TUBERCULOSIS AND THE RHEUMATIC DISEASES

Some Analogous Medical, Social and Economic Aspects*

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Tuberculosis and the chronic rheumatic diseases constitute two of the greatest scourges of mankind, and are responsible for much social and economic disturbance, together with infinite human misery, disability and invalidism, more often than not occurring in the prime of a man's life, and curtailing the family's sole source of income. Anyone whose work brings him into close contact with large numbers of these two diseases of chronicity, as has been my own experience during the last fifteen years, cannot fail to be struck most vividly by the close similarity of the problems characterising both groups of diseases, whose medical, social and economic aspects are so closely inter-related.

I propose to confine my attention more especially to the analogous aspects of two particular groups of these diseases which have so much in common, namely, pulmonary tuberculosis and rheumatoid arthritis (rheumatoid disease). Both are general systemic diseases with secondary manifestations, the one in the lungs, the other in the joints, both necessitating a full knowledge of general medicine (for they may at one time or another simulate almost any disease in general medicine), as well as of the wide problems of differential diagnosis of chest and joint diseases respectively. It follows, therefore, that they are or should be primarily the concern of the general practitioner and the general physician, rather than of the ultra-specialist, if successful results are to be achieved. The present trend towards over-specialisation must be counteracted for, as Victor Bonney said recently in his Hunterian Oration, it "is not only harmful to the specialty but injurious . . . to the whole, for, the wider conception being lost, the specialty becomes self-centred and parochial." The ultra-specialist is unable to see beyond his own narrow province, which has meant in the case of rheumatoid disease that the local joint manifestations have been treated without relation to the general background of the patient. It is my firm conviction that the rheumatic diseases must resume their rightful place within the province of the general physician if any success in their radical control is to be achieved. For successful results are obtainable if the disease is diagnosed in its early manifestations and if adequate facilities for treatment over a prolonged period of time are readily available.

It is my intention in this paper, while indicating the analogous features, to portray also the divergences inherent in these diseases and to compare and contrast existing facilities, as well as the present position each occupies in the public consciousness, with the object of securing for the one at least that degree of recognition accorded to the other, and of championing the widest possible measures for the substantial control of both.

Some Social and Economic Aspects

Pulmonary tuberculosis is an infectious disease of known aetiology, closely associated with mortality, and is, rightly, an over-riding concern of the medical profession, the public health authorities and the community. The result has been an extraordinary drop in the incidence of the disease, unhappily twice counteracted by war and its accompanying upheaval. In 1901 deaths from pulmonary tuberculosis in England and Wales amounted to over 41,000, but by 1913 the figure had decreased to 36,000. However, in 1918 they had again increased to 45,000, dropping the following year by 9,000. This decrease was maintained until 1939, by which time the figure was as low as 21,000, but 1941 figures rose with alarming rapidity to 23,000. This increase has not been maintained, but the incidence is still substantially higher than before the war.

Rheumatoid arthritis is, by contrast, a disease of unknown aetiology, associated for the most part with morbidity rather than mortality. In consequence it has hitherto been relegated to the list of uninteresting and incurable diseases, and has been treated almost with indifference by the profession as a whole, although few would contest the assertion that a life of helplessness

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total incapacity in bed or wheeled chair, the patient a burden to himself, his family and society, is worse than death. There are, perforce, no mortality figures to compare with those of pulmonary tuberculosis, but as far as disablement is concerned it has been reckoned that rheumatoid disease is responsible for ten times as much as pulmonary tuberculosis, and that the loss of working days through such disablement amounts in England to one-sixth of the total disability through illness. One-sixteenth of all money expended on pensionable invalidism is disbursed to such sufferers, but there is a general attitude of defeatism in relation to the rheumatic diseases as a whole, and chronic arthritis in particular, which is quite unjustified. Above all, it is essential to combat the idea that rheumatoid arthritis is an incurable disease. In point of fact, correctly handled and given therapeutic facilities comparable to those available for pulmonary tuberculosis, with similar after-care, vocational guidance and rehabilitation in all its phases, in no group of diseases are results likely to be more successful, and they will certainly compare favourably with those of pulmonary tuberculosis.

