teaspoonful of starch-water with 15 drops of tincture of opium was given; and in one hour the cold-water enema (one pint) was repeated; this time it was retained. At 4:30 p.m. the same day the temperature was 102 F., and the patient was resting quietly. At 10 p.m. an enema of nearly one quart of water at 40 F. was given. Applications to the chest were continued, and 1/5 gr. of codein was given every four or five hours. At midnight the temperature was 100 and the pulse 110. During the remainder of the night the patient slept fairly well, something she had not done—she said—for more than a week.

On July 2, at 9 a.m., I found the patient quiet and resting, the delirium gone, the cough relieved, expectoration free, the temperature 100.5, and the pulse 100. A cotton-batting jacket was ordered in place of the poultices. Pepsin, 5 gr., and bismuth, 10 gr., were given every four hours, and salol 5 gr. every four hours. The bowels were very loose, but were kept under control by using, when necessary, 10 to 25 drops of the tincture of opium, in thin starch-water.

In looking over the nurse's notes I find that this patient received on an average of two enemas of cold water a day for seventeen days, with the most beneficial results. The temperature was always kept below 102 by means of cold water. This patient also made a good recovery and was discharged August 13.

The six other cases I would speak of briefly as a whole: One was a child of 6 years; one a woman of 60, and the others were of middle age. They were all treated with the cold or tepid sponge bath, whichever gave them the least discomfort; and all were given the cold-water enema. No bad results came from its use. One case of hemorrhage was promptly relieved by the enema of ice-cold water. Where the diarrhea was persistent it was controlled by the starch-water and tincture of opium. A little brandy was used in one case only, for the relief of temporary heart failure, while strychnia was used in several.

I wish to speak in particular of sleeplessness accompanied with restlessness and a tendency to exhaustion and delirium. The cold enema relieves this condition quickly and completely.

In closing these few remarks, I desire to say that early antisepsis of the gastrointestinal tract is greatly to be desired. A few doses of chlorid of mercury were used in all of these cases, followed by salol, for a longer or shorter period of time.

Whether the cold-water enema has an antiseptic action on the typhoid bacillus I can not say, but I do know that its use is followed by a rapid decrease of temperature and great comfort to the patient.

SHOULD THE DENTAL STUDENT BE EDUCATED INDEPENDENTLY OF GENERAL MEDICINE?*

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Only yesterday one commonly heard the statements: "These dental college graduates don't amount to anything, they are too theoretical; it is the practical man who learned in an office and never went to college that can fill teeth." "What's the use of a dentist studying anatomy and physiology and such things? He wants to learn to extract and make plates and put in fillings and not waste time on studying theory." A brief day finds all this passed away, profession and laity both de-

manding the degree of Doctor of Dental Surgery, as at least a certificate of proper study and attainment.

Again we note the same old spirit giving out the idea that too much study of medical branches makes a less efficient operator, that such work must be curtailed in order that more time may be devoted to purely technical training, and every consideration subordinated to development of the mechanical side of the subject. But the tide of advancement is even now setting in and with the weight of accumulating information is forcing the need of broader dental education along the line of general medicine. Already the layman of the better class looks for the M.D. to add assurance of reliability that to him the D.D.S. unattended does not represent. To claim that the dentist needs a knowledge of anatomy, but that his knowledge should stop at a given point, because he does not require a more extended study of the subject, and is in fact better without it, would seem to be strange logic; and yet—ridiculous as is this proposition, contemplating, as it does, the isolation in treatment of a limited part of that wonderful anatomic structure, the human body, from all its other portions, when its very fundamental principle is the harmonious co-operation of every division, whether great or small, with each and every other one—this is exactly what the advocates of dental, to the exclusion of medical, education for students of dentistry are, wittingly or unwittingly, undertaking to do.

It ought to be a matter of surprise that a paper having the title of this one should be called for by members of the dental and medical professions, so-called—for we know that these two, which at most ought only to be recognized as distinct factions of the same professional body, are not commonly so understood. While the current stirred by the movement of vastly increasing realization of the importance of anatomic, physiologic, clinical, histologic, pathologic, bacteriologic and therapeutic considerations in relation to the oral cavity and to even the simplest of those operations which contemplate the preservation of teeth and other organs associated with the mouth, the relative interdependence of other organs, or even the entire human organism, on the healthful condition of these special ones in the performance of their proper functions, has done much to broaden the dentist's field of operation, yet there is in some quarters a decided tendency to limit it, despite the very apparent need of its extension.

The colleges that have been conducted independently of medical colleges point with pride to the record of their achievements. They can and do truly say, "we have been the chief factors in making dentistry and the dentists of America the best in all the world." Grant this, and still may it not be possible that, in the evolution of the educational system of a great profession, the time has come for something better, for a curriculum which, embodying all that the specialization and technical training has beneficially accomplished, shall yet become so broadened as to include the scientific study that a thorough knowledge of medicine demands and which has become imperative to dentistry in view of the requirements of an educated public?

