A British Medical Association Lecture ON THE WAR PHYSICAL CENSUS.*

DELIVERED AT AYLESBURY, MAY 11th, 1920,

BY

SIR JAMES GALLOWAY, K.B.E., C.B., M.D.,

SENIOR PHYSICIAN, CHARING CROSS HOSPITAL.

GENTLEMEN,—Meetings of the British Medical Association such as this give an opportunity for discussing subjects of interest to the community at large as well as the problems of diagnosis and treatment of sick folk. I have been informed that there will be present at our conference to-day not only medical men of the district in general practice, but also medical officers of schools and others engaged in carrying out the work of the Ministry of Health and the Board of Education. I venture, therefore, to draw attention to the record of the physical condition of the people now being published by the Government, derived from an analysis of the medical examinations carried out for the purpose of forming and reinforcing our armies during the war.

Earlier Attempts to obtain an Estimate of the Health and Physique of the People.

This is not the first time that there has been an outcry and some danger of believing the statement that there is widespread and progressive deterioration in the condition of the people. Before and after the South African war the "progressive physical degeneration of the nation" became a catchword in the mouths of some of those interested in social reform. The opinion thus expressed was reiterated so often that belief that it was true was widely accepted. One good result of this outcry was the establishment by the Government of an Interdepartmental Committee on Physical Deterioration, which reported in the year 1904. This report is of great value, and should be freely in the hands of our profession, especially those who are concerned in watching and preventing the commencement of physical deterioration and disease. The report now being issued is based on a much greater body of observation, and gives therefore a sounder foundation for the conclusions that will be drawn, and much better reason for any action that may result. My purpose to-day is to draw attention to some of the main features of the present report, with the intention of inquiring what we may do as practising physicians in the course of our daily work to lessen the unnecessarily large incidence of debility and disease seen in the adult, but so often commencing in the young.

Before leaving the subject of the report of 1904, I desire to draw attention to the very wide terms of reference of the Interdepartmental Committee. The original terms of reference were:

To make a preliminary inquiry into the allegations concerning the deterioration of certain classes of the population, as shown by the large percentage of rejections from physical causes of recruits for the army, and by other evidence, especially the report of the Royal Commission on Physical Training (Scotland), and to consider in what manner the medical profession can best be consulted on the subject with a view to the appointment of a Royal Commission, and the terms of reference of such a Commission if appointed.

These terms of reference were subsequently extended and enlarged as follows:

1. To determine, with the aid of such counsel as the medical profession are able to give, the steps that should be taken to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people.
2. To indicate generally the causes of such physical deterioration as does exist in certain classes; and
3. To point out the means by which it can be most effectually diminished.

It is interesting to note how the terms of reference were widened and varied, and especially to know the reliance on our profession to give counsel and aid.

The mental attitude of the people and the Government brings to recollection the state of mind of our difficult patients—they are pressingly anxious to have our advice and assistance when in trouble, but so soon as the immediate cause of anxiety is past they are often unwilling

to follow advice or to take the precautions necessary to prevent a recurrence of trouble, and to forget their medical advisers in more ways than one. A good doctor, however, learns how to manage his difficult patients. Let us hope that a reformed medical profession may understand better how to deal with a more reasonable nation.

The somewhat excited outcry years ago about "progressive physical deterioration" originated as a result of the medical examination of recruits for the army, especially before the South African war. It was found that from 40 to 60 per cent. of the young men offering themselves for service in those days were of so feeble development or suffered to such an extent from disease as to be unfit for military service. The knowledge of this fact, and especially the pained observation of the degenerate specimens of humanity offering themselves for service at the various recruiting centres, gave rise to the clamour to which I have referred. The late Sir William Taylor was then Director-General of Medical Service of the army, and I well remember speaking to him many times on this subject. It was owing to his common sense and breadth of outlook that these exaggerated statements were reduced to their proper dimensions and that the work of the Committee was directed along lines that should have proved fruitful. He remarked that the idea of "progressive physical deterioration" had occupied a much too prominent position in the mind of those who had to consider and report on the advisability of inquiry, and drew attention to the fact that the results obtained by the recruiting officers for the army gave no trustworthy basis for the conclusion that there was general physical deterioration, that the numbers concerned were too small, and that the recruits of that day were drawn in excessive numbers from the most defective members of our population. Both Sir William Taylor and General Borrett, who had previously been Inspector-General of Recruiting, agreed that the real lesson of the recruiting figures was the failure of the army in the conditions then existing to attract a good type of recruit, that a great many of those who drifted to the army were young men who had no opening in life, who had no occupation, who were not fit for, or disinclined for, permanent work. The result of these criticisms was that the Committee proceeded to investigate the nature and causes of the deterioration which was manifest, following the advice of Sir William Taylor, given in his evidence—namely, "I trust that the inquiry will end in suggestions that will lead to the institution of measures which will result in bringing about a marked improvement in the physique of the classes from which our recruits are at present drawn." (December 3rd, 1903.)