History

Elsewhere I have traced our knowledge of pulmonary tuberculosis from ancient times until the present day, showing how it has been the constant care of physicians of all generations, although it was not until the middle of the last century that special hospitals and sanatoria were established and that the proper treatment of the disease was made possible by the succeeding discoveries of, *inter alia*, the tubercle bacillus, X-rays and collapse therapy in all its phases through advances in thoracic surgery; showing also how the State has taken ever-increasing control, and how the picture to-day presents an almost unbelievable contrast with the position a hundred years ago, witness the rapid decline in its incidence and the favourable prognosis for so many of its victims. I must therefore be pardoned for concentrating here rather on analogous problems in the rheumatic diseases, exposing the lamentably deficient treatment hitherto meted out.

From an historical point of view the rheumatic syndrome can be established as having existed as an entity many years before pulmonary tuberculosis, for joint changes are recorded in fossils as far back as the Triassic dinosaur, 200 million years ago. At a later period Greek and Roman baths and watering-places testify to contemporary rheumatic disorders. Throughout medical literature they appear to be given—as indeed to the present day—short-term, local treatment. And yet, chronic rheumatic joint disease is the greatest single cause of disability in temperate climates, and is said to produce more pensionable invalidism than any other condition, except cardiovascular disease in old age. Figures are only obtainable for the insured population, about one-third of the whole, but it has been officially calculated that its cost in this country is of the order of twenty million pounds annually. For Scotland alone it has been estimated by Davidson and Duthie at between two and three million pounds, and was there responsible for 14 per cent of the total invalidity of insured persons in 1936, involving on this basis 50,000 insured persons who are totally incapacitated with an annual loss of approximately three million working days. In America some seven million persons are sufferers from the rheumatic diseases, of whom three million are estimated to be suffering from chronic arthritis.

The Campaign Against the Rheumatic Diseases

Efforts to combat these widespread diseases have been somewhat sporadic, although the Ligue Internationale contre le Rheumatisme has held some valuable congresses, and in England the Empire Rheumatism Council, under the able and energetic chairmanship of Lord Horder, has endeavoured to plan on broad lines against all the manifestations of rheumatism. So far, however, it has not become a question for the State, as tuberculosis or even cancer. In 1935 the Report of the Chief Medical Officer of the Ministry of Health proposed to reduce industrial morbidity from chronic rheumatic disease by research into its causation, investigation into the comparative value of various therapeutic measures, increased provision of various forms of physical treatment, and increased in-patient accommodation in research units in various hospitals. Apart from the pioneer efforts of the London County Council, principally through its Rheumatic Unit at St. Stephen's Hospital, and beds made more generally available for diseases of chronicity under the Emergency Medical Service, these proposals have not as yet been implemented.

As regards in-patient accommodation, the existing number of sanatorium beds for the

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prolonged treatment of pulmonary tuberculosis is notoriously inadequate, and, with the development of mass radiography and the accompanying detection of the early symptomless cases, the problem is likely to become more acute in the future. Before the war there were some 30,000 beds available for the treatment of pulmonary tuberculosis in England and Wales. By contrast there were under 1,000 available for the treatment of the rheumatic diseases. If gross incapacity is to be avoided—and as a general rule it is only the incapacitated case that can secure hospitalisation—prolonged institutional treatment on sanatorium lines should be available at the very least to all active cases of chronic arthritis. An extension of the recently introduced monetary allowances for tuberculosis to other diseases of chronicity like the rheumatic diseases will enable such patients, freed from economic, and therefore mental anxiety, to undergo prolonged treatment in a proper spirit of co-operation. One has seen proper facilities produce a veritable transformation in the patient: instead of complete crippledom the patient ceases to become a burden to society, being transformed instead to useful citizenship, partially or wholly self-supporting, according to the nature of the case, with an incredible change in his morale and general outlook that has to be seen to be believed. I know of nothing which can produce greater satisfaction than results of this nature following on several months' concentrated treatment. It is, however, essential to obtain the wholehearted co-operation of the patient, and with this object in view those engaged in his treatment must be imbued with a spirit of enthusiasm, coupled with a well-developed social sense and psychological understanding to communicate to the patient under their care.

