of hospital life, I strongly advise a visit to one of the German universities or to Paris, to acquire the key to the two languages in which the best modern books are written, and to widen the mind by seeing the aspect of science and affairs from a Continental standpoint. It is lamentable that there is so little professional intercourse between the students of one of our London schools and the teachers of another. The laudable energy which has made each of them complete and well-equipped colleges has had this drawback, that at the present day the attention of a diligent student is more confined to the teaching and practice of his own school than it was sixty or seventy years ago.⁴ The narrowness and prejudice bred by this isolation may be corrected by a visit to the famous sister universities of Edinburgh or Dublin; for their complete removal no prescription is so efficient as a prolonged stay in Continental laboratories and hospitals. But even such a broad and liberal education, even familiarity with the daily advances of medical science recorded in periodicals and archives and yearbooks, or transmitted by telegraph to the wondering readers of the daily newspapers, is not all that is needful to make a learned physician. We know well the difference between reading of an experiment, or even seeing it performed, and doing it with our own hands. We know the difference between studying a pathological atlas, or even a cabinet of histological slides, and seeing and handling morbid tissues and making sections for ourselves. So also is there all the difference between learning the present conclusions as they stand recorded in the last edition of a textbook or compendium and tracing the steps by which our present knowledge has been reached.

With regard, for instance, to the physiology of the circulation, it is not only curious but instructive to follow its gradual growth from Galen and Vesalius, Columbus, Cæsalpinus and Servetus, to Harvey and Lower and Malpighi, to Hales and Vierordt, to Ludwig, to Chauveau and Marey, to Gaskell and Roy. The only true scientific method is the historical one. If we only know the results of a science without the steps by which they have been reached, we have indeed its practical use, but lose half its educational value. We are almost in the position of an engineer who knows the conclusions of trigonometry by rote, but is ignorant of the demonstration. I would therefore urge upon junior Fellows, while still enjoying the prospect rather than the fruition of professional success, to spare some of the time which is unoccupied by work in wards and laboratories for the perusal of such antiquated works as have been published as much as twenty years ago, and particularly for gaining acquaintance at first hand with Virchow's *Cellular Pathology*, and the lectures of Watson, Trousseau, and Stokes; or, if their time and inclination does not allow of more extended research, at least to read such succinct masterpieces as Laennec's *Mediate Auscultation*, Heberden's *Commentaries*, Sydenham's *Treatise on Gout*, and Harvey on the *Movement of the Heart and of the Blood*.

(3) I would, moreover, exhort Fellows of the College to see that, while all the new methods of experimental pathology and of pharmacology are carried out by duly trained physiologists, we do not neglect the fundamental method taught and practised by Harvey of inspecting the bodies of those who have died of disease. It was this union of morbid anatomy with clinical observation which made the discoveries of Laennec and of Bright really fruitful. Without these necropsies, clinical medicine is but an empirical art, diagnosis a sham, and treatment little better than quackery. Exclusive attention to therapeutics is apt to bring a man dangerously near to homœopathy and other pretended systems of treatment, but sound pathology and diagnosis controlled by *post-mortem* inspection give positive knowledge and that union of modest self-confidence and prudent enterprise which become the physician.

⁴ Let us hope that the University of London, when reconstituted by the labours of the Royal Commission, which is now preparing its Report to the Crown, may provide by the regulations of its medical faculty for more community of teaching and learning among students of medicine in this city.

MEDICAL MAGISTRATE.—Mr. George Stoker, of London and Dunloe Castle, Killarney, has been appointed to the Commission of the Peace for the County of Kerry.

ON METHODS OF ANATOMICAL STUDY.

An Address delivered to the Medical Society of University College, London.

By ALEX. MACALISTER, D.Sc., M.D., LL.D., F.R.S.,
Professor of Anatomy in the University of Cambridge.

THE GRIEVOUS BURDEN OF THE STUDENT.