This report led to very little result. As the effects of the war receded in the distance interest became less in the physical condition of the people, so far, at any rate, as the necessity of providing soldiers was concerned. Very few dreamt that in ten years the whole nation would be under arms, and that compulsory service would be introduced up to the age of 50 years and over. A good deal of interest continued to be shown in the physical condition of certain groups of people—for instance, school children, operatives and employees in some of our great industries—but fitness for war service was lost sight of, or even willingly forgotten.

I have mentioned the report of 1904, and that now being issued, but I recommend that anyone interested in these matters, and in their bearing on our everyday practice, should have by him also certain other documents, such as the Report of the Anthropometric Committee of the British Association, 1883; the Reports on the Physical Welfare of Mothers and Children, published by the Carnegie Trust; Mr. Arthur Greenwood's Report on the Health and Physique of School Children, published for the Ratan Tata Foundation, London School of Economics, University of London; and the Current Reports of the Medical Officers of the Board of Education, which must be familiar to their authors, some of whom I see before me. Certain of these documents possess the interest of historical romance rather than of statistical investigation, as, for instance, the Scottish Report written by Sir William Leslie Mackenzie.

The War Census: How it was made and what it shows.

On August 4th, 1914, or immediately afterwards, it became evident that the manhood of the nation would have to be strained to the utmost to raise the armies

* Much of this lecture was given as a lantern demonstration.

necessary to permit of our survival as a State. The physical condition of the male population once more became a question of supreme importance and urgency, but it was too late to think of measures of reform needing inquiry and time for development—the nation had to take what it possessed. Under the strain of war conditions it was at first hardly possible to obtain a record, or at any rate an accurate record, of our manhood offering themselves for military service. It was only in the later years of the war, and especially in the last year, that methods of systematic medical examination evolved and became so comparatively efficient that trustworthy information on a large scale could be collected for investigation and for the information of the country in the future. A faithful few remembered the lessons of 1904, and so it came about that as opportunity offered arrangements were made to secure accurate information as to the condition of the people which had for so long been desired, even under the pressure of vitally urgent duties. It is to the results of nearly 2,500,000 examinations carried out by some among my audience and many of our colleagues from November 1st, 1917, to November 1st, 1918, that I wish now to draw attention. It may safely be said that such a review became possible in our country only under the compelling circumstances of a war for existence. It would be evidence of unthinkable carelessness and neglect if full advantage of the information now at our disposal is not taken by our fellow citizens and by ourselves, in view of future emergencies and for the immediate purpose of meeting the crying need for the improvement of the health of the people.

During the twelve months preceding the Armistice—1917–1918—2,425,184 medical examinations were conducted. The men examined were classified in the well-known grades established by the Ministry of National Service, with the following results:

Grade 1	...	...	...	...	871,769 (36%)
Grade 2	...	...	...	...	546,276 (22-23%)
Grade 3	...	...	...	...	756,859 (31-32%)
Grade 4	...	...	...	...	250,280 (10%)

Thus, out of every nine men called up for medical examination, three were placed in Grade 1, two in Grade 2, three in Grade 3, and one in Grade 4. By way of making a standard of ready comparison the results obtained by the examination of 1,000 young men of average health and strength, reared under favourable circumstances, were utilized and a proportional standard worked out by Professor Arthur Keith. This standard was found to correspond very closely with the results obtained by examining large numbers of men who had lived in ordinarily favourable circumstances, and the standard may be accepted as adequate for the purpose of the comparison which we desire. Comparing the actual figures with the results obtained by the examination of the normal group taken as representative of a healthy section of the population, we find that we should have expected the following result:

Grade 1	...	...	...	...	1,697,595 (70%)
Grade 2	...	...	...	...	485,040 (20%)
Grade 3	...	...	...	...	181,902 (7.5%)
Grade 4	...	...	...	...	60,647 (2.5%)

Expressed in terms of Keith's standard of physical fitness for an average normal group, which we have ascertained to be 89.3 per cent., the result given by the medical examinations throughout the country was 70.9 per cent., a deficit of 18.4 per cent. in the fitness of our male population as estimated for service in the army on the widest possible basis. I need hardly draw attention to the serious state of affairs disclosed by these figures, nor need I comment on the fact that the results are by no means comforting or flattering to our national complacency.