Although it is perfectly true that pulmonary tuberculosis is an infectious disease, and, in consequence, the community has to some extent been educated to its risks, it should never be forgotten that, although arthritis is not communicable in itself, its burdens, financial and otherwise, are transmitted to and shared by a large proportion of the population. Davidson and Duthie rightly point out that not until sufficient beds are available for the treatment of cases in the early stages will the present pessimistic outlook on chronic rheumatic disease be altered. They also assert that many "physicians on the staffs of voluntary hospitals have not received the special training required for the diagnosis and treatment of the rheumatic diseases," and they deplore the fact that many of these physicians "have little interest in the group of the rheumatic diseases and not infrequently dislike having such cases under their charge." Such an indictment cannot, under present conditions, be refuted, but to stimulate medical and public interest in the rheumatic diseases should be no more difficult a problem than in many other diseases of chronicity such as chronic heart, pulmonary, nervous, renal diseases, etc.

Let us, however, consider one or two factors which may have contributed towards the failure to arouse the interest of the profession in this group of diseases.

Classification

The general practitioner is the foundation stone upon whom any scheme for early diagnosis and adequate treatment of the rheumatic diseases must be built. He has, therefore, the right to expect that every facility shall be available to him. Unfortunately, however, the clinical classification of chronic arthritis continues to be both confusing and chaotic. Some sixty different classifications have been filed by the Ligue Internationale, and although highly scientific classifications are desirable for the limited few they are not adapted to the general practitioner. My own feeling is for a return to the original classification introduced by Sir Archibald Garrod in 1890. He recognised two essential types, (1) rheumatoid arthritis and (2) osteo-arthritis. Non-articular rheumatism is not included, nor are the rarer chronic specific arthritides, but, bearing these points in mind, this classification is open to the least criticism, and is, moreover, the basis upon which the simpler English and American classifications are built. Two distinct groups with separate aetiology, pathology, radiological picture, symptoms and signs are recognised: (a) the rheumatoid, inflammatory, atrophic or ankylotic type, and (b) the osteo-arthritic, non-inflammatory, hypertrophic or non-ankylotic type. I am confining my attention to the rheumatoid type because I believe it to have so much in common with pulmonary tuberculosis that it requires to be dealt with on similar lines, on a national scale through State intervention.

Aetiology

The exact aetiology of rheumatoid arthritis being unknown, many aetiological factors have to be considered, and their importance weighed in assessing the prime cause of the disease in

FINANCE	Total number of cases involving the following financial problems	52	Total number of cases involving the following financial problems	52
	Low wages or allowances	48	Loss of income during illness	9
	Absence of normal wage earner	4	Ill-advised spending	8
	Unemployment	15		
EMPLOYMENT	Total number of cases involving the following work problems	46	Unsuitable	17
	Bad conditions	4	Long hours	46
	+ Other activities	17	Long journey	4

DOMESTIC	Total number of cases involving the following domestic problems	18	Need for help in the home	Care of children
		11		
		16		

HOUSING	Total number of cases involving the following housing problems	Overcrowding	Poor quality
	24	2	24

DIET	Total number of cases involving the following dietetic problems	Inadequate	Unsuitable
	23	18	10

WAR-TIME PROBLEMS	Total number of cases involving the following war-time problems	Evacuation	Bombing	Need for holiday
	11	2	8	4

PSYCHOLOGICAL	Total number of cases involving the following psychological problems	? Mental abnormality	Temperament and stability	Ignorance and shiftlessness	Factors in childhood	Marital relationships	Acute financial worry	General worry and overstrain	Anxiety re separation	Illness or death in family	Illegitimate pregnancy
	72	2	18	7	9	4	17	32	13	37	5

Number of cases in which one or more of these factors are present	96
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CHART SHOWING DETAILED ENVIRONMENTAL INVESTIGATIONS AND THEIR POSSIBLE INFLUENCES IN 100 CASES OF RHEUMATOID ARTHRITIS IN WOMEN. FROM THE RHEUMATIC UNIT, ST. STEPHEN'S HOSPITAL

