salve; during the following days it may be necessary to make a couple of openings besides, for the removal of the sutures; but this should not be hurried, for the longer the bandages can remain unmoved, the surer is it that the healing 'per primam intentionem' is advanced.

"To ascertain if all is going on well, in three weeks, that entire part of the bandage that covers the face of the stump, can be cut away, the circular portion of the bandage that remains will prove a protection and support to the newly formed edges of the healing wound. Generally, in most cases, the bandages can remain unmoved from three to five weeks, when the wound will be found well healed."

ARTICLE IV.—*Dental Surgery as an Adjunctive Branch at our Medical Schools.* From a Lecture delivered at the Medical School, Surgeons' Hall, May 1860. By J. SMITH, M.D.

IT has now for some years been customary at this school of medicine, to deliver, during the summer session, a short course of lectures on dental surgery,—on the teeth and relative parts, in their peculiarities of structure, disease, and treatment. This branch of practice, as a subject of lecture, occupies rather an unfavourable position; and on this account, and indeed from its anomalous nature in many respects, demands a somewhat more explanatory and formal introduction to your notice than might otherwise appear necessary.

Dental surgery, as it is called, has nothing very brilliant or otherwise inviting in its pretensions, to commence with. It cannot aspire to anything like the importance, the interest, or the fascinations possessed by other subjects of lecture daily under discussion here. The acquirement of any knowledge regarding it seems of no great moment. Any acquaintance with it is frequently deemed immaterial, and consequently optional, or perhaps superfluous. It is a subject only recently attracting much, or indeed any, special attention. It has been virtually relinquished by medical men, and, until lately, monopolized almost entirely by non-medical practitioners. It has, in fact, been almost altogether disconnected from medicine. It has been set adrift to wander an outcast in the dominions of irregular, unlicensed practice; and it is only at the present day that, like a prodigal son, it seems wearied of its vagrancy, and inclined to bend its steps homewards, and claim its relationship and its allegiance to legitimate surgery.

Under these circumstances, then, its position as a subject of lecture is inauspicious, to say the least of it; since, while the subject has the disadvantage of appearing as an interloper on the already existing curriculum of medical study, it labours under the additional drawback of making its appearance with an ungainly aspect and an

odour of insignificance, real or imputed. But I say real or imputed, because to decide this matter constitutes a question at this very moment occupying a very much increased amount of attention, and the settlement of which is involved in no small measure of difficulties, not the least of which being to decide whether the indifference manifested towards the subject of dental diseases depends upon our possessing a knowledge of their unimportance, or upon the fact of no general knowledge existing about them at all,—the latter, in the meantime, promising to turn out the simple and true explanation of the whole matter. "The mouth," says Sahadi, in his *Philosophy of the Persians*,—"the mouth is a grotto, whose pearls are priceless." Grottoes of the kind, however, being rather common, familiarity with their pearls seems to have bred contempt for their value and forgetfulness of their existence.

Unimportant or not, however, as the subject may appear—and I have no wish to magnify its importance—it is of quite sufficient consequence to demand that medical practitioners should be a great deal better acquainted with it than they are,—a fact, the recognition of which I hope to show you as of considerable advantage in many ways.

I am not stating merely my own opinion on this point, but the opinion of the highest authorities we possess on such subjects; and as it is of some moment that at the outset I should be supported in what I have to advance in these lectures, let me quote the words of one or two well-known writers on this matter. I take John Hunter. "One might imagine," says that distinguished surgeon, "that the diseases of the teeth must be very simple, and like those which take place everywhere else in the bony parts of the body; but experience shows the contrary. The teeth being singular in their structure, and in some other circumstances, have diseases peculiar to themselves. These diseases, considered abstractedly, are indeed very simple; but by the relations which the teeth bear to the body in general, and to the parts with which they are immediately and intimately connected, they become extremely complicated. In order to understand these affections, it is, then, previously necessary to comprehend the anatomy and uses of every part of a tooth. Without such previous study it is impossible to account for many of those diseases and symptoms appearing in these organs; and many erroneous ideas of their pathology will be entertained, arising from an insufficient and incorrect knowledge of the structures in which they occur."

Joseph Fox, again, one of the writers following Hunter, remarks, in the introduction to his celebrated *Natural History and Diseases of the Human Teeth*, that "the necessity which exists of procuring relief when the teeth are affected by disease is a source of considerable occupation to many who, in large towns, confine themselves to this department alone; but in those situations where surgeons are obliged to undertake medicine and surgery in all their branches, it

is indispensable that they should be as well acquainted with the structure and diseases of the teeth as of any other branch of practice whatever."—P. 9.

