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## *THE CULTURAL FACTOR IN THE DENTAL CURRICULUM*[1]

FIRST of all let me discharge the pleasurable duty imposed upon me by the administration of the University of Pennsylvania and its faculty of dentistry, by conveying to you their fraternal greetings and hearty congratulations upon the completion of this splendid edifice which to-day you dedicate to the purposes of education in an important specialty of the science and art of healing.

It is characteristic of the things of the mind that they are unhampered by the limitations of time or extent, that the commonwealth of intellect is without geographical boundaries or distinctions of caste, race or nationality; that the pursuit of the intellectual ideal lifts all to the level of a common brotherhood; and it is in the spirit of this larger fraternalism that I bring you the salutations and greetings of one of the oldest institutions of learning established by England in her American colonies. It is by reason of our common origin as well as by reason of our common ideal that I have a peculiar pleasure in being present upon this happy occasion as the temporary mouthpiece of an elder sister institution to discuss with you briefly something of the circumstances and conditions which environ the special department of education with which we are mutually concerned, and, claiming the prerogative of an elder sister somewhat, to point out a few of the difficulties to be overcome by her younger

[1] Delivered at the dedication of the new building of the Royal College of Dental Surgeons, Toronto, December 29, 1909.

relative who, with the enthusiasm and pride begotten of a new and faultless dress, starts out to-day refreshed and eager upon her educational pathway.

While dentistry and possibly dental education, in some sort or degree, is doubtless coeval with man and man's physical needs, dentistry as an organized department of activity and education is but seventy years old, its inception as a profession dating from the establishment of the first school for the systematic education of dental practitioners in Baltimore in 1839. From this initial and successful attempt at organization upon an educational basis have arisen all subsequent efforts having the same objective purpose, notwithstanding the individual differences as to means and methods which they severally involve.

From the first successful attempt to provide the means for the systematic education of the dentist down to the present time both the effort and its practical realization have been "hedged round and about" by opposing opinions as to the relationship which dental education should rightfully bear to medical education. And while the arguments of those who would compel the merging of dental education within the medical curriculum are even now manifesting another periodical recrudescence, the process of evolution and the incontestable logic of fact and experience are more and more firmly establishing dental education upon an autonomous basis.

It is not my purpose to enter into a discussion of the relationships of dentistry and medicine further than to call attention to the fact that from its beginnings as an educational system dental education has been subject to more or less stress of criticism because it has elected to develop outside of the channels of medical education and to mark its qualification with a degree distinctive of its own special culture.

That our professional forebears were wise in their decision to place dental education upon an independently organized basis is a conclusion which I think is justified by the practical success of their plan, which in its evolution and development has given to the world the profession of dentistry as we now find it ministering acceptably to the health and comfort of humanity in all civilized nations.

The social conditions, the social needs of humanity to-day, are, however, not the same as those which characterized the period when dentistry as a profession was in its swaddling-clothes. To quote a recent phrase of President Eliot, "the world has been remade in the last half century," and it will, I think, be profitable for us to consider to what degree dentistry and dental education have kept pace with this world development; in other words, has dentistry remade itself in keeping with the intellectual and material progress of society?

Mr. Herbert Spencer enunciated as his broadest and most comprehensive definition of life that it is "the continuous adjustment of internal relations to external relations." Applying this definition to the case in hand, our inquiry concerns the degree and extent of the adjustment which dental education has maintained with respect to its environing social relations; has it in its educational methods reflected the intellectual progress of the times and fairly met the demands of the social order by a continuous adjustment thereto, thus demonstrating its right to live?

From the material point of view no other than an affirmative answer is possible. When we consider the aggregate of pain and suffering that has been mitigated or completely banished by the skillful ministrations of the dental practitioner, when we think of the added years of comfortable human life, the relief of distress from dis-

figurement, the restoration of comeliness, the prevention of disease, the correction of deformities and of defective speech and, above all, the boon of surgical anesthesia given to humanity by dentistry, surely no one can doubt its importance and utility as a department of the great science and art of healing.

In its technical procedures and its artistic craftsmanship dentistry has acquitted itself so creditably that the flexibility of its technical resourcefulness has become proverbial, yet to such an extent has the attention of the dental profession been focused upon the material side of its progress that we have failed, I fear, in no small degree, to grasp its larger possibilities and to appreciate the importance of those factors of professional life upon which a higher attainment, a greater usefulness to humanity and a wholesome self-respect depend.