It is true that there are certain errors underlying these great masses of figures with which we are dealing. For instance, there were some re-examinations of the same individuals. In certain districts a large number of the fit young men had volunteered or been called up for service before the last year of the war. But, on the other hand, there are counter-balancing conditions, such as the fact that in many places the examinations were carried out for the first time on fit men who had been retained during the earlier years of the war on reserved occupations, such as mining and the making of munitions, and there were the young men presenting themselves for service on reaching the age of 18 in the year under review. It may, I believe, be safely concluded that the actual results

obtained would be found to diverge not greatly from what would have been obtained in normal conditions if the whole male population throughout the country had come under review.

In order to understand some of the reasons for this widespread divergence from what we have a right to consider should be the average condition of health in our male population, and from a consideration of these reasons to draw such conclusions as may be helpful to us as the medical advisers of the people with whom we are dealing in our daily practice, it will be useful to review the three main causes which produced unfitness for service. On reviewing the results of large numbers of examinations three main causes of disability are apparent:

1. Poor physique and the presence of physical defects.
2. Tuberculosis, one definite infective disease responsible for widespread damage.
3. Diseases and degeneration of the heart and blood vessels, in many cases due to various infective conditions.

Poor Physique and the Presence of Physical Defects.

With reference to the first of these chief causes of degradation, there can be no doubt in our minds that much of it is due to conditions occurring in early life which are preventable. Take the effect of one disease alone—namely, rickets—on the future development of the child who suffers from it. Its effects on the growth of the body and on the proper development and function of the bone and the other tissues are known to all of us. On reading the reports of the medical officers engaged in this investigation much emphasis is laid again and again on the effects produced by imperfect feeding and on bad home life on large numbers of the children of the nation, especially in crowded industrial areas. One medical officer remarks: "Experience in Manchester teaches that the cause of 'poor physique' in children is the gross ignorance of the simplest forms of domestic economy and cookery amongst the mothers." "The defect was not due to poverty (except in a practically negligible number of cases), but to the lack of knowledge of the mothers (who could have afforded the necessary food) as to how to cook it." These errors in diet are known to us all, and recent investigations have emphasized their importance. They are known to be preventable, and as medical men we are largely responsible for keeping the attention of the public and of the local governing bodies on the fact that these causes of physical degradation exist, that to a large extent they are preventable, and that the proper steps for their prevention must be taken.

Another important cause of defects of physique and of degeneration is the effect of occupation on workers, especially when hard work under the unfavourable conditions existing in certain trades has to be undertaken in early life. One of the most striking features of the report of grading in the industrial districts is the rapid fall of the numbers of the young men who could be placed in Grade 1 at the age of 18 years compared to the numbers who could be placed in the same grade on being examined four or five years later. This is true of many industrial areas, but the most serious effects on health appear to be seen amongst the young workers in the textile industries both in cotton and in wool. A medical officer makes the note with respect to the south-eastern districts of Lancashire that the average man here is for military purposes an old man before he reaches the age of 40. Again, in dealing with the physical condition of the men between 40 and 50 who came up for examination after the Military Service Act of 1918 increased the age limit, he remarks:

"The question naturally arises as to why there should be this high proportion of disabilities."

The "Lancashire folk are hard working and industrious, and from an early age absorbed in industry. Often on questioning youths as to their pastimes I have been told that they have no time for games of any sort. They begin work young and work long hours, and too often they think that they are fully compensated if they can make big wages. Thus the growing boy gets no chance of healthy outdoor exercises to develop his frame."

"That his physical condition is poor does not trouble him. He is only like his fellows."

"The consequence is he contracts rheumatism, bronchitis, hernia on account of the slackness of tone of his muscles, and varix and flat-foot as a result of long hours of standing."