"I believe," says Leonard Koecker, "that I shall be able to establish the fact, that the operative part of dental surgery forms a much more important and more extensive branch of the healing art, and that its practice is attended with much more difficulty than what is the general opinion."—P. 14.

"No one," says Mr Samuel Cartwright, in the last published volume of the *Odontological Transactions*,—"no one who has undertaken the cares and responsibilities of dental diseases can fail to feel that they are strictly a branch of the surgical profession; and cases are constantly presenting themselves to the notice and for the opinion of every practitioner, which cannot but convince him that dental surgery and surgery, distinctly as they are often regarded, are too closely allied to bear separation."—P. 10.

Dr Benjamin Ward Richardson, in his *Lectures on the Medical History and Treatment of Dental Disease*, published this year, speaking of infantile dental affections alone, says:—"Such a breadth of subject is here opened—such a volume of important truths—that I have had supreme difficulty of disposing of the materials before me. The lecture would afford scope for a whole course, with each section as a text instead of a reading."—P. 146.

"Too much attention," says Mr Tomes, "cannot be given by those engaged in medical studies to dentition and its concomitant disorders. The diseases of the permanent teeth also, from their frequency and their painful character, and the important influence they exercise on other diseases situated in their neighbourhood, as well as on indigestion and various forms of nervous and spasmodic disease, command our attention, and render ignorance of their treatment unpardonable."

I have given these extracts, because I think it right to fortify myself with the weight of such authority; and I trust that, having done so, we may dismiss much apparent unimportance—much seeming insignificance attaching to the subject. In fact, it is only when we examine and know all that has thus been done and written by such men, that this seeming unimportance begins to be perceived as indeed more apparent than real.

That its importance, however, as a branch of medical instruction is, at least in some quarters, fully recognised, seems evident from the fact of no fewer than seven of the chief schools of medicine in London alone having regularly appointed lectureships on the subject, viz., St Thomas, Westminster, Guy's, University College, St Mary's, and the London Hospital; while, over and above these, a special dental hospital and a special dental school have been added within the last year or two, supported and conducted by most of the leading practitioners of that metropolis; and, lastly, the Royal College of Surgeons of England has, last year, instituted examinations in

the same subject, and received the Royal Charter for conferring qualifications accordingly.

The interest and utility of such a branch of study as dental surgery must indeed be obvious to every one who for a moment reflects on the matter; and the necessity for a further acquaintance with it than at present exists is equally apparent, when we consider the anomalous nature of the diseased conditions to which the structures concerned are liable, and the modifications of surgical treatment required in their diseases,—that with every change occurring in these organs a change occurs involving the whole constitution and the very nature of the individual; in infancy, the crisis accompanying their first appearance; in adult life, the disorders associated with their diseased conditions or destruction; in old age, the marked alteration of the whole system accompanying their loss. When we consider the intimate and remarkable association of such phenomena with different marked epochs in the dental system, while, on the other hand,—important as thus seems an acquaintance with these matters,—we observe how little knowledge regarding them really exists, at the same time that disease connected with the teeth is one of the commonest cases demanding treatment, how comparatively few practitioners, for example—notwithstanding the familiar manner in which the subject is talked about, and the coolness with which death is constantly ascribed to its influence—would undertake to give even a slight *resumé* of the process of dentition, its different stages during infant, not to speak of fœtal life, and the various epochs at which its most ordinary phenomena, hidden or invisible, occur. How many instances are met with where practitioners do not know even the number of teeth which ought to exist within the mouth, and where the difference of form between one tooth and another is no better known; and, consequently, how often we find such trifling operations as are connected with the teeth undertaken with want of confidence, and performed with want of success, by medical men, who never would have run the slightest risk of failure had they merely paid a very little preliminary attention to the matter.

All this may be, and too commonly is, regarded as immaterial. Be that as it may, however, the frequency of those affections to which the teeth are liable during dentition, as well as after it has terminated, and the teeth are fully developed, renders it necessary for the practitioner not only to be prepared for undertaking their treatment, but even, were it nothing more, to answer such questions as are constantly being put to him regarding these organs, and in answering which he will require to be familiar with all the phenomena connected with the dental system from the first period of its development upwards; and be it remembered that patients too easily see whether he is so or not. Every medical man must expect to be, and indeed every family medical attendant is certain to be, asked regarding a child, during dentition and its accompanying ailments, how many teeth it ought at its age to have. He is equally certain

