THURSDAY, JULY 18, 1872

MEDICAL EDUCATION

A THOUGHTFUL address on "Medical Education in America," read by Dr. Bigelow to the Massachusetts Medical Society, has just been published in the form of a pamphlet. It discusses the important subject of the kind and degree of instruction in collateral sciences that should be given to the student of medicine during the short period of four years now at his disposal, and in the course of which he is supposed to have acquired the knowledge that will enable him to practise with advantage, or at least let us say with safety, to his patients, and with credit to himself. The question is of a very complex nature, and its difficulties can, perhaps, only be properly appreciated by those who have themselves been teachers, and who are not, therefore, likely to be led away by Utopian ideas of the amount of information that can be acquired by a man of ordinary abilities in this space of time even under favourable circumstances. It is very easy to say Educate to the highest point possible; let the student know something, at least, of Chemistry, of Botany, of Comparative Anatomy, of the origin, composition, and mode of manufacture of the drugs he uses; but the fact is overlooked that almost all he learns of these subjects is quickly cast aside when he begins to practise, because he finds that it is of no earthly use to him, and he regrets when too late the time he has spent in acquiring them, because it has led him to neglect the far more important matters of Pathological Anatomy, and the actual practice of Medicine and Surgery. "The Medical Student," Dr. Bigelow observes, "does not need to pick herbs from the field, or treat horses and dogs, or consider his parallelogram of forces before putting in a dislocated shoulder; but he does need to know how to recognise and exactly how to reduce a dislocated shoulder, how to recognise and treat human disease, and what are the medical properties of the drug which the farmer has grown, or the merchant imported for the apothecary. This is but a fair division of labour. He has enough to occupy him profitably and exclusively in his own immediate field of study, without wandering over the whole domain of knowledge—at least, at the mistaken behest of those who have a confused notion of a liberal education and large culture." "There is a fallacy in the idea of culture. Talent and power of application may, indeed, incidentally lead a man to eminence in several directions. But a cultivated, a literary, or even a scientific man is not necessarily the best physician." At the same time Dr. Bigelow concedes that there should be a certain latitude in the study of medical science on the ground that "no student or artisan is the worse for an outlook upon kindred arts and sciences which will help him to establish the true relations of his own, which will supply him with additional facilities and light for its pursuit, and with that training of his intellectual powers afforded by a systematic variation in their exercise." It must be remembered that all the sciences collateral to medicine have undergone extraordinary development during the past few years; and that to acquire a very moderate knowledge of chemistry, for example—such knowledge as would enable the student to analyse a single animal fluid, or even a fragment of a calculus—would be the undivided work of a year, and when accomplished he would scarcely be one step in advance of the man who had learnt a few rules of general application to the diagnosis of disease taught by an accomplished chemist.

Whilst agreeing with the general views expressed by Dr. Bigelow upon the education of the medical student as he now presents himself at the Hospital Schools at the age of eighteen or nineteen, it yet appears to us that the quality of the raw material, if we may call him so, might be immensely improved by the general adoption of a well-directed scheme of preliminary education. "One of the enormous follies of the enormously foolish education of England," said Sydney Smith, "is that all young men, dukes, fox-hunters, and merchants, are educated as if they were to keep a school or serve a curacy." Just so; and it is precisely in this respect that the education of the medical student of this country requires revision and improvement. The medical profession is not essentially a literary one. What is really required is a seeing eye and an understanding heart; the faculty of correct observation on the one hand, and on the other the ability to single out what is important amidst a multitude of unimportant particulars—in a word, judgment; and as this is capable of being immensely improved by exercise, it should surely be the point to which the education of the student should be directed. But, as a matter of fact, no line of education can be better adapted for the purpose in view than that of the medical student of the present day. From the beginning to the end it is or might be made a "questioning of nature." The grand defect of the system is that insufficient time is at the disposal of the student to master the details. He learns a little of many things; nothing well, unless it be his anatomy; but the advantage a knowledge of all would give him may be estimated in some remote degree by the value that teachers and students alike set upon this single acquisition. Seven years are not thought too long to make a master workman in any of the humblest trades; and yet the student is expected to acquire a fair knowledge of all the branches of a very wide, difficult, and profound intellectual pursuit in four short years, or if we read Dr. Bigelow aright, in three years in America. It is here we think, then, that some alteration is requisite. A boy who is going to enter the medical profession should be early set apart for that ministry. We are bold to say that a boy of fifteen knows or ought to know enough of Latin, Greek, and Arithmetic for any subsequent use he is likely to make of them. At this age he should be called upon to select what his future career shall be, and his education should be directed accordingly. From the inquiries of the Committee of Convocation of the University of London, *à propos* of the proposal for rendering the examination in Greek optional at Matriculation, it appears that there are several large schools of good repute in this country, as those of Cheltenham, Clifton, Haileybury, Marlborough, and Wellington, in which a "modern side" has been established, where attention is chiefly directed to the cultivation of mathematics and modern languages, Latin and Greek being considered as subsidiary branches of knowledge, or even completely omitted, as in the case of Greek at Cheltenham College.

