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**EXPERT COMMITTEE ON
RHEUMATIC DISEASES**

First Report

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WORLD HEALTH ORGANIZATION

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GENEVA

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EXPERT COMMITTEE ON RHEUMATIC DISEASES

First Session

Geneva, 31 August - 4 September 1953

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EXPERT COMMITTEE ON RHEUMATIC DISEASES

First Report *

The Expert Committee on Rheumatic Diseases held its first session in Geneva from 31 August to 4 September 1953. The session was opened by the Deputy Director-General of the World Health Organization, Dr. P. Dorolle. Dr. W. S. C. Copeman was elected Chairman ; Professor A. Ruiz Moreno, Vice-Chairman ; and Professor J. Goslings, Rapporteur. The agenda submitted by the Director-General was adopted as a basis of discussion.

Terms of Reference

The committee was to consider at its first session chronic rheumatic diseases of articular and non-articular types, a general review of this group of diseases being envisaged, particularly from a public-health standpoint. The committee noted that no provision had been made in the agenda for the discussion of rheumatic fever and its sequela—rheumatic heart-disease. Although appreciating the reasons which led to the exclusion of this particular rheumatic disease and its sequela, the committee was of the opinion that, because rheumatic fever and its cardiac and other manifestations constitute in many instances a chronic rheumatic affection mostly with intermittent acute exacerbations, the more general aspects of this condition could not be entirely excluded from its deliberation. The committee agreed, however, that detailed discussions on any special aspect of this condition would not be undertaken at this session.

* The Executive Board, at its thirteenth session, adopted the following resolution:
The Executive Board

1. NOTES the first report of the Expert Committee on Rheumatic Diseases ;
2. THANKS the members of the committee for their work ; and
3. AUTHORIZES publication of the report.

(Resolution EB13.R16, *Off. Rec. Wld Hlth Org.* 52, 6)

1. Introduction

Medical use of the term "rheum" goes back a very long way, probably to the time of Galen or earlier. This term came to imply the idea that a painful part was abnormally infiltrated and perhaps distended with one of the body-fluids or "humours". In the course of time, however, the word "rheumatic" has come to be used as a non-specific omnibus term attached to a group of diseases of an incapacitating and painful character chiefly affecting the locomotor system.

Most of the "rheumatic" diseases are chronic, that is to say, they persist or tend to recur, and also to cause alterations in the structure or function of the body which eventually result in permanent impairment. Chronic rheumatic diseases are invariably prominent in the morbidity data of chronic illness; and for many years analyses of health insurance or industrial sick leave records have shown the great prevalence of these diseases when taken together as a group, and, also, their importance as causes of long-term disability. In several countries, these long-known facts have recently been emphasized by the results of sickness surveys based on home visiting.

Relative inaction in this field by health authorities at the national or governmental level, as well as at the local or municipal level, can for the most part be attributed to lack of clear medical guidance. It must be recognized, however, that, even for the doctor, the subject of the chronic rheumatic diseases is still full of uncertainties. Etiology has not yet been precisely defined in any of these diseases, and until this gap in medical knowledge is closed it will not be possible to devise specific preventive measures, while treatment, other than palliative, will remain almost entirely empirical.

Fortunately, in many countries there have been groups of physicians who realized the great social and economic importance of these diseases just as they appreciated the difficulties of solving the medical problems associated with them. The attempts of these physicians to grapple with these medical problems and, at the same time, to suggest the administrative measures urgently required have been steadily growing in scale and effect. Nevertheless, in most countries, the total clinical effort at present directed against the chronic rheumatic diseases remains very much less than is justified by the amount of illness they cause and, moreover, the proportion of laboratory or other research being done on them is relatively insignificant as well as almost completely uncoordinated.

The committee, therefore, welcomes the opportunity now provided by WHO for a brief review of the chronic rheumatic diseases from

an international standpoint. In undertaking this review, which must of necessity be made on the broadest possible basis, the committee recognizes that there should be kept in mind the great differences in the standard of medical care already attained in different countries, and also that, in most of what may be termed the medically underdeveloped countries, there are over-riding special problems connected with illness of known infective or parasitic etiology which are amenable to specific measures of control, the application of which must, for the time being, divert the available medical and financial resources from chronic diseases of unknown etiology which cannot at present be prevented. Even now rheumatic fever, for instance, is probably more prevalent in tropical and sub-tropical countries than is generally realized, and as soon as the average age of the population in these countries increases other rheumatic diseases are likely to become increasingly prevalent.

2. Nomenclature and Classification

Nomenclature

It is necessary for purposes of description and record to have a list or index of approved terms sufficiently extensive to give separate designation to any morbid condition that can be specifically described. Such a list is also a prerequisite to classification.

