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SIR WILLIAM OSLER AT SEVENTY— A RETROSPECT

No physician occupies a higher place in the esteem and affection of the English-speaking medical profession than Sir William Osler. For many years his name and his words, written or spoken, have carried an appeal to the mind and heart of physicians as no one else's, and they do so still today. To explain fully this matchless power, this intellectual and moral force, is a far greater task than we would pretend to attempt at this time; but in the interest especially of the rising generations of physicians, the present occasion seems a suitable one on which to point out some of the chief landmarks along the road traveled by the beloved and honored septuagenarian on the way to his high place.

The friends of student days in Toronto and at McGill University in Montreal have recorded that he followed no traditional course, but worked much in the hospital and especially the postmortem room, and that unlike most of his fellow students he troubled himself apparently but little about examinations and mere book knowledge. His graduation thesis on topics in pathologic anatomy was awarded a special prize "because it was greatly distinguished for originality and research." After two years of study abroad, he began to teach pathology in Montreal. He was then 25 years old. Before long he was teaching medicine in the wards also, and he seems quickly to have given himself so completely over to teaching, anatomic and clinical observations, and literary and medical society work as to leave little time for private practice and the cultivation of opportunities to earn money, caring apparently but little about the morrow. Many papers were published these years: those on prodromal rashes in smallpox, on blood platelets, and on infectious endocarditis may be mentioned as examples of the more important. From the first he made a hit as a successful teacher who aroused enthusiasm and stimulated independent work. One more significant fact in regard to the Montreal phase of Osler's career should not be overlooked, namely, the deep and actively helpful interest in the student himself which

has characterized his relations to students and young physicians throughout the succeeding years.

It is remarkable how early he attained certain fixed and dominant characteristics that have contributed alike to his usefulness and distinction. Any adequate account of just how various early influences worked together to give such a distinctive and definite bent to Osler's career from its very inception has not been made. It will be an interesting story. Palmer Howard and James Bovell, Canadian physicians of rare quality, are said to have influenced his medical work and outlook more than others. In 1884, Osler went to Philadelphia as professor of clinical medicine in the University of Pennsylvania Department of Medicine. His new colleagues were not a little astonished at first because he steadily turned aside all temptations to private practice in the usual sense but remained strictly teacher and consultant, thus securing the desired leisure for study in hospital, laboratory and library. His demonstrations in the pathologic society drew to him the younger men of the profession especially, an example of sharing the stores of observation all too little followed by leading teachers of clinical medicine and surgery; with an occasional exception like Fenger in Chicago. Many notable articles were published, and while in Philadelphia another side of Osler not yet referred to revealed itself fully, namely, his keen interest in medical history and biography and his gift for letters. In "Who's Who," bibliography is given as his sole recreation.

From this period dates the beginning of a series of addresses and essays of high literary merit: now rich with results of diligent search in medical scriptures, always hopeful and cheery, inspired by lofty ideals and an instinctive spirit of kindness, they belong, many of them, more to the permanent "literature of power" than to the short-lived "literature of knowledge," and every physician should have them in his library. He has stimulated greatly the interest in our own medical history, and we owe to Osler vivid sketches of the lives and work of early leaders of the profession in this country—Nathan Smith, Bartlett, Jackson, Bigelow, Alonzo Clark, Gerhard and others—with whom it was his ambition to be ranked. "The chief desire of my life has been to become a clinician of the same stamp with these great men, whose names we all revere and who did so much good work for clinical medicine."

As no one before him in this country, Osler illustrated that years of hospital work and observation give better equipment for teaching clinical medicine than practice as ordinarily pursued; hence, when the Johns Hopkins Hospital was opened in 1889, he was the first choice for the head of the department of medicine. And now began the most productive and fruitful period in his professional life. His cherished ambition to build up a great clinic in this coun-

try was to be fulfilled. Under the liberal and enlightened policies of the new institution in Baltimore, he rapidly organized a model medical clinic, one of the best, and the first and long the only one of its kind in this country. Here medical students were taken into the wards as units in the working force of the hospital; young physicians were trained through graduated services for higher careers in clinical medicine, and knowledge advanced by systematic study and investigation. Beloved by colleagues, assistants, students, he inspired them, as a colleague has said, with extraordinary stimulus to high endeavors. The result was a great contribution, sorely needed at the time, to medical education and to clinical medicine, which makes one of the brightest pages in our annals.

