

patients, without feeling their pulse, making any examination, or in any way coming in contact with them." He is said to have acted thus in accordance with the orders of the chief of the medical department, who, in a letter dated March 27th, remarks "I see no necessity for you to touch the patients, but you may stand at the entrance of the tent and ask questions, and so satisfy yourself as to its (*sic*) progress." Some of the allegations made in detail in support of the charge the reporters do not however consider proved. The next charge is considered to have been true—viz., "That the treatment to which the people in the tents at Half-way Tree and in the Small-pox Hospital at Stirling Castle were subjected caused general dissatisfaction, and resulted in those afflicted with small-pox refusing to enter these and other small-pox hospitals." Special causes are allowed to have operated in deterring people in some cases where it was asserted that this was due to the fear of the "neglect and cruelties," but yet in the very sentence in which this is stated the reporters repeat "that there was a strong and not unwarranted feeling against them" (hospitals).

The last charge blames the "authorities" for having failed to perform their duties properly in preventing the spread of the epidemic. The reporters "do not think it open to them to enter into any inquiry as to the course taken by the Central Board." But, in a concluding paragraph, they call attention to a very significant fact—namely, that Dr. Ross, the acting head of the Medical Department of this Board, declined to give evidence, and that there were several points which could only be satisfactorily cleared up by him. This refusal on his part has created an unfavourable impression.

No one can fail to see how completely Dr. Bowerbank has justified his statements. He deserves the thanks of the community in Jamaica for the fearless and persistent manner in which he brought forward these accusations, and finally obtained a public inquiry in regard to them. Such administration of the sanitary department of the Government as that disclosed by Mr. Drake and Mr. Cruise, in the time of a serious epidemic, is discreditable in the extreme, and indeed criminal. We beg to call the attention of Lord Kimberley to the report above referred to, and we hope he will act promptly in the matter, and so as to render the recurrence of a similar state of things impossible.

Correspondence.

"Audi alteram partem."

MEDICAL EDUCATION.

To the Editor of THE LANCET.

SIR,—The excellent remarks in your leader of October 4th on the present state of medical education demand the careful attention of everyone interested in the question. The importance of the subject induces me to add one or two observations and suggestions on two points wherein, as it appears to me, the system is in need of a radical change.

First, with regard to the range and extent of the subjects and the time within which a student has to acquire his knowledge. Four years is the period most of the examining boards deem sufficient for this purpose, and during this time the student has to attend lectures on chemistry, botany, zoology, anatomy, physiology, *materia medica*, surgery, medicine, medical jurisprudence, and midwifery, to study disease in the hospital wards and attend clinical lectures, to work for a given time at practical chemistry, practical physiology, practical pharmacy, practical midwifery, practical surgery, &c., and then to be examined in all these subjects. Now it is not so much of the range of subjects that I complain as of the *extensive* acquaintance with each that is *expected* from the candidate after his four years' study. A lifetime hardly suffices for the study of some of these subjects; and yet there are examiners and lecturers who, as their special knowledge increases, seem to acquire morbid notions as to the importance of their own department, and insist on an intimate acquaintance with it, all others being regarded as secondary; forgetting that the students they have to deal with want to be medical

practitioners having a competent and sound scientific knowledge, but not simply and solely anatomists, physiologists, or chemists. I would be the last person to decry the value of a thorough scientific training for the medical practitioner; I appreciate its value fully; but what I maintain is, that an intimate acquaintance with all the above subjects cannot be acquired in four years—the prescribed period,—which is, moreover, all the time that can be afforded by the vast majority of those desirous of entering the profession. The process has not yet been discovered of driving into a British skull, in so short a period, the knowledge of half a dozen German professors. The attempt is impossible; and whilst striving after the impossible we lose what is possible. The student's mind, under the present system, is crammed with ill-digested facts and crude notions about the most recent theories. These he disgorges at some examination board, famed, perhaps, for high-standard questions and indifferent answers; he receives his certificate, and is qualified (?) to practise his profession; but when he comes to the real work he is surprised to find how little his knowledge serves him. His studies must begin afresh, and he must find out for himself which is useful and which is superfluous information.

