SUGGESTIONS ON MEDICAL EDUCATION AND REFORM.

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It requires some boldness, I know, to ramble through the thorny jungle of comment on these subjects, where angels have trodden before, and where my intrusion may have no special value. Most of the arguments have already been worn threadbare. May I place some considerations before you as the plain and simple reflections of the man in the street? The onlooker, however, often sees most of the game, and detachment from active professional work is not the worst way of looking round, and reading, and thinking, and wondering whether the more advanced and scientific methods of the present day turn out better practitioners than those which were in vogue in the late Fifties, when I was a student in Edinburgh.

In the first place, I consider it a sheer waste of money to provide bacteriological installations and physiological laboratories in every medical school. I should no more encourage an ordinary practitioner to meddle actively with microbes than I would allow him to operate for appendicitis. Bacteriology is the most misleading thing in the world unless worked by specially-trained scientists, and in every locality there should be a central station where such investigations can be carried out on rigidly up-to-date lines. This we have in Aberdeen, where Professor Hamilton, our leading authority on pathology, generously gives much time and work to unravel such problems as are put before him. Then, again, unless young fellows are to become physiologists pure and simple, why puzzle their brains in the vain attempt to understand the conflicting views of Continental authorities, or the complicated varieties of mechanical contrivance invented for experimental purposes? Let us have again central stations where research can be carried on according to the Ludwig methods under careful supervision, and then let the results be accepted without repetition or endorsement. The sceptical attitude can be carried too far, and I am quite prepared to believe in the inhibitory action of the pneumogastric nerves, although I have never sat in the back seat of an imperfectly-ventilated lecture room, and dimly seen some kind of indicator slowly moving up and down to register the movements of the heart.

Next, I hold that young fellows are over-coddled and fed with spoonmeat nowadays. There is a tutor at hand to expound and explain everything; nothing is left to be casually picked up, and the brilliant band of practitioners who manned the benches of the old Edinburgh University in former days under the giants of the past were nothing the worse for having practically had no actual teaching, but had been left to moulder about under the inspiring influence of Goodsir, Christison, Simpson, Syme, Edmund Forbes, Bennett, and their colleagues, and the tutorial department naturally fell into the hands of the "grinders," a most useful class of men, abhorred by pedants, but beloved by those who had the advantage of working with them. In my day Gregory's attempts at professional instruction were simply absurd. He could explain nothing, and the simplest experiment went wrong in his clumsy fingers. Goodsir, though a far bigger man, was not much better, for he was perpetually struggling in the clouds of transcendentalism, and although much of his epoch-making work was contained in his lectures, and, being unpublished, was calmly appropriated by others, we could make nothing of him, and had it not been for my dear old master Struthers, who lectured in my first year, I must inevitably have been plucked in anatomy as I was in chemistry. Under these circumstances we had recourse to Wilkinson, a born teacher with a clearness of exposition which I have never heard surpassed, whose drawings in coloured chalk on the blackboard of difficult bits of regional anatomy almost approached genius.

One result of the modern and excessive development of departmental instruction is that professors have no time or energy left for original work. The Scotch universities are staffed by able men, who had made their mark before election. But what is the output now? Simply *nil*, because their powers are wasted by having to cram into little boys' over-stuffed brains a heterogeneous mass of confused material to meet the imperious demands of General Medical Council inspectors, and then they have to read a vast and complex variety of literature to keep up with what is called the progress of the times, which seems to me, as a man in the street, to be too often purely destructive, one set of men

demolishing the work of their predecessors, and being in their turn demolished by those by whom they were succeeded. In the good old days, when the yellow and faded leaves showed the antiquarian nature of the lecturer's MSS., research was actively going on, and the splendid series of investigations pouring forth with the virile vigour which was then the stimulating characteristic of my old Alma Mater. Every subject is now so overgrown that one mind cannot grasp it all, and chemistry, physiology, and the like have to be worked like the co-operative stores—in compartments. But, so far as I know, there is no limit to the scope within which an examination may be carried on, and an unhappy student can easily be plucked bare by any faddist who magnifies the importance of his special line of knowledge. Perhaps this has already been done, and I may be a day after the fair, but, if not, I should like to see rigidly-defined areas, within the limited circle of which the knowledge of students should be tested, and professors should be expected to expatiate, and then every chair should be provided, as in Germany and elsewhere, far more efficiently than at present, with the well-qualified and, above all things, well-paid assistants, who should relieve the occupant of all tutorial work, and set him free to carry on that original work on which the reputation of a university so largely depends.

