British Medical Association.

EIGHTY-NINTH ANNUAL MEETING, NEWCASTLE-UPON-TYNE, 1921.

President's Address

ON

THE MEDICAL PROFESSION: A HORIZON OF HOPE.

BY

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In addressing this great Association for the first time as its President, my first duty is to thank you for the great honour you have conferred upon me—an honour which, I am well aware, I owe in the first instance to my friends and colleagues of Newcastle and neighbouring counties. In the next place, it is my great privilege to bid you, on behalf of my Lord Mayor, corporation, and citizens of our city, a most cordial welcome—a welcome which it will be the pleasure and privilege of your professional brethren to make as genuine and as warm as possible during the whole of your visit.

This is the third occasion on which the Association has held its annual meeting in Newcastle, and twenty-eight years have gone by since your last visit. The interval with its tale of years has been marked by changes in our city, and especially in the personnel of our profession, for the young have grown old, and some of those of middle life, and all who were then in advanced age, "have one by one passed silently to rest."

The name of one calls for special reference, for, as we all recognize, much of the success of the Meeting of 1893 was due to the hospitality and courtesy of George Hare Philipson, the President of the Association, and not a little to his business acumen. I venture to hope that the present meeting will be as successful as the last and be enjoyed by you, our welcome visitors. At all events, it is our most earnest desire that it will be both agreeable and profitable; the latter I feel sure it will be from what I know of the scientific and professional programme, and if the surroundings of our meeting place are less attractive and beautiful than those of some other towns visited by the Association, we hope to balance that by the warmth of our personal welcome.

In choosing a subject for an address worthy of the occasion and my audience, I ask myself, Would the past, present, or future best provide me with what I want? and, seeing that we best prophesy of the future from the past, perhaps my own forty busy years of consulting practice, with intimate association all that time with students as a teacher of medicine, should entitle me to dream of the future in the light of the past, which brings me to a question that we must all ask ourselves in the fullness of time, Are we satisfied with things as they are, and, if not, in what manner can they be improved? In short, I am at once brought up against considerations of the widest nature regarding our profession as a whole in its present standing and what it might become.

Let us ask, in the first place, are we satisfied with the position our profession occupies in the scheme of national polity? And next, are we satisfied with ourselves? With regard to the status of the profession as a whole, we are told by a recent writer, Branford, in his book, *A New Chapter in the Science of Government*, "that the whole medical profession of the country in all its various groups of professional associations or subguilds (private, municipal, State) is now in process of organizing itself into a vast unified guild of a medico-political kind, which later will embrace the entire world, and why? Because it has become convinced that the whole hygiene of the folk requires its utmost and careful consideration in all its aspects, it is determined to be adequately represented in the government of the country." And, again, the same author writes, "it is illuminating to note that the first great social group to attempt its national organization

thus as a whole (Labour has done it only in part) is the most highly organized of the biological group of occupations." This fairly represents our position to-day, and yet we cannot fail to recognize that we are still in a somewhat fluid state. It is evident at least that we are becoming an indispensable factor in the government of the country. But this has not always been the case, for our importance and indispensableness have risen with our efficiency. Contrast the influence exerted by the work of the doctor upon the result of the South African war with that of the late great war and the point will be conceded at once. But in what sense are we indispensable? All-important as a factor of party government? A power to conjure with? To be exploited by either party—as free, or fair, trade, or the Irish problem? Or else do we stand alone like the religion of a nation? Like the influence of the throne? A power that is essential to the well-being of the people, to be encouraged and fostered as one of our great national assets? Aye, indispensable in the highest sense, and all the more so because of our ever-growing efficiency. It is a soul-stirring thought and cannot fail to stimulate us to greater efforts which must succeed when all are united for a common purpose.

Consider for a moment the advance of one generation, contrasting the position of medicine fifty years ago with the advance of to-day. In some directions the progress has been phenomenal, in others very substantial, in others again, less so; but a gain all along the line; an advance that is quite as marked in the socio-political-medical world as it is in the strictly scientific, and all purely professional and aiming at improvement of the health and welfare of the people, with proficiency as our goal, ever mindful of the fact that the standard of our efficiency is the measure of the value of our services to the State. And yet, if we read history correctly, it would seem that in the past the State valued medicine in the inverse ratio of the value of our services to the nation. But this can no longer be said to be true. From time immemorial, when pristine medicine and religious beliefs could not be considered apart, from the time when primitive man was unable to connect cause and effect, the echo with the sound, the reflection with the mirror-like surface of still water, to the present, medicine has been accepted at its face value, and whilst we would not disturb confidence in the doctor, it is our aim more whole-heartedly than at any other time in the past to deserve that confidence—to bring our true value into closer harmony with our face value—and it is only fair to ourselves to recognize that the public are more discriminating than they were, and neither they nor we are quite so prone to confuse the *post* with the *propter* as in days gone by. Formerly the outlook of the bystander was not what he thought but what he felt, but now ever-increasingly the people have acquired the at times inconvenient habit of thinking, a change that we welcome, for we look to the public for assistance in our efforts to advance. We are a scientific and progressive profession, and are not "content to dwell in decencies for ever." Progressive, yes, but the question is, Can we do more than we are doing and thus progress more rapidly? Can we render still greater services, and thus deserve and earn still more the goodwill and appreciation of our fellows? If so, we shall have no cause to complain of our position in the State, for we shall recognize our true value, and as is the custom, others will esteem us as we esteem ourselves.