THE student of medicine at the present day has a grievous burden laid upon him. He is expected in the short space of five years to master the principles and details of the five preliminary sciences—physics, chemistry, biology, anatomy, and physiology—to become proficient in the four more purely professional subjects—pathology, bacteriology, pharmacology, and therapeutics—to invade the domain of the lawyer in the study of medical jurisprudence, and to make himself expert in the applications of all these to the practical branches of medical and surgical science. These are not only the three specified in the Medical Act—surgery, medicine, and obstetrics—but also the finer subdivisions, such as ophthalmology, rhinology, laryngology, otology, etc., the mere recital of whose names reminds us of the description of the state of Egyptian medicine given by Herodotus.

We have a rough measure of the amount of work which this course entails in the bulk of the textbook literature which covers the ground. About 10,000 pages—for the most part crammed with facts—have to be studied with an attention which amounts to a virtual committing to memory of their contents. In addition to this private reading the student must spend time and strength in practical work in the special laboratory of each department and in the hospital wards, so that he may educate his eye and his hand to a high degree of scientific precision.

There is also this farther complication in the educational outlook that the amount of knowledge in all these branches is rapidly growing. The literature of new work in human anatomy published in the year 1892 amounted to a little more than 2,000 octavo pages, and research in the other subjects is quite as prolific in its results. This advancement of learning has led to a necessary division of labour in our medical schools—a differentiation of teachers consequent on the specialisation of subjects, so that the student is instructed in anatomy by an anatomist, in biology by a biologist, in chemistry by a chemist, and so on through the alphabet of the sciences.

Theoretically, the plan of this arrangement is a counsel of perfection, and the result—the ideal physician—is the marvellous man of erudition and skill with whom we are familiar in novels, who combines the omniscience of an Admirable Crichton with the astuteness of a Sherlock Holmes. But, unfortunately, in the practical working of our system there is one drawback—human receptivity is a limited quantity, for many a conscientious student has discovered from sad experience that the brain is as impatient of overfeeding as the stomach. Here we are brought face to face with a real and growing difficulty, and eventually we must come to a deadlock, unless some satisfactory measure of reform in our method of education be devised.

The fundamental consideration which should be the guide of all medical teachers, and especially of all those authorities whose business it is to plan curricula and to arrange for qualifying examinations, is the clear perception of the central aim of all medical study, which is the relief and prevention of disease and of suffering among men. Our profession, as a profession, exists solely to this end, to which all the branches of knowledge in the curriculum are ancillary. He is the most successful healer who aids Nature most effectually to fulfil these purposes, and to this touchstone should all our knowledge be brought—How far does it help us in doing this work?

It is at this point that our present system is liable to fail. The sciences which form parts of the medical curriculum may be viewed from two distinct standpoints, the academic

or that of pure knowledge, and the practical or that of their relation to the art of healing. Scientific truth viewed in the former aspect is interesting for its own sake; viewed in the latter it is interesting only for the sake of its utility. The specialist sees his own science chiefly from the former point of view. To him the proper discharge of his duty means the teaching of his science as it is known to him, and it cannot appear otherwise than a degradation to be compelled to teach it by schedule or in any such imperfect form as must of necessity rob it of its completeness and of much of its interest. This view commands our heartiest respect, especially in the cases of anatomy and physiology, for if there be any subjects in the course with which the practitioner requires to be especially conversant, they are these twin sciences. But even here we are confronted with that psychological deadlock, the impossibility of mastering all the details included in these subjects.

It comes, then, to this, that under the pressure of concurring and conflicting interests, the preliminary sciences cannot be taught in their entirety; and as it is plain that the most judicious care must needs be exercised in the selection of the portions of each which should be obligatory on the student, we are forced to give some answer to the very practical question, How much of each must the student know, and how is he to learn it?

We are concerned now with the answer to these questions only so far as they apply to anatomy. It is unnecessary to spend time in insisting upon the importance of its place in the course, as constituting the very foundation of medical science. The words of our earliest English anatomical writer, Vicary, are as true to-day as they were when written: "The Chirurgion must knowe the Anatomie, for al authors write against those surgions that worke in man's body not knowing the Anatomie; for they be likened to a blind man that cutteth in a vine tree, for he taketh away more or less than he ought to doo. And here note well the saying of Galen, the prince of philosophers, in his Estories, that it is as possible for a surgion not knowing the Anatomie to work in man's body without error, as it is for a blind man to carve an image and make it perfyte."