How far examination is really a good test of knowledge is an old controversy which I do not wish to reopen except to say this: that the capacity for placing one's accumulated stores of information clearly and coherently on paper is a special gift; and a man may be an excellent doctor although he may have a poor literary faculty, and gives meagre answers to questions. And when we remember what outside examiners too often are, and how they spin elaborate cabinets of conundrums to gratify their own ingenuity, we may wonder not that so many students are "plucked," but that any get through at all. For this reason I am strongly in favour of keeping the examinations, at the universities at all events, purely and solely in the hands of the professors. The assessor is generally a young man, perhaps an assistant surgeon or physician to a London hospital, where he has been seeing chronic dyspepsias, varicose ulcers, and winter coughs for ten or fifteen years, and to put him as a spy (for that is what it really amounts to) on the proceedings of a man of perhaps European reputation is an absurdity so palpable that I wonder it has survived so long.

The great advantage of the professor doing all the examining, as in my old Edinburgh days, when the arrangement worked admirably, is that he can supplement the results of the replies to the printed queries by his experience of the class work and general demeanour of each individual student; and the look of a "kent face" will steady the timid and restore his scattered thoughts to the matter in hand.

As regards the arrangement of the student's time, it is most important that the first two years should be exclusively devoted to anatomy, chemistry, botany, materia medica, and physiology; and until they have been cleared out of the way, and the overcharged memory relieved by examination, admittance to the in-patient or out-patient department of the wards should be rigidly barred. Any one who is actively engaged in dissection is a source of danger to sick people, which no anti-septic precautions can avoid; and to ask young men to engage in clinical work before they understand the structure or functions of the human body, or the action and uses of medicines, is an absurdity so glaring as to require no refutation. The old system of apprenticeship, now unhappily abolished by educational faddists, was not open to this objection, for under it young fellows were early broken into the harness of general practice; under experienced supervision they were taught to make up medicines, to do a little small surgery, and to see a class of cases of a slight and trivial kind which never reach our great hospitals. Above all, they learnt, if they were fortunate in their master, the art of managing sick people, and, above all, the necessity, no less than the propriety, of courtesy and kindness to the poor. This lesson, which is too often neglected in the hustle and scrimmage of out-patient hospital practice, was taught to Edinburgh students of my time by the late Warburton Beggie, the best type of the beloved physician, whose personal charm was only equalled by his clinical tact, and whose memory will be for ever green in the memory of his attached pupils.

Out-patient departments are mischievous absurdities, and should be abolished without delay. There we see an unhappy physician, perhaps a Fellow of his College, spending the best years of his life in doctoring gaunt processions of dyspepsias, and winter coughs, and chronic rheumatism,

and bronchitis, and phthisis, creating appetites with tonics which he cannot gratify with food, and searching in vain for some crumbs of comfort or instruction to give to his expectant class. How much better the old Edinburgh plan was. There was no out-patient department there, but only what was called a waiting room, where cases sent for admission to the wards were seen by the physician or surgeon in charge. Dispensaries did the rest, and there we saw a moderate number of cases, and were given the addresses of others to be visited at home. This was done under the direct supervision of the medical officers whom we called in on emergency, and when I say that my immediate superiors were Gairdner, Sanders, and Matthews Duncan, I think it will be allowed that this was a professional training most valuable to the student, and an admirable arrangement, for the patient was attended at home under domestic conditions which could at any time be supplemented by admission to the hospital.

The fifth year of medical study, which I cannot but regard as an educational fad, is usually wasted so far as I have been able to find out. I cannot discover what its place in the curriculum really is, and it places a burden on the backs of long-suffering parents which they can ill afford to bear.

The worst of medical study is that its methods are continually in the melting pot at the instigation of the General Medical Council, which, having outlived the necessity for its existence, is compelled to invent work—one day it abolishes a most useful body of men, the unpaid assistants, who are now flung on the world ruined and penniless because their existence annoyed the comfortable consultants of Harley Street and Savile Row, and the next spend their time in debating the intricacies of what they are pleased to call "infamous practice," to squabbling with the leading corporations, who very properly decline to accept their dictation, and to unsettling the minds of the Conjoint Board about their systems of examination, with the result that, although its members are all honourable and distinguished men, and their chairman is exceptionally dignified and impartial, they have lost all hold on public opinion, and are now practically bankrupt. Would it not be better to sweep them out of existence, to have a registration office, charging a small fee, and at the same time to reform drastically by abolition all corporations and examining bodies, and let the qualifications for practice be given by a Conjoint Board, whose proceedings can be controlled by the Privy Council, and who are free from fussy and meddling interference, and let those who desire a higher degree go to the universities.

The Royal College of Physicians may of course retain itself as a select and dignified debating society, conferring what titles it pleases, and looking after its somewhat indifferent library, and maintaining by means of a curator the fiction of a museum which I doubt if any one has ever seen; and of course the magnificent museum of the College of Surgeons should be maintained by the State.

REPORT OF THE COMMISSION ON DYSENTERY AND ITS RELATION TO ENTERIC FEVER.