Progress with us consists in increase in knowledge and its wider diffusion, together with greater accuracy in its application in preventing and combating disease; or, in other words, what we want is more light and more efficient torch-bearers. The late great war demonstrated very clearly that the personnel of the medical profession varied enormously, as was only to be expected, in professional knowledge and character, and that therefore there was a great lack of uniformity in the value of individual services rendered to the country. On the whole, it may be said to the credit of the profession of medicine and surgery that these services were splendid; nevertheless they were not uniform, for whilst many covered themselves with glory, there were some who failed; nor need one lay oneself open to the charge of a breach of allegiance if I remind the Association that the same want of uniformity obtains throughout the length and breadth of the land; and of necessity there must be great difference in the skill and ability of both men and women forming the ranks of our calling. The personal factor varies enormously, and we cannot shut our eyes to the inequalities, though we can do much towards diminishing the disturbances arising from them. Making due allowance for the differences in the personal qualifications, inclusive of natural ability, the lack of uniformity depends in some measure upon the want of uniformity in educational opportunities—but to this point I shall return; suffice it for the present that there are inequalities, and that the service to the public is defective in consequence. We must not, however, lose sight of the fact that character is the most important human factor in the levelling-up process, for, as everyone of experience recognizes, character is of more importance than ability. "What," asked Le Play, the great French sociologist, many years ago of an audience, "is the most important thing that comes out of the mine?" a riddle to which the average auditor replied, "Coal." "No," said Le Play, "Not coal, but the miner." And so it is with us; a doctor is of more importance than his physic, and it should be our duty to educate, train, and equip him so that he will fulfil his proper functions towards his patients and the State.

We cannot make character, but we can shape it, and the first step surely is to imbue the novice with a proper sense of responsibility. This, our responsibility, imposed upon every member of our profession, is a serious, a tremendously serious matter, and it is growing with the evolution of our calling. The man of character recognizes it, meets it, and does his utmost to face it, but I am afraid I am within the mark when I venture to say that there are a great many who do not sufficiently realize it, and look upon their profession as a means to an end—to wit, a living. As matters are shaping, the State will soon realize fully the great weight of responsibility that belongs to every medical man, and I am anxious that it should not be left to the State to bring it home to us; and assuredly if we only realize our personal obligation we shall have no difficulty in facing any measure of official responsibility the State may think fit to place upon us. And so let us, conscious of the advantages of a discerning criticism, acknowledge freely that progress might be hastened and indulge in a dream of constructive idealism.

It is scarcely possible to discuss in a comprehensive way the problem of the education and training of a doctor without considering that all-important question, the personal factor—the characteristics fitting the individual for the profession of medicine; all are not suitable, many are manifestly unsuitable; the good doctor is born, the indifferent doctor is made. I pass by, but with due respect for its utility, that personal charm which asserts itself favourably in all human relationships, and would probe deeper in search for the qualities that ensure success in the highest sense. Nor do I despise the factors of self-aggrandizement and desire for gain, for even these selfish desires, if I may so designate them, are legitimate, and often play an important part in the evolution of our science; but behind them we may recognize the interpenetration of more worthy aspirations tending towards higher conceptions of the public weal, and making for the successful struggling of the ever-upward movement. For to frame ideals (as has been well said) is of the essence of man's nature. We all recognize that we cannot ignore the business side of medicine—would that we could, and live for the interest it is to us and for the service we can render our fellow-men. But although this, as a practical

proposition, is hopeless, the sentiment touches very close the traits or characteristics that distinguish the good from the indifferent doctor. One naturally hesitates to set oneself up as a critic, and it may even be said that he who criticizes his fellows is disloyal to his cloth, and I hope that this objection will be disallowed when I candidly admit and deplore my own shortcomings, and when I venture to claim the right, in the interests of all, to utilize the results of over forty busy years of professional experience.

In our profession, perhaps more than in any other, if a member is to do his duty by the community and State, justice and credit to himself, and, in a word, fulfil his professional obligations in a proper and satisfactory manner, he must continue his education during the whole of his professional career. He must remain a student, for unless this be so, he will not profit by his daily professional experience, and in the passage of time he will lose more than he gains. Experience, as all will admit, notwithstanding present-day ideas, is most valuable, but only if it includes sound knowledge in its content, for otherwise it may be worse than useless, and like little knowledge a dangerous thing. For experience is only of value when it is associated with accurate thinking, and thus professional experience and studious habits are inseparable.