The extent of anatomical knowledge considered requisite for practical purposes in the days of Vicary was different from what it is in our own time. According to him, all that it sufficed the young practitioner to know about the anatomy of the gluteal region is that "the hippes have great brawny flesh on them, and from thence dissend downwards brawnnes, cords, and ligaments, moving and bynding together the thies with the Hanches themselves." In the days of George I the description of this region had grown longer, but in our best English textbook of that period it is comprehended in sixty-eight short lines; whereas at present we find in *Gray* that the account of this region occupies rather more than eight times that space. How heartily will our students now say "Amen" to the sentiment of Cheselden: "I could wish the Dividing and Distinguishing of Parts was usually carried no farther than is necessary to answer these valuable ends"—that is, of utility.

Until a little more than a quarter of a century ago anatomy occupied a unique position in the curriculum of the medical student. In all other departments he had no alternative but blindly to accept the dictum of teacher or textbook. Here alone he was trained to use his eyes and his hands; here alone he was educated to translate the impressions made by the objects of his study on his senses into words, enabling him to check the descriptions in his books or those taught in the lecture room by comparing the realities under his hands with the verbal accounts of them given by his teachers. In the dissecting room every student was an investigator. In this way practical anatomy was a discipline of incalculable value, for not only was the knowledge acquired an end in itself, but the method whereby it was gained was the most valuable part of the entire medical training. Physics, which was no part of the curriculum in my student days, is now the subject of a laboratory course; so is chemistry, so is biology, so is histology, so is physiology. Each of these is not only taught in the lecture room, but the laboratory course of each is a practical drill. In this respect anatomy has lost its singularity, as it is no longer the sole subject learned by the method of practical experiment.

Not that it is yet quite superseded in this respect by its sister subjects. I believe that a training in careful dissection is still the best discipline whereby the student can acquire neatness of manipulation and thoroughness in experimental work; and, *per contra*, the vile habit of scamping work acquired by lazy and careless dissectors is certain to be carried by them into the other departments of their study.

Viewed as a discipline and training in method, anatomy is still of pre-eminent importance to the student so far as his study is practical, but no farther. So long as it trains him to see things with his own eyes and not with those of his teachers, so long as he is made to use his own hands and not to stand idly by while the demonstrator does the work, so long as he carries on his work in a critical spirit, not willing to accept the words of his textbook until he verifies them by comparison with the facts—under these conditions there is no part of the modern curriculum from which the student benefits intellectually and morally so much as from his practical training in anatomy.

Having said this by way of preface, let us now endeavour to answer the two great questions which the exigencies of the time have set before us. It is quite plain from what has been said of the growth of knowledge in anatomy, that it is only the privilege of the few to keep up with that progress, and that consequently some definite principles should be formulated to guide the anatomical studies of the many. We shall find it most convenient to reverse the order of the problems and to take in the first place that of method.

HOW SHOULD A STUDENT LEARN HIS ANATOMY?

Whatever amount of anatomy it may be needful for the student to know, it is of fundamental importance that his knowledge should be accurate. I have elsewhere said that the only knowledge of anatomy which is of use to the practitioner is that which will enable him, without hesitation, to put his finger over or a needle into any structure of the body. The skin should interpose no obstacle to the precision of this localisation, or to his power of mentally picturing how the parts lie with regard to each other. It is not given to every man easily to visualise things and places. The inquiries set on foot by Mr. Galton show that human capacity is very varied in this respect, but I have little doubt that the power can be cultivated by close attention. One of the greatest anatomical teachers of his time, my revered predecessor in Dublin, James Macartney, used to impress upon his class, at St. Bartholomew's, the importance of this kind of knowledge, which he illustrated by cutting down upon and tying the femoral artery while standing blindfold, and more than once he varied the procedure by keeping his back turned towards the subject while operating.

In order that we may attain to this standard of usefulness, the method of our study ought to be fourfold.

1. The part whose anatomy we desire to learn must be dissected.
2. The structure exposed must be named.
3. The region as prepared by dissection must be compared with sections of the same part prepared by the method of freezing.
4. The arrangements of the parts have to be interpreted, and finally learned by reading and revision.