Notwithstanding all contrary efforts, several factors are working to this end. The education of medical and dental students together, as in the departments of universities and medical schools, is perhaps first among these influences. The advantage of future consultation

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becomes apparent, as daily the common relationship of diseases of the mouth to general disorders of the system is shown in the dispensary and infirmary work, and each student becomes impressed with the idea of the futility of treatment without due consideration of this fact in a large proportion of cases. Friendships and mutual respect thus born make easier the practice of this principle. The division of expense makes possible a better class of teachers and better instruction for a limited number of dental students.

Last, but by no means least, the public, being educated through the press and otherwise, are now more and more concerned with the grave character of pathologic oral conditions, and seek rather one who deals with such than an artisan who rivals the jeweler in his accomplishments, to the exclusion of such considerations.

Time and inclination are, after all, the essential points. The former must be gained by lengthening of required periods of study before graduation, the latter is an outcome of natural development stimulated by such influences as may be brought to bear upon the colleges, students, profession and laity. In my paper read before the National Association of Dental Technicians, the actual number of hours possible to be devoted to each branch of study was estimated under the seven-month term, and it was clearly shown that only a bare smattering was practicable, and that the need of a longer period of study was most urgent.

The plan of having a four years' medical course precede the study of dental branches is impracticable; the age of the student, after allowing for the necessary years of preliminary study, would in most instances be such as to make the matter of manual training and the acquirement of sufficient technical dexterity much more difficult and uncertain than at an earlier age, whereas on the other hand, the more matured mind is better able to understand the science of medicine.

Dentistry, while a special branch of medicine, just as the eye, ear, gynecology, or any other of the recognized divisions, differs from each, and the overruling of this fact must surely tend to its disadvantage, but there is no good reason why the study of medicine during the first two years can not be supplemented by a thorough training in operative and prosthetic technics, or general anatomy by special dental anatomy. Nor can there be any objection to continuing, during the summer months, practical operations in the mouths of patients under the direction of demonstrators in the college infirmary, where the student can be steadily employed in filling teeth, constructing crowns, bridges and dentures and in performing all the operations of dental practice in order that he may, during the winter session, devote more time to the studies of his third year in medicine, without interfering with the regular requirements for dental graduation, and the following year receive a degree in medicine. Such a student, although completing the work in four years, has had seven full courses of instruction, and therefore, much more practical experience and study than could be possible during the regular winter sessions alone; at the same time his study of medicine is exactly the same as though he were to be a general practitioner, and he is in all respects an equal in mental equipment.

The practical benefit of such a course of instruction seems to be borne out by the results obtained in the Dental Department of the Milwaukee Medical College,

where for students undertaking this double work, eleven full months of attendance in each year are required. The men ambitious and able to undertake and carry on this course faithfully have proved themselves to be in every way more fit and capable than those whose desire is to slip along with less effort in the way of study and attendance; are better operators, more skilful in mechanical ability and far more to be depended on to deal with surgical and other measures in the treatment of pathologic conditions than they could possibly be with only three seven-months terms of special dental instruction.

Perhaps one of the most perfect systems for educational development that has ever been brought forward is the Froebel kindergarten. Its practical utility in developing the powers of the growing child, of forming character, in pointing to his special traits and in leading on to the future selection of an occupation such as Nature's bestowment of talent has best fitted him for, all through the delightful agency of plays, songs and entirely happy occupation is simply marvelous, yet its general application to public school methods for large numbers of children, where so much of the significance of each part is necessarily lost and only that which is purely mechanical remains, is undoubtedly proving itself anything but the benefit that it really ought to be; so in the matter of giving instruction in operative and prosthetic technics in our dental colleges while the conception and value of such work in preparing the student by training the hand, the eye and the mind to act together with a just appreciation of the requirements for operations on the mouth and teeth, by laboratory instruction, beyond doubt mark a mile-stone in the progress of dental education, yet when such methods are applied to the instruction of numbers of students far greater than should be undertaken at one time—where actual work on the patient was required and where instead of the individual student being brought in closer touch with actual conditions of the mouth he is kept away from them and thus longer removed from the time when he shall operate on the living subject—then like the kindergarten under similar conditions, they cease to be the thing of benefit that they should be, and become a menace to that high development for which they were originally instituted.

Unfortunately, the fact is not generally recognized professionally, socially or otherwise, that the mental and physical requirements of the practitioner of dentistry cover a wide field, even greater than the exactions for rhinology, laryngology, otology or ophthalmology. His need of medical science is quite as great; his special part in its relation to general disease or to pathologic conditions in other parts is fully as significant as theirs; and beside all this he must have the eye and the subtle appreciation of cosmic effects that the artist has, as well as the delicacy of touch and manual dexterity of those whose occupation fits them to manipulate the delicate hair-springs of the finest watches. It is because the breadth, the scope, and the wonderful possibilities of individual and collective effort, if directed toward the development of the powers of future dental practitioners as a benefit to humanity, are not fully understood.

