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WHERE ARE WE GOING?

MEDICINE IN A PLANNED ECONOMY

BY

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It is a truism to say that the last fifty years have witnessed a revolution in public health. Many diseases we have exterminated, others we have learnt to cure, others again we have learnt to control; puerperal and infant mortality have diminished, the expectation of life has risen, and the standard of personal, domestic, and public hygiene has improved beyond recognition. Our pride in these achievements, however, should not blind us to the other side of the picture—the rapidly mounting cost of the medical services both in money and in man-power. At any time this remarkable paradox would provide a subject of great

The existence of this increase is of course well known. What is not realized is the acceleration. Figs. 1 and 2 show the rapidly mounting cost per in-patient per week and per out-patient per attendance, respectively, at Addenbrooke's Hospital, Cambridge. The *Hospital Year Book* shows that a similar rise is occurring throughout the country. While it is partly accounted for by the general rise in wages and cost of equipment, it is mainly due to the increase in the amount of work done per patient. In 1897 106 beds were served by four physicians, four surgeons, and two residents; in 1922, with 170 beds, the

FIG. 1.—Addenbrooke's Hospital. Cost per in-patient per week in pounds.

FIG. 2.—Cost per out-patient per attendance in shillings.

FIG. 3.—Upper curve = medically qualified staff; lower curve = medically qualified staff per 100 beds.

FIG. 4.—Number of pathological examinations.

academic interest; in our present economic plight it becomes a matter of grave national concern.

The expansion of medicine is visible to all. With a population almost at its maximum practitioners have increased in the last twenty years by 50%. Many new hospitals have been built and others enlarged and upgraded. Hospital beds, having reached the figure of 600,000, need to be supplemented by a further 200,000. To the increasing army of nurses has been added a large force of auxiliaries which barely existed a generation ago—radiographers, almoners, dietitians, speech-therapists, laboratory technicians, occupational therapists, orthoptists, hospital physicists, masseuses, physiotherapists, child-guidance workers, clinical photographers, records officers, health visitors, and psychiatric social workers—classes which are being added to almost yearly.

total staff numbered 16; in 1947, with 315 beds, it numbered over 70 (Fig. 3). These figures, however, grossly underestimate the increase in man-power, for they take no account of the assistance which the staff now receives from the host of auxiliaries or the greatly increased work done by members of the staff compared with that done by their predecessors, who were mainly occupied with general practice. Although there has been some increase in the population this has been offset by the opening of a new hospital in the area and the enlargement and up-grading of others. In spite of this, demand has outstripped supply, for the waiting-list has risen in the last ten years from 228 to over 1,500. The necessity for the increase in staff will be realized from the increase in the work of one department alone. Since 1927 the total pathological examinations have increased 33 times (Fig. 4) and the blood

counts 50 times (Fig. 5). These figures again underestimate the true increase, since examinations have become more complex. Parallel figures could doubtless be produced by other hospitals. Taking the country as a whole we see in Fig. 6 the rise in the numbers on the *Medical Register*. Twenty years ago the annual increase was 600; it is now

FIG. 5.—Number of blood counts.

FIG. 6.—Numbers on the *Medical Register*.

over 2,000. In fact, whatever medical activity we plot against time we find the same result: *acceleration towards infinity*.

Can we see any sign of a limit to this trend? There are four directions in which we can look: the stabilization of the population, the repair of past neglect, the improvement in social conditions, and the advancement of science.

Stabilization of Population

Since the figures given above show that the rise is mainly due to the increased medical requirements of each patient it is clear that nothing short of a substantial decline in population could operate as a limiting factor.

Repair of Past Neglect

It may be thought that we are making up for lost time and that stabilization will be reached when we have accomplished this task. This, however, is true only to a limited extent. It is a misreading of history to think that our forerunners were neglectful in providing the necessary requirements. Sixty years ago there was barely any need for hospitals, because domiciliary treatment was as efficient as hospital treatment. If we look back we find this general rule: every new development has appeared as a small increment, and its provision has always been regarded at the time as amply sufficient for existing needs and a matter for pride and congratulation. When, in 1915, the Governors of Addenbrooke's Hospital built two small rooms for radiology and electrical treatment combined they described the accommodation as "commodious." To-day a floor-space twelve times as great is considered inadequate. At all times estimation of future requirements can be made only in terms of the leeway to be made up and in the light of the existing state of medicine. The developments which are in store, even in the immediate future, are hidden from us. We know neither the form they will take nor the provision which they will need. All we know is that they are certain to come.