I have already said enough as to the first stage, and will only add that it should be the aim of the student dissecting to examine every part which is mentioned in his book, and to verify every relation which is there set down. This brings us to the second step in our method, which is that everything exposed has to be named.

THE USES OF NAMES.

There are different opinions entertained by teachers as to the best kind of guide to be provided for the student in his dissection. One plan is to use a concise book of directions in the dissecting room, and not to read the account of the part fully until afterwards; but even though the directory be a good one, like the admirable manuals of Cleland and Bardeleben, the student who adopts this plan is sure to miss many important points at every stage of his work. For the trained observer, who notes down at each step everything

which he sees, this method is good, and will eventually make him a good anatomist, but it takes time. For the ordinary student, who knows not for what to look, or what points to notice concerning the structures which he has exposed, I am convinced that the plan is a bad one, and only entails a harmful dependence on the demonstrator. For him the book to be used in the dissecting room should be a full description containing every particular which is verifiable by the eye, so that these may be observed on the spot, where alone they can be profitably learned.

It is owing largely to this system of trusting to learn about things at home that the student so often falls into the fatal mistake of confounding the learning of names with the learning of the things named. It is deplorable how much the committing to memory of names and of formulæ is supposed to be the chief thing required in learning anatomy. The student at the outset of his career must realise that he cannot become an anatomist by learning off crambooks by heart. Names are necessary to enable us to speak and read concerning the things of anatomy; they aid us in recalling to memory parts and their relations; they should enable us to retain clear ideas as to the nature of things; but unless each name conjures up before the imagination the definite thing named they are useless.

I venture here to add a few words as to the system of names which it is best to use. There are certain qualities which names should have, and of these anatomists have unfortunately been too often unmindful.

1. Each name should be as far as possible a single word. We can distinguish the thumb from the great toe by calling former "pollex manūs," and the latter "pollex pedis," but when we have a classical name for the latter it is preferable to restrict "pollex" to the thumb and to use "hallux" for the great toe. It is, of course, not always possible to name joints by single words, but when we can it is certainly desirable to do so.

2. Each name should, as far as possible, refer to a single part. To call a bone in the wrist, and also one which has only a partial serial relation to it in the ankle, by the common name "scaphoid," is apt to engender confusion; here we have an appropriate synonymy, and can save ourselves from mistake by naming the tarsal bone "navicular."

3. Each name should be as accurate as possible, that is, should not be liable to convey an erroneous meaning. There is a nerve in the neck which is named in many textbooks "descendens noni;" but the trunk from which it detaches itself is now invariably called the twelfth, and not the ninth, cranial nerve. This has led certain describers to rename it after the synonym of that nerve, "descendens hypoglossi." But further research has shown that the filaments composing it do not come from the hypoglossal but from a spinal source, and that they are only close companions of the fibres of the twelfth nerve for a portion of their course. Here we have a clear case for the reconsideration of the misleading genitive, and for the giving of a new name which will convey a true idea of its real relationship.

4. It is desirable that structures which bear definite names in cognate sciences of wider range, such as biology, embryology, and physiology, should have the same names in human anatomy. The student of biology or embryology finds that there is an arterial stem arising from the ventricle which he names the ventral aorta, and that there is another originally paired stem lying along the vertebral column, the dorsal aorta. These are joined by a series of cross branches, the aortic arches. We see in the more generalised vertebrates several pairs of these, and in the human embryo we can clearly trace at least three such arches. But in our human anatomy nomenclature it has been the almost invariable custom to group together the ventral aorta, the arch, and a part of the dorsal aorta under the one name "arch of the aorta," which then has to be split up into parts for purposes of description. Here the adult human names mislead the student in his embryological studies, and the morphological terms confuse us and give us false ideas of homology when we meet with a different system of naming in human anatomy.

