

their lectureships to students who had not distinguished themselves in both parts.

It is impossible to touch on all the points which suggest themselves in connection with this question, but we may point out in conclusion that the examination in Cambridge has to adapt itself to two classes of candidates, viz.: There is the class who may be called professed mathematicians, because they spend their lives in cultivating mathematical science and in teaching it to others, and there is the class who abandon their mathematics as soon as their undergraduate course has terminated. Of the former class we believe that their tastes and the necessities of their position will alike carry them beyond the subjects of the first examination. In the case of the second class, which is a large one, it is undoubtedly a wise thing to restrict their studies within the limits of the easier subjects. For under the present system, in their eagerness to secure good places they attempt subjects which are either beyond their powers or their opportunities, and so fail to gain the advantages which a strict mathematical training is supposed to afford.

#### "CRAM" BOOKS

*Notes on Physiology, for the Use of Students Preparing for Examination.* By Henry Ashby, M.B. (London: Longmans, Green and Co., 1878.)

THIS book, being a fairly creditable and careful specimen of its kind, seems to offer a fitting opportunity for denouncing the whole class of "cram" books of which it is a member. It purports to be notes on physiology, compiled originally, while the author was a demonstrator in the Liverpool School of Medicine, for the use of those students of the school who were preparing for the primary examination of the College of Surgeons; and it is confessedly based upon Foster's "Physiology" and the two chief anatomical text-books used in England. It is a small 18mo of about 230 pages, clearly printed in a large type, and it contains a number of condensed and dogmatic statements in all departments of physiology. It is, we rejoice to be able to say, written perspicuously and compiled with evident care. Most of what Mr. Ashby has read in Foster he has accurately digested and dogmatised. But though he has thus almost disarmed criticism as to his particular book, the book still remains infected with the vices of its class; it is a delusion and a snare to the student; and we heartily wish Mr. Ashby's talents had found a worthier object for their exercise. "Notes" are undoubtedly of the greatest value to a student—nay, they are indispensable, if he is to acquire a large view of his subject; but they are only valuable when the student has compiled them himself from the larger text-books, or, better still, from original memoirs, or when he has seen them digested and set down, so to speak, before his eyes by his teacher. Each of the sentences in his book Mr. Ashby doubtless could and would make the text of a lucid explanation in his lectures or demonstrations. He would lay before his hearers the different views of observers on different physiological questions, as he had learnt them, and, balancing the evidence, he would abstract for them a trustworthy judgment in a careful and concise statement: and the student who took down his notes, on re-reading them, would have the whole discussion refreshed in his mind with more or less

vividness—would, in fact, have almost all the benefit of condensing the notes for himself. But when these concise statements or formulæ are put into the hands of students who have not been thus prepared for them, the case is wholly different. Aladdin has the lamp, indeed, but he can conjure up no powerful genii with it.

But if this were all we might be content to let books like this sink to their own level; their inutility would lead to their speedy death. But while the good student would never for a moment think of reading notes that he had not made himself, or if he did read those of another, would quickly find out the cause of their uselessness to any one but their author, the bad student is misled to believe that 230 small pages of fair-sized type contain the whole of the physiology that he needs; he looks through the list of contents and finds set down there almost every physiological fact and problem of which he has ever heard, and he naturally concludes that he has only to equip himself with this little book in order to cope with his examiner.

Mr. Ashby's book, admirable for the purposes of his own students, is useless or worse than useless to the students of any other teacher; published to the world, it is like a creature in an improper medium, and we are constrained to wish that, with all similar books, it may quickly meet the usual fate of creatures so circumstanced.

After this we need not say much about the book itself. On the whole it is well done. The histological sections are decidedly the weakest. The "ossification of bone" (p. 29), and the "development of tooth" (p. 107) might as well have been omitted altogether, as put in so meagrely. The extremely important histological researches of Heidenhain on the pancreas seem to be ignored on p. 16, where "probability" only is allowed to the elaborating functions of glandular epithelia. The pigment layer of the eye on p. 17 is assigned to the choroid coat instead of to the retina, and again on p. 194. No nucleus is given to striated muscular fibres on p. 81. On p. 179 Prof. Ferrier's name is put down at the end of a paragraph as if he were the prime authority for certain facts regarding the *corpora quadrigemina*, which we rather owe to Flourens, Longet, and Goltz. These errors are not of vital importance, and some of them have probably been due to inadvertence. But there are two more mistakes which are of greater weight, and show the danger of mere book-making. On p. 34, where the properties of muscle are discussed, we find that "On contraction . . . O is absorbed and CO<sub>2</sub> . . . given off." This is left unexplained here and in the rest of the book. What Mr. Ashby doubtless meant was that during contraction more arterial blood passes into muscle, and more O is taken up than during rest, while CO<sub>2</sub> is at the same time emitted; but, in the above unguarded way of statement, the fundamental fact of the independence of the actual absorption of O and disengagement of CO<sub>2</sub>—a fact of the utmost moment in our conceptions of muscular work—would seem to be passed over. Again, on p. 168, under nervous conductivity, we have the curious statement that "the axis-cylinder probably conducts the impression, *the medullary sheath acting as a sort of insulator to prevent the currents from becoming mixed and confused*"—a physical explanation which no physiologist would now for a moment think of offering.