Improvement in Social Conditions

The relation between the standard of living and the incidence of disease is complex in the extreme. In theory we should expect a diminution in disease when the whole population is adequately fed, housed, clothed, and educated. In practice, however, several factors operate powerfully to prevent this happy consummation. In the first place we have to admit our failure to establish any causal relationship between social conditions and most of the major diseases which fill the

hospitals. Secondly, as civilization, or at least our conception of it, advances, rational practice becomes complicated by extraneous considerations. There is the threat of litigation and censure, which among its other effects has resulted in the routine x-ray examination of even the most trivial injuries. As the man in the street becomes familiar with the many similar tests which are rapidly being added, the threat of litigation will increase. Now that in almost every family there is at least one person who, being a masseuse, speech therapist, orthoptist, or whatnot, is in the best position to speak with authority on medical matters, this threat may reach formidable proportions. Investigations inspired by fear of litigation are inessential by-products of the healing art, imposed upon it by modern society. The threat to economy lies not in the premiums paid, nor in the expenses incurred by the protection societies (which can doubtless look after themselves), but in the enormous expense of examinations made not because of their clinical necessity but from fear of savage penalties. The time has come when we simply cannot afford the wholesale radiography of trifling injuries because one in a million may become the subject of litigation. A situation which should be ours to control has passed into the hands of the lawyers. The courts will have to accept the plea of reasonable care against accusations based on conventional procedures. Moreover, practitioners are increasingly pressed for the performance of investigations which they know to be useless under the circumstances. Refusal is difficult, since any subsequent calamity will, however unjustly, be ascribed to their obduracy. In private practice concessions to prejudice are permissible, since the cost is borne by the patient, but it will be interesting to observe whether, with free medical attention for all, specific methods of investigation will be demanded by patients as a right.

Thirdly, as the standard of living rises people increasingly fail to distinguish between essentials and non-essentials, and tend to judge efficiency by the standard most obvious to them—namely, the *fa-l-l-s*. I have often heard patients sing the praises of the cottage hospitals (to which they should not have been sent) on account of the homely atmosphere there created. In particular, women value the "dainty teas" in which these institutions specialize. Admission to hospital is coming to be looked upon as a desirable thing in itself, and it is remarkable how this idea has unconsciously crept into common parlance. Recently at a meeting of a friendly society a member, complaining of the long waiting-list for admission to the local hospital, said that several hundred members *wanted* to be admitted. A business man in comfortable circumstances and robust health, speaking of the advantages of the general hospitals over the nursing homes, said he *looked forward* to the time when he could be admitted to a general hospital. At the present time admission to hospital is in many cases essential merely because domestic difficulties make the necessary investigation and treatment impossible to carry out at home. While we may hope that circumstances will improve in course of time, it is to be feared that admission to hospital will meanwhile have become a habit too deeply ingrained to be easily eradicated. If we make hospitals more comfortable than homes in inessentials it will be a sign of regression, not of advance, in civilization; it will be a reversion to the days when our ancestors found in the monastic infirmaries a refuge from the insecurity of their wattle huts. In short, whatever reasons may exist for hoping that a rise in the standard of living will diminish the incidence of disease, there is every reason to fear that it will increase the incidence of treatment.

The Advancement of Science

The most reasonable hope for the diminution of disease may seem to lie in the advancement of science. The astonishing growth in our knowledge about the natural history of disease is, however, no measure of the speed at which we are finding the causes of disease. Medical research is peculiarly obedient to the law of diminishing returns. In the first place, unlike most other sciences, which stretch forth into a boundless ocean, its sphere is very definitely circumscribed. In the last resort it is up against the inevitable; its concern is the postponement of a natural termination, and it is significant that in the new science of geriatrics we are interesting ourselves in the consequences of such postponement. We live in an age of increasingly

medicated survival. Secondly, our most dazzling successes have concerned those noxious agencies which differ biologically from, or are extraneous to, human life rather than those which resemble or are inherent to it. Hence our triumphs have been greater over acute than over chronic ailments. Progress slows up as we come to deal with the weaknesses of the flesh. The discovery of vaccination, though undoubtedly a stroke of genius, was a simple matter suited to the crude state of science then existing. Profound as was its effect upon society, the conquest of smallpox was achieved at a cost which was infinitesimal compared with to-day's expenditure on cancer research. Thirdly, humanitarianism, while being the main inspiration of medical research, at the same time imposes upon it severe limitations. While urging us to the strife it withholds from us the use of the most powerful weapons—wholesale slaughter and breeding from immune strains—which have proved so effective and economical in the hands of the agriculturist. For these reasons medical research has, of all forms of research, the least prospect of reaching its ultimate aim.