There is another region in which there is a want of accordance between the names used by the anatomist and the facts made known to us by the physiologist. If there is anything definitely known in relation to the localisation of function in

the brain, it is that the convolutions which border the central fissure both before and behind are similar to each other in their functional relations, and differ from those which lie in front of or behind them. These are the areas which when injured give rise to affections of the muscular system. Yet, according to the current system of naming, one part of these motor areas is included in the frontal lobe, together with the true frontal convolutions which have nothing to do with motor phenomena, and the other half is relegated to the parietal lobe, whose hinder part is equally unconnected with motion. Here there is obviously something wrong, a something which the development of the parts makes more clear, as it shows us that the central fissure, which appears single and definite in the adult, is really made by the fusion of several originally unconnected pits on the brain surface. This discrepancy between anatomy and physiology would be avoided were we to group the central convolutions into a lobe by themselves, and sever them from a fictitious alliance with parts whose functional relations are so dissimilar.

We must recognise a certain arbitrary element in nomenclature, and this leads to confusion when in different countries, and even in different books in our own country, the usage of words is dissimilar. It is here that the importance of such a convention as that recently inaugurated in Germany becomes apparent. Attention has been called lately to the vagueness of the boundaries of the region of the abdomen, and it has been shown that the accounts of these given in the different textbooks are hopelessly at variance. If such boundaries are to have any clinical value it is plainly of importance that they should be definite, accurate, and universally appreciated in terms of equal comprehension, and I, for one, am ready to agree to the decision of any convention which shall, with due care, recommend any one set of definite boundaries.

The average medical student has a ravenous appetite for names. While examining recently in a northern university, one of the questions I set related to the chorda tympani nerve, and I observed in the papers of two score of students that whatever part of the anatomy of that nerve they did not know, they were all aware that it escaped through the canal of Huguier. It mattered little that only a small percentage knew what that canal really is. I need hardly remind you that there is in general no such canal as an independent passage. The three elements of the temporal bone come into close contact above and behind the mandibular condyle, and ultimately fuse except at three points, at which they are separated by the passage of a few small structures between the elements. Externally there is nothing to interfere with their union, and they become consolidated internally behind the attachment of the edge of the meniscus, the cartilaginous process of the malleus and its ligaments, and the small vessels that, passing in the lee of these, keep open the fissure, and at its innermost corner the chorda tympani escapes. The iter for this nerve, as seen from the tympanum, is usually continuous with the rest of the fissure, but viewed from the basilar surface it may be separated from it by a short superficial area of union. It is this occasionally separate superficial channel whose existence is kept fresh in the students' memory by the euphonious name of the late veteran Professor of Anatomy to the School of Fine Arts in Paris, upon whom we, with praiseworthy British cosmopolitanism, are endeavouring to confer immortality by the association, although his claims seem to be ignored by most of his own countrymen. This cosmopolitanism, I may remark by the way, is one which our more "insular" neighbours across the Channel are very far from reciprocating. I have spent more time upon this canal than it deserves, as it illustrates the point at issue—how much more easy it is to learn a name than to know the thing named.

THE LIMITATIONS OF THE UTILITY OF DISSECTION.

The third stage of study is the comparison of the part dissected with the same region as shown in frozen sections. One school of teachers tells us that dissection is the only way to learn anatomy, but there are some things dissection cannot do. It cannot show you the relations of undisturbed parts, which is of the very essence of surgical anatomy. As the name implies, *dissection* is the art of taking parts asunder; it is essentially analytic. When carried out properly, dissection

as the art of removing the connective tissue from around parts so that they can be severally seen. The most skilful anatomist, when he opens the body cavities, must displace the viscera in relation to the landmarks, and cannot avoid doing this to such an extent that, like the fallen Humpty-Dumpty, all the members of the Anatomical Society of Great Britain and Ireland cannot put them back again as they were before. Here the careful comparison of our dissections with the sections of undisturbed parts comes to our aid. These sections are not mere superfluities—ornamental adjuncts to a dissecting room; they are necessary parts of the teaching apparatus in any properly equipped school. If sections are not available, properly constructed models of them are the next best thing to help us. In a recently published pamphlet an eminent anatomist has ridiculed the use of these by saying that the parts as seen in the models do not correspond to the parts as seen in the dissecting room. And he is right; for we see the parts in the anatomy room not as they were, but as our disturbance has made them. Take, for example, the flattened liver, as you see it on a table, and compare it with the liver of the frozen body, or with Steger's model of it. The former presents a form which the organ could not possibly assume in its normal position when pressed upon, faceted, and moulded by the surrounding viscera and muscles. Take also the pancreas; you know it, as shown in sections or in the model, to be quite a different thing from the long tongue-shaped gland formally figured in so many textbooks. But the liver and pancreas of the model are the organs as they exist in the condition with which the physician has to deal, and it is in these forms that these organs must be known if we are to use to advantage our anatomical knowledge for clinical purposes. Dissection is the only way of learning structure and details; sectional study is the only way of learning relations.