The doctor's life abounds in matters of the deepest interest, and if his heart is in his work, and his grasp of fundamentals sufficient, a foundation upon which a superstructure may be raised, he cannot fail to develop the habit of study, for the working of the studious mind brought into daily contact with the problems of Medicine and Surgery is smooth and progressive; but everything turns upon the one essential point—is he interested? Yes! The secret of individual progress lies in the answer to the question—Is he interested? And the man or woman who is, in the true scientific sense, must inevitably advance, though naturally much must depend upon opportunity. The objection will no doubt be raised, "What time in running a busy practice have I for study?" and doubtless our sympathies will be with our objector, who represents a multitude of practitioners without leisure. But even the busiest drudge in our profession, if only he be interested, must advance; and if it so happen that he is one of the elect, nothing can keep him back so long as he is able to work. But the rate of progress and the height of his achievement will depend upon opportunity, for next to enthusiasm opportunity tells most heavily in the race, and without it all competitors are of necessity badly handicapped; but earnestness begotten of enthusiasm is easily the first essential, for the man who possesses it will make his own opportunity. Nevertheless, the profession of medicine is an open field, and the entry will always include some who, lacking zeal, even with the advantage of opportunity, inevitably fall behind. In the interests, therefore, of all it is in the highest degree important to facilitate the acquisition of knowledge, and thus to bring within the reach of all the ascertainable facts out of which professional experience is fashioned. These facts are either to be found in literature, and as such are at our command, or exist as observations that come under our personal notice, and naturally the earnest student welcomes his information from all sources; but, as I have said, he makes his own opportunity, and can safely be trusted to acquire what he is searching for, whilst by increasing the facilities to the average man and rendering it more easy for him to acquire information we are opening wide the avenue of knowledge for all.

How best, then, can we help forward post-graduate training and assist the doctor to add to his store of information, and thus increase his individual usefulness? It may perhaps enable us the better to answer this question and to understand the necessity for some change if I remind the public of the conditions—with which the majority of my hearers are already familiar—under which the average doctor enters upon the practice of his profession and endeavours to do his duty to his patients, and to add to his professional knowledge. During the greater part of a long professional life I have taken part in examinations for medical degrees, and have been able to test, more or less accurately, the capabilities and acquirements of upwards of two thousand candidates, so can claim to be somewhat familiar with the kind and extent of the professional knowledge with which the minds of those about to embark upon medical practice

are stocked. Two things have impressed me: first, the severity of the ordeal, or examination test, to which the candidate is subjected—that is, the extensive range and large amount of knowledge expected of him; and, second, the inadequacy of his attainments, having regard to the serious and responsible duties awaiting him. Further, it will be known to most present that the University of Durham admits to the degree of M.D., after a searching examination, practitioners of medicine of fifteen years' experience, and who have attained to 40 years of age, and my experience of this examination has taught me the utter hopelessness of any candidate's chances of success who has not devoted many months (six to twelve) to careful preparation for the examination. That is to say, the man who, in popular language, "has a shot at it," always fails, and it must be recollected that the examination is thoroughly practical; and I would like to add that candidates who have presented themselves without careful preparation and have been rejected, and have returned in six or twelve months' time spent in a manner calculated to render themselves fit for the test—including, often, attendance on hospital clinics—have, generally speaking, impressed the examiners most favourably; indeed, the difference in many cases has been most striking between the first and second experience. I would like to add that those who have had the courage and enterprise to undergo this further ordeal, with the necessary thought and preparation, have, I believe, one and all recognized the signal benefit they have obtained by it.

In thus suggesting that there is room for improvement in our service, we must remember we are dealing with knowledge in the practice of medicine and surgery, which it is the aim of all workers, in the interests of all, to raise to the highest possible level of exactness. This is a design to which every practitioner could under favourable circumstances contribute, though at present he is heavily handicapped, as he has to live and work in the most depressing atmosphere of constant doubt—of problems unanswered, of opportunities lost. This wail, for it is a wail, will probably suggest to the minds of all here one of the chief difficulties in the way of progress, and will, I hope, elicit a sympathetic interest in the problem—How are these difficulties to be overcome? It may perhaps be a surprise to many, but not, I suspect, to the more thoughtful section of the public, that the diagnosis in many cases (very many, I am afraid) is only a matter of opinion, which must remain in doubt unless cleared up by an autopsy, and in making this statement it will not, I trust, be thought that I am casting blame upon the doctor; far from it, for the marvel is that his opinion is so often correct, considering the difficulties with which his path is beset in his endeavour to contribute his quota to the common cause. I have alluded to this state of matters as an atmosphere of doubt; it is more than that, it is in the highest degree discouraging and is calculated to kill the scientific spirit with which it is our aim at college to inspire all our students; and in claiming the right of the doctor to follow up the lines of his training, I am urging a change in the interests of all; in the interests of scientific medicine and surgery, and more particularly in the interests of his patients.

