

we may add Chauveau and Steele] this has been confounded with the spigelian lobe of man."

In conclusion, we are sure that all teachers of anatomy will agree that, in an educational point of view, Mr. Steele's volume is a most valuable addition to the literature of the subject on which he treats.

#### OUR BOOK SHELF

*Dutch Guiana.* By W. G. Palgrave. (London: Macmillan and Co., 1876.)

*Canoe and Camp Life in British Guiana.* By C. Barrington Brown, Assoc.R.S.M. (London: Stanford, 1876.)

THESE two works deal with a small portion of a region of considerable interest from various scientific points of view, but of which we as yet know comparatively little; indeed much of the region included under the name Guiana is a *terra incognita*, and presents a fine field for an enterprising explorer. Mr. Palgrave, whose long silence since the publication of his classical work on Arabia many have wondered at and regretted, spent only a fortnight in Dutch Guiana, and this volume testifies made a diligent use of his time. The work is more connected with the historical, social, and commercial aspects of the Dutch colony than with the strictly scientific, but contains much valuable information about a country of which even the Dutch themselves, we suspect, know little. Mr. Palgrave has gathered many facts about the colony from various quarters, and ingeniously weaves these into his pleasant narrative, so that a reader who gets to the end of the little volume will have a very fair idea of its history, present condition, and future prospects. In a graphic and popular way he describes the journeys he made up the rivers near the coast, and conveys a fair idea of the productions, the people, and the aspect of the district visited. To the ethnological reader, one of the most interesting chapters is that on the Bush Negroes. Scattered all over the colony to the number, Mr. Palgrave thinks, of about 30,000, are various tribes of independent negroes, descendants of former slaves, who rose against their Dutch masters, fought for and obtained their freedom and liberty to settle pretty much where they chose, and have lived peaceably beside their former masters ever since. These Bush Negroes are descended mostly from Africans of the same type, but are now divided into three main tribes, and several subordinate branches, with chiefs and sub-chiefs, each tribe named from the place at which its treaty of peace and freedom was signed, as Aucan, Saramaccan, and Moe-singa. The interesting point is that "the grouping, once made, perpetuated, and in the course of years it has produced in each instance a distinct type, till what was at first merely nominal and accidental has become permanent and real." Mr. Palgrave's work is one of great interest from beginning to end. It contains a clear map and a plan of Parimaribo.

Mr. Brown is a much better surveyor and explorer than he is a book-maker. As Government Surveyor of British Guiana, he has visited nearly every corner of it—the tracings of his routes on the map forming a regular network of blue lines—and during his journeys has collected a vast amount of valuable information about its physical aspect, geology, fauna, flora, and people. The reports on the physical features and descriptive geology of the colony have, he says, been already published by the Treasury Commissioners, and in the present volume he professes to give only a popular narrative of his travels. But the volume is something more than this, as almost every page contains notes on the fauna and flora and geological features, as well as natives that came under his observation. All these notes are put down miscellaneously in the order of time, amid the notes of the

incidents that occurred during the journeys, so that it is difficult for one interested in the natural history of the country to ferret out and classify the observations. Mr. Brown would have done great service both to the general and the scientific reader, had he gathered these notes together and arranged them in an appendix, or even if he had taken care to see that his work was provided with a carefully compiled index. In another edition we hope the latter want will be supplied, as it will certainly add much to the value of the work, which, notwithstanding the defects in plan we have mentioned, is an important contribution to the information we already possess about British Guiana. Mr. Brown, it may be remembered, was the discoverer of the magnificent Kaieteur Fall, on the river Potaro, a tributary of the Essequibo, an account of which we gave in NATURE shortly after its discovery in 1870 (vol. iii. p. 108). The excellent map and well-executed illustrations add much to the interest and value of Mr. Brown's work.

*The Royal School of Mines' Magazine.* (London: Wyman and Sons, 81, Great Queen Street, Lincoln's-Inn Fields, W.C.)

THIS magazine, the first number of which we have just received, is to be issued three times a year, under the auspices of the students of the Royal School of Mines, and is to be devoted to articles on travel, athletics, football, and to other matters connected with the school. The present number contains several articles, by former students, on travel, an article on football, together with a record of matches played by the Royal School of Mines' Football Club, during the session 1875-76. It also contains a list of papers on mining and metallurgy; results of Royal School of Mines for 1875-76; a report of the annual dinner of the club; besides two original poems, both of which are good.

We confess we are a little disappointed that greater attention has not been paid to scientific subjects; we have no doubt, however, that this will be rectified in future, and we heartily recommend the magazine to all interested in the Royal School of Mines. J. McD. C.

#### LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

##### Storm Waves of Cyclones

I BEG to submit the following suggestion, to explain in a general way by the accompanying diagram the view that might be taken of the rise and great height of storm waves of cyclones at sea, such as occurred in the Bay of Bengal, and inundated and devastated extensive tracts of the coasts and islands on October 31 and November 1, 1876.

It is generally observed that when the winds blow into a re-entering angle of any sea-walls or quays, that the surge of the wave rises higher in it than against the plane sea wall, and frequently it shoots up the corner in a kind of spouting form. Again, the tides in estuaries and friths, having bell-shaped mouths facing the ocean, and contracted inner ends receiving a river, rise to very extraordinary heights, as in those of the Severn and Thames, where disastrous floods have just occurred.

These heights are much increased when the winds blow into them, as westerly into the Severn estuary, and easterly into the Thames mouth, as during the recent gales. The ordinary rise on the south coast of England of the tides is generally only about ten feet, but at Bristol they may rise to thirty or forty feet, which, in fact, would be greater than the height of any storm-wave in a cyclone in India. Now if the course of the revolving winds in a storm mass be considered as a spiral from the outside to the inside, like a coiled watch-spring, then the section of each spiral turn may be considered as decreasing from the outside to the centre inside. This will therefore resemble a long re-entering angle or estuary tube twisted upon itself as a