THE VALUE OF A STUDY OF MORPHOLOGY.

The fourth and last stage, that of interpretation, revision, and reading, opens up an important general question, and with it we may with propriety consider the answer to our second problem, How much anatomy ought we to expect the average student to know? This is the last point which our time will now permit us to discuss. It practically resolves itself into the inquiry, How far should the ordinary student be instructed in the morphology of the parts with which he is engaged?

Some anatomists regard morphology as a hindrance to the proper study of anatomy for medical students, and they blame the morphological method of teaching as one tending to diminish the attention paid by students to dissection. There is no doubt that the study of the human body from the morphological standpoint affects our perspective in viewing the component parts of that body. To the morphologist, many facts which are of little practical importance are of the deepest interest. The vestigial cord in the fold of the pericardium is in a sense on the same platform as the superior vena cava, the ductus arteriosus as the arch of the aorta, and the vena azygos as the vena cava. But this is no real objection to morphological interpretation. The anatomist does not regard the larger parts with lessened interest because he takes note of their poor relations; and the morphological method in teaching, while it is as practical as the old merely descriptive teaching used to be, has in addition the advantage of investing the whole subject with an interest which raises anatomy from the level of an engrossing handicraft, an art without a science, and makes it a science as well as an art, an exercise of the understanding as well as a training of the senses. To the mechanical anatomist, the courses of the right and left inferior laryngeal nerves are things to be remembered, not to be understood; to the morphologist they are illustrations of the process whereby this region has come to be what it is. He cannot fail to remember the facts because he knows the process, and, when he sees the altered course of the right nerve which accompanies the commonest of the anomalies of the right subclavian, it is to him no surprise, but a condition which he has foreseen and can understand. To his unscientific fellow it is an unexpected freak, an isolated fact with which to burden his memory.

But if morphology invests some small things with a larger interest, it helps us to put other and more troublesome things in their proper place of unimportance. Thus, to the

morphologist the muscles of the back naturally group themselves into easily remembered series, whose component individuals are of as little moment to him as they are to the practical surgeon; and the number of facets on the carpal bones are of as little importance to him as they are to the practitioner.

Taking it on its lowest ground morphology furnishes to the student of anatomy the most valuable form of *memoria technica* which he can have, infinitely better than any system of mnemonics can possibly be. It has been said that it gives the student more to remember, but it makes his work easier to be remembered. In place of a mass of detached facts it gives him a system, and instead of the common divergences from the usual arrangements being so many extra burdens on the memory, they are so many component elements in a unified knowledge.

There is scarcely any portion of our descriptive anatomy which is not simplified by viewing it from the morphological standpoint. We have an illustration of this in the case of the lateral processes of the vertebræ. The student learns that each vertebra has a transverse process, but he finds that the structure so named is essentially different in each region of the spine. In the neck it is evidently compound, and clinical observation has shown that even during life the separation of the anterior element as a cervical rib may give rise to puzzling appearances. In the loins, again, he finds that this transverse process has moved until it is in front of the articular processes, and in this position takes quite an altered relation to the outgoing spinal nerves from that which it presents in the thorax; but he has learned them all as transverse processes, and in the unity of the name there lies confusion, leading to inaccuracy, unless he checks it by learning a number of collateral facts which have no apparent nexus. But the man who has acquired a preliminary knowledge of morphology discovers that under the one name he is dealing with, at least, two sets of parts essentially different in their fundamental relations. If he be wise he will learn to apply to each of these its distinctive name, and these will in themselves convey clear ideas of the real state of things.