Consider for a moment that the mouth is the beginning of the digestive tract, the functions of which are as much dependent on its co-operation as any other portion, and that its impairment through disease can at once extend an influence throughout the entire economy,

disastrously affecting digestion, assimilation and metabolic changes without which a general condition of health is impossible. Remember that its lining membrane extends to the nose and throat, and any of its diseases are thus afforded easy transit to more remote parts; also that with heat, moisture, accessibility to the outer air, what a wonderful incubator it provides with culture-media ready to cater to the appetites of every variety of germ; and bear in mind that it commonly harbors the bacilli of tuberculosis, diphtheria, typhoid fever, the pneumococcus, the streptococcus of erysipelas, and the various germs that are known to be concerned in suppurative processes. Think again of the network of large vessels capable of carrying infectious products directly to the brain and the intricate network of nerves, irritation of which can easily cause pain, paralysis, anesthesia, hyperesthesia of different parts, or through their ganglionic associates, send messages to different portions of the body, which shall in their turn give rise to conditions such as neurasthenia, epilepsy, chorea, etc. Furthermore, let your mind dwell on the possibility of anemia, septicemia, pyemia, or tetanus through the agency of disturbances in this single part, and then let question who will the need of medical knowledge for those on whom all these considerations must depend.

In the U. S. Educational Report it is noticed that dentistry is a branch of minor surgery, specialized and quite apart from medicine or even general surgery. Is the practice of dentistry more of the nature of minor surgery or are the operations performed by the dentist in treatment of diseases of the mouth less grave or more fitly termed minor than the majority of those performed by practitioners of those other specialties, and is not the fitting of glasses quite as mechanical in its nature as the fitting of dentures?

In parts of Europe there has long been a distinction between the dentist of limited degree and him who, through having had sufficient education, is entitled to be called "Doctor." The Belgian government has in contemplation the suppression of the diploma in dentistry with the right to practice dentistry to be conferred only on the physician, the same as the other specialties of medicine.

While it seems altogether unlikely that America will follow the lead of European nations in regard to any matter pertaining to dentistry, the fact nevertheless remains that, having taken longer and more expensive courses in both medicine and dentistry, it is but natural that some benefits should accrue to the individual aside from his own selfconsciousness in being better equipped for the practice of his chosen profession. This can only be through closer relations with the medical profession and the recognition as a member of that profession by the public generally, hence the tendency already noticed on the part of a steadily increasing number of individuals to hold aloof from purely dental conventions and interests. This condition of things is greatly to be deplored; it is just the leaven of the influence of such men that the upraising of the dental standard requires most urgently now as ever; and above all things the work of this Section should be to bring all into the great medical fold.

The time has come, it would seem, for the dentist who would be also a surgeon to be one in fact as well as in name—to have his degree in medicine and also that which certifies to his special training as a dentist. If

he chooses to ignore the medical aspect of his calling then he should, with due regard for consistency, leave out the word surgeon, and call himself doctor of dentistry, not doctor of dental surgery or doctor of dental medicine, since he elects to ignore the profession which these terms represent, and to be simply the doctor of dentistry, in other words, a teacher of the methods of filling teeth, shorn of the medical, pathologic, bacteriologic, the surgical, and in short, the entire medico-scientific aspect. The very individuals who so loudly proclaim the fact that a dentist should be distinct from the medical profession, and freely ignore the right to recognition in that direction, would be the very first to protest against the withdrawal of all those portions of the educational and practical branches of his profession, which belong by right of fact, custom, priority and inheritance to the older profession from which they wish to separate themselves.

It seems the height of absurdity to speak of the "passing of the dental college" at the moment when the number of recent graduates eclipses all former records, yet, just as the lengthening shadows betoken the coming sunset, so must follow as "night the day" a restoration to medicine unconditionally of her wayward but promising child, dentistry.

THE PRACTICAL VALUE OF A MEDICAL EDUCATION TO THE STUDENT OF DENTISTRY.*

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Much has been said as to the necessity of a broad educational foundation for dental students from a theoretic or scientific point of view. That an educational superstructure can be raised only to a height correlative to the breadth of its scientific foundation will be gainsaid by none; but I would speak of the value of a broad medical education in the everyday practice of the student of dentistry when he has taken upon himself his life-work as a practitioner. There exists too broad a gap between the practice of medicine and dentistry; a field of practice uncultivated by either doctor or dentist; one which can not be reached by either so long as present conditions remain. The doctor fails to recognize the mouth as a cavity in which neural irritations, productive of remote manifestations are developed, but treats it rather as a cavity for dentists to work in. The infection of the alimentary tract is a matter of great interest to the practitioner of medicine, but the oral cavity, with its abundance of microbes and its deep recesses for their propagation, has been abandoned by them to the dentist.

The patient is referred to the dentist with the expectation that he will assume the full responsibility of the care of the mouth, a responsibility which he may not assume if his knowledge of medicine is not sufficient to trace from cause to effect and from effect back to cause again any of the pathologic conditions to be found there. In our present condition of practice a large percentage of the diseases of oral origin go unrecognized by dentist

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