with colourless corpuscles—is, in fact, purulent; in a word, the condition of the tissue is that of acute corpuscular infiltration, with this remarkable characteristic, that it affects equally the whole of the region previously deprived of circulation, and does not extend beyond it. What is to be learnt from the observation is this, that the privation of blood, when continued, say for sixteen hours, is so damaging to the tissue of the organ placed under this condition that, although it looks perfectly healthy and natural, so long as no blood is circulating, it is in reality *in the state of an inflamed part*. To prove its condition, all that is wanted is the restoration of the circulation, for no sooner is this effected than the ordinary phenomena of inflammation manifest themselves. It becomes hot, red, swollen, and no doubt painful.

In order to connect this counterfeit process—identical with inflammation in result, though different in origin—with the succession of effects ordinarily produced in a tissue by injury, it must be contrasted and compared with them as they exhibit themselves in the same field of observation. This comparison has been made by Cohnheim with wonderful completeness and accuracy. Among the most remarkable of the experiments he has made with this view, are those which relate to the inflammations produced by exposure to heat and cold respectively—*noxa* of which the action is probably simpler than of any others. When the ear of the rabbit is surrounded for a short time by a liquid a few degrees below freezing, and then removed, it becomes red and congested, but soon the arteries contract, and the tissue returns to its natural state. If the temperature of the liquid is as much as seven or eight degrees below freezing, the ear reddens in the same way on removal, but the redness soon becomes associated with doughy swelling. If the temperature is still lower, the so-called reaction is correspondingly more intense. The ear not only becomes hot and swollen, but in the microscopical examination of the exuded liquid, or of the tissue after death, you have evidence that the part is in the condition of diffuse suppuration—being, in short, in a condition very similar to that which was induced, with even greater rapidity, after temporary arrest of the circulation. In the action of high temperatures Cohnheim has shown that we have a similar gradation of action, so that the same effects which follow exposure for a short time to a temperature of 16°, are produced with equal promptitude by immersion in warm water of so moderate a temperature as 120°, provided that during the immersion the circulation is arrested, so as to allow the tissue to take the temperature of the medium with which it is in contact. Three degrees only of difference—i. e., raising the temperature from 120° to 124°—are sufficient to convert non-inflammatory into inflammatory—i. e., suppurative—*œdema*, and if this point is exceeded, death of the part, to a greater or less extent, is the inevitable result.

We have thus two parallel series of effects produced in a living tissue by agents differing entirely from each other, one a purely negative one, the privation of arterial blood, the other a *noxa* of the simplest kind: cold or heat, as the case may be. In both series we have the effects following each other in the order of their intensity, in the former according to the time during which the part has remained without circulation, in the latter according to the temperature. In both cases the relation between cause and effect is so well ascertained, that if, for example, it is known how long the arrest of circulation has lasted, it can be predicted with certainty whether determination of blood, congestion with *œdema*, diffuse suppurative infiltration, or gangrene, will be the result; and in like manner, by regulating the temperature to the required point by the thermometer, we can as well determine beforehand the supervention of either of these several degrees of inflammation.

Clearly the same close relation between cause and effect, between *noxa* and lesion, holds good throughout the pathology of inflammation; and if this is so, it appears that no view can be taken of the process of inflammation more simple, and at the same time more satisfactory, than that which was enunciated in the first lecture—namely, that inflammation is nothing more than the aggregate of those results which manifest themselves in an injured part as the immediate consequence of the injurious action to which it has been exposed.

[Erratum.—In the report of Lecture II., the word "*moxa*" should have been *noxa*.]

Correspondence.

"Audi alteram partem."

THE UNIVERSITIES AND MEDICAL DEGREES.

To the Editor of THE LANCET.