The work done by Osler and his associates during this period is now woven into the fabric of modern American medicine. It was a wonderfully productive period. His influence as writer and speaker expanded; he preached a vigorous gospel of sanitation, particularly with reference to typhoid fever; he promoted the work of medical societies and libraries, and entered deeply into the life and interests of the profession generally. "With the general practitioner throughout the country my relations have been of a peculiarly intimate character," and few if any have enjoyed in such remarkable degree the warm personal friendship and admiration of physicians everywhere. He was the high priest of lofty ideals, harmony and friendly cooperation. Always the close, kind friend of his students and assistants, many a fumbling beginner has been gladdened unexpectedly by his generous encouragement.

In 1905, Osler accepted the Regius professorship of medicine in Oxford University. While we have not been able to follow his many activities so closely as when he was here, we have had continuous evidence that his work has gone on with undiminished vigor, and that his relations to the profession at large and his interest in its welfare have undergone no other change than in the place of immediate manifestation. Neither wealth nor fame has turned him away from the calm course he laid out for himself while still a very young man. His recent utterances, in a chapter on the treatment of disease, on the exploitation through impudent advertising of pseudoscientific preparations of questionable value by powerful manufacturing pharmacists have the familiar Oslerian ring and hit the bull's eye in the center. In place of a more or less noticeable tendency to therapeutic vagaries he would place "a stern, iconoclastic spirit which leads, not to nihilism,

but to an active skepticism born of a knowledge that recognizes its limitations and knows full well that only in this attitude of mind can true progress be made."

And now we must take leave again of our friend and teacher. The American Medical Association sends him its heartiest congratulations on his seventieth birthday, and warm assurances of gratitude and affection. And to our young men, coming on the scene, we would recommend careful heed of these words from Osler's response at the farewell dinner tendered him at New York, May 2, 1904:

I have had three personal ideals: One to do the day's work well and not to bother about tomorrow. You may say that is not a satisfactory ideal. It is; and there is not one which the student can carry with him into practice with greater effect. To it more than anything else, I owe whatever success I have had—to this power of settling down to the day's work and trying to do it well to the best of my ability, and letting the future take care of itself.

The second ideal has been to act the Golden Rule, as far as in me lay, toward my professional brethren and toward the patients committed to my care.

And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came to meet it with the courage befitting a man.

CABLEGRAM

OXFORD, JULY 8, 1919.

JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION, CHICAGO:

MY BIRTHDAY GREETINGS TO COLLEAGUES
AND OLD STUDENTS OF MCGILL, PENNSYLVANIA,
JOHNS HOPKINS AND TO MY MANY
FRIENDS IN THE UNITED STATES AND CANADA.

WM. OSLER.

THE PHYSIOLOGIC COST OF CHEWING

The act of mastication has lately attained new prominence in human physiologic routine from two different circumstances: first, the vigorous advocacy of thorough mastication as the basis to hygienic well-being. It is largely owing to the propagandist energies of the late Mr. Horace Fletcher that the doctrine of deliberate mastication has been widely preached; and "fletcherism" has gained many adherents among that omnipresent group which is searching for the secret of a better existence through improved health. One of the claims made in favor of thorough mastication as advocated by Fletcher is that the extreme comminution of the food and the more effective insalivation promote the digestion and utilization of the nutrients. Despite the plausibility of this argument there is an abundance of experimental evidence to show that the nutrients in the common food products are absorbed in large measure even under ordinary habits of eating. It is exceptional to find less than 90 per cent. of the digestible nutrients utilized; and for the familiar fats and carbohydrates the records approach almost perfection. The residual fecal masses are normally devoid of more than small quantities of digestible nutrients. That which constitutes the output by the bowel comprises indigestible residues, refuse matter from alimentary secretions, and bacterial residues. These are not unutilized nutrients.

