these scales the divisions are so arranged that all the logarithms of the numbers from 1 to 10,000 can be easily read off, and *vice versâ*. The scales, or tables as they are called, are published in two qualities. The cheaper are neatly and clearly printed, and on a smaller scale than the other; but, on the whole, we recommend the more expensive sheets, as the numbering is more easy to follow (coloured numbers being used), and the divisions are more legible on them.

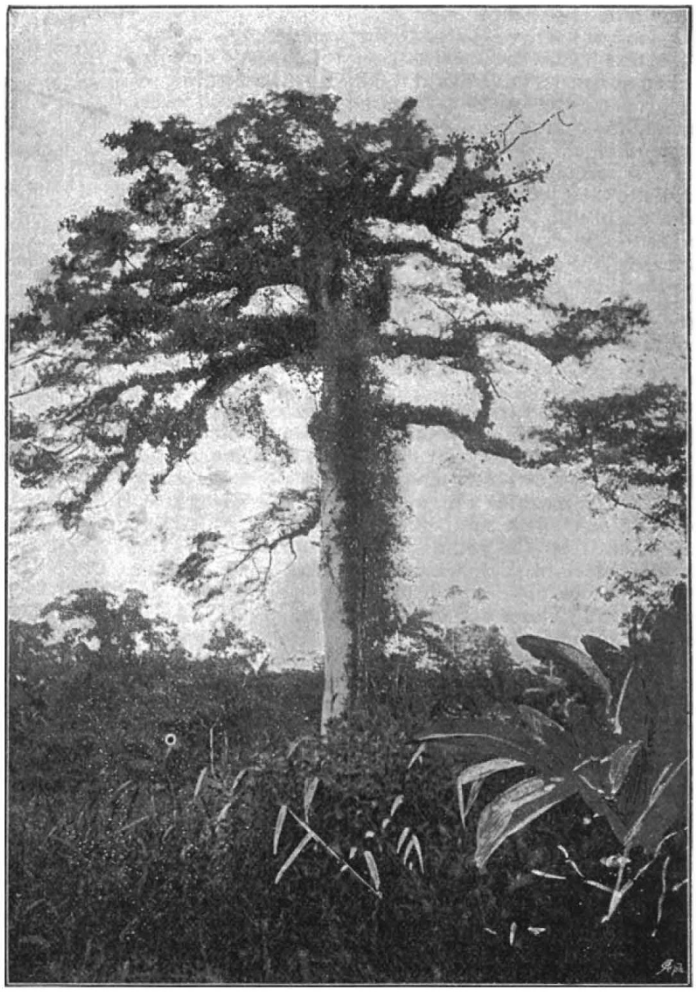
To understand the method of working the tables is a matter of only a few minutes' attention, and when grasped, either the logarithm of a given number, or the number from a given logarithm, can be read off without the least hesitation. The book of instructions, which is separate from the tables, contains all that the user of the tables can require. The explanations are full and concise, and the worked-out examples will prove an excellent help in acquiring the methods of solution.

In the Guiana Forest. Studies of Nature in Relation to the Struggle for Life. By James Rodway, F.L.S. With an Introduction by Grant Allen. Illustrated. (London: T. Fisher Unwin, 1894.)

WE have read Mr. Rodway's book with a good deal of pleasure. Such a subject as the struggle for existence amongst the animals and plants of the Tropics, could not fail to be full of interest when dealt with by an enthusiastic lover of nature. For it is in the Tropics that nature's principal workshops are situated, and no naturalist can afford, nowadays, to neglect that essential element in a liberal biological education—a visit to these regions. There the struggle for life is no longer, as in our own climates, a cold-blooded process which only a trained eye can follow, but a fiercely active competition for the means of subsistence which is everywhere apparent in every detail of the structure of the individual and of the economy of the species. The "heartless vegetable" amid such surroundings seems no longer a reality, but the cold figment of a northern imagination.

Mr. Rodway describes the vegetation of the forest, the swamp, the sand-reef, and the sea-shore, and each is sketched in vigorous outline. One cannot, however, avoid wishing that the author had been contented to give his impressions of the actual facts, without indulging in metaphysical moralising which is not scientific, and is not always common sense. Occasionally, too, he gives way to great prolixity, as, for instance, in an excursus on the interdependence of animals and plants, which is all very like something we have heard before, only that Mr. Rodway's story is longer. The author is on dangerous ground when he ventures to dip into the philosophy of natural selection, or to deal with problems of variation.

But notwithstanding these defects, the book is worth reading. It is well illustrated, and contains a large amount of really interesting observation which may stimulate the general reader, and which will recall many a half-forgotten scene to those who have themselves been travellers. The accompanying illustration, for which we are indebted to the publisher, shows a silk cotton-tree crowded with epiphytes.



Lehrbuch der Experimentalphysik. Von A. Wüllner. Band i. 5te Aufl. (Leipzig: Teubner, 1895.)

STUDENTS who wonder when we are to have an English treatise on experimental physics worthy of comparison with this well-known German one (and the French text-books of Jamin and Violle), will find food for reflection in the fact that thirteen years have elapsed since the last edition of Wüllner (the fourth) was published. Much the same thing holds good of other German scientific treatises, notwithstanding that publishing firms of repute in the Fatherland do not consider it beneath their dignity to quicken the sale of the remnant of an edition by having notices posted up in the Universities intimating that *bonâ fide* students of the subject can secure copies at a reduced price by application through the University Professor.

In the present case the interval has been well employed. The first volume has grown to 1000 pages—or 150 more than in the fourth edition—and the most important researches published up to the end of 1892 have been incorporated. In the last edition the article on internal friction contained simply a discussion of torsional vibrations and logarithmic decrement, followed by a page in which mention was made of the researches of Schmidt and others, with a statement of the conclusion arrived at, viz. that in such elastic oscillations the