SIR,—In your leading article of to-day on this subject, one important point seems rather to have escaped your consideration—viz., that the value of a title or degree, like that of most other things, is not a little estimated by the difficulty experienced in obtaining it. The title of Doctor of Medicine, there seems some reason to fear, is likely to be so easily assumed that it will be scarcely worth the assuming; and a large number of medical men will probably, ere long, prefer, as some now do, to be without it. The degree of Doctor of Medicine at a University, however, will retain its value so long as it is felt to represent a higher mental culture, and, in the case of the Oxford and Cambridge degree, that social culture and the other advantages which are regarded as connected with a residence at those Universities. Now this higher mental and social culture necessitates the expenditure of time in its acquisition, and that involves the expenditure of money. This is the real difficulty in the way of obtaining a degree at the old Universities, and I think it will puzzle you to suggest a plan by which this can be lessened much more than has already been done without lowering the value of the degree in a manner which I am sure you would be the last to wish. Some years since, it is true, there were other difficulties, such as those arising from religious views &c., which had the effect of dissociating the profession from the Universities. These have been entirely removed; but it takes some time to awaken the country and the profession to the fact that there is no barrier whatever against a degree at the old Universities, except the time and the knowledge required. Even the former has of late been practically much reduced: first, owing to the arrangements by which the examinations in the subjects of general education may now be passed at the very commencement of the University career, or even, through the "Oxford and Cambridge Schools Examination Board," before the student comes into residence, so that the whole, or nearly the whole, of his time at the University may now be spent in the study of Natural Science and Medicine; and, secondly, there is now so much instruction and opportunity for work in these subjects, both at Oxford and Cambridge, that the old Universities offer at the present time (in my opinion) to the industrious and intelligent student the very best entrance into the profession. I do not mean to say that we should be content. Contentedness in such a matter savours of that dulness which is akin to deadness. Not to go on improving our educational system is certainly to go back; and if we go on, there is, I feel sure, a great future before the Universities in relation to the medical as well as the general education of the country. The improvement must not be looked for much in the direction of lessening the time, or the expense, or the standard of knowledge required. To lower the last, high though it undoubtedly is, would be fatal; and I question whether its maintenance is compatible with any material further reduction of either of the other two.

The number of degrees in Medicine conferred is, unquestionably, far too small. This, however, must now increase, as the number of students entering is increasing, and persons are beginning to be aware that the Universities are not only freely open, but are good avenues to the profession; and the expense attendant on university education is not disproportionate to the standard of knowledge required. It must, however, not be forgotten that many of our students do not proceed to the degree of Doctor. Some are content with the degree in Arts, some with the degree of Bachelor of Medicine, and some with the licence to practise obtained elsewhere, finding that they are not equal to obtain the degree here; so that the influence of Cambridge upon the medical profession must not be estimated solely by the number of degrees conferred. The spirit of this University, and the same, I believe, may be said of Oxford, is essentially liberal, as much as that of any body with which I am

acquainted, or more so. It is favourable to the prosecution of medical as well as of other science. Medical degrees have been rendered more accessible by the improvement of education and the lessening of expense, so that they are within the reach of anyone who can afford to spend a year or two more on his education than the time required for an ordinary diploma, and who can attain to the requisite standard of knowledge; and I have no doubt that any proposal, from any quarter, would be well received which is likely to be of real benefit to the profession and the public.

I am, Sir, yours &c.,

Cambridge, Jan. 15th, 1876.

G. M. HUMPHRY.

* * We are quite content at present with the admission made by Professor Humphry. He will not charge us seriously with any wish to dissociate the possession of University degrees and a considerable amount of general and professional culture. We indicated in the article which he criticises that, in our opinion, the prime business of the Universities was to allure and assist every class in the nation to a higher culture, and especially to put themselves into such relation with the professional classes as to give them the best chance of becoming scientific in the broadest sense of the word. The professional classes are a most valuable connecting link between the people and those who teach abstract science. Moreover, the people have a great interest in the development of the scientific spirit in the professional classes. For the title of "Doctor of Medicine," apart from the possession of a university degree, we have something less than a want of respect, as we have lately very plainly said in another connexion, and as we say again to-day. But if the practitioners who assume the title of "Doctor" have any sort of excuse for doing so, it is in the frigid bearing of the Universities towards them and their profession. Surely the Universities which have shown themselves capable of entering into vital relations with the common schools of the country, could have no insuperable difficulty in putting themselves into more inviting relations with the medical schools. Dr. Humphry himself says the number of degrees in medicine conferred by the Universities is, unquestionably, far too small. It is about two a year or less in Cambridge and Oxford. We know that the reason for this is not in the indisposition of men to take degrees, but in the impracticability of the terms of the Universities for those whose main business in life is to be learned in the art of healing. We heartily accept the assurance of Professor Humphry that proposals from any quarter will be well received, which are likely to be of any real benefit to the profession and the public. We commend to his notice a suggestion in another letter which appears in our impression of to-day. Meantime it is only fair to say that Cambridge has a very respectable medical school, and that all the courses required for admission to the first professional examination of the College of Surgeons, as well as to the second M.B. examination at the University, may be very well taken at Cambridge.—ED. L.