I found myself recently discussing the present status of the medical practitioner with a prominent member of our profession, a man of high standing and wide experience as a general practitioner, and the conversation inclined towards the question of education and training of the doctor, and I asked him what in his opinion could be done to improve his scientific and professional standing. His reply was definite and uncompromising. "The one thing above all others," he said, "calculated to elevate and generally to improve the standing of the general practitioner is opportunity for *post-mortem* verification or the contrary of his expressed opinion." He added, "We shall never be any better until we are entitled to claim, with the knowledge that we shall not be denied, a *post-mortem* examination." I was much impressed by this view of the matter, coming as it did from one whose knowledge and experience of general practice could not fail to make clear to him the revolutionary character of the suggestion, and how inconvenient it might be to have to acknowledge our mistakes, for, indeed, the opinion my friend expressed coincided fully with my own. Revolutionary it certainly would be; but what an enormous gain to have our doubts set at rest; and it is not too much to hope that before very long both the public and

the profession will be educated up to feel that truth above all things must prevail. Could we but engender amongst our members the love of truth as the fundamental essence of our professional life and the mainspring of our activities, and could we also inspire eagerness to search after and courage to proclaim it, what a noble profession would be ours! I believe the desire to rise and live up to our loftiest professional aims is there; but we are unfortunately trammelled and moulded by public opinion and prejudice and the requirements imposed upon us by the State. The very loftiness of the estimate which is entertained of the doctor is his undoing, for he is set tasks which he cannot perform; he is expected to make bricks without straw, and not infrequently we assume to ourselves personally the public estimation of our calling, though this I believe in the main to be a failing of youth.

In urging the importance, nay more, the necessity for greater facilities for *post-mortem* investigation in clearing up doubts which must arise in the mind of the doctor in many cases, I am indicating the most important step towards a rational scheme of post-graduate training. It is, perhaps, unnecessary to insist upon the enormous advantage it would be were *post-mortem* examinations universal, for all, save those who never make them, are prepared to admit their educational value, and I have little doubt that the opposition to a movement in this direction, begotten of prejudice in the public mind, would soon vanish were the incalculable service to the science of medicine made sufficiently clear. I have said that medicine has advanced in every direction, but I regret to have to admit that the advance along certain diagnostic paths is not as rapid as we could wish, and not nearly so rapid as it would be were *post-mortem* examinations more frequent; and I believe I am stating what is correct when I say that in private practice they are not even so frequent as they were in my earlier days. It is true that in a few of our large hospitals throughout the country, in the wards of which students of medicine enjoy the inestimable privilege of clinical study, the enlightened committee of management now sanctions an autopsy in every case under fitting limitations, but in the majority of our clinical hospitals the old restrictions still obtain and the study of pathology is still hampered as of old, to the great disadvantage of the medical school and, if they but knew, to the public themselves.

Did anyone question the service rendered diagnosis by the substitution of the unclouded prospect of certainty for the befogged atmosphere of uncertainty—the educational value of exact diagnosis in a doubtful case—let him ask himself what he has learnt from the modern surgeon's exploratory operations, and he will candidly admit that nearly all he knows of abdominal diagnosis is the outcome of the lessons he has learnt in consequence of the ease and impunity with which we can now "open and see." It is the examination *ante* which, as we know, is often effectual in averting the *post*.

We all recognize the value of post-graduate teaching in connexion with the Fellowship of Medicine and Post-Graduate Association, and similar courses of study instituted in various centres, and no doubt many take advantage of these opportunities, but after all they are only supplementary to the curriculum of the student and cannot take the place of the natural progress and ever-ripening experience, the outcome of facilities which I would like every practitioner to be able to claim as a right, and for which I have little doubt sooner or later the State will make provision in the interests of medical science and the health of the nation.

The importance of accuracy in diagnosis cannot be overstated, and it is unnecessary to insist upon the value of the autopsy in promoting it as well as in the training of the practitioner. As a scientific profession we naturally aim at precision, but unfortunately take no steps to secure it in our daily work. Of what value, has any one ever asked himself, are the statistics upon which the computing officials of our insurance companies are accustomed to base certain actuarial statements which are accepted as guides to practice because they are founded upon statistics compiled from official returns, which we have reason to believe are so hopelessly inaccurate that the results can at best be nothing more than rule of thumb guides? Some may possibly doubt this statement. Well, let any one that does institute an inquiry—say into the accuracy of

the death certificates as tested by *post-mortem* examinations in even the best of our clinical hospitals—and he will have his eyes opened, and his knowledge of practice may possibly lead him to draw a still more striking inference from the contemplation of the question of the accuracy of the returns throughout the country generally—outside the walls of our great hospitals.