Of 200 youths of 18 to 20 years of age examined and rejected in the north-western region of England, no fewer than 85 were rejected on account of poor physique and

other physical defects. The result of the examination of men from 42 to 50 in the same part of England showed an enormous mass of disability arising from physical defects, most of them acquired not simply as a result of age, but mainly as a result of occupations in which they had been engaged. Take this criticism from Scotland, a part of the country which gave a comparatively good recruiting record of physical fitness. A medical officer writes:

"The examination of the boys was disappointing; the proportion deferred for re-examination as not being up to the standard of physical fitness required for their age was unduly high. This was quite as noticeable amongst the agricultural as amongst industrial classes. Here again the determining factor was feeding and housing; in the case of the agricultural classes the evil of the bothy system, living on tinned foods, cakes and tea, lack of home comforts . . ."

Much of this knowledge is no doubt very familiar, although it has rarely been dragged out into the open day so prominently. It is impressed on us on considering this record that much, probably the most, of this degeneration is preventable, and it is our duty as medical men to aid and to insist on its prevention.

Tuberculosis.

The second great cause of rejection is one infective disease—tuberculosis. We know that its incidence throughout the country is great, but the reports seem to show that the occurrence even of recognizable cases is not sufficiently indicated in the official records. In London, from January to October, 1918, 160,545 examinations were made. Of these, 5,238, or 3.1 per cent., were placed in Grades 3 and 4, owing to tuberculosis; 2.6 per cent. of these suffered from tuberculosis of the lungs. It is by no means comforting to have it pointed out to us that numbers of these cases occurred amongst barbers, hair-dressers, and others brought into close association with their fellows. Certain very noticeable reports are made from Liverpool with reference to the incidence of tuberculosis even in its contagious and infectious stages. Out of 66,000 examinations from November 1st, 1917, to July 31st, 1918, about 1.75 per cent. were rejected on account of tuberculosis. This work was done in close association with the medical officer of health and his officials. The striking fact is brought out that of 277 cases proved to be tuberculous, 218, or 78 per cent., were previously unknown to the health authorities. And so the story of tuberculosis and its incidence is remarked on by medical examiner after medical examiner. Who can doubt that this widespread incidence is unnecessary? It has its origin in the close crowding of our population, the insanitary conditions produced by back-to-back houses, ill aired courts, and ill ventilated dwellings in our cities, villages and rural districts. These are pointed out as nurseries of the infection. It is clearly our duty to keep rousing the attention of the people and of the local and municipal authorities to the occurrence of a disease which is contagious, infectious, and preventable.

Disease and Degeneration of the Heart and Blood Vessels.

The third great cause of unfitness and of rejection is noted as diseases and degeneration of the heart and blood vessels. Included in this category are the various forms of heart disease—pericardial, myocardial and valvular—due to rheumatic inflammation of the heart. In such cases we have to deal with a fairly well recognized type of infection, but there can be little doubt that many individuals who show failure of the heart and of the circulation have suffered from other general infections not so obvious as that of rheumatic fever. As men become older the results of strain will show themselves much more readily on a cardio-vascular system only slightly damaged by infective process occurring in early life. This appears to be the cause of the fact that on looking over the report of the examinations of the older men, especially between 40 and 50, a great proportion of disability appears to be due to disease of the heart and of the blood vessels. In the London region, of 160,545 examinations, 15,947 were placed in Grade 3 or Grade 4 on account of heart affections alone, no less than 9.9 per cent.

One of the most important of the forms of vascular degeneration causing disability is venous varix in some form. Varicosity of the veins of the lower extremities to an extent sufficient to disable or to be dangerous was

found to be very common, especially in the industrial districts and among the older men. The amount of this form of varix was surprising, even to experienced medical men. From the south-eastern region of Lancashire it is reported on the examination of the older men that "varicose veins are extraordinarily common, and a large proportion of them are of extraordinary severity, like tortuous knotted ropes extending up the whole leg and thigh. Including varicocoele and piles, quite a quarter of the men suffered from varix."

I mention these three great causes of disability on account of their frequency, but also to draw attention to the fact that to a very large extent they are preventable. If the nation could be so educated that the children are better cared for, that the adolescents and the young men are not driven to hard work beyond their powers, and that the adult worker is protected from the more evil consequences of his labour by securing proper conditions in the field and in the workshop, a very large proportion of these disabilities would be mitigated or would disappear.

Oxford and Bucks: Some Figures and their Lessons.

May I now draw attention more particularly to the condition of this district, most familiar to the members of my audience, so that we may have a tangible idea of the state of the people of whom we are in medical charge. For this purpose the authorities of the Ministry of Pensions, in whose charge the medical records of the Ministry of National Service now remain, have very kindly furnished me with more detailed information than has yet been published. Among other documents, I lay before this conference the complete analysis of the causes of rejection during the year under review, arranged according to occupations. This information is not yet available for other parts of the country, with the exception of London and the South-Eastern Region, and we are much indebted to the Ministry for the trouble they have taken to get out these figures specially so that I may have the opportunity of placing them before you.