As a counter influence to this concentration of attention upon the material features of dental practise with its commercializing tendencies there is needed above all things an aggressive propaganda of education the objective purpose of which shall be the development of that type of culture which is expressed as professional character. In making this statement I fully realize that I am simply rephrasing a belief which has been frequently expressed before, but because of that very fact it is all the more evident that it represents a condition broadly recognized both within and without the limits of the dental profession.

A tendency to indifference toward those things which make for professional character has subjected us of the dental profession to not infrequent criticism, and some who recognize the condition without investigation of the cause are inclined to place the responsibility directly upon our dental educational institutions. That our dental colleges should become the target for criticism of that character is not unnatural, nor do I think that it is altogether unmerited.

As the seed ground for the development of professional skill and qualification through training and technical education, so also the colleges of dentistry should be the nurseries of professional character and culture. I take it for granted that there can be no dissension as to the general truth of that question, nor do I think that there can be any real doubt as to the fact that while we have given much attention to his technical education at all points, there has not been given proportionate attention to the cultural features of our educational system in the preparation of the student for his professional life.

It is in his college course and because of his college course that the student acquires and later manifests as a practitioner that tendency to concentrate his attention upon the material features of his work which I have before referred to as a professional attribute which gives rise to adverse criticism and creates the demand for a broader training for the dentist, less narrowing and commercializing in its tendency.

The general answer of our dental educational institutions to this kind of criticism is that they are purely technical schools, that they are compelled to deal with the material delivered to them by the preparatory schools, that defects in intellectual culture are chargeable to faulty preparation, that the business of the dental college is to teach dentistry, not to develop culture. This defensive attitude is only partially true, for while we may concede that the preliminary education of the dental student should have done much to broaden his mind and to have aroused to activity in him those intellectual attributes which later become fixed

in character, it must be remembered that the process has only been begun in the preparatory school and that three or four years of purely technical professional study may quite easily neutralize the cultural effect of his preparatory work unless his professional training is conducted with reference to conserving and further developing his powers of intellectual growth.

I realize full well that I am likely to arouse an attitude of incredulity, even possibly of scorn, by the suggestion that anything in the curriculum of dental study may have a cultural value as such, quite apart from its material technical usefulness; but because I believe that something more than mere technical training can be gotten out of the dental course, that something in the nature of character development may be derived from doing the work of the dental curriculum, I am encouraged to present that side of the question, for I am convinced that its due recognition will eventuate not only in relieving those of us who are teachers of a source of criticism, but also it will greatly improve the grade and texture of our educational product and make our graduates not only better dentists but men of larger intellectual resources and therefore more acceptable members of society.

Can the dental curriculum be utilized for the attainment of these desirable ends? Let us seek the answer in an analogy. It may be stated almost axiomatically that in the materialization of great artistic conceptions the character of the medium in which they may be expressed is a minor consideration. What concerns us most in the contemplation of a statue, for example, is not the material of which it is made, but is it good art, does it bear the stamp of artistic genius? The creations of the greatest masters of harmony were in many cases interpreted upon instruments of inferior grade, but the soul of music may speak its divine message through any medium, and enthralled by its spell, we care not if it be "blown through brass or breathed through silver." So also in the utilization of education for the ends of culture it is not the means by which the intellectual activities are set in motion that are of primary importance, but rather the ends toward which our educational efforts are directed, and it is these that should mainly concern us both as teachers and as students.

Education dominated by the purely utilitarian *motif*, as most of our modern education is, loses its cultural effect by concentrating the mental faculties upon the function of acquisition, of getting, as an intellectual process. The graduate thus trained goes forth to his life work, which consists for the most part in converting his mental potential into terms of material possession.

By the overemphasis of the utilitarian ideal those faculties of the mind, the exercise of which creates a taste for the higher orders of intellectual enjoyment, suffer from arrest of development, under which conditions any process of thought that does not work out to a concrete material end becomes impossible.

