28. The rate of half-pay awarded to officers retiring for their own convenience, after 20 years' service on full-pay, under Article 20, shall not exceed one-half of their full-pay at the time of retirement.

29. Every medical officer who shall retire after a service upon full-pay of twenty-five years, shall be granted a rate of half-pay equal to seven-tenths of the daily pay he may have been in receipt of when thus retiring on half-pay, provided he shall have served three years in his rank, or shall have served abroad for ten years in all ranks, or for five years with an army in the field. An officer of twenty-five years' full-pay service, whose service falls within neither of these conditions, shall be entitled to only seven-tenths of the daily pay he was in receipt of prior to his last promotion.

30. A medical officer of twenty years' full-pay service, placed temporarily on half-pay on account of ill health, may, however, be allowed to retire on permanent half-pay, at the rates fixed by Article 27, if after one year on half-pay he shall be reported by a medical board to be permanently unfit for further service.

31. In all matters not specially provided for in our present Warrant, the officers of the Medical Department of our Army shall be subject to the General Regulations for the Departments of our Army.

It is our further will and pleasure that the rules established by our Warrant of the 1st March, 1873 (as amended by our Warrant of the 23rd October of the same year), Article 19 of our Warrant of the 18th February, 1874, and by Warrant of 29th September, 1874, shall continue to be applicable to all officers now in the Medical Department of our Army; but that Articles 4, 11, 12, 14, 15, 16, and 20, of our said Warrant of the 1st March, 1873, shall be cancelled and the following Articles shall be substituted in lieu thereof:—

4. (a) A Surgeon-General shall rank as Major-General, according to the date of his commission. (b) A Deputy Surgeon-General shall rank as Colonel, according to the date of his commission. (c) A Surgeon-Major shall rank as Major, according to the date of his commission; after 20 years' full-pay service as Surgeon and Surgeon-Major, he shall rank as Lieutenant-Colonel, but junior of the latter rank. (d) A Surgeon shall rank as Lieutenant, according to the date of his commission; and after six years' full-pay service as Captain, according to the date of the completion of such service.
12. A Surgeon shall be promoted to the rank of Surgeon-Major on completing twelve years' full-pay service in our Army, if he be recommended by the Director-General of the Army Medical Department.
16. All promotion from the rank of Surgeon-Major to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, shall be given for ability and merit upon the selection of our Commander-in-Chief, with the approval of our Secretary of State; and the grounds of such selection shall be stated to us in writing, and recorded in the Department. In all such cases the amount of foreign service shall be expressly stated.
20. Medical officers shall have a right to retire on half-pay after twenty years' service. Medical officers of the rank of Surgeon-Major or Surgeon shall be placed on the retired list at the age of 55, and all Surgeons-General and Deputy Surgeons-General at the age of 60 years.

We do further direct that when any officer now serving shall, under Article 20 of our Warrant of the 1st March, 1873, as revised by our present Warrant, be compelled to retire at the age of 60, he shall have added to his retired pay, as fixed by our said Warrant, such annual sum as our Secretary of State shall consider to be a just compensation for any net loss he may have incurred from the substitution of 60 for 65 as the age for retirement.

Until our further pleasure shall be made known, nothing contained in our present Warrant shall be held to change the existing system of promotion of the medical officers of our regiments of household troops.

Given at our Court at Windsor, this 28th day of April, 1876, in the 39th year of our reign.

By Her Majesty's command,
GATHORNE HARDY.

ABSTRACT OF THE REPORT OF THE BOARD OF MEDICAL STUDIES TO THE UNIVERSITY SYNDICATE, CAMBRIDGE.

THE Chairman of the Board of Medical Studies has informed the Vice-Chancellor that the Board have had under consideration the communication dated Oct. 12th, 1875, of the Syndicate appointed to consider the requirements of the University in different departments of study. With respect to the first inquiry of the Syndicate, whether the "Board consider that any additional teaching is needed to instruct students in the subjects of the University examinations supervised by it, and generally to further the advancement of the studies of (this) department, and studies cognate to them,"—the Board are of opinion that additional teaching is needed which would require the appointment of—(1) A teacher of Pathological Anatomy, whose chief duties would be to demonstrate, and to have charge of the Museum of Morbid Anatomy. (2) A professor or teacher of Surgery. (3) A professor or teacher of Midwifery, and Diseases peculiar to Women. (4) A professor or teacher of Medical Jurisprudence. (5) A professor or teacher of Sanitary Science (6) Instruction in Mental Diseases, to be given during one term in the year. (7) A demonstrator of Practical Pharmacy may at some future time be required.