If this view appears unwarrantably pessimistic let us appeal to the facts and consider the effects of the fruits of research upon everyday clinical practice. Of the hordes of diagnostic tests in common use very few are, like the identification of the tubercle bacillus in the sputum, discoveries of the cause of disease. By far the greatest number are tests of consequences—tests, that is to say, of the reaction of the body to some infection or disturbance of unknown nature. For the most part these tests, however valuable they may be diagnostically, only determine by-results which are brought to light by scientific and sometimes fortuitous means. They are like the flotsam which, unseen in the roaring torrent but readily visible in the eddying pools, merely indicates that some disaster has occurred nearer the source. These tests have come to be used not merely to confirm a clinical diagnosis and to settle a matter of doubt but also to discover morbid conditions alleged, on grounds however uncertain, to be responsible or associated. Witness the tests required to discover or eliminate foci of infection said to be the cause of fibrositis. They are used to make a diagnosis doubly and even trebly sure, and to prove the absence of any other diseases—a process which multiplies as new diseases, new modifications of diseases, and resemblances between diseases are discovered. We dare not make a diagnosis of neurosis without using all the appropriate tests to eliminate beyond all shadow of doubt the organic diseases which it simulates, and with each test the patient becomes increasingly impressed with the reality of his complaint and prouder of its importance. Moreover, these tests are also employed at frequent intervals to gauge and control treatment, for the therapeutic seas into which we now venture are navigable only by the most vigilant pilotage of the laboratory. The truth is that, at any rate in regard to chronic disease, cure is being more and more outstripped by treatment, and there is no sign that the situation will be reversed.

This prospect, ominous enough in itself, is rendered more ominous by the disturbing fact that advancing knowledge so often obscures rather than clears our vision. For many years radiological examination was held to provide reliable evidence of the existence or absence of a gastric ulcer. But now it is claimed that gastroscopy reveals ulcers invisible to radiology. Here is the result, recorded in the *British Medical Journal* of Aug. 9, 1947 (p. 215), of an experiment in which the same x-ray films of the chest were submitted to five radiologists.

"The number of the full-size celluloid films found positive for tuberculosis varied from 59 to 100; altogether 131 films were described as positive. All five agreed that the film was positive in only 27 cases. Four were in agreement on 17 films, three on 17, two on 23, and in 47 cases only one observer described the film as positive. Further individual comparisons showed that from one-third to one-half of the films described as positive by one reader were negative according to the others. The radiologist with the smallest group of 59 positives had 31, 29, 37, and 14% of his positive films described as negative by the other four. The proportion of another reader's 100 positives labelled negative by the other experts varied from 42 to 50%."

"The failure of the same individual to be consistent in his judgment was even more astonishing than the variation

between different radiologists. All the films were assessed for a second time at a later date by the same five readers. The proportion of first positives regarded as negative on second reading by the same expert varied from 7 to 41%, and the proportion of the second positive readings which had been called negative on a first reading ranged from 6 to 19%. The radiologist who had 59 positives originally found an additional 23 on his second assessment, but missed 4 of his own first positives."

This makes depressing reading. We are left with the impression that modern methods, with their mounting cost and complexity, while valuable in establishing a diagnosis already made by simpler means, contribute little to the elimination of doubt and uncertainty. Scientific discoveries hailed on their first appearance as fresh triumphs over Nature lead to disillusion when their limitations are realized. Artificial aids to our senses make the boundary between health and disease vaguer instead of clearer. Does our reliance on them denote a lack of faith in ourselves? Does it mean that, in the words of H. G. Wells, mind is at the end of its tether? It is like the problem of the fens. The more these are drained, the deeper they sink, and the deeper they sink the more they have to be drained, so that a time may come when the cost of drainage exceeds the value of the food grown on them.

If I appear to decry the value of research and to advocate empiricism let me say at once that nothing is further from my intention. There is a world of difference between the discriminating application of research on the one hand and, on the other, the routine performance of its technique by the unskilled and the self-confident interpretation of its results by the inexperienced. If a tree produces too much leaf we can, by ringing the bark, pruning the roots, or other devices, restrain the sap and at the same time direct it to fruit-formation. Economic factors may force us to confine the prolific sap of science, without affecting its source, to the most productive channels. While encouraging genius we must make it clear that medicine is no place for the career-plugging of mediocrity.