IN August, 1900, the Secretary of State for War appointed a Commission to report on "the nature, pathology, causation and prevention of dysentery and its relation to enteric fever." The Commissioners were Lieutenant-Colonel Bruce, Colonel Lane Notter, and Professor W. J. Simpson. The immediate occasion which led to the appointment of the Commission was the terrible mortality from these two diseases in the South African campaign, and in view of this fact it cannot be said that the terms of the appointment quoted above were happy or likely to bring about an exhaustive inquiry into the preventable causes of mortality in the late war.

The result of an inquiry is a bacteriological report by Lieutenant-Colonel Bruce (48 pages and 15 coloured plates); a report by Dr. Simpson of 49 pages, appendices of 30 more pages, and several maps; and a report by Colonel Notter comprising 16 pages and 1 plate. The last and the first reports are undated, the second is dated November 29th, 1901. A short introduction is prefixed to these three reports signed by Drs. Bruce and Simpson and dated November 29th, 1901, and what is in fact a minority introduction but undated is added by Professor Notter. In view of these facts it is not altogether surprising that nearly two years have elapsed before the report is presented, and that it now loses much of its value in consequence of its individual characteristics. It contains much valuable information, and had it been a unani-

mous report, some hope of rational reform in the sanitary service of the army might have been entertained.

THE ETIOLOGY OF SOUTH AFRICAN DYSENTERY.

Lieutenant-Colonel Bruce made a bacteriological investigation of 18 cases of dysentery and 7 of enteric fever, and describes in detail the pathological conditions found. He arrives at the following conclusions:

1. That dysentery in South Africa is not caused by amoebae, as there is some reason to believe is the case with the dysentery of certain other countries.
2. That the organs in dysentery are absolutely sterile. Hence, unlike enteric fever, the causal agent confines itself to the intestines.
3. That in the large intestine no particular species of micro-organism stands out prominently as in the case of cholera.
4. That there is not sufficient evidence in this work to advance the theory that some of the normal inhabitants of the intestines belonging to the coli group take on a pathogenic power.
5. That there is no connexion between dysentery and enteric fever, Eberth's bacillus not being found in the organs or intestines of dysentery.
6. That there is a certain amount of evidence to show that so-called cases of dysentery following enteric fever are relapses of enteric, where the disease has attacked the large intestine.

PROFESSOR SIMPSON'S REPORT.

In the second part of the report, Professor Simpson deals in a thorough and workman-like manner with the conditions and causes leading to the immense mortality in the South African campaign. On the last page of his report he gives an estimate of the cost of enteric fever in the campaign, which most usefully brings out what a large saving would be effected merely from a financial point of view by the taking of the necessary preventive measures. Taking the cheapest infantry soldier to cost £40 by the time he arrives in South Africa, his death by enteric fever implies an estimated cost to the country of £87; if he is attacked by enteric fever and recovers, the cost is £57, on the assumption that he resumes work at the end of four months; £108 if he is invalided home and has to be replaced by another man. During the two years of the war there were at least 31,128 cases of enteric fever, and on the above basis the total cost was £2,724,306; and, if to this be added the cost of extra hospital staff and equipment of hospitals and transport, the cost is brought up to at least £3,500,000. This estimate does not include dysentery, and is calculated on the basis of the cheapest soldier available.

Enteric Fever and Dysentery in the Civil Population.—Enteric fever under ordinary circumstances is a veritable scourge in South Africa, and dysentery, although ordinarily mild, assumes a virulent form in the mines. The main cause of these diseases is undoubtedly an insufficient protection of the water supplies and a general absence of a proper and sanitary disposal of excreta and slop water.

Enteric Fever and Dysentery in the South African Army.—In view of the above facts it is not surprising that in the absence of efficient means of prevention the South African army suffered badly. The number of deaths from enteric fever were over six and a-half times that of dysentery in the first year of the campaign, and nearly six times in the second year.

Decomposing food has been a great cause of fatal dysentery in former times; and it is satisfactory therefore to learn that the "comparative absence of a general prevalence of fatal dysentery and scurvy may be very properly ascribed to the excellent commissariat and food arrangements of this war." Dr. Simpson makes a useful suggestion on this point, that is, that meat should not be sent out in tins containing more than a single soldier's rations for the day, in order that exposure to dust and dirt of the opened tins may be avoided.

The drinking of surface waters was the most usual cause of dysentery; but the sand which lodged on food during dust storms appears also to have been a cause.

History of Modder River.—Dr. Simpson next passes in review the main epidemics of the campaign, his deductions being based in the main on information obtained on the spot or from official sources. We cannot agree with Colonel Notter's demurral to "so much of Part II of the report being taken up with details as to, and criticisms of, circumstances connected with the occupation by the army of camps at Modder River, Paardeberg, and Bloemfontein," on the ground