Lectures on Pathological Anatomy are given by the Linacre Lecturer; but he is not appointed by the University, and his stipend is so small that he cannot reasonably be expected to devote to his subject all the time and labour which its high importance demands; the Board therefore are of opinion that the greatest present need is a proper provision for the teaching of Pathological Anatomy. The Board would draw the attention of the Syndicate to the fact that in the very important subject of Physiology (8) the arrangements for teaching are anomalous. Some part of the instruction is given by the Professors of Anatomy, some in certain colleges; but the greater part is given by the Trinity Prælector in rooms provided by the University. The Board are of opinion that the chief representative of so important a subject should have the title and status of a Professor of the University, and be appointed by and responsible to the University at large. The Board are of opinion that such a professor should be precluded from the professional practice of medicine, and that he should be aided by one or more demonstrators. The Board are also of opinion (9), having regard to the great extent of the subjects of Comparative Anatomy and Zoology, that there should be a professor in each department. The Board recommend moreover (10) that a Pathological Laboratory be established; (11) that a Museum of Materia Medica be formed; (12) And that additional accommodation be provided in dissecting rooms and work rooms for Human Anatomy. The remainder of the report deals with relations to subsist between the University, the Colleges, and the students with respect to the professors, lecturers, and teachers.

Correspondence.

"Audi alteram partem."

DENTAL ANÆSTHETICS AND HEART DISEASE.

To the Editor of THE LANCET.

SIR,—I have read Dr. Burney Yeo's letter on dental anæsthetics in relation to heart disease with much interest, and feel that he has mooted a question of the greatest importance to the profession and to the public alike. I am convinced that many dangers attendant upon the use of anæsthetics are often overlooked simply because immediate death is not the result of their administration. Considerable experience in the production of anæsthesia by nitrous oxide gas and the consideration of its action convince me that in many cases its use is attended with more or less risk, this risk not being sufficiently realised, inasmuch as the

mischievous wrought is subsequent to, not, apparently, coincident with, the inhalation of the gas. Dr. Yeo asks "whether the existence of great obstruction to the circulation in the form of valvular disease of the heart counter-indicates the use of anæsthetics?" and if so "whether nitrous oxide is an exception to the rule?" To these queries I would answer that in all cases of heart disease the greatest caution should be exercised, though I do not think that valvular mischief is that condition in which its administration would be attended with the greatest hazard, nor would the mere absence of a murmur by any means necessarily be a proof of safety in its use. The explanation of the phenomena attendant upon the exhibition of nitrous oxide seems to indicate that the conditions of heart which would render anæsthesia by its means the most dangerous are those in which it is the subject of fatty degeneration, or those in which its structure is flabby, and its coats relaxed. In cases of death from this agent the right auricle and right ventricle are much distended with blood, and there seems to be every reason for accepting Dr. George Johnson's explanation of its action—viz., that there is, first of all, obstruction of the systemic, followed by a greater obstruction of the pulmonary, circulation, and subsequent engorgement and dilatation of the right side of the heart.

Some recent experiments made with Dr. G. Johnson upon rabbits have convinced me of the truth of this theory, and, indeed, the phenomena exhibited in a person under the influence of the oxide support it quite as fully—firstly, the pulse is firm and tense; secondly, the pulse becomes imperceptible, and lividity simultaneously occurs.

Without entering into details, it may be briefly said that all symptoms may be explained by extreme contraction of the minute pulmonary arteries, with resulting over-fulness and distension of the right cavities and comparative emptiness of the left, the supply of blood and oxygen to the tissues being greatly diminished. In short, we have all the stages of asphyxia rapidly developed as a result of imperfect oxygenation of the blood.

Assuming these explanations to be correct, it is clear how much danger might attend the frequent administration of the gas in cases like those which I have characterised. About the distension of the right heart there is no doubt, and such a strain upon its parietes when enfeebled would alone be sufficient to accelerate disease, whilst death might be caused by paralysis of that viscus. I have seen one case in which there was intermittence of the heart's action for three weeks after anæsthesia induced by this agent, beyond which there was no sign of disease, the symptoms entirely passing off within the period mentioned.