In the Eastern Region of England, including Oxfordshire and Buckinghamshire, 216,012 examinations were made, with the following results:

Grade 1	...	...	...	...	68,604 (31.8%)
Grade 2	...	...	...	...	54,360 (25.1%)
Grade 3	...	...	...	...	67,492 (31.3%)
Grade 4	...	...	...	...	25,556 (11.8%)

These figures, estimated by Keith's standard, give an index of fitness of 68.9 per cent., and show a deficit from the standard fitness of 20.4 per cent., the deficit on the whole country being 18.4 per cent. It will be seen, therefore, that the Eastern Region not only falls far below the standard of fitness that we should have the right to expect, but is considerably below the average of Great Britain. I have taken out certain groups from the analysis of the whole of the rejections to give some indication of the effects of the three great causes of physical unfitness in our own district.

In the area of Oxfordshire and Buckinghamshire 3,689 were rejected as being unfit for service during the year under review. Of these:

Poor physique and the presence of physical defects account for	...	...	...	...	422
Tuberculosis for	...	...	...	...	300
Diseases of the heart and pericardium, the arteries and veins for not less than	...	...	...	...	827

Bearing in mind our people in Oxford and Bucks these results certainly are arresting, and give cause for grave consideration. On looking over the reports of the medical officers to obtain indications as to the reason of so great and so severe an amount of disability, I note first this interesting criticism respecting an agricultural population:

"The agriculturalist on the whole is a good type of recruit, but in Wales may be divided into men engaged on arable land and dairy farming and those on pasture farms. The former does not give a very good type of recruit, as the men engaged in this work suffer to a large extent from bad feet and rheumatism. Those on pasturage farms generally in the mountainous districts, engaged for the most part in shepherding, are a splendid body of men and are usually sound."

The Commissioner of Medical Services for the Eastern Region is a medical officer of wide experience. For many

years as an officer of the Indian Medical Service he had the opportunity of observing the recruits in India for the Indian armies. Comparing Indian recruits with some of those seen by him, he makes the remark: "The prevalence of disease and defective physique among the young men of Great Britain presents a shocking contrast." The Deputy Commissioner of Medical Services, dealing with Buckinghamshire and stationed at Aylesbury, states:

"The chief feature of this half-year has been the examination of the older men, that is, of 43 to 51, of whom there were 1,674. That only 6 per cent. of these men should prove fit for Grade 1 was a sorry result." "Bucks is essentially an agricultural county, the young farm labourer of 18 to 21 is a splendid specimen as a rule, but the same class of man at 40 instead of being in his prime is middle aged, with such disabilities as myalgia, arthritis, varicose veins, hernia, and flat-feet, all pointing to much standing, walking, exposure and hard manual labour." "Next to agriculture come chair-making and the boot trade." "The conditions in the latter need improving; much of the work is done in small, close, ill-ventilated rooms, with the result that the men of Chesham are, generally speaking, of poor physique and weaklings." "Very different were the men from the important London and North-Western Works at Wolverton; there the men and boys are medically examined before admission, and the work is done under satisfactory conditions, with the result that by far the majority were fit for Grade 1."

His colleague, a medical man of long experience in the two counties, stationed at Oxford and dealing with Oxfordshire, remarks on the poor physique of agriculturists in his area. He states: "In my opinion the homes of the agricultural working class are a disgrace to a civilized country. In pre-war days agricultural wages in Oxfordshire were as low as twelve shillings a week."

These criticisms are made by men of experience brought face to face with the results of degeneration and disease in our adult population. I have remarked on another occasion how depressing is the sight of so much suffering and disease when seen in bulk, and the influence that it has on the judgement of those who have to witness it. It is no wonder that the criticisms made are occasionally unduly weighted by the evidence of what they have seen in such concentrated form, but there can be no doubt in our minds of the existence of a large mass of deficiency, and equally that much of it is avoidable.

The Necessity of Obtaining "a Comparative Estimate."