The Fetish of Perpetual Expansion

We have unfortunately come to accept expansion as inevitable and unending. Nobody even visualizes a time when our hospitals will be emptied instead of crowded, when the conquest of disease will lead, as it logically should, to the diminution of disease. We go further and seem to assume that such expansion is something desirable in itself. We pride ourselves on the cultivation of virgin soil rather than on the harvest. Consider, for instance, the plans recently envisaged for the development of clinical photography (within certain limits a desirable thing). According to one of its enthusiastic advocates the department of the future must have a medically qualified director, an assistant director, two photographers who must also be trained nurses, a microscopist with additional training in photomicroscopy, a secretary, an instrument mechanic, a nurse, and a porter. Accommodation must consist of one large main studio, 40 by 20 ft. (12.2 by 6.1 metres), three subsidiary studios, 15 by 10 ft. (4.8 by 3 metres), three small studios for the photography of small objects, seven dark- and accessory-rooms, a secretary's office, a filming-room, a director's room, dressing cubicles, linen-cupboards, lavatories, storerooms, and a small surgery. This, we are told, would suffice for the first three years; after that extensions would be necessary. Among the users of the department would be the welfare department, which would wish to "show the return of a healthy glow to the cheeks of a convalescent." A second enthusiast tells us that medical photography must become "a subject in our medical schools on an equality with radiology." A third tells us that the staff will need a lengthy and complete training. Spaciousness, he says, would be necessary in order to counteract "the demoralizing effect of cramped quarters." But, one may ask, were Louis Pasteur, J. J. Thomson, and Gowland Hopkins demoralized by the cellars in which their best work was done?

This is perhaps an extreme case, but it illustrates an attitude of mind from which many of us suffer. Ambition in its most virtuous form impels us to raise ourselves higher from the ground on a pyramid of ever-increasing subordinates and accommodation. We measure our success by the material growth of the things which we create, forgetting meanwhile that in many human activities, such as increase of population and exploitation of new countries, this standard has had to be abandoned. We see limit, either actual or implied, in all directions; in the wide adoption of birth control, in the world shortage of many necessities, in the control of entry to the universities, and in the predetermination of the size of the new satellite towns. We can therefore hardly maintain our faith in the inevitability of perpetual expansion in the one feature of social life whose reduction is essential to the prevention of the reduction of everything else.

The Dependence of Medicine on Economics

The idea that medicine is immune from economic laws is fostered by several factors. First, in a commodity the need for which diminishes the capacity to pay for it the laws of supply and demand cannot operate. The cost of treatment having for the great majority of the population been removed from the sphere of domestic economy and transferred first to charity and later to the State, the consumer is a third party (the doctor) who, acting in the interests of the recipient (the patient), has therefore no interest in economic considerations. Spending all he is given, he appeals for more to the supplier, who is totally incapable of judging the degree of necessity.

Secondly, life is not, as it is sometimes believed, beyond price under all circumstances. Its value increases with the danger which threatens it. When the danger is imminent people are quite unreasonable; when involved in an accident they expect doctors and nurses to appear out of the blue. The great majority of the community have in fact set the value of their lives at a very low figure, for the 4d. or 6d. per week which is the most that can be extracted from them for specialist treatment under the contributory schemes is only a very small fraction of their expenditure on the cinema, football pools, and cigarettes. That the value of life is only relative is easily proved. The appalling toll of road accidents could be reduced to vanishing-point by a decree limiting speed to 10 miles an hour. We do not take this step because it would dislocate our commerce and (let us be candid) curtail our pleasure; we prefer to improve the treatment of the results of accidents.

Thirdly, in the healing art the heart as well as the head plays a part; it cannot be conducted in the matter-of-fact manner with which we cash a cheque at a bank. Patients have strong views of their importance and behave as though the world revolved around them. The public, while granting that the medical labourer is worthy of his hire, believe that under certain circumstances, such as a railway accident, humanitarian must override financial considerations. Humanitarianism is, moreover, mixed with sentiment—a commodity which, however inexpensive and harmless it may appear, may have costly reverberations. When food distributors go on strike but graciously make an exception in favour of hospitals they make a bid for sympathy as illogical as it is mawkish. For the crocodile tears which they shed for the sick in hospital blind them to the sufferings of the sick in their homes, not to mention those awaiting admission to the hospitals and those recently discharged and in need of special nourishment. They overlook, too, the ill-health consequent upon the deprivation of food of which they are the cause.