Other conditions, such as hypertrophied tonsils, short necks in plethoric people, should all be considered in using nitrous oxide gas, especially where there is reason to suspect cardiac mischief. Finally, I believe it offers many advantages when used for short operations, provided that it be administered with caution and skill; but I fully agree with

Dr. Yeo that "no unqualified person should be permitted to make use of anæsthetic agents," whilst I would warn those who do so of the consequences they would incur should any fatal accident arise—if a sense of their moral responsibility be insufficient to deter them from using agents empirically which may be dangerous in the present, but still more so in the future. Medical men could prevent many of the dangers to which Dr. Yeo has alluded by warning their patients of the risk they run in receiving anæsthetics at the hands of those not qualified to administer them. He alludes with satisfaction to the new "Association of Surgeons Practising Dental Surgery." I trust that it may do much to elevate the status of oral surgery, not only by improving education, but by making all take a higher estimate of the legitimate scope of that specialty.

I am, Sir, your obedient servant,

S. HAMILTON CARTWRIGHT.

Old Burlington-street, May 1st.

To the Editor of THE LANCET.

SIR,—If you will kindly afford me a small space in your valuable journal, to answer some of the questions asked by Dr. Burney Yeo in your last number, I will endeavour to be as brief as possible. I think it is now allowed by the profession in general that, in those cases in which a capital operation is necessary, the shock to the patient is likely to

be attended with more risk than attends the administration of an anæsthetic; hence, for my part, I should not decline to anæsthetise a patient suffering from any organic disease whatever. With reference to the special case mentioned by Dr. Burney Yeo, in which there was great obstruction to the circulation, in the form of valvular disease of the heart, I believe all will allow that any agent which increases that obstruction in itself, or adds to it, by taking away the power of the muscular force of the heart to overcome the obstruction, must have a deleterious effect; and therefore, in this case, the anæsthetist would do well to avoid using either chloroform or bichloride of methylene, which tend to depress the heart, and select nitrous oxide or ether, which add to the force of the heart's action and stimulate it.

It is well known that the emotion of fear may in itself be fatal in cases, without any cardiac mischief, and therefore, in answer to the second part of the first question, I would say,—before you proceed to the administration of any anæsthetic, endeavour to get the confidence of your patient, and let him feel that he can trust you, then put him *thoroughly and completely* under the influence of the anæsthetic. I believe there would be some risk if the patient were only partly anæsthetised, for then the system would be cognisant of the unfelt pain of the operation, muscular rigidity take place as a reflex action, and thus, acting by pressure on the bloodvessels, causing greater obstruction to blood circulation, might produce a fatal result.

In almost all the patients who have given me a history of having been nervous and hysterical after some previous administration of the nitrous oxide, I have almost invariably found either that they have been pondering over and dreading the operation for some days, and passing sleepless nights, or that just as they have been recovering sensation, one or two teeth have been extracted, and although on awakening they will not remember anything about the operation, yet the unrecognised pain has produced a most intensely vivid and painful dream, the effects of which may have been persistent for days.

I have often given gas to patients in whom a loud cardiac bruit was present, and I have never known any ill consequences follow when the plan I have advocated above has been adopted. At the present time I regard nitrous oxide and ether as by far the safest anæsthetics in use; but I unhesitatingly say that, at some future time, if the practice of allowing them to be given by unqualified and incompetent persons continues, fatal results must be expected.

Having answered that portion of the letter which relates to the anæsthetic part of the question, I leave the remainder to be replied to by those dentists who are in the habit of attempting to do two things well at the same time—viz., administering the anæsthetic and extracting the teeth.

Believe me, faithfully yours,

WOODHOUSE BRAINE, F.R.C.S.,

Anæsthetist to Charing-cross Hospital and the Dental Hospital of London.

Maddox-street, Hanover-square, May 2nd.

PROVINCIAL REPRESENTATION ON THE COUNCIL OF THE COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—Do allow me the opportunity of reminding the provincial Fellows that we have lost a very able representative in the Council of the Royal College of Surgeons by the death of Mr. Southam of Manchester, and which creates a vacancy which must be filled up at the annual meeting in July. It is some years since I laboured hard and long in conjunction with some other Fellows to obtain a fair representation of the provincial surgeons at the Council of the College; and we have so far succeeded as to have had for the last few years three provincial Fellows on the Council. I am not yet satisfied and do not consider that we have a just proportion. Out of the 24 members of Council we ought at least to have five sent from the provinces. The number of provincial Fellows far exceeds the metropolitan. And it is our own fault if we do not at the next election place on the Council the number we think we are justly entitled to. We must clearly make an effort, and suffer some inconvenience and expense, to enable us to fill up the vacancy