to be asked, what teeth are those next in order to be expected. As a matter of course, he will be asked what the number of the complete first or temporary set is when they have all appeared; and, very probably, what is the number of teeth, including first and second set, then forming within the jaw. He is sure to be often asked, when should certain of the first set be shed, and at what age should they be replaced by members of the second or permanent series. He is equally certain to be asked, which of the teeth appear only in the permanent, and not in the temporary set; and these he has generally to point out. He may be asked what the number of the second set is, by how many it differs from the number of the first set, and in the addition of what teeth does the difference consist. This is the common and constant inquiry in every instance of malformed jaws, and irregular disposition of the teeth contained in them. Every day the question will be put to him, whether a tooth to be extracted will be replaced, how many fangs it has,—his answer here being, of course, checked when it is extracted;—to which kind of tooth it anatomically belongs, and many other questions, which, idle as they may be, it is becoming and it is his place to know how to answer. And these questions are sometimes put by those, such as experienced mothers and nurses, who may merely wish their own already-formed opinion confirmed, but who are far from being ignorant of what is a very close approximation to the real facts of the case, and what the answer ought to be; and it is exceedingly awkward in such circumstances—exceedingly painful for any medical practitioner to be unaware, for instance, either of the particular tooth which should be next in order of appearing at the time, or whether a succeeding tooth is to be expected at all; and still more awkward for him to have cut a child's gum, as the phrase goes, in the belief that a tooth is pressing upon it, trying to escape, in some curious quarter, where no tooth can reasonably be expected for six months or a year.

Again, every one knows that no structures are more liable to disease, nor the occasion of more annoyance, than the teeth in their mature state. Every medical man is being asked now and then to remove a decayed tooth; some patients who would altogether object to the operation being performed by a stranger, would willingly submit to the extraction of a tooth by their own medical attendant. But how many cases occur where, either from aversion to it or a want of confidence, a practitioner is at heart unwilling to undertake the duty, and perhaps, from unacquaintance with a few details, declines the operation, trifling as it is. This is more particularly important in country practice, as in large towns there are always those at hand who, as dentists, exclusively devote themselves to such cases. But a patient can scarcely be expected to resort to a distant city for aid in such instances—his only errand being the incapacity of his own medical attendant—if another practitioner who will undertake the duty is to be found in the immediate vicinity; and

this very circumstance is no uncommon cause of a patient being altogether lost to a medical man.

A young practitioner starting in some favourable locality, and naturally anxious to establish a creditable reputation, may be called out among his first cases to extract a tooth. He goes, and perhaps finds that his new patient is some lady in delicate health,—perhaps the wife of one of the influential men of the district,—in fact, as the phrase goes, a "good patient." Recollections of not a few failures in dispensary and hospital practice now begin to flash across the surgeon's mind. His comfort on these occasions was the oblivion into which such failures in these days so speedily passed; but now he knows that failure entails a much more disagreeable, a much more injurious result. He must at all events make the attempt,—not now, however, in the presence of sympathizing fellow-students, but in that of probably two or three exacting and punctilious members of the family into which he has been introduced, and who are more than likely to consider his success or failure in such a trifling operation as the key to the acquirements and abilities of their new friend in more important matters. His conscience tells him that a tooth's extraction is, at the best, no joke to the patient,—that if he does it now as he has usually done it, it will be an outrage; he feels his want of knowledge—he operates distrustfully, and, ten to one, he does so unsuccessfully.

Apart, however, from the consideration of the practitioner's own feelings at such inability; apart from the consideration of that detrimental small talk to which such simple occasions frequently give rise, we must recollect that ignorance is here unwarrantable on other grounds. It is by no means merely to enable you to relieve toothache, or extract a tooth, that is the object of these lectures. Connected with this subject, we have the diseases of children during dentition, which, if not caused by, at least accompany this process,—diseases which are more frequent and more fatal than at any other period of life. Erroneous opinions may be entertained of the relation of dental development to those diseases, and perhaps exaggerated statements may be set forth regarding this point. But the universal admission, and the steady rate of occurrence, of certain diseases of infancy as accompaniments of dentition, manifestly indicate a liability to them at this period, and it is clear that much mutual influence must necessarily be exerted between that process and those disorders; indeed, in this case, it is only by the cultivation of a more general intimacy with the nature of dentition than at present exists among medical men, that the beneficial results of such improved acquaintance with this subject are yet to be ascertained. The diseases of the teeth, and their consequences, are considered much more trifling than is really the case. If we consider the irritable constitution during infancy, and even for a time beyond that period, and recollect the whole number of teeth of the first and