Accuracy in diagnosis is, as I have said, of the first importance, but the search after truth in nearly every other direction as well is lax and indeterminate. Time will not permit me to pursue this most important subject, but I am convinced that until there is instituted in every large teaching hospital connected with our medical schools a statistical department with a highly trained official at its head—call him registrar, or what you will—whose duty it would be to collect and systematize all returns having accuracy as the constant aim, we shall continue to flounder on as we have been doing, groping after truth, and failing to read correctly the signs ready to hand and awaiting interpretation.

At present the returns are grossly inaccurate, and therefore many of the deductions are necessarily fallacious, whilst, for the want of a proper system, the waste of what I may call raw material is simply appalling. Observations of interest are made daily in the wards, *post-mortem* rooms, and the adjacent pathological and chemical laboratories of every teaching hospital, of which use is never made, perhaps because they are isolated and their significance is not at the moment recognized. They are forgotten and, in many instances, pass even from the mind of the physician, surgeon, or pathologist who made them. Professor Vincent tells us of a physicist who, long before the discovery of x rays by Röntgen, noticed cloudy markings upon his photographic plates whenever they were brought near to Crookes's tubes, but disregarded the observation as of no value. But instances could be indefinitely multiplied illustrative of the loss to science that may be involved in the failure to note, collect, collate, and investigate simple observations in medicine, surgery, pathology, and collateral sciences. This loss, which cannot be estimated, may very properly be compared with the loss to commerce and science involved in the crude uses to which tar was put before the discovery by Perkin of the colour mauve in the year 1856. Then followed other colours, together with benzine and its homologues toluene, xylene, naphthalene, and anthracene, not to mention the manifold uses to which the long series of coal-tar derivatives have been put. So without any great stretch of imagination may we regard the waste of which I have spoken. The fact is, the work in every hospital ward, *post-mortem* room, and scientific laboratory engaged in the investigation of disease for the purposes of teaching should be regarded in the light of research, and I think the assumption is only reasonable that the establishment of whole-time professorships in medicine, surgery, and midwifery in connexion with all our medical schools, together with properly organized registration departments, would help very greatly to promote this most important side of the teacher's functions. The importance of collecting this raw material, at present running to waste, will be recognized by all, but especially by teachers themselves, who would have the results of their own labours, of their hospital's records and statistics by which to drive home the lessons they would inculcate, for, as Professor Vincent very properly points out, students pay more attention to the personal observations of their teachers than to textbook statements. And further, research workers would be in possession of vast quantities of accurately noted and properly collated facts for the pursuance of their investigations. Thus our teaching facilities would be promoted and our methods of instruction put upon a more satisfactory basis, whilst our knowledge would increase more rapidly and our science correspondingly benefit, and, transcending all, truth would be recognized as the presiding genius of our activities—our great purpose, our highest aspiration.

The history of the general practitioner, the corner stone of the profession of medicine, told in terms of his professional education, is, or should be, a record of continuous progress from the first stage of the introduction to the end of the last chapter, when *finis* marks his retirement or his decease. He travels along a road, at times rough and uphill, in which there is no break, and perhaps the easiest going, from the education point of view, is the outset care-

fully indicated by notices bearing the official imprint of the curriculum. It is greatly to his advantage if, at the end of this part of his journey, he can secure a resident appointment in a first-class hospital. This cannot be too strongly emphasized, and it is impossible to over-estimate the value of six months' intensive training at this period of professional life, when responsibility and a certain measure of authority under discipline, with ample opportunity for the study of special problems, unite to shape and develop character, and furnish illustrations in abundance of the principles already forming the foundation of that superstructure of experience, the endowment of the trusted practitioner. So helpful is this experience that the young graduate who has enjoyed it begins life with a take-off vastly superior to his neighbour who has not—who is, indeed, in comparison badly handicapped in the race of life. I feel so strongly upon this point—the advantage of a resident appointment—that I would like to take this opportunity to warn the rising generation against the practice, which is becoming only too common, of declining these appointments in order that an immediate financial return may be secured. It is true there are not at present hospital appointments for all, but sooner or later, with perhaps some adjustment of the period to be served, this want will be remedied, and I venture to hope that the time will come when a resident appointment will be found to be an essential feature of the training of the doctor. Having regard to its educational value, the period of the student's career at which the appointment is held is, I believe, a matter of great importance. During the war, when every available practitioner was called upon to serve, our hospitals had to fall back upon students to fill the posts usually held by qualified doctors, and it was the common experience that in the case of many students who were appointed before they had reached a certain stage in their professional training to fill these gaps the appointment and all that it entailed was not only valueless but actually harmful. But coming in due course at the end of the curriculum, and after the final examination, the experience is most useful, and cannot fail to produce a lasting impression upon the future career.