While fighting the battle for anatomy as a subject fit to form a part of our Natural Sciences Tripos Examination in my university, the opprobrium was often cast upon it that by its arbitrary nomenclature it divorced itself from science as such; and in former times there was a certain element of truth in this allegation. That day has passed, and however the *laudatores temporis acti* may deprecate it, morphology has now taken hold permanently on human anatomy, and has given it a new aspect.

It may be said that in taking this view I am turning my back on the fundamental postulate of medical training with which I started, but it is not so. Experience is showing us that the soundest practical anatomy for professional purposes can be more easily and more thoroughly learned by its being made intelligible and reasonable, so that even on the utilitarian principle we can defend morphological training.

If there be any truth in the assertion that the attention given to dissection is less than it was formerly, we cannot blame our more scientific methods as the cause. It is due to the increased demands on the students' time by those other necessary subjects, like physiology, which were formerly so much neglected; and, after all, he is not necessarily the best anatomist who spends hours in exhibiting a *gluteus maximus* guiltless of divided fibres or of adherent connective tissue shreds, but he who knows where the muscle is, what it does, why it is so placed and so shaped. He who not only has traced the source and point of entry of its nervous and vascular supplies, but who can give an intelligent reason for these supplies and their position, is the genuine anatomist.

THE CONUNDRUMS OF EXAMINERS.

If we must diminish the burden on the students' memory, let us lighten it of the unnecessary and useless details into which our descriptions of muscular origins are apt to run. And if in this connection the examiners in anatomy for professional qualifications were to make it a fundamental principle, in framing their questions, that nothing should be asked which had not some practical bearing, it would banish from the curriculum the necessity of committing to memory the answers to those needless conundrums which are useless

alike in the surgical, medical, and scientific aspects of the subject. This would lighten the labours of the student in the best possible way, and make the anatomical portion of his course a pleasant, intelligent, useful, and efficient training, the memories of which would not begin to fade when he finally turns his back on his medical school to engage in the serious responsibilities of his independent professional life.

THE MEDICAL PROFESSION, THE PUBLIC, AND MEDICAL ETIQUETTE.

An Address delivered before the First Pan-American Medical Congress at Washington, September, 1893.

By ERNEST HART, D.C.L.

SIR ASTLEY COOPER, one of the greatest surgeons and most accomplished gentlemen of the last generation, was in the habit of addressing every candidate for Membership of the Royal College of Surgeons of England, of which he was President, somewhat in the following words: "Gentlemen, you are about to enter on a noble and difficult profession; your success in it depends on three things: First, on a good and thorough knowledge of your profession; secondly, on an industrious discharge of its duties; and thirdly, on the preservation of your moral character. Without the first—knowledge—no one can wish you to succeed; without the second—industry—you cannot succeed; and without the third, even if you do succeed, success can bring you no happiness." Those words might form a very adequate summary text for the guidance of the conduct of all medical men. And it might conceivably be asked whether there is any necessity for a more detailed and elaborate code. Indeed, it practically has been asked, and there are large questions involved in the decision. On the other hand, it has from time to time lately in our country been found necessary to reinforce and strengthen our code by additional declarations, and I think to some extent in yours; the need for a stringent upholding and development of the code has also become a question of the day. I think it is clear that if ever there were such necessity, at no time could it be stronger than at the present moment. For under the stress of the modern social development, under pressure of the modern temptation for advertising and the severity of competition, in view of the arts of those who make advertisement a business and a profit, in presence of the temptations held out to draw medical men from the ancient paths of modesty and self-effacement, there is now stronger reason than ever to fortify ourselves against those growing and innumerable seductions by a code so exact, so far-reaching, that the physician need never be in doubt as to what is his duty in any complication, or in the face of any doubtful case in which he may be inclined to give himself the benefit of the doubt.