second sets, being at that time simultaneously developed within the jaws,—no fewer than 48 being contained in them, between 6 and 7 years of age—20 of these being already cut and in their natural situation in the mouth, while 28 exist in different stages of growth within the jaws,—we can scarcely wonder, taking such circumstances into account, that dentition should exercise an important influence on the health. And although the diseases of the permanent and fully developed teeth may not themselves be of so dangerous a character, yet they are equally frequent with the disorders occurring at an earlier period in those of the temporary set; and from their own painful nature and indirect evil results, such as tumours, abscess, neuralgia, dyspepsia, etc., a knowledge of their diseases and their treatment becomes in many cases of the utmost consequence. Besides, there are perhaps no operations, either minor or major, at which patients become more irascible on failure, than operations on the teeth. Let a man's tooth be injured—broken, say—be it ever so excusably: he glares at the operator, and bestows forgiveness on him, if he does it at all, only like a martyr on his murderer.

We must recollect that all dental disorders are connected with tissues, such as the teeth are, very peculiar in their construction and general nature altogether, when compared with other organs; and it is in this way easy to perceive the benefits to be derived in the treatment of their diseased conditions from a previous knowledge of their anatomy and physiology. One of the principal objects of special lectures is, that more attention may be devoted to such structures as are in their organization complicated or obscure, and, it may be, exceptional or unique. To become familiar with the healthy and morbid conditions of such organs, requires attention to be devoted to their special study,—as is the case, for example, with the eye and its diseases; and the peculiarities of structural and functional character met with in the development, the tissues, and the diseases of the dental system, appear to render such attention equally necessary in this case also. Because, whether we regard the teeth as exerting a morbid influence during their development; or, as being themselves bare and exposed as they are within the mouth, so directly liable to chemical and physical destructive agencies; or, as demanding so many special adaptations in the treatment of their diseases,—we find them to be in a manner unique. We find them acting positively as foreign bodies during their development within the bony texture of the jaws, where their bulk is as rapidly increased as their number is largely augmented, while, at the same time, the bones containing them undergo very little increase of size. This itself is one circumstance which imparts an anomalous character to many affections connected with the teeth. Again, in their fully developed condition, we find the teeth, unlike any other bony structures, bare and unprotected, as we have said, within the mouth, and exposed to all those injurious influences which, to any organ approaching osseous tissue in its

constitution, would in similar circumstances be detrimental. Lastly, their distinctive structural peculiarities require a style of treatment as different from that of other bony textures, as these two cases are in the characters of their morbid conditions themselves.

I am aware that many topics involved in these considerations are included, or understood to be included, in the subject matter of other lectures; and that in cutting out a *special* course for subjects already discussed in more than one *general* course of lectures, I may be thought like the man who, with a large hole already in his door for the cat, proceeded to cut a small one for the kitten. But there is an advantage in bringing together in a collective form those facts which are otherwise unconnectedly discussed by different lectures and at different times. Another circumstance is, that certain affections occurring during infancy, if not specially considered, are apt to be overlooked, by their forming a sort of debateable ground between the province of the lecturer on midwifery and that of the lecturer on practice of medicine; dentition being in full activity at the termination of the period of lactation—a period when the diseases of infancy cease to be more particularly adapted for introduction into a course of lectures on midwifery—while they seem as little suited for discussion along with the ordinary subjects of the lectures on practice of medicine. In short, at this early period of life, the diseases are of a somewhat anomalous character, and in their nature stand by themselves.

It is, indeed, upon such principles that special lectures in any department of medicine have ever been established, and I need not refer to the inestimable benefits resulting from their introduction. One of the leading and most interesting characteristics of the age in which we live, is what is termed by political economists "the division of labour,"—an arrangement by which the separate working and individual exertions of many are made to converge towards the accomplishment of one grand object—the organization of one central and complex whole. Such is the system admitted and approved by those engaged in manufactures and other commercial enterprises; and although we can scarcely speak of manufacturing medical men, yet pupils are the teacher's raw material, and to turn them out the finished article requires a division of labour no less complete.

It has been argued that special lectures are apt to engender specialists, and that all specialists in medicine are objectionable. But two kinds of specialists exist: the one having his whole stock of knowledge limited to the specialty he practises; the other possessing all the acquirements and qualifications of the general practitioner, but devoting them all to the specialty he has adopted. The first is the man described by Goldsmith, who without the body of the shirt may cut a figure in the ruffles; the other has the ruffles, but he has the shirt besides. It is, in fact, on the sense in which the term specialist is employed that the whole depends.