As an important preliminary to the steps that must be taken to remedy the defects in the physical condition of the nation disclosed by the report, I would again urge the advantage of a continuous record of the health of our people. This suggestion is not a new one, although it seems to give a shock of novelty to some who have not thought of the great advantages that would be gained. You will recollect that the Interdepartmental Committee of 1904 were asked to furnish the Government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people. There can be no doubt in any one's mind of the advisability of such a record. If we had periodical information of the health of our people we would soon be able to recognize the chief influences which produce physical degeneration, and to identify and to understand more fully the causes and early signs of disease. The objection raised to such a course is its presumed impracticability. This difficulty, I believe, is greatly exaggerated. If the benefits of the course were explained and understood such objections as do exist to the periodical examinations of our population would be overcome.

But we have already a mass of information from which instruction in these matters can be obtained. I have a list before me—a list of no fewer than twelve kinds of Government departments and Corporations engaged in examining men, women and children simply with the purpose of ascertaining their physical fitness, often with no reference to treatment. The number of observations made by medical men for this purpose must be many hundreds of thousands every year. They are made in the case of many individuals repeatedly from the date that they enter an elementary school up to the time of commencing their life's work, and at various periods afterwards. If these observations were collected and collated by methods similar to those used in the report with which I have been dealing, the information so greatly to be desired would be at the disposal of the country without great departure from custom.

If the time permitted I should like to refer to the interesting plan adopted for the medical inspection of the school children by the practitioners of Oxfordshire, and the arrangements made for obtaining a continuous record of each individual child. It is on such lines as those marked out in the neighbouring county that the "periodical data for an accurate comparative estimate of the health and physique of the people" will be obtained.

The Land, the Folk, their Work.

Coming from London to-day and travelling into your beautiful county, I could not fail to see the nature of the land. Leaving the great wilderness of houses I saw the characteristic features of the lower London tertiary formations, its clays and gravels, and the soil they produce; then the upper cretaceous rocks distinguished by the graceful outlines of the Chilterns; passing deeper into the secondary formation, the clays, sands and limestones of mesozoic time which give the characteristic features to mid England. Overlying were the various drifts of gravel, sand and clay masking, and sometimes softening, the basal geological features, but giving fertility and permitting of the cultivation of the land. On this foundation I saw the hills, the river valleys, the meadows, the plains of sand and fertile clay which characterize your counties and make them among the most pleasant parts of England to look upon.

Then I thought of your people, and my mind went back to the days before the Romans when your country was inhabited by races speaking the Celtic tongues, but who had their origin in ages long preceding the Celtic infiltration. Have these races left their mark on the population of your district? It is true that we read under the date 571 that Cuthwulf, brother of Ceawlin, again marched northward and "fought against the Welsh at Bedford, and took four towns, Lenbury, Aylesbury, Bensington and Ensham," and we can imagine the men of Wessex meeting the East and Middle Saxons just in this place, where your town is built on a rocky island rising from the fertile valley. It must have been a desirable place of habitation from remotest time. Historians, I think, look upon your district as one of the most thoroughly Saxonized in England, and the language and your place-names give evidence of this. But is it not more than probable that the invading West and East Saxons and their kindred from the north were not in overwhelming numbers, and that they mixed with the older races of the land? Without disregarding the Saxon tongue the older influences no doubt exist both in race and disposition, and your people are of the characteristic mixed stock of the greater part of our country, and possess their full share of its enduring and virile characteristics. It is only recently that the railroad has opened up the more secret parts of your counties, and the racial stock formed at the time of the immigration of the West Saxon men has remained almost pure. More recently, on your eastern and southern borders you had the overflow from London, but these newcomers are the more vigorous members of the racial swarms living round the lower Thames, and should not depress your native healthy stock.

Thinking of the occupations of your folk, I note that agriculture in various forms absorbs a large proportion. Your industrial centres are not large, and your workers are engaged in industries which should be neither unduly fatiguing nor unhealthy. The stranger who has the opportunity of walking on the Chilterns through the great beech woods down to the busy little towns in the river valleys is persuaded that the lot of the worker has fallen in a pleasant land. He is much in the open air; he has to care for the great woods and noble trees whose timber forms the material in his workshop.

Thus the country, your people, and their occupations are good beyond the average, and yet the records of our physical census show results not only far below what we have a reasonable right to expect, but very definitely below the average of the rest of the country. I ask you to meditate on the reasons for this. No doubt many will occur to your minds; indeed, the explanations that I have quoted from the evidence of our medical colleagues suggest many of the causes, and of these causes and reasons there are few that are not controllable by the medical profession as a whole and each of us in our individual sphere of work.