the individual. By and large, focal sepsis has been regarded as the overriding aetiological factor, but occupation, heredity, postural defects, malnutrition, over-crowding, overwork, diet and vitamin deficiencies, climate, fatigue, acute infection, and mental and physical trauma all play their part as predisposing factors. The accompanying table showing the results of detailed environmental investigations and their possible influences in 100 cases of the rheumatoid type of arthritis in women is instructive. The high influence of financial, employment and, psychogenic factors is noteworthy. I am indebted to Miss Stanton, of the Almoner's Department of the Rheumatic Unit at St. Stephen's Hospital for her help in this work. As far as focal sepsis is concerned it has to be admitted that until recently it has been a common experience to find the arthritic sufferer divested of teeth and tonsils, with sinuses drained, and possibly appendix and gall bladder, etc., removed. Yet in spite of such active measures in dealing with focal sepsis the patient is often no better but considerably more despondent and lowered in morale, and one feels that it is certainly time to place the subject of focal sepsis—which has been under discussion for twenty years—in proper perspective. Moreover, as regards dental sepsis in particular, it should be recorded that Vaizey and Clark-Kennedy have found that bad teeth are not incompatible with good general health, and that, in any case, indiscriminate removal of suspected foci will not necessarily affect the course of the disease even in rheumatoid arthritis which is the most definitely infective of the rheumatic diseases. In fact, as they rightly point out, it is now fairly widely admitted that the cure of rheumatoid arthritis following dental extraction is the exception rather than the rule. It has not been found possible to compare satisfactorily cases of rheumatism where septic teeth have been extracted with those where they have not been eradicated, but it would appear—and one's own experience corroborates this view—that the two are less closely allied than has been commonly suggested.

Clinical Manifestations

From the moment of onset there are many points of similarity between pulmonary tuberculosis and rheumatoid arthritis. The disease may develop in either acute or insidious manner, although more commonly the latter. Consequent upon this, early attention is seldom sought, with the corollary that early diagnosis may not be made nor treatment advised. For example, of the last 100 cases of rheumatoid arthritis seen at the Rheumatic Unit at St. Stephen's Hospital, the average duration of the disease before advice was sought was 6.1 years, the longest time being as much as 25 years, while the shortest was six months. On the other hand I recall three cases with a sudden onset of rheumatoid arthritis where the disease developed with high fever (temperature 103 to 104), which continued for three to six months, gross loss of weight (in one case three stone), general malaise, sweating, anorexia, palpitation, etc. The general constitutional aspect in these cases completely overwhelmed the local lesion, and here, not unnaturally, in view of the acuity of the disease, immediate attention was sought. Such a picture is not unfamiliar in either group of diseases, and occasionally the differential diagnosis the one from the other may be a problem.

In the insidious type of case the prodromal or pre-arthritic symptoms are closely analogous to the constitutional symptoms of pulmonary tuberculosis, and may include progressive loss of weight, general malaise, lassitude, sweating, fever lasting for several weeks or even months, tachycardia, etc. Muscular weakness and atrophy, marked cutaneous changes, sub-cutaneous nodules, peripheral circulatory changes, hypochromic anaemia, leucocytosis or leucopenia according to the acuity of the disease, raised blood sedimentation rate, diminished vitamin C excretion in the urine, certain visceral manifestations such as splenomegaly and lymphadenopathy as seen in the so-called "Still's and Felty's syndrome," may all occur in rheumatoid arthritis.

The clinical features of the articular lesion, frequently involving the wrist and the proximal interphalangeal joints, and commencing as periarticular swellings with effusion, constituting the typical spindle-shaped swellings, are well known, as also the tendency to go on to fibrous and bony ankylosis, especially if untreated, and the all too common type of preventable deformity of flexion of the metacarpo-phalangeal and other finger joints and ulnar deviation are equally well known.

FIG. 1 (*on right*).—Showing gross wasting in a case of rheumatoid arthritis.

FIG. 2 (*below*).—Showing hands of a case of the rheumatoid type of arthritis illustrating (*a*) flexion deformity; (*b*) early wasting.

The Nutritional Factor

The nutritional factor in both pulmonary tuberculosis and rheumatoid arthritis is noteworthy, and the response to treatment of cod-liver oil and malt and insulin are noted elsewhere. In taking the dietetic histories of several hundred cases of both these diseases, Miss Rose Simmonds, to whom I am greatly indebted for her help and co-operation, has found analogous—although varying degrees of—deficiencies of vitamins A, B, C and D in both groups. Sufferers from either are generally of the thin type, for whom an exceptionally nutritious, high calory diet is essential; but while this fact has been recognised as far as the tuberculous are concerned, by the granting of additional milk rations, the rheumatic patient is not entitled to any benefit of this nature.

Physical Medicine

Physical medicine is now becoming recognised as an important therapeutic agent. Among the purposes of the newly inaugurated British Association of Physical Medicine are—as I see it—the establishment of physical medicine on a scientific basis, the promotion of research into the potentialities of physiotherapy and the instruction of students and the medical profession generally in the practical application of exact therapeutic methods and dosage. The role of the physical medicine specialist should surely be analogous to that of the pharmacologist in his specialised knowledge of drug action and therapy, and it should no longer be possible for a patient to be sent to the department of physical medicine with a request “electrical treatment, please.” The election of Lord Horder as the first president of the Association emphasises the basic tenet of progressive physical medicine specialists that physical medicine should be integrated with and not divorced from general medical practice.