As for teaching the science of medicine without an arrangement into separate special branches, the thing is impracticable. It is the method by which the greatest results are produced by the least amount of labour. It falls under the old illustration of Sertorius, where two men are described as competing with one another which should pull off a horse's tail in the shortest time: one set to work pulling at it in a mass, and failed; the other adopted the plan of pulling it off hair by hair, and succeeded;—so is it in the acquisition of medical instruction.

Again, it has been argued, why devote such attention to some departments of medicine, while others are no less in need of as much culture, and perhaps more? Why make dental disease, for instance, a subject of special lectures, while so many other diseases equally demand increased investigation. But this style of argument requires no comment. It only makes matters worse. Its import is similar to that of the exclamation of a foreign gentleman, upon a lady remarking to him that his hands were dirty—"My hands! If you saw my feet." The two cases are precisely parallel.

Besides, those changes ever occurring in society demand increased acquaintance with and increased attention to certain innovations in some special branches of practice; and it is little ailments, not the performance of dashing operations, or the miraculous cure of hopeless diseases, that constitutes the mass of average cases daily falling to practitioners. It requires much philosophy, says Rousseau, to see what goes on daily before our eyes. Medicine, like charity, should begin at home,—with the treatment of homely, domestic disorders; and I think you will find diseases of the teeth to belong to that catalogue. Surgeons certainly should be able to undertake their treatment, and if the regular dentist will necessarily be required at least for completing some cases, the surgeon ought at any rate to be able to prepare the way for and to understand these manipulations: he ought to know what is required of the mechanical dentist, and when his interference is required; and certainly every surgeon should even know the general characters of mechanical dentistry—as, for instance, of artificial teeth, their kinds, their modes of fixation, etc.—when we reflect on the frequency of such occurrences as swallowing teeth, and the difficulty of extracting them from the œsophagus or gullet unless their form is familiar. Because although cases do occur where such swallowed teeth pass through the whole alimentary canal, without injuring or being injured,—patients with more economy than squeamishness occasionally even replacing in their mouth the wanderer on its appearance in society once more,—yet in many instances death has been averted only by the dislodgment of such foreign body from the fauces or gullet, where it had become almost immoveably impacted.

Finally, one of the most useful, indeed essential adjuncts to this, as well as to any similar course of lectures is clinical teaching, or rather practice, in the application of knowledge orally conveyed. An

opportunity for this will, I trust, soon be afforded in this instance, as, according to the recent example set by other schools of medicine, arrangements have been made for instituting in Edinburgh a special dispensary set apart for this purpose. As yet, however, these arrangements are incomplete, it being desirable to ascertain the average attendance of patients before admitting pupils. Very shortly, however, we may expect to be enabled in this way to combine the advantages of a practical along with a theoretical course of instruction in all those affections comprehended in the province of dental surgery.

ARTICLE V. — *On Infantile Mortality, as illustrated by Private Practice; with Suggestions for Future Inquiries.* By W. T. GAIRDNER, M.D., Fellow of the Royal College of Physicians of Edinburgh.

IN the course of some inquiries in which I have lately been engaged,[1] into the rate of death of infants under one year in England and Wales, it occurred to me as being a desirable thing to obtain from the records of private practice some data bearing upon this subject. I accordingly applied to two or three friends in the medical profession, engaged in general practice, on whose faithfulness in recording facts, and willingness to communicate them, I thought I could rely with confidence. The data so obtained are not, of course, strictly comparable with those furnished by the Registrar-General, and used by me in the researches above referred to. But they are of importance, as the nucleus of an inquiry which might probably be greatly extended with advantage to the public, and which almost every practitioner largely occupied in midwifery practice might follow out within his own sphere of observation. I therefore think it right to place on record the more important of the facts furnished to me with so much care and goodwill, in the hope that, although insufficient as a foundation for general conclusions, they may hereafter be amplified and generalized so as to afford a large amount of valuable instruction.

The question which I put to the friends who so kindly undertook to assist me was this: Of the infants born alive under your immediate observation, what proportion die during the first year of life? I requested that this question might be answered, if possible, in some detail, and with reference to certain particulars pointed out as being probably attainable. I also requested that the induction might be founded upon not less than 200 cases, and that these might be taken strictly as they occurred, *i.e.*, entirely without selection; and that the doubtful cases might be stated as doubtful, rather than simply excluded from the inquiry. In this way, having regard to

[1] See a paper, read at Glasgow, Sept. 1860, to the Association for the Promotion of Social Science.