But, first of all, I want to elaborate the view that our rules of medical etiquette stand upon a strong logical basis, and that their strict enforcement is for the benefit of the public, at least as much as, if not even more than, for the benefit of the profession. Medical etiquette has been sneered at by shallow cynicism as mere trades unionism. It is, on the contrary, a self-denying code which is made in the interests of pure morality, and for the benefit of the public far more than for the interests of the profession. This allegation of trades unionism is the converse of that of inutility, which those who are prone to call themselves of the younger school allege; but not even the youngest of us, as you know, are infallible, and in this matter it is the youngest who are most likely to go wrong. They proclaim themselves liberals. Is it, however, in some cases the liberalism of Gallio? Let us look at this matter from the largest and most liberal standpoint. Let us begin by comparing our code with the standards of the legal profession.

My distinguished friend, Sir Edward Clarke, lately the Solicitor-General of England, in writing to me on the subject recently, said the essence of the matter might be summed up in a very few words: "Every lawyer ought to be a gentleman and ought to do only what is right and honest; if he does not other men ought to have nothing to do with him."

Notice that, "if he does not other men should have nothing to do with him." That position of the bar should be strengthened by this, that the etiquette of the bar is absolutely in the hands of the bar, circuits, and attorney-general, and that of the solicitors in the hands of the Incorporated Law Society, so that any solicitor who is guilty of an offence, whether as a lawyer or as a gentleman, can be, and from time to time is, not only temporarily suspended but deprived of the right to practise at all. In a case tried last July in England, a solicitor in a certain town had been the proprietor of a house used for an immoral purpose, of which he received the rent. That was considered a stain upon his character as a gentleman, and for that he was suspended from the roll and excluded from practice. So that we have at least the example of the legal profession, who have a code even stricter than ours, in insisting upon a high standard of honourable conduct in the profession.

Legal etiquette prescribes certain technical acts which a lawyer must not do. An eminent American lawyer, whom I had the pleasure of meeting, mentioned to me, for example, that he may not conduct a "speculative suit"—that is, he may not conduct a suit in which his pay is to depend on the success of the suit—a palpable restriction on his liberty. Liberty is a blessed word, but compulsion is, under certain circumstances, often a more blessed word. The reason for this rule is that if a lawyer undertakes such a suit he becomes personally and financially interested in the result, and may be tempted not to give the court all the aid which is his duty, or may in the end lose the relations of harmony and respect which are indispensable between the court and the lawyers, who are officers of the court and are bound to help Justice duly to balance its scales.

In the same way "champerty" is a legal offence. So, too, no respectable lawyer will give separate advice upon a case which is already in the hands of a colleague. As between advocate and advocate, harmony, courtesy, and the forms of friendship must prevail; and at any time they must in the interest of the client be able to come together and to seize the earliest opportunity of avoiding litigation by compromise or mutual settlement, where it is possible and right. The etiquette of the bar is very strict, and is closely observed.

Legal etiquette is, like medical etiquette, a code of honour and of duty by which the public benefit; and those who depart from it or deride it—"legal shysters" I think they are called in the United States—are not, any more than medical quacks, those of whom their country or their profession have most reason to be proud.

I will pass at once to the consideration of our code of medical etiquette. I will ask you to consider whether you are of the opinion that it is safe or wise to cast aside the precedents of past experience and to substitute individual judgment for settled rules. If man were a purely abstract and perfectly moral intelligence, no doubt few words would suffice to legislate for his daily needs. Enough to say, "Do unto others as ye would they should do unto you."

But medical men are not pure creatures of perfect and abstract morality any more than other men. They have, indeed, certain advantages from the outset. From the very beginning of their professional life it is impressed upon them by their teachers that their profession is a mission and not a trade; a mission involving frequent self-sacrifice and a steadfast regard for interests other than their own. In this they are greatly helped by the force of precedent, by the example of those around them and of the leaders whom they most respect. But even these are inadequate. Without the aid of the written as of the unwritten law, even the best of men are apt to decide wrongly in their own favour on a doubtful question of ethics, and often in matters and cases where there are settled instructions in the code which would guide them rightly.

Let me read to you a few of the rules of our College of Physicians, which command with us a universal adhesion and respect. I do so only as an example of the conclusions to which many years of observation of the impingement of the forces of modern life on professional duty have led some of our wisest heads. I will refer only to a few as follows:

No candidate shall be admitted to examination who refuses to make known, when so required by the president and censors, the nature and composition of any remedy he uses.

That the practice of medical authors frequently advertising their own