Constitutional Background

The effect of constitutional predisposition, inherent constitutional basis for disease, the significance of the soil in relation to the development of a particular disease—all these are significant factors. Why, for example, does A. with an asthenic build develop pulmonary tuberculosis, while B, built on similar lines, develops rheumatoid arthritis? Various means of appraising various types of constitution have been studied, and it may well be that such factors as congenitally inferior joint tissues, impaired blood supply, body build, psychogenic make-up of the patient, together with certain extraneous influences, such as faulty body mechanics, exposure, trauma, incorrect nutrition, endocrine upset, fatigue, etc., all help to determine the potentially arthritic subject. It follows upon this that such measures as mere attention to involved joints by physiotherapeutic measures, the use of vaccines, analgesics, etc., cannot be regarded as rational. The only possible method of approach is to recognise the patient as an entity, and thereafter to adhere to a programme of treatment which will deal with every aspect of the disease.

Having thus briefly considered some of the factors that have hitherto acted as deterrents to successful management of the rheumatic problem, I propose now briefly to discuss an organised plan of action for its control and treatment.

Rest

Rest must be both mental and physical, and presupposes the best possible environment, away from home conditions, with plenty of fresh air and sunshine, as for cases of pulmonary tuberculosis, and where the patient can have constant medical and nursing supervision, on sanatorium lines. The rest, to begin with, should be complete, except/in so far as all involved joints should be put daily through a range of painless movement. Correct body posture, where there is a tendency to kyphosis, etc., should be maintained in bed by the use of one pillow and a hard mattress or fracture boards under the ordinary mattress.

The period of rest required will depend, as in pulmonary tuberculosis, on the activity of the case, and it may vary from a month to even a year or more. The widespread but entirely erroneous idea that the active rheumatoid arthritic should be “kept moving” requires constant resistance.

Diet

Despite much nonsense that is talked about special diets for rheumatoid disease, there is no specific diet, but the diet should be well-balanced, nutritious, of high calory and vitamin

content (protective), and containing adequate quantities of milk, cheese, butter and margarine, fruit and vegetables (green and root), wheatmeal bread, and the full ration of meat and eggs, including dried eggs, which, like dried milk, are good food value.

Drug Therapy

As with pulmonary tuberculosis there is no specific drug for this disease, but many drugs of various kinds are in common use. I can merely refer to them briefly here.

Systemic drugs used include arsenic, iron, strychnine, and quinine.

Metabolic drugs, such as iodine, sulphur, calcium, thyroid, etc., have received varying degrees of recognition.

Analgesic drugs are valuable in so far as co-operation on the part of the patient can only be obtained by relieving pain. Aspirin, codein, phenobarbitone, bromides, phenacetin, pethedine, and a dilaudid pill may all be useful, depending on the individual and the degree of pain.

Nutritional drugs like cod-liver oil and insulin can often, as in pulmonary tuberculosis, be extremely valuable in relation to the nutritional side of the disease.

Vaso-dilator drugs, such as histamine and acetyl choline, can often assist the defective blood supply of the joints involved in the arthritic process.

Finally, certain selective drugs, such as:—

Gold in suitable active cases of the rheumatoid type of arthritis. It is essential, however, that this drug should be used with the utmost discrimination, adequate control, particularly of the blood sedimentation rate and white cell count, being almost a *sine qua non* for in unsuitable cases the use of gold is fraught with danger.

Blood transfusion. I have found that a series of small blood transfusions of 300 to 400 c.c. in active cases associated with marked debility, anaemia, etc., given at weekly intervals, are often effective in controlling the acuity of the disease.

Focal sepsis. As I have emphasised earlier in this paper, the removal of focal sepsis, provided it is done with discrimination, may be of value.

Physical Medicine

Physiotherapy includes treatment by heat, light, electrical and hydrological methods, massage and movements. It should be prescribed in carefully controlled doses, both for the control of general health and for the local treatment of the joints. These methods of treatment should, under an organised plan, be much more readily available, and not, as at present, limited to the spas, although the spas and marine resorts should fulfil a special function in a comprehensive plan.

