

it should be given its due prominence in any general account of the series.

The last eighteen pages of the book are given to the chapter on physiographic geology.

This matter belongs in close relation to the earlier chapters of the book, and seems somewhat isolated in its position. It is not so completely treated as the other parts of the book; but it is, nevertheless, a fair condensation of the most material points of the subject. The illustrations of this subject are rather limited, but a diagram of the Colorado Canyon by Mr. Holmes (p. 923) gives a peculiar value to the set of diagrams.

It is hardly fair to quarrel with the title of so good a book, but it would have been better to have given it the name of a manual rather than a text-book. It is not fitted for the ordinary use of schools; being far too rich in matter, and calling for too much collateral knowledge for classroom work. It belongs in association with Dana's classic manual of geology. For American students it cannot replace that admirable book; but, taken along with the American work, it will give the student a very complete encyclopaedia of geologic science.

The book is fairly well made. The type is bolder-faced than in Dana's manual; so that the total amount of matter is about the same in the two books, despite the somewhat larger page of Geikie's volume. An admirable feature of the book is the free use of footnotes referring to authorities, which is a distinct advantage the book has for the student. The figures are well chosen, and finely serve their purpose; though there are not quite half so many as in Dana's work.

The index is voluminous and well made.

HAECKEL'S CEYLON.

Indische reisebriefe. Von ERNST HAECKEL. Berlin, Paetel, 1883. 13+356 p. 16°.

A visit to Ceylon. By ERNST HAECKEL. Translated by Clara Bell. Boston, Cassino, 1883. 8+337 p. 16°.

In his 'Voyage of the Beagle,' Darwin has shown that an acquaintance with nature does not in the least detract from the interest of a traveler's adventures. Haeckel, in his new book on Ceylon, has still further given evidence that a love for nature's treasures adds an indescribable charm to one's wanderings in a strange land. In the 'Indische reisebriefe' we find a charming account of a scientific pleasure-excursion which the author made during the six months following October, 1881. The journey included a brief stay at Bombay,

and a much longer series of travels through Ceylon, covering a space of four months.

Upon reading the book, the first impression we get is, that Haeckel must be a most pleasant travelling-companion, so delighted is he with every thing. He starts, he tells us, on a trip he has been longing for all his life, and evidently with the expectation and intention of having a delightful excursion. Nor will he allow any thing to frustrate his intention. It makes no difference where he is, or who are his companions: his good nature is unbounded. Every one, he seems to think, treats him with more than kindness; the roads he travels are models of comfort; and even the elements conspire in his favor. The country he passes through calls forth the whole wealth of the German language to find adjectives sufficient to express his boundless admiration. Officials give him every assistance; private homes open to him with the kindest hospitality; and even the natives take great interest in him, and are ever ready to give him aid which is at least kindly intended. When he establishes his laboratory at Belligam, he is supplied with servants, to whose excellency he can only do justice by naming one Socrates, and a second Gany-mede. Belligam, the name of the town where he established his laboratory, means 'sand-village.' This name, however, does not suit Haeckel's general delight; and he calls it Bella gemma, considering it as 'a choice jewel in nature's casket.' An ordinary trip in the tropics is thus, by good nature and enthusiasm, transformed into a glowing journey through fairy-land. Indeed, one almost imagines, as he reads, that he has found an American advertisement of a pleasure-excursion. So full of pleasure and good fortune is the whole trip, that the reader soon grows weary, and wishes that some slight accident might happen, to break the monotony. It is certainly a relief to find the admission that the fauna of the island is disappointing; and we are quite reconciled to the fact, that the scientific laboratory was not quite so successful as had been hoped.