In this way we are not only creating a deformed and one-sided educational product, but still worse, we are closing the doors that lead to the sources of highest human happiness. The age is essentially utilitarian, the demand is for the practical and for the kind of education which may be ultimately expressed in terms of material prosperity. In response to the universal clamor for an education that will help to achieve these material ends, our schools, our seats of higher learning, are yielding, many of them under protest, to the general demand. The old and one-time popular type of education, the study of Greek and

Latin classics, is becoming obsolete and the demand is that modern language training shall replace the study of Greek and Latin because of the greater usefulness of modern languages in the practical business of life. Regarded simply as mental discipline the exchange of modern language study for the ancient tongues may have entailed no serious loss, and possibly, from the standpoint of material usefulness, the exchange may have even been attended with a certain degree of gain, but what has been lost is the uplifting effect of the Greek ideal, the spiritualizing power with which the activities of life became invested by contact with Greek thought and culture.

In his portrayal of the processes of intellectual growth of his young hero, Walter Pater says of Marius the Epicurean:

> He was acquiring what is the chief function of all higher education to impart, namely, of so relieving the ideal or poetic traits, the elements of distinction in our everyday life—of so exclusively living in them—that the unadorned remainder of it, the mere drift and débris of our days, comes to be as though it were not. . . . If our modern education in its better efforts really conveys to any of us that kind of idealizing power it does so (though dealing mainly, as its professed instruments, with the most select and ideal remains of ancient literature) oftenest by truant reading.

We have here, I think, the admission by one who was himself one of the illuminati of classic learning that while the "most select and ideal remains of ancient literature" are the professed instruments by which the idealizing power is directly awakened in the human intellect, yet the divine spark of inspiration is oftenest caught from "truant reading." But why necessarily or exclusively from reading of any sort in the literal sense? Is there not in the world about us, in the study of the material universe of which we are a part, the contact with which involves not only our struggle for existence but our effort to solve the riddle of life, the stuff from which all books, all literatures are derived? Is it not from these sources that the poets, the sages, the inspired ones of all times have heard the divine message and transmitted it in immortal terms to humanity?

Those leaders of education who have yielded a willing ear to the general demand for utilitarianism as the dominating principle in our educational system, have justified their position by a narrow interpretation of Herbert Spencer's epoch-making question of "What knowledge is of most worth?"

The deduction that only the knowledge which has any worth at all is that kind which may be converted to material use is an injustice to the intellectual breadth of the great philosopher which is not warranted by his own statement of his case. In his contention as to the superiority of scientific study over other means of education he says:

> The discipline of science is superior to that of ordinary education because of the religious culture that it gives. So far from science being irreligious, as many think, it is the neglect of science that is irreligious. Science is religious inasmuch as it generates a profound respect for and an implicit faith in those uniform laws which underlie all things. By accumulated experiences a man of science acquires a thorough belief in the unchanging relations of phenomena, in the invariable connection of cause and consequence, in the necessity of good or evil results. He sees that the laws to which we must submit are not only inexorable but beneficent. He sees that in virtue of these laws, the process of things is ever toward a greater perfection and a higher happiness. Science alone can give us true conceptions of ourselves and our relation to the mysteries of existence. Only the sincere man of science—and by this title we do not mean the mere calculator of distances, or analyzer of compounds, or labeler of species; but him who through lower truths seeks higher and eventually the highest—only the genuine man of science, we say, can truly know how utterly beyond not only human knowledge but human

conception is the universal power of which nature, and life and thought are manifestations. For discipline as well as for guidance, science is of chiefest value. In all its effects, learning the meaning of things is better than learning the meanings of words. Whether for intellectual, moral, or religious training, the study of surrounding phenomena is immensely superior to the study of grammars and lexicons.

In the passages which I have just quoted it seems to me we may find the vitalizing thought which honestly and intelligently applied to our educational work should ultimately lift it out of the slough of unrelieved materialism in which it is at present struggling, and help us to reform it upon lines which shall restore to all education the power to direct the mind toward the contemplation of higher things and thus to elevate the standards of reasonable human living and of human happiness.