To the Editor of THE LANCET.

SIR,—May I venture to send you a few lines on your admirable article in to-day's LANCET on the Faculty of Medicine as it exists in our English Universities? Unfortunately for myself, I have not seen Dr. Morgan's pamphlet; I shall at once get it. In the meantime I would submit to your consideration a few words on a subject to which I have given some little attention for years past.

1. I most cordially concur in your observations on the obligation which lies on the Universities of Oxford and Cambridge "to develop yet farther their medical schools." Cambridge, as you add, has, in its recent action in the matter of State Medicine certificates, shown a willingness to meet the requirements of our day. The only difficulty with regard to the further development of our medical school—

which already year by year increases—lies in the amount of residence now required—viz., nine terms, or three years. As Cambridge allows the study of medicine to begin after the Previous Examination has been passed—i. e., at the end of six terms or two years' residence—I think the University might wisely remit the other three terms, and permit the period to be spent in one of the great schools of medicine. Two years' University training in Arts would be priceless to all, and with the great reduction in cost which the unattached students can practise, the course would be within the means of most. Medicine, alas, is a poor profession, and all our arrangements must be limited by expenditure. Herein the many scholarships now given in science would farther help the Cambridge student.

2. Why should the London University not be compelled to descend from the clouds? "It is admitted," you say, "that the conditions for obtaining the London degree are impracticably difficult to the great majority of men." Why should this absurd state of things be allowed to continue? The charter was surely conferred on the University for the advantage of the many, and London should be required to add to its present high honour standard a good pass degree, which the average student of the London schools might with proper training obtain. Moreover, I take leave to doubt whether this forcing system, applied to all its students, has led to any great results. The London degrees are yet far from rivaling Oxford and Cambridge in public estimation, while in the race of life I have not found the London graduates the formidable competitors their achievements in cram examinations might have led me to fear. I think that in this reform of the London University, and its adaptation to the requirements of the London medical schools, is to be found the relief of "practitioners wanting degrees and willing to submit to a reasonably testing examination" to whom you refer. Hitherto the advocates of their cause have been loud in their complaints of the requirement of residence by the Scotch University Commissioners. But why, may I ask, should the Scotch Universities be called upon to provide degrees in medicine for Englishmen who cannot satisfy their own Universities? The fame of the Scotch Universities, and specially of the great Medical School of Edinburgh, suffered sensibly in former years by the mass of illiterate general practitioners who graduated at St. Andrews and Aberdeen; and I for one rejoice that this system has been brought to an end. If the permission left to the University of St. Andrews to grant yearly ten degrees to men forty years of age without residence were given by selection as honorary degrees, I think the duty of the Scotch Universities to the medical profession would be well and fully done. I doubt myself whether there are more than ten practitioners each year deserving, by their scientific work, of the honorary doctorate; while to set about examining men at forty years of age for a scientific degree is alike childish and futile as any test of their fitness or acquirements.

All Universities have hitherto held that residence and systematic training shall precede the granting of their degrees, and none has more positively insisted on this fixed systematic training and regulated course of study than the modern University of London. Why should you call on the Scotch Universities to depart from this time-honoured tradition to meet the requirements or the vanity of the general practitioners of England, when you leave the University of London to pursue unmolested the training and education, as well as examination, of its own graduates?

3. But one word more. The question is now actively discussed in your columns, and will shortly come before the College of Physicians, as to giving the title of Doctor to the members or licentiates of the College. This, I submit, the general practitioners are fairly entitled to when admitted to any degree of membership in the College of Physicians. Doctors they are in public estimation and in their professional calling, and it seems to me but a poor paltry jealousy on the part of the English and Scotch graduates to refuse them this familiar and simple title. A member of the College of Physicians may surely be called a doctor without injury to the prestige or rights of the graduate doctors of Cambridge or Edinburgh, and I trust that herein the College of Physicians will pursue its present liberal policy and practice.

I am, Sir, your obedient servant,

Athenæum Club, January 15th.

M.D. CANTAB.