What is the remedy for this? Lengthen the period of study, or diminish the number of subjects? Do neither, but limit the *range of each subject*. Let some competent body (and who so well fitted for the task as the General Council of Medical Education?) from time to time draw up and publish schedules defining the range of the examination in each separate subject; let all that is superfluous be left out, retain that which is essential and important, and which can be mastered thoroughly by the pupil in the time; let the questions be kept strictly within this range, and then the examinations may be as stringent and rigorous as you please. In this way it would be ensured that every student is thoroughly grounded in the essentials of his profession; that so far as his knowledge goes it is sound. He is thus prepared in the leisure of his earlier years of professional life to extend his scientific knowledge, because he has a firm basis to go upon, and English medical practitioners would then do far more for the advancement of physiology and the other sciences connected with medicine than at present. Now, unfortunately, there are many who, after passing their examinations, find they have gone over the entire range of their several subjects so superficially that the little vague knowledge they possessed soon evaporates; they have become unfitted to study anything thoroughly; they are weary of science; and gradually settling down to what is called "routine" practice, they may possibly gain experience, but only at the expense of the lives of their patients.

My remarks, of course, apply only to "pass" examinations. By all means let there be "honour" examinations in addition. These might advantageously take place at a later period, and be as extensive and varied as possible. Thus the abler men—those who were specially fitted to advance the various departments of scientific medicine—would be found out and encouraged; whilst the great body of practitioners, from their sounder training, would be better able to appreciate and utilise any discoveries that were made. What we want still was put very concisely nearly forty years ago by my venerable and distinguished namesake in his lectures: "A well-weighed scheme of professional education, sound and practicable,—comprehensive, yet moderate in its requirements, and adapted to all." And he goes on to say: "Besides the many good purposes this would serve, it would have the special benefit of satisfying the minds of students themselves that at each step in their progress they are in the right path." The General Council of Medical Education has been occupied for years trying to reconcile the conflicting interests of nineteen licensing and examining bodies, and to induce them to have one examining board for all. If, whilst these conflicting interests are being adjusted, the Council would promulgate a schedule limiting the range of each subject after the manner I have suggested, it would be received as an immense boon by students; it would extinguish cramming, and do much to advance both practical and scientific medicine.

Secondly, the system of requiring "certificates of attendance on lectures" has somewhat of a mediæval character, and appears to be unwise. I fear such a regulation rather encourages the notion in the minds of some students that by being listless listeners to the lecturers they will imbibe

without any effort all the knowledge that is necessary. "It is desirable," as you remark in your admirable article, "that before a student presents himself for public examination he should possess certificates from his teachers of having gained sufficient knowledge to justify his attempts." And why should not this be required? Such a regulation would revolutionise medical teaching, and would secure what you so much desiderate—the improvement of the teachers themselves. It would stimulate the communicative powers of the lecturers, and by holding frequent *viva voce* and written examinations on the subjects discussed in their lectures they would find out where their teaching had been defective or misunderstood, and be able to remedy it. Moreover, by requiring certificates of the proficiency of the taught, instead of the present certificates, the teachers would be put more distinctly on their trial. A certain amount of discredit would be reflected upon them by their pupils' failure. For if a pupil were rejected by the licensing body, this would imply, not only that he had been insufficiently instructed, but that his instructor, in giving him a certificate of proficiency, was unable or had failed to find out his deficiencies.

It is absolutely necessary, however, before teachers will be willing to adopt such a plan, that the vagaries of examiners must be controlled; and, whilst the questions set in the pass examinations ought to be sufficiently searching and comprehensive, they should at the same time be strictly confined within the range authorised by such a schedule as I have above referred to.

I am, Sir, yours, &c.,

Cambridge, Oct. 10th, 1873.

P. W. LATHAM.

BLOODLESS OPERATIONS.

To the Editor of THE LANCET.

SIR,—I must claim for an English surgeon and for British surgery some share at least in whatever merit there may be in the employment and the recommendation of that method of saving blood in amputations with which Professor Esmarch's name is now coupled. The surgeon is Mr. Clover. The amputation in which he employed a method in all respects almost exactly similar to that which is now advocated was performed twenty-one years ago, in June, 1852. I was present at, and assisted him in, its performance.

The case is as follows:—Mr. B—, fifty years of age, had been struck twenty years previously by a cricket-ball on the lower part of the thigh. Abscess followed, and sinuses formed which never healed. In March, 1852, Mr. Clover trephined the lower end of the femur, and removed some sequestrum. Erysipelas and deep suppuration followed. Increasing exhaustion setting in and a considerable portion of femur being found to be necrosed, amputation was proposed, and, after consultation, agreed upon.