Herbert Spencer, an accepted exponent of scientific thought, tells us that we must seek the higher truths through the lower orders of phenomena, which is simply the unadorned statement of an evolutional law, but a law which is the basis of all development of the mind, of all intellectual progress. Ages before anything worthy the name of science was conceived of, the mind of man in its earliest gropings took its first wavering steps toward the infinite through the labyrinth of common things about him, and out of his material experiences he began to weave the fabric of an intellectual vestment which was later destined to clothe his conception of his gods and his holy ones, and thus make it possible for him to worship the infinitely good, the true and the beautiful. And so it has been in all ages, for while we recognize the fact that each age refines and improves upon the experiences of its predecessors, yet the individual in his mental and cultural growth repeats the old journey, more easily perhaps, but nevertheless he must gain his goal by experiences concerned with the lower orders of truth before he can reach the higher. The poets, philosophers and artists of all times have reflected the same thought. If I catch his meaning aright it is a portrayal of this fundamental principle which we find set forth by Robert Browning, in that confession of his faith entitled "Christmas Eve and Easter Day," where he breaks forth in that magnificent declaration of the apotheosis of the love element in life—

Love which, on earth, amid all the shows of it,
Has ever been the sole good of life in it,
The love ever growing there spite of the strife in it,
Shall arise, made perfect, from Death's repose of it;
And I shall behold thee face to face,
O God, and in thy light retrace
How in all I loved there, still wast Thou.

It was the reaching out for these higher conceptions that characterized the best culture of the ancient Greeks, and conversely it is our tendency to subordinate these higher attributes of the mind in relative importance as compared with materialism and utilitarianism that is the defective feature of our modern systems of education. In our efforts to adapt education to the ends of material progress we have lost sight of the possibility, nay more, we have neglected the duty, of seeking for the higher orders of truth through the lower orders of phenomena with which we deal in our educational work. We have concentrated our attention too much upon the media of education and have in so doing neglected the most important ends of education, the cultivation of those higher attributes of character that satisfy the demand for happiness, that make life a joy well worth the living.

If such character development as produced the best culture of the Greeks were possible under the conditions of human knowledge and material development then

existing, how much simpler and more direct should be the access to a similar cultural development under the conditions of our modern civilization.

Our failure to discover the cultural value of the educational material with which we are now dealing has resulted from our intense preoccupation with the lower orders of phenomena and our consuming desire to utilize them for the ends of material prosperity.

We must reestablish the ancient ideal, which the best culture of all peoples has shown to be the development of an appreciation for the higher orders of truth, a love for the study of causes behind phenomena, and an abiding faith in the fact that the larger happiness of life is to be found in the things of the mind rather than in material acquisitions.

It is this ideal which must govern us as teachers if we are to hope to in any degree stem the tide of materialism and commercialism with which our work is at present dominated. We must realize that the work of the classroom and the laboratory is susceptible to the vitalizing influence of the cultural principle. To bring out from the study of the lower orders of phenomena with which he deals, an appreciation of the underlying forces, the *Weltgeist* of which the material things of life are but the outer cloak, is the mark of the true teacher as distinguished from the novice, just as it is the same order of intellectual development in the laboratory, the studio or the shop that marks the difference between the master and the apprentice, the artist and the artisan respectively.

I believe that the principle which I have thus attempted to portray is directly applicable to the work of the dental curriculum, as it is to all education. Dentistry in its scientific aspect may be regarded as a special department of the great science of biology combined with certain phases of chemistry and physics. Its art is merely the application of these sciences to the ends of practise, but in their practical application the cultural elements of honesty of purpose, faithfulness to artistic ideals, a love of the intrinsic beauty of nature's designs and a veneration for nature's laws are essentials for success. These higher cultural attributes it should be the part of the teacher to develop from the study of the data which comprise the lower order of phenomena of the dental curriculum.

To all who sympathetically and intelligently give ear to the voice of nature the pathway is clear, for, as Robert Louis Stevenson has beautifully expressed it:

> The Greeks figured Pan, the god of nature, now terribly stamping his foot, so that armies were dispersed; now by the woodside on a summer noon trolling on his pipe until he charmed the hearts of upland ploughmen. And the Greeks in so figuring uttered the last word of human experience. To certain smoke-dried spirits, matter and motion and elastic ethers and the hypothesis of this or that spectacled professor tell a speaking story; but for youth, and all ductile and congenial minds, Pan is not dead, but of all the classic hierarchy alone survives in triumph; goat-footed, with a gleeful and an angry look, the type of this shaggy world; and in every wood, if you go with a spirit properly prepared, you will hear the note of his pipe.

Our mission then as teachers of a humane and useful profession is to penetrate this "shaggy coat" of materialism, this commonplace and unattractive covering of the divine spirit behind it all, and to so educate those committed to our charge that they shall, in God's providence, be able to see something more than "the seamy side of the divine vestment which the earth-spirit is forever weaving on the whirling loom of time."

EDWARD C. KIRK