The Economic Background

Since we can see no sign of any arrest of this accelerating expansion (let alone any reversal of the process) in stabilization of the population, in repair of past neglect, in improvement of social conditions, or in the advancement of science, and since such expansion is clearly incompatible with a contracting economy, we are forced to conclude that the limit will be determined by the available resources of man-power or cost, or both. The limit in man-power is already evident in the acute shortage of nurses, and shows signs of spreading to other sections. Improvement in the conditions of employment, however desirable, is no solution, for it only increases the cost and probably attracts less suitable entrants. Moreover, the labour market being limited, the shortage can be relieved only at the expense of productive work. As regards the cost, we must bear in mind that with the establishment of the National Health Service the State becomes a single *private* patient—John Bull. But whereas the individual private patient can deny himself the benefits of medical treatment or throw himself upon charity if the cost is beyond his means, John Bull must foot the bill. The question is, How much can he afford to pay? The answer depends upon three stark economic truths.

First, disease cannot be anything but a tax on national prosperity, however much it may benefit sections of the community. Secondly, the available resources, whether national or charitable, are only two—the surplus of agricultural produce and the surplus of exports over imports. In this country the first of these has long ceased to exist, and cannot return unless the population is substantially reduced. The absence of the second is now only too painfully apparent, but many still fail to realize that it is something far greater than a sudden and temporary calamity. It was predicted by Disraeli in 1847, and in view of the increasing industrialization of other countries it is extremely unlikely that we shall even approach the high-water mark reached on that day fifty years ago when the captains and the kings departed.

The third truth is that the standard of medical treatment is influenced by, and at the same time influences, the general standard of living. This reciprocal relationship arises from the fact that the purpose of medicine, which is the promotion of happiness and prosperity by the subjugation of ill-health, consists of two components, humanitarian and economic. Though these are interwoven in practice we must for our present purposes separate them. The humanitarian component is uppermost in the relief of suffering in the aged and infirm, though the economic component is also present if this relief is accompanied by a reduction in the number of those in attendance upon the recipients and their consequent liberation for productive work. The resources available for the humanitarian component are limited by personal or national income. What we can afford to spend may, and often does, fall short of what we should like to spend. This is a hard saying, but we live in a hard world.

Suppose that 100 patients suffer from a rare disease curable only by the use of a drug costing £50,000 per patient and that there is no prospect of this amount being reduced. The £5,000,000 required to save these lives would clearly be beyond the resources of the State, for it could be provided only at a sacrifice which would involve loss of efficiency and therefore loss of health to the whole community. As the State could hardly make an exception in favour of one patient no one would be saved. If, however, one patient were a millionaire he could save himself by writing a cheque for the amount. This hypothetical case

may seem fantastic, but it is only an exaggeration of what actually occurs. Recuperation in the South of France can be enjoyed by the few but is denied to the average citizen, although he is glibly promised the finest medical service in the world. Of the rare and refreshing fruit promised by Lloyd George not a single grape has assuaged any parched lips from National Health resources. A medical service provided by the State cannot be as efficient as that which the fortunate few can provide for themselves. In a beleaguered city there is a limit to which the defenders can share their rations with the infirm. If that limit is overstepped by dictates from the heart the defence is imperilled. The fear that we may have reached the danger mark is in the minds of those who now question the wisdom, from the national point of view, of the liberal allowance of milk to sufferers from dyspepsia. In regard to its humanitarian component, then, the standard of a national medical service is limited by the general standard of living. It cannot overstep that limit without adversely affecting national prosperity.

