the laborious inadequacy of Mr. Spencer. Nothing can be more delightful than the ease and brilliancy of this discussion, or more honorable than its recognition of the worth of the opposing school. "The representative writers of this school," Mr. Martineau concludes, "have in truth theorized in one language, and felt in another, and have retained ideal conceptions of a scale of good, and admirations for types of character, for which their doctrine can find no corresponding place. Nor is this an accident of their individual presentations of the theory. So long as it sets itself to find the moral in the immoral, to identify the order of right with the order of strength, to repudiate any study of what ought to be except in studying what has been, is, and will be, it totally shuts the door in the face of all conception and possibility of duty, and by naturalizing ethics reverses the idealizing process which rather ethicizes nature. It subjugates character to science, instead of freeing it into religion."

Two sources of embarrassment are here hinted at, which are felt throughout the work. The one is the loyalty of the writer to the terminology of the school in which he has been reared. This is so marked in the presentation of the author's own theory, that the hasty reader may fancy that he is dealing once more with that analysis of faculties which used to satisfy the writers on ethics, and which made the study so dreary. "The virtues and vices, the appetites, emotions, and affections," some one has said of that earlier school, "stood each in its appointed corner, and with its appropriate label. Never before had human nature been so neatly dissected, or so ornamentally packed up." It is not until one has penetrated through this somewhat repelling method, that he discovers the wealth of insight which Dr. Martineau's treatment exhibits. The other source of embarrassment is more serious. It is the obvious conviction of the writer that the principles of ethics cannot be finally described apart from their relation to religion. After all is said and done, human nature remains, as Mr. Bradley most forcibly points out in his 'Ethical studies,' a contradiction whose solution compels one to the religious attitude. Dr. Martineau constantly hints at this necessary incompleteness; and

his preface promises that the philosophy of religion shall be his next task. How the relation of ethics to faith would be developed by him may be seen in his very remarkable lecture on this subject, delivered in 1881. Here his spirit has its natural flight, unhindered by controversy or by ethical limitations.

We turn, finally, from these very insufficient suggestions of the contents of the work to a single element in it which will be novel to most readers, and interesting to all. Dr. Martineau is led in his preface to describe the personal experiences which gave its character to his work, and in so doing he offers us a most fascinating and instructive glimpse of his own intellectual autobiography. It seems that he was originally trained to be a civil engineer, and his first philosophical studies were controlled by scientific conceptions. "So self-evident appeared the maxims of mechanical causality, that in my heart I deemed it blindness if any one professed a different vision." . . . "It is no wonder, that, in skimming over my notes of work in those distant years, I seem to be communing with some tight-swathed, logical prig, in whose jerky confidence and angular mimicry I am humbled to recognize the image of myself." It was the discipline of teaching these subjects which changed his views; yet the change was not so obvious to himself as it was to his friend, J. S. Mill. "Though he saw to the bottom of my apostasy, he did not cut me off as a lost soul." Finally, under the guidance of Professor Trendelenburg and the inspiration of Greek philosophy, he gained what he describes as a 'new intellectual birth.' "It was as if the stereoscope through which I had looked at Plato or Aristotle had had its double picture, — Greek and English, — with distorted halves, producing only a blurred and overlapping flat; while now the slide of true correspondence was there, and the eye, after a momentary strain of adaptation, beheld the symmetrical reality in all its dimensions." . . . "The metaphysic of the world had come home to me; and never again could I say that phenomena, in their clusters and chains, were all." To many a student there will be nothing of more value in these volumes than these suggestions of what the author calls "the transitions of his thought, and the testing crises of his life." FRANCIS G. PEABODY.

WORK OF THE CHALLENGER EXPEDITION—III. GEOLOGICALLY VIEWED.

THAT the work of a dredging and sounding expedition should add much to our knowledge

of the geology of dry land, except by inferences from submarine formations, is hardly to be expected. Nevertheless, this report contains many facts and observations useful to geologists. Several of the phototype plates are extremely striking illustrations of geological phenomena, showing more on one sheet than many pages of text would do. Such, for instance, are the plates illustrating glacial markings in Nova Scotia (i. p. 158), the trap-hills of Kerguelen (p. 338), and the wonderful lava cascade of Kilauea.

Only two of the series of special reports, actual and projected, treat of essentially geological matters; one already printed being on the petrology of St. Paul's Rocks, by Prof. A. Renard. These rocks, far removed from any continent, consist of a number of small islets separated by deep chasms, through which the ocean unceasingly pours and rises into breakers. The rock-mass, according to Professor Renard, is peridotite; and, while admitting the possibility of the volcanic origin favored by analogy, he has been led, rather, to presume that the rocks are a remnant of upheaval of an orographic character. This view has been opposed by Professor Geikie, and in this journal by Mr. Wadsworth (*Science*, i. 1883, p. 590), and would seem yet unestablished.

The second report referred to is that of Dr. Murray, on the deposits of the deep-sea bed. One of the most attractive plates in the work before us is that (p. 926) illustrating the ooze formed by the diatoms, radiolarians, foraminifera, and other organic remains on the sea-bottom, as seen under high magnification. After the removal of the calcareous portions, and the determination of the carbonic acid, the remainder is divided by Dr. Murray into mineral matter, the *débris* of siliceous organisms, and fine sediment. The material found in inland seas and along continental shores consists in large part of terrigenous deposits, the different colored muds and sand, and volcanic *débris* of inorganic origin; while corals and corallines afford sand and mud of organic origin. The abyssal deposits, on the other hand, in large part, seem to consist of ooze derived from remains of minute animals, such as pteropods, diatoms, etc., and especially of a red clay such as results from the degradation of the ooze and of decomposed pumice. The transition between the former and the latter is gradual, but in the great deeps the clay almost exclusively predominates. The terrigenous deposits reveal the equivalents of chalks, green sands, marls, or shales, but in the deep-sea deposits, according to Dr. Murray, differ pro-