Whilst urging thus strongly the importance of post-graduate training I must not overlook the claims of the student, to whose work, training, and examinations I may be permitted to make brief reference. I have already hinted that of the many who elect to study medicine there are some who are quite unsuitable, and who would be well advised to try some other walk in life. This I admit raises a very difficult question, and it is one to which hitherto no attention has been given, nor can it very well be discussed in a public address. I pass it by, therefore, with the observation that it is a question that deserves our attention, and I would particularly commend to the authorities the question of preliminary general education of the doctor.

Success in the profession of medicine, by which I mean the proper fulfilment of the duties of the practitioner, is attained by the exercise of certain faculties which are capable of development. Among these gifts stands out prominently the faculty of taking notice. This gift—the power to observe—is in many people, until developed by special training, entirely in suspension, but there is no endowment of which the complex mental organization of man is composed more capable of development than this. A party of grouse shooters, when tramping through the heather between the rows of butts, made a search for white heather, and the host was the only member of the party who succeeded in gathering the white sprigs. He was invited to explain his success. "Oh," he remarked, "you know I am a manufacturer, and I have trained myself to observe flaws in certain goods when passing rapidly through the galleries." And in like manner, I maintain, may the faculty be trained in the case of the students. The training could go on *pari passu* with the teaching of physics, chemistry, anatomy, and physiology, in connexion with which courses the habit of observing accurately might be acquired, to be further developed in the out-patient department, wards, and *post-mortem* room. The opportunity to promote this kind of training will increase in the case of anatomy and physiology when these subjects are brought into closer touch with clinical work, as recommended by Keith, Berry, Vincent, Lewis, and others, the importance of whose suggestions, it is to be hoped, will be recognized and put into universal practice. These have for

their aim the realization of the vision of the prophet Ezekiel—to make the dry bones to live; the giving of a vital interest to subjects at present dead, at least in the mind of the average student; the bringing into prominence from the very outset their practical utility, and thereby furnishing a living continuity between the earlier and the later subjects of the curriculum.

The question of special instruction of our students in the diagnosis of early disease is intimately associated with this subject. It is recognized by all that the earlier a diagnosis is made the better for the patient, and notwithstanding this self-evident truth it is remarkable how little attention has been given to the training of students in the recognition of the earliest indications of disease. The wards are, as a rule, filled with examples of advanced disease, and the subjects selected for clinical lectures and demonstrations are usually conditions in which history and physical signs are as far as possible characteristic and strongly marked. And, of course, this is almost inevitable, for the student has but a short two years into which to crowd his clinical training, and he is naturally attracted by outstanding and obvious pathological changes in which the signs and symptoms are more or less gross and appeal to his untrained senses. It is evident that something must be done to help forward the student's training in this direction. At present, as things are, his opportunities are derived from attendance in the out-patient department of the hospital, where as a rule a large number of patients have to be seen, and the teacher is a member of the junior staff, and is not infrequently only just qualified. I have no wish to under-estimate the value of the out-patient teaching, but the diagnosis of incipient disease is at once the most difficult and the most important problem the doctor has to face, and yet it must be admitted that hitherto but little attention has been given to this phase of clinical medicine. It is generally supposed that the art of early diagnosis will be acquired later in the course of practice, but it is then too late, for in panel practice there is, I fear, contrary to the expectations of the authors of the present system, no such thing as early diagnosis. The truth is there is no time to work out an accurate diagnosis in an early case in a crowded consulting room in panel practice, and there is a danger of the aptitude becoming a lost art. For, on the one hand, the doctor has not the necessary time to devote to a careful examination, and, on the other, the tendency of the present day is to ignore physical signs and to rely altogether upon laboratory methods. I would therefore earnestly plead for some alteration in our system that will give due prominence to training in the methods of early diagnosis.

It is obvious that a thoroughly serviceable knowledge of the functions and structure of the human body in health and the possession of well trained senses—the ability to observe—are essential to successful diagnosis. Nevertheless, I believe I am correct when I state that comparatively few practitioners are familiar with the range of the limits of health as signified by signs evident to the trained senses. For instance, to take but one example, failure to recognize the fact that our stethoscopes employed in the examination of chests (heart and lungs) detect the widest possible differences in normal individuals, has been the source of much error in practice. The truth of this assertion was made apparent in connexion with recruiting examinations during the war, when thousands of perfectly healthy young men were graded low, or rejected altogether, on account of the erroneous interpretation of some physical sign. And, in the same way, every day life assurance problems are settled incorrectly on similar grounds. The fact is, when we recognize that a comprehensive knowledge of the functions of man, together with the indications of their working, is necessary to enable us to detect abnormalities, it is plain that the normal state demands our very special attention, for we are dealing with what is at once the most perfect and the most faulty machine of creation.

