

hotter, drier, and healthier than that of Zanzibar. Here he did not attempt to strike inland, the weather and the hostility of the native tribes being unfavourable, but returned along the coast southwards to Pangani, and thence inland to Fuga, the capital "city" of Usambara, in the Highlands of Eastern Africa. In order to gain a complete knowledge of the Zanzibar coast, he also paid a visit to the island and port of Kilwa, situated beneath the ninth degree of south latitude. Here are the remains of an ancient town of considerable size, with respect to which many legends are current among the natives; but the gradual sinking of the coast has rendered the ancient site uninhabitable. Although at the present time a miserable and foetid collection of squalid huts, Kilwa was found in 1500 by the Portuguese a town of great prosperity, the capital of Southern Zanzibar, and ruling the coast as far as Mozambique and Sofala; but the curses of European wars and the slave-trade have desolated the once thriving country. Captain Burton does not think very highly of the so-called "free labour" system, which he terms "the latest and most civilised form of slavery in East and West Africa."

The most important expedition made by Captain Burton was, however, that undertaken between 1857 and 1859 to Kazeih in the Ukimbu district, upwards of 500 miles from the coast, and about 2° south of the southern shore of the great Victoria N'yanza, in company with Captain Speke. But as this journey has already been illustrated in his own "Lake Regions of Central Africa," and the country has been further described by Colonel Grant and Captain Speke, he does not again enter into details respecting it; but thus sums up what he considers its geographical results:—"That the Boringo is a lake distinct from the 'Victoria N'yanza' with a northern effluent the Nyarus, and therefore it is fresh water; that the N'yanza, Ukara, Ukerewe, Garawa, or Bahari y a Pili, is a long narrow formation, perhaps thirty miles broad, and 240 miles in circumference, and possibly drained to the Nile by a navigable channel; that the N'yanza is a water, possibly a swamp, but evidently distinct from the two mentioned above, flooding the lands to the south, showing no signs of depth, and swelling during the low season of the Nile, and *vice versa*; and that the northern and north-western portions of the so-called 'Victoria N'yanza' must be divided into three independent broads or lakes, one of them marshy, reed-margined, and probably shallow, in order to account for the three effluents within a little more than sixty miles."

The botanical results of this journey are about to be illustrated by Colonel Grant, in a magnificent volume, to be published by the Linnean Society, which it is understood will be illustrated by 600 plates, the cost of which will be defrayed entirely by the gallant author.

One chapter is devoted to a sketch of the labours of Captain Burton's old comrade, Captain Speke. Though tribute is here paid to his many excellent qualities, we regret to be again introduced to the details of the estrangement which grew up between the explorers, culminating at the meeting of the British Association at Bath, when the two companions in arms met as strangers, advocates of two rival "Nile-theories," as to the origin of the Father of rivers.

In the Appendices, Captain Burton gives some useful

details of the meteorology, commerce, &c., of Zanzibar. A well-executed map helps to illustrate the author's journeys, without a constant reference to which the narrative is by no means clear; but we cannot commend the style in which the woodcuts interspersed here and there are executed.

OUR BOOK SHELF

Deschanel's Natural Philosophy. By Prof. Everett. Part III., Electricity and Magnetism. (London and Edinburgh: Blackie and Son.)

IN the Preface by the translator of the present volume, it is said, with much truth, that "the accurate method of treating electrical subjects, which has been established in this country by Sir W. Thomson and his coadjutors, has not yet been adopted in France; and some of Faraday's electromagnetic work appears still to be very imperfectly appreciated by French writers." Accordingly we find that the translator has added a considerable amount of matter, and more especially two important chapters, one on the electrical potential and lines of electric force, and the other on electrometers, together with an appendix on electrical and magnetic units. Dr. Everett has thus considerably improved a book, which, in its original form, was already a good one. The ordinary branches of the subject are unfolded, the plates are good, and the explanations are full and clear. The portion devoted to magnetism is in this, as apparently in all such general treatises on natural philosophy, considerably the most defective part, and especially in the sections which relate to terrestrial magnetism. The whole of that question is most insufficiently dealt with. The treatment of the secular changes in the magnetic elements is confined to twelve lines, where it is said that "declination and dip vary greatly, not only from place to place, but from time to time;" but from which we should expect that the unlearned reader would be led into the error that intensity is uniform. Then, again, the vast subject of changes in the elements, such as are not secular, is confined to one short paragraph, headed "Magnetic Storms"! The intrinsic importance of the subject of terrestrial magnetism, and the great and increasing interest attaching to it, no less than the extreme beauty of many of its investigations and results, entitle it to a much larger notice than the very imperfect one in this volume. The chapter on the Telegraph contains useful matter, and especially a description of an autographic telegraph, an instrument which, while interesting and ingenious, has not often found its way into such treatises. We miss such points as how to find the locality of a fault in a telegraph wire, which we might the more expect to see treated of when we consider the full explanation which is given of Ohm's laws, and when we see such elaborate details as to some telegraphic instruments as are entered into in the chapter in question. The chapters on the heating effects of currents, and on electrolysis, are clear. The question of electromotive force, and of the means of determining it, might have been entered into more fully; and, generally, from the character of the chapter on the potential, we might have expected to see a little more introduced concerning points which may be elucidated by the application of the principle of the conservation of energy.

JAMES STUART

Medizinische Jahrbücher, herausgegeben von der k. k. Gesellschaft der Ärzte, redigirt von S. Stricker. Jahrgang 1871. Heft iv. Mit 4 Holzschnitten. (Wien: 1871.)

THIS part, which concludes the first volume of Stricker's Jahrbuch, contains: (1) Researches on the Inorganic Constituents of the Blood, by Adolph Jarisch. Jarisch gives the details of an improved method by which blood can be