On June 9th, 1852, the patient was put under chloroform, and as he was very weak it was thought of much importance to save as much blood as possible. Mr. Clover accordingly adopted the following method to effect this:—The limb was raised, and a narrow bandage was applied very tightly from the toes nearly to the perineum; a screw tourniquet, without any compress, was then applied immediately above the bandage. The bandage was then unrolled from the thigh, and the limb removed by antero-posterior flaps, the bone being divided about two inches below the trochanter minor. Scarcely any blood was lost, and the patient made a rapid recovery.

The recommendation to which I allude is contained in the three last editions of the "Science and Art of Surgery." It is as follows:—"In those cases, as of chronic disease, in which it is of great importance to save blood as much as possible to the patient, it is a good precaution to bandage the limb tightly from below upwards immediately before the tourniquet is applied, thus preventing to a great extent the venous congestion." (Ed. of 1864, p. 19.)

It will be seen that the method adopted by Mr. Clover in 1852 is identical in principle with that employed by Esmarch, and only differs in one point of detail—viz., the use of a tourniquet band instead of an india-rubber tube as the means of arresting the entry of blood into the bandaged

limb. Of the two I should consider the web band of a screw tourniquet far safer than india-rubber. The latter is a very uncertain material, and, after having been laid aside for some time, is apt to become hard and brittle, so that there might be danger of its snapping when much stretched. The webbing of a tourniquet band is quite safe, can neither yield nor snap.

In conclusion, I may say that the simple raising of a limb in the perpendicular position for a few minutes before the application of the tourniquet is quite sufficient to empty it of blood, more particularly if friction or gentle pressure from below upwards is combined with position, and that tight bandaging is quite unnecessary. This simple process is, I understand, much employed in Edinburgh, and was used with perfect success at University College Hospital on Wednesday last by Mr. Berkeley Hill in an amputation through the lower third of the leg.

Esmarch's real merit appears to me to consist in having applied this method to other operations on the limbs than amputations.

I am, Sir, yours, &c.,

Oct. 11th, 1873.

JOHN ERIC ERICHSEN.

To the Editor of THE LANCET.

SIR,—In to-day's issue of your valuable journal, p. 532, you mention several probable dangers which may accrue after operations performed according to the plan introduced by Esmarch; but there is one great change in the circulation produced by it which struck me as being important to consider as to its advantages and safety. Before the operation is performed the amount of blood is, or may be supposed to be, adequate to all the exigencies of the entire system, and that the heart and general vascular system contained as much blood as may be safe for them to bear.

When, however, an elastic ligature of great power is applied to a limb, and progressively tightened from below upwards, its object and effect must be to empty the vessels, thereby forcing the blood into a considerably diminished vascular area, and so creating a sudden relative surcharge, which may not be safely endured. I have ventured to make this suggestion, the fallacy or the truth of which can only be proved by facts.

I am, Sir, yours &c.,

Manchester, Oct. 11th, 1873.

THOMAS RADFORD, M.D.

CEPHALOTRIPSY.

To the Editor of THE LANCET.

SIR,—In your issue of October 4th, Dr. Radford, of Manchester, took exception to a remark of Dr. Carey's in an account of a case of cephalotripsy, in which the latter says "he thought of Dr. J. Braxton Hicks's plan of removing the calvaria and canting the base." Dr. Radford said "it was not Dr. Braxton Hicks's plan, but many years ago was described and practised by the late Dr. Hull." Lest any of your readers should think I had claimed the credit of others' work, I write to say that I have nowhere made any such claim. In the paper read before the Obstetrical Society (see Obst. Soc. Lond. Trans., vol. iv.), entitled "An Inquiry into the best mode of Delivering the Fœtal Head after Perforation," I most distinctly referred to Dr. Hull as having pointed this out. I remarked that it was curious that, with the exception of Burns, the succeeding authors were silent upon the point; yet so it was. I had written my paper in rough, when, searching through Burns, I found his allusions to Hull and his repetition of the experiments confirming him. After him the principles which regulate traction after perforation were lost sight of, and in difficult cases force rather than skill was triumphant. Since the reading of my paper many authors have expressed their sense of the value of the principles involved; and as the oftentimes formidable operation of craniotomy and cephalotripsy ought not to be undertaken without a clear comprehension of the principle, I shall be amply rewarded if my paper discussing the whole subject have been instrumental in advancing our knowledge.

Yours truly,

J. BRAXTON HICKS.

George-street, Hanover-square, October 10th, 1873.