Furthermore, comparative investigations of the actual utilization of the nutrients by persons who on one occasion "bolted" and on another occasion "fletcherized" the same diets have given no experimental justification for the assumption of improved absorption as the effect of the more thorough mastication. Obviously it is a physiologic desideratum to comminute moderately at least some of the meats and carbohydrate foods that enter into the customary human dietary. In certain diseased conditions, comminution of the food is an indispensable requisite. However, so far as the fadist features and the extreme claims of unique benefits are concerned, we cannot forego quoting the remark of an extremist in the other direction. "Fletcherism," he writes, "is permissible in those easy-going lackadaisical individuals whose tastes are gently epicurean and who possess the desires of a Lucullus minus the means. Let those benighted harmless souls chew and champ to their heart's content, for they, poor beings, need some fad, and this one can harm no one unless it be themselves. But to busy men who are shouldering the cares of government, commerce and science, and whose strenuous impetuosity moves them to act quickly, whose every act is intense and every movement a flash—to such individuals, fletcherism is a thorn in the flesh."¹

In the second place mastication has become conspicuous in this country through the widespread use of chewing gum. Some time ago a distinguished chemist² remarked in a public address that if the Rockefeller Institute is spending to good advantage about half a million dollars per annum for medical research, the chewing gum bill of the United States would easily support half a dozen Rockefeller Institutes. Coaxed by the insidious suggestions of advertisements and encouraged by the public example of bankers and ministers, physicians and judges, men and women from all classes have joined the ranks of the mastication army. The lasting odor of mint has begun to compete with that of onions and garlic in certain groups of our population. We shall not venture to discuss the alleged virtues of chewing gum. The reports of its help in allaying thirst for the boys in the trenches can scarcely be used in support of the use of chewing gum in the ordinary walks of life. Nor can the alleged presence of pepsin in certain brands be emphasized as a universal panacea. Amid all the uncertainty as to the physiologic effects of chewing gum one fact has been clearly demonstrated. Benedict and Carpenter³ of the Nutrition Laboratory of the Carnegie Institution of Washington in Boston have found that as a result of chewing gum the basal metabolism may be increased more than 17 per cent.

This has a further bearing on the doctrine of "fletcherizing." If prolonged mastication can necessitate an excess heat production equivalent to nearly one fifth of the basal metabolism, it is easily seen, to quote the Boston physiologists, that any advantage gained from a possible increase in the digestibility of the food is more than compensated by the increase in heat production. The conception, they add, of an increase in the digestibility and in the utilization of the energy of foodstuffs as a result of prolonged mastication thus finds no support in fact.

NICOTIN IN CIGAR SMOKE

Nicotin, which exhibits a toxicity of high degree, is volatile. Why the tobacco which contains it does not cause greater evidences of pronounced poisoning than are observed in the ordinary smoker has been a mystery. The traditional explanation has been that nicotin is destroyed in the process of smoking, and that the combustion products, real or conjectured, are far less toxic in their character than is the tobacco alkaloid itself. There can no longer be any doubt, however, that the nicotin is by no means completely burned up in smoking, for there is valid evidence that more than one third of the volatile poison can be recovered in the smoke.¹

Various schemes have been employed or recommended to eliminate the nicotin menace of tobacco without making it necessary to give up its use. Among these are the production of so-called nicotin-free cigars. They have never attained any recognition in this country, although serious attempts have been made to introduce them in some of the European countries. One product has represented the result of extracting the tobacco to remove the alkaloid. As other valued aromatic properties of the plant are thereby likewise removed, such detoxicated tobacco has never attained popularity. Another method has consisted in "fixing" the alkaloid by a treatment which forms the insoluble nicotin tannate. Tobacco treated in this way may, on ordinary chemical analysis, show a low content of nicotin; but this does not prove that the nicotin may not be liberated into the vapors in some degree when the tobacco is smoked. Experiment shows, in fact, that it actually is. Another procedure has been to introduce iron chlorid near the butt end of the cigar with the object of making it retain some or all of the volatile nicotin that passes through this portion as the smoke proceeds into the mouth of the smoker. Here, too, critical investigation has revealed the failure to prevent the exit of nicotin, at least in such cigars of this type as have been offered for sale to date.

1. Fitch, W. E.: *Dietotherapy*, New York 2: 83, 1918.

2. Bakeland, L. H.: *Some Aspects of Industrial Chemistry*, Science, Aug. 7, 1914, p. 197.

3. Benedict, F. G., and Carpenter, T. M.: *Food Ingestion and Energy Transformations with Special Reference to the Stimulating Effects of Nutrients*, Carnegie Institution of Washington, Publication 261, 1918.

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