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We venture to suggest that in these, and, indeed, in every other large school in England, a third, or Natural Science department should be founded, in which Practical Chemistry, Field Botany, and Natural Philosophy, with the French and German languages, should form the subjects of study. We are confident that in the hands of competent teachers, a lad might obtain between the ages of fifteen and eighteen or nineteen, a very large amount of useful knowledge on these subjects, without any undue strain upon his intellectual powers; while we are convinced that such a scheme would prove successful in a pecuniary point of view; and that there would be ample funds, derived from the scholars in attendance, to pay the additional teachers that would be required. The instruction given need only be rudimentary; but it should be most precise and thoroughly acquired. Any chemist could select six elements, any botanist six natural orders, any zoologist six classes of animals, which, if thoroughly known, would constitute an invaluable training to the future physician. He would then enter the medical school with a well-cultivated mind accustomed to close observation, and prepared to profit to the utmost by the system of education now generally adopted.

ORNITHOLOGY OF NEW ZEALAND

Catalogue of the Birds of New Zealand, with Diagnosis of the Species. By Frederick Wollaston Hutton, F.G.S., Assistant Geologist. Published by Command. 8vo. (New Zealand, 1871.)

A History of the Birds of New Zealand. By Walter Lawry Buller, D.Sc., F.L.S., C.M.Z.S., &c. Part I. 8vo, coloured plates. (London, 1872.)

BIRDS, as most people know, or ought to know, form the most important part of the vertebrate Fauna of New Zealand, and their importance is maintained not only when they are compared with their compatriots of other classes; but, when regarded in reference to members of their own class in the world at large, the birds of New Zealand offer so many singular forms that as a whole they deserve every consideration. Some of the most remarkable of these have already been mentioned by a distinguished writer in this periodical,* but perhaps hardly sufficient prominence was then given to the fact in the ornithology of New Zealand which seems of all others to demand attention; for, recent birds being divided into two great and trenchantly marked groups, of very unequal extent, the smaller of these groups (the *Ratitæ*) is found to contain six most natural sections, comprising, to take the most exaggerated estimate, less than two score of species, while the larger group (the *Carinatæ*), though perhaps not containing more natural sections, comprehends some ten thousand species. Now, two out of the six sections of this small group are absolutely restricted to New Zealand, and these two sections contain considerably more than half of the species known to belong to it. Thus, setting aside the Carinate birds of our distant dependency (and some of them are sufficiently wonderful), its recent Ratite forms—some twenty species, let us say—alone may be regarded as the proportional equivalent of one-tenth of the birds of the globe, or numerically, we may say, of an avifauna of about one thousand species.

* NATURE, June 23, 1870, and Jan. 5, 1871.

The birds of New Zealand, therefore, merit especial attention, and we are happy to say they receive it at the hands of the authors whose works are above cited. Taking the field in or about the year 1865, Mr. Buller, till then unknown to fame beyond the limits of his native colony, brought out an "Essay on the Ornithology of New Zealand," which at once attracted notice in this old world of ours. Some of his views were challenged by Dr. Finsch, then of Leyden, who had paid attention to this extraordinary avifauna, and a controversy ensued. This, to the credit of the controversialists, was carried on in a spirit very different from that in which many another war in natural-history circles has been waged, and the happy result is that on most points the combatants have arrived at the same conclusion, thereby giving assurance to the general public of its being the right one. The Essay we have mentioned may be regarded as the preliminary canter which a race-horse takes before he puts forth his full strength; and Mr. Buller's book, or that part of it which is as yet published, shows what he can do now that the colonial authorities have allowed him to come to England for the express purpose of completing his design.

Captain Hutton is known as an observer who, during several long voyages, had proved that some rational occupation could be found at sea even by a landsman; for, instead of devoting his energies to the ordinary time-killing amusements of shipboard, he watched the flight of the various oceanic birds which presented themselves, and speculated on the mode in which it was performed and the forces it brought into operation—to some purpose as the Duke of Argyll and Dr. Pettigrew have testified. The pamphlet whose title we give is in some respects a not less significant, if a less ambitious, work than Mr. Buller's; and though to the last must belong the crown of glory, we by no means wish to overlook the useful part which Captain Hutton's publication will play. If here we do not notice it further, it is because its value will be most appreciated in the colony itself, while Mr. Buller's beautiful book appeals to a larger public.

Of the baker's dozen of species included in this first part of the "History of the Birds of New Zealand," we propose to notice only those belonging to three genera, two of them quite peculiar to the country, while the third is, or was, found in the neighbouring islands of the same zoo-geographical province. The remaining eight species belong to types of far wider distribution; hawks, owls, and kingfishers present much the same features all the world over, and the New Zealand parrakeets do not much differ from their congeners which are found in other portions of the Australian region.

The Kakapo, or Owl-parrot (*Strigops habroptilus*), is without doubt one of the most remarkable of New Zealand birds. It has already been figured in these columns;* but perhaps a few more words about it may not come amiss. Its crepuscular habits seem to have kept it hidden from the earlier explorers, and it was not until 1845 that this singular form was made known to naturalists by the late Mr. Gray. Possessing ample wings, it disdains their use; and to such an extent has this desuetude reached that its osteology is thereby materially affected, and it stands alone among Carinate birds as having the keel of its breast-bone dwarfed into a mere ridge, such as is

* NATURE, Jan. 5, 1871.

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