Haeckel's style in this book, as indeed in all his writings, is a most happy one. He gives what may be called a confidential description of nature where it is most lovable. The reader gets the impression that it is being given him in person by the author, for the purpose of enjoying once more the pleasures of the journey, and having a quiet laugh at the people. He cannot keep himself out of his descriptions, — indeed he does not try to do so; and what we see on every page is not a picture of Ceylon, but a picture of a man, making a journey through

Ceylon. He begins by telling us that he is getting to be an old man, and it is now or never with him as regards a journey in the tropics; but when, in the next breath, he informs us that his advanced years number eight and forty, we are quite amused at his premature old age. When he tells us, in the first chapter, how the Berlin academy refused to give him any aid on account of the challenge he had thrown to it on evolutionary speculations, we laugh with him. We see his amusement as he writes upon seeing wild apes for the first time: "Comparing them with the dirty and naked begging priests at our feet, they seemed to me a highly respectable ancestry for them." His German nationality, too, is ever apparent. Now we see it when he describes his German companions, or more frequently when he delights in his allusions to 'the indispensable black tail-coat and white necktie' of old England, or to the English 'chimney-pot' (*cylinderhut*), which he considers, 'of all head-coverings, the most hideous and insufficient.' He enjoys telling of English gluttony as compared with German temperance, of the Englishman's love for money with his exorbitant prices, and finally ends with the terse statement, 'Unsonst ist in Indien nur der tod.' But even his admiration for Germany does not prevent him from giving tribute to the faculty which England has exhibited as a colonizing power.

The scientific results of the Ceylon journey are not apparent. He travelled quite extensively through the island; continually swelling his collections, and finally established a rough laboratory at Belligam, where he worked hard for six weeks, filling his large cases with specimens from land and sea. But beyond the statement that the fauna of Ceylon agrees closely with that of the Philippine and Fiji group, the zoölogist gets little scientific knowledge. His account of the botany of the island is more extensive; but even this is largely made up of artistic descriptions of the magnificent vegetation which so vividly impresses a traveller in the tropics. That the journey was made by Haeckel is, however, sufficient proof that it was more than a pleasure-excursion. He brought back large cases of specimens, of which he says little, but which will, in years to come, undoubtedly be a source of much valuable information to the scientific world.

The book is not intended to be a scientific production, but rather a pleasant account of a naturalist's travels; and as such it is a success. A book of travels is usually dry and uninteresting after the first few chapters; for, however

interesting new places may be to the traveller, to keep up a novelty in description soon becomes an impossibility. Haeckel has not entirely overcome this difficulty, but he introduces variety in the shape of personal anecdotes and observations. He is successful, too, in selecting most interesting points for description; and this, together with his boundless love for nature, which is so evident in every line, makes the closing chapters of his book much less wearisome than is usual with books of like nature. He reserves his account of the people until toward the end, and thus gives a series of bright chapters as the close of his stay at Belligam; and, by the continual introduction of people and incidents, he succeeds in keeping the reader's attention better than is customary. But, in spite of all, the last chapters of the book will invariably be glanced over in a hurried and cursory manner.

The translation by Clara Bell is on the whole good, though she has evidently been hard pressed to find expressions which will translate Haeckel's superfluity of adjectives. In some cases she seems to have been unable to find English expressions which give any idea of the German. One hardly gets the idea from the phrase 'worthy and fair reader,' which is conveyed by the German, '*Du, geneigter leser, und noch mehr, verehrte leserin.*' Though she has not followed the German very closely in her translation, yet she has succeeded in conveying to the English reader a tolerably good idea of Haeckel's flowing, free, and confidential style. The wonderful success of Haeckel's writings has proved that his method of writing and dealing with scientific subjects is a most attractive one; and this edition of his visit to Ceylon, partly on account of the freedom of the translation, but more largely because of the nature of the subject treated, will give to the English reader a better idea of his style of writing than any other of his translated works.

REMSEN'S THEORETICAL CHEMISTRY.

Principles of theoretical chemistry with special reference to the constitution of chemical compounds. By IRA REMSEN. Revised edition. Philadelphia, Henry C. Lea's Son & Co., 1883. 242 p. 12°.

In preparing this new edition of his little book upon 'Theoretical chemistry,' Professor Remsen has extended quite materially the second part, which treats of the constitution of chemical compounds, and which forms its most distinctive and attractive feature. Many of the alterations, however, will hardly be regarded as improvements by those who believe