Students in future will be taught the working of this machine in such a way as will make it more easy for them to appraise at their proper value departures from the normal; and it will be the aim of the teacher to render his teaching more vivid and to demonstrate as far as possible its bearing upon clinical problems.

I am fully aware that there are objections to this attempt to abolish the line of demarcation between pure

science and practical application, and that from a university point of view, on the ground that the foundations of applied science are ever extending, it would be a mistake to do anything that would tend to limit the range of the student's studies; but the patient must be our first consideration, and it cannot be denied that the practical side of the curriculum is hazardously short.

I must not conclude this dream of progress without a reference to the examination test which all students of medicine must pass before their names are inscribed upon the official Register. For long I have questioned the wisdom of the present system which wholly neglects to take into account the candidate's record as a student. He is known as a number, his anonymity is preserved as far as possible throughout the examination, and no notice is taken of the results of class, prize or scholarship examinations, or of what should be the most valuable evidence of teachers of industry and capacity during his period of training; indeed, as far as I know, except in the case of one or two universities, there is no official record kept. The examination is not competitive, and the object of the examining board, composed of home or internal and external examiners, is to impose a test that will safeguard the public. But as such a test it is necessarily very imperfect since it takes cognizance only of the present, ignores the past, and makes no attempt to anticipate the future. I welcome, therefore, the support and recommendation of the General Medical Council in this direction.

Let me briefly recapitulate. In the short time at my disposal I have not been able to do more than touch the outskirts of some of the more conspicuous problems at present confronting us for practical solution. I have reviewed the present standing of the medical profession in strength and weakness; and I have tried to point out how, in my judgement, certain weak places might be strengthened. I have looked at the selection, teaching and examination of the students, and have offered hints as to some ways in which these courses might be reviewed with advantage. I have laid stress on the all-important fact that self-education of the true doctor continues through the whole of his professional life, and calls for steady combination of study with practice; and I have endeavoured to show what invaluable aid and stimulus may be given to the individual doctor by placing within his reach co-ordinated methods of assistance in advanced work.

It is hardly too much to say that attention to post-graduate work is of even greater importance, and brings more fruitful results than the indispensable attention to undergraduate instruction. In this connexion I have dwelt on the value of resident appointments in hospital; on courses of post-graduate lectures; on post-graduate examinations after a considerable interval of practice; and I have outlined a scheme of almost unlimited possibilities in research work.

Accurate observations accurately recorded, strictly tested and verified, provide the one sure foundation of certain knowledge in place of guesswork. If such observations were systematically collected and tabulated; if every practitioner had free access to the record and the stimulus of knowing that further observations of his or her own would be heartily welcomed, we should before long gain a permanent rise in the level of medical efficiency.

As a profession we earnestly desire to serve the community to the very best of our ability. We desire to serve freely, to serve graciously, to serve effectually. We desire to safeguard health that by knowledge and foresight can be kept intact; to restore health that has been impaired or lost; and where restoration is impossible, to alleviate suffering and fortify endurance to the best of human power. With the standard of our high calling kept in view, we, in whose hands it rests at this present to shape the immediate course before us, are ambitious that we should leave to our successors an increased store of doubtful points definitely cleared up and settled; should leave certain obstacles on the way forward definitely removed; so that they, our successors, may be freed from the first to attack fresh, and perhaps still more intricate, problems which will assuredly present themselves for solution. I would fain echo the words of one of the world's pioneers:

"Now understand me well—it is provided in the essence

of things that from any fruition of success, no matter what, shall come forth something to make a greater struggle necessary."

Some considerable fruition of success is already ours; led by courage and confidence we shall triumph in many another encounter.

A Special Address

DELIVERED AT THE

EIGHTY-NINTH ANNUAL MEETING OF THE
BRITISH MEDICAL ASSOCIATION

BY

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INDUSTRIAL HYGIENE: ITS RISE, PROGRESS, AND OPPORTUNITIES.