Occupational Therapy and Rehabilitation

Occupational therapy fulfils the dual purpose of restoring function and acting as a psychological stimulus. As a specific measure for the joints it is invaluable in suitable selected cases, and it serves as a mind deterrent during treatment.

Rehabilitation is the logical continuation of occupational therapy, and is to-day becoming recognised as a social issue of the first magnitude, and "in its widest aspect envisages a prophylactic aspect." (Howitt). The recently published Tomlinson Report embraces both pulmonary tuberculosis and the rheumatic diseases, and recommends that the early stages of re-employment or reconditioning should be on a non-competitive basis, but that ultimately the crippled or disabled person should be able to compete on equal terms with his co-workers in any particular trade or occupation, this being wholly possible if employment is suited to individual capacity. With this object in view it envisages a considerable extension of occupational therapy in sanatoria and elsewhere, the continuation of treatment concurrently with early employment and close co-operation between hospital or sanatorium and employment exchange.

Orthopaedic Treatment

The two main functions of orthopaedic treatment are (1) the prevention of deformity by putting acutely inflamed joints at rest in the optimal position, and (2) the correction of established deformity. Various modern methods are available for the prevention or correction of deformity, based principally on the technique of serial plasters. A knowledge of the principles of correct body mechanics, manipulation, and the use of surgery in joint disease is also of great

value in the selected case. It is axiomatic that this should be in close consultation with an expert orthopaedic surgeon.

Psychotherapy

In many cases of rheumatoid disease, fibrositis, etc. there is a large psychogenic factor, and anxieties and emotional upheaval frequently impede physical progress. In such cases psychotherapeutic aid can often be beneficial.

Conclusion.

Analogous features of tuberculosis and the rheumatic diseases, with particular reference to pulmonary tuberculosis and rheumatoid arthritis, have been compared and contrasted. The deficiencies of the latter from the point of view of prevention, diagnosis, and treatment have been noted, and any scheme to ameliorate their position must fulfil two main desiderata: (1) the rheumatic diseases must return to their place within the province of general medicine. This implies a medical profession interested in the problem and facilities with modern methods for prevention, diagnosis and treatment. (2) The scheme must be planned on a regional basis with adequate in-patient accommodation and diagnostic facilities for long-term treatment on sanatorium lines. For this it would appear that State intervention with monetary allowances during the active phase of treatment is, as with tuberculosis, inevitable.

Regionalisation of medicine with special units for particular branches would enable the student—the potential practitioner—to see the disease in all its manifestations and to learn the manifold therapeutic measures associated with it. With this object in view under- and post-graduate courses are suggested, social service departments to deal with the hygiene of home and factory, to inquire into social and economic causes which may be deterring the patient from accepting treatment and an adequate after-care system to follow-up cases in order to prevent relapse as is done to-day for pulmonary tuberculosis.

Rheumatic units of some 50 to 60 beds in regional hospitals accommodating some 1,000 patients, with out-patient departments for the less active cases which require physiotherapy or other forms of treatment and for after-care once the disease has been stabilised as a result of institutional treatment, have been recommended as practical and economic. With accommodation for graded rest and exercises, workshops for occupational therapy, etc., they will afford the patient as well as the medical and nursing staff the advantages of a general hospital side by side with specialised attention, while the undergraduate will have opportunities for seeing all types of patients, hitherto, as with tuberculosis, withheld from him. As has already been stated the London County Council Unit system has already proved the value of such a scheme where teamwork involving the collaboration of the physician and his expert colleagues, such as the orthopaedic surgeon, the physical medicine specialist, the pathologist, the biochemist, surgeons of specialised departments, the psychiatrist, the masseuse, the social service worker, the dietetician, the occupational therapist, etc. I can speak with personal experience of the Rheumatic Unit at St. Stephen's Hospital, where all these ancillary factors, readily available in a general hospital, are of the greatest advantage.

The existing spa hospitals might well be correlated to such a scheme and put to the special purpose of maintaining quiescence of the disease and preventing relapse. They would thereby be enabled to fulfil a more important role than many of them are able to do to-day, owing to inadequate in-patient accommodation and the erroneous view held by so many lay sufferers from rheumatism in one form or another that a three-weeks' cure will prove a panacea.

The views here expressed are personal to the writer and do not necessarily represent those of any authority with whom he may be connected.

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