In the economic component the situation is the reverse, for here the standard of medicine directly influences the general standard of living. This component is typified in the youth who submits to the radical cure of hernia in the hope of the financial reward which will ensue from his increased efficiency. The benefit will not be confined to himself but will be felt by the whole community. Personal good becomes merged into national good. This fact indicates the amount which the State can afford to spend on the economic component. It must be less than the value of the improvement which is expected to accrue. It must show a profit in the long if not in the short run. We are often told of the annual loss of labour, expressed in man-hours, due to minor ailments, and the figures are indeed formidable. If this wastage can be reduced by research carried out centrally and capable of cheap application peripherally there is an economic gain. But if we rely on incoordinated and ill-considered peripheral action the result may well be an economic loss. If, for instance, a hospital contemplates the establishment of an auxiliary service devoted to the economic component, the reason must be economically sound. It is not sufficient to say that other (probably larger) hospitals are doing it, nor can the question, "Can we afford to do it?" be met by the fatuous rejoinder, "Can we afford not to do it?" if by this is meant, "Can we countenance the loss of prestige if we don't?" Nor, again, is the step justified if, when established, the department is used because it is there, not because it is really needed. It may be justified in three ways. First, the improvement in treatment must result in an improvement in national efficiency—in the more rapid return of the worker to industry and in a lessening of expenditure on man-power in attendance upon patients after their discharge from hospital. Secondly, the work of the medical staff must be eased so that it can deal with the same number of patients in a shorter time, with the ultimate object of making fewer doctors necessary. Thirdly, research into the causes and treatment of diseases which reduce working capacity must be thereby facilitated. This is admittedly a difficult criterion; it is sufficient here to state that it is applicable to only a few hospitals.

While I fully appreciate that in practice the humanitarian and economic motive cannot be separated, I am convinced that we cannot solve the problems which confront us unless we realize that national prosperity determines the humanitarian component and is largely determined by the economic component. The importance of the economic component is brought home to us only when man-power is short. Always implicit in the work of the military medical services, it is forced upon us for the first time during peace

by the stark reality of our plight. We must constantly bear in mind that every person engaged in medicine is a person lost to the production of food and exports. Medicine is now not only a humanitarian profession but also an indirectly productive trade.

Conclusions

If my philosophy appears unduly pessimistic my answer is that economics is notoriously a dismal science and cannot be otherwise when applied to medicine. Those who think that medicine is above economic laws are destined to have their illusion rudely shattered, for a limited and planned economy obviously cannot support a health service expanding with the acceleration which medicine now exhibits. I do not pretend that the suggestions which I have made touch the main problem; still less do I expect them to command universal assent. I shall be content if I have succeeded in stimulating a realization of the situation and the disastrous consequences of ignoring it. I foresee three dangers which are by no means remote. First, money and labour will be spent on trifling ailments to the detriment of those who are seriously ill. There are indeed signs that we have already reached this stage. My realization of this danger will, I hope, absolve me from any charge of displaying in what I have written an unsympathetic view of ill-health. Secondly, individual attention and mature thought will be replaced by routine performance and reflex automatism. Responsibility beyond their capacity will be delegated to subordinates and auxiliaries, with the encouragement of that form of self-confidence which never admits ignorance. The maintenance of a high standard of practice will be greatly imperilled. Thirdly, the threat to freedom of action in our dealings with patients, a threat which we so much dread, may be forced on us not by a thirst for official control but by sheer economic necessity. When limitation becomes imperative, as it certainly will, it is surely preferable that it should be self-imposed by those who have an intimate understanding of the subtleties of clinical medicine rather than enforced by those who have only a bureaucratic acquaintance with it. In the reconstruction of our distracted world the doctor will be called upon to play a vital part, a part transcending the mere technicalities of his profession, a part which will demand, as never before, the fullest exercise of his intellectual qualities and moral influence. We rightly dread any violation by the State of the sanctity of the doctor-patient relationship, but the preservation of this sanctity depends upon the full recognition by doctor and patient alike that individual health and national health cannot be dissociated, and that intelligent but at the same time unselfish regard for his own health is not the least contribution which every citizen must make to national prosperity.

Chiropody, Theory and Practice (3rd edition, Charlesworth and Wiles, 42s.), by Franklin Charlesworth, is already well established as a useful textbook among students and practitioners of chiropody. The issue of a third edition, largely rewritten and extended, shows that it meets a demand which is likely to increase with the growth of the auxiliary medical services, including chiropody, when the Health Service starts. If the new entrants to the profession absorb all the information and carry out the precepts given in this book they will indeed become worthy practitioners, for as its title implies it is a most comprehensive production ranging over anatomy, physiology, surgery, medicine, materia medica, and theoretical and applied chiropody. However, the author has been at some pains to determine that of such vast subjects only those aspects which are of direct interest to the chiropodist have been included. The student will find here just the information he requires to cover his examination syllabus. The medical practitioner who sees and is interested in minor foot disabilities will discover much useful guidance in this volume on the possibilities and limitations of chiropodial treatment. The book is well and clearly illustrated and the production is of a high standard.