It is just over a century ago since the British Parliament turned its attention to the fate of children employed in the mines and factories of this country, and little more than half a century ago since diseases due to occupation received similar recognition. Great Britain was the pioneer of industrial legislation. The utilization of water power and steam led to the rise of the factory system and to the growth of large towns. The "Industrial Revolution," which began about 1740, and the inventions which preceded and followed it, not only placed us as a nation in a high position in the world of commerce and made us wealthy, but it created new methods of employment associated with the subdivision of labour, as well as a new class of workers to meet the requirements. It also initiated problems, towards the solution of which, as the statesmen of the time had no experience to guide them, the laws which they framed could at the best be but only tentative and a makeshift. While the introduction of machinery made labour in the factories in one sense less irksome, it led to the employment of women and children, many of whom, owing to the long hours and low wages, rapidly broke down in health, with no financial assistance from the State or from the industry to fall back upon, so that to ill health were added the distressing circumstances of poverty and starvation with only the workhouse to look forward to. In order to prevent physical degeneration of the working classes it became necessary to improve the conditions under which labour was carried on in mine and factory by shortening the hours of labour for women and children, and by raising the age of child workers. The employment of children of seven years of age in our coal mines and factories, and the harsh treatment extended by overseers to them, since they were frequently beaten or handled roughly when they were found asleep at work, form unpleasant reading in the pages of the industrial legislation of this country. From the first decade of last century onwards to the Victorian period Parliament time and again shortened the hours of labour, restricted the employment of children and improved conditions within the factories, but even as late as sixty years ago little had been done to instil into the mind of the people the association of certain diseases with particular occupations, and how these diseases might be prevented. Thackrah, in 1831, had written upon the subject, and Arlidge, in 1892, had published his monumental work, but occupational diseases as a class had not yet caught on with the medical profession, and so matters drifted. Sir John Simon, at the dawn of the public health movement in this country, recognized how closely identical was the health of workers with the objects sought to be secured by a public health service, and that in the prevention of disease lay one of the most important duties of the medical profession. To-day the preventive side of industrial medicine is regarded as even more important than the curative. It was the meeting of the British Association in this city in 1889 which brought me into vital contact with industrial medicine, and which drew from me my first appeal for improving the conditions under which the manufacture of white lead was carried on. The time was opportune, the country was ripe for action, a spirit of

reform and a desire for industrial betterment had penetrated into the House of Commons, with the result that the Home Secretary, then Mr. Asquith, appointed a White Lead Commission to inquire into the circumstances under which white lead was manufactured, and how the risk to health of the workers might be diminished. It was my fortune to be placed upon this and other commissions concerning dangerous occupations. In the Blue Books which these and subsequent committees published is contained a mass of useful information. Industrial hygiene may be said to have merged out of, or to have been a continuation of, parliamentary interference with the claims of employers to utilize labour almost to its breaking point. Occupation was never meant to cripple workmen, cause ill health or induce early death. It was thus that medicine was drawn into the social movement in which it plays an honoured part to-day. In few fields of human activity has the call for preventive medicine been greater than in the various industries of this country, with their former high mortality and sickness rates. Society, in the past, kept itself too far aloof from knowledge of the conditions under which certain trades were carried on, and even the workers themselves were not always aware of the dangers to which their employment exposed them. Ignorance is responsible for many of the calamities which overtake us. It became necessary to instruct workers and employers in regard to occupation and health, for to have knowledge is to be forearmed. Regulations drawn up by the Home Office, and meant for the welfare of workers, have from time to time been challenged by both employers and employed, and there is no objection to this, since at a conference of the parties concerned conflicting opinions may be modified, or, failing this, a compromise is effected, and work allowed to continue, during which fresh regulations can be given a trial.

Within the last few years the scope of industrial hygiene has widened. It includes not only consideration of the conditions under which work is carried on, the hours of labour, and diseases incidental to occupation, but it deals with the physical effects of work as seen in fatigue and how hours of work and rest may be correlated so that there may be obtained the maximum of production with the minimum of effort, also that the hours of respite from labour may be made sufficiently long for recovery from exhaustion to take place. The tendency has been to remove from labour any serfage element which may have clung to it as a remnant of bygone days, and to recognize that men and women are not mere machines, but that they are entitled to the opportunities of improving themselves mentally and physically. To-day industrial hygiene is no longer the affair of one nation but of all the advanced nations. The creation of the International Labour Bureau under the aegis of the League of Nations has raised industrial medicine to a higher platform, so that while the health of the workers is one of the main objects, and production is regulated by the physical fitness of the worker and by the hygienic conditions under which labour is carried on, the fact that industrial medicine has become international will incite backward nations to aim at securing a higher standard of health for their workpeople, as well as more efficient means of increasing production. Arising out of legislation passed for improving conditions of labour and shortening the hours of work, also proceeding through medical supervision of workers and the elimination of the unfit as well as the substitution of comparatively harmless for harmful methods of production, of industrial medicine it may be said that although it has made such rapid strides that many of the results obtained have become fresh energizing influences in the life of nations, yet many opportunities for good still lie in front of it.

Medical examination of workers before commencing their industrial career would no doubt create hardships, but the ultimate gain would transcend all these. Even with the ordinary precautions, taken there would still be found a certain number of persons who would break down in health earlier than others, either as the result of diminished vital resistance or of idiosyncrasy. With the view of determining the susceptibility of individuals to poisons in particular trades Sir Kenneth Goadby has suggested the employment of blood tests, thus indicating that the liability to occupational disease, as in the case of infectious maladies, is largely a personal matter.