Nomenclature of the rheumatic diseases has developed on different lines in different countries, the terms used representing in each country more or less nationally held views on etiology, pathology, priority of description, and so on. An internationally agreed nomenclature would be of considerable value to scientific workers in this field and the committee noted that, recently, the task of formulating such a nomenclature had been undertaken by a specially appointed committee set up by the International League against Rheumatism, and that considerable progress had already been made. The committee considered that, largely as a result of these efforts of the International League against Rheumatism, difficulties of nomenclature are not in future likely to hinder scientific study of the rheumatic diseases.

Classification

Rheumatic diseases affect the locomotor system in which they are important causes of pain, dysfunction, and anatomical change. The most important link between them is now considered to be that they are all diseases peculiar to the connective tissue and that, as such, they all show reactions peculiar to this tissue and especially of its collagen element. It

should be emphasized that, although the etiology of the different rheumatic diseases is probably extremely diverse, these connective tissue reactions are common to all of them, and in this connexion it should be noted that not only connective tissue of the locomotor system but also, to some extent, that of the viscera, the nervous system, the haematopoetic system, the skin, etc., may be affected by these diseases.

Inasmuch as the reactions of the connective tissue are not at present fully understood and the initial causes of most of the rheumatic diseases are still unknown, a classification of the rheumatic diseases rationally and solely based either on etiology or on pathogenesis is not yet possible. At the present time, therefore, any classification of these diseases, irrespective of the purpose for which it is intended, must be provisional. Moreover, so little is known about several of the diseases which have come to be termed "rheumatic" that there is in fact no justification for giving them any particular place in any classification. As a consequence of these uncertainties, a physician concerned with the rheumatic diseases must in practice be familiar with a large number of diseases which, although probably in some manner related to the rheumatic diseases, have not commonly been accepted as such.

Bearing in mind these facts, the committee considered that the list of the diseases commonly accepted as rheumatic and of other diseases presenting rheumatic features which is given in Annex 1 to this report (see page 19) would be useful as a catalogue or index descriptive of the scope of the specialist in chronic "rheumatic" diseases.

The committee did not suggest this list as being a classification suitable for the medical statistician. As regards the statistical classification of the chronic rheumatic diseases, the committee recognized the position occupied by the International Statistical Classification of Diseases, Injuries, and Causes of Death (Sixth Revision, 1948)¹ as an internationally accepted basis for statistical studies of disease.

3. Incidence and Prevalence

The third session of the Expert Committee on Health Statistics defined the uses of morbidity statistics in relation to non-communicable diseases as follows :

- " b. Planning for development of preventive services.
- " c. Ascertainment of relationship to social factors.

¹ World Health Organization (1948-9) *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*, Geneva, 2 vol.

- “ d. Planning for provision of adequate treatment services.
- “ e. Estimation of economic importance of sickness.
- “ f. Research into etiology and pathogenesis.
- “ g. Research on efficacy of preventive and therapeutic measures.
- “ h. National and international study of distribution of diseases and impairments.”²

In general, the existing data on the incidence and prevalence of chronic rheumatic diseases are not adequate for any of these purposes. A greater degree of international uniformity in nomenclature and classification, and in the technique by which data are collected, would however considerably improve this position.

Methods of collecting general morbidity data

Four main methods have been used to obtain data on the incidence and prevalence of the rheumatic diseases. These are notification (i.e., reporting), analysis of medical sickness (e.g., health insurance) records, analysis of hospital records, and the so-called “survey of sickness” based on home visiting.

Notification. This procedure has not been applied compulsorily to any rheumatic disease except rheumatic fever. Its value as a general method of collecting data on the incidence and prevalence of this disease has not yet been established.

Analysis of medical sickness records. This method has been used effectively in a number of countries to establish the economic importance of the rheumatic group of diseases taken as a whole. In many countries, however, the medical certification of chronic rheumatic diseases lacks precision because the accurate diagnosis of most of these diseases needs special facilities not usually available to the doctor concerned. It follows that a great many of the patients suffering from diseases in the rheumatic group are certified as regards sickness absence in such vague terms as “arthritis (unspecified)” or “rheumatism (unspecified)”. This greatly diminishes the usefulness of the data available from these records in any direction other than that already mentioned.

Analysis of hospital records. The advantages and disadvantages of hospital statistical data were considered and it was agreed that it is difficult to relate these to the population at risk. The statistical value of hospital records taken by themselves is therefore limited, but they can be important when used in connexion with morbidity surveys.

² *Wld Hlth Org. techn. Rep. Ser.* 1952, **53**, 7 (section 1.2.4)

Surveys of sickness. The economic importance of the rheumatic group of diseases, first established by analyses of medical sickness records, has subsequently been amply confirmed in several countries where data have been obtained by home visiting or the questioning of representative samples of the population by non-medical observers. Such surveys cannot, however, provide reliable incidence rates for particular rheumatic diseases, because the data obtained are based to a considerable extent on self-diagnosis, and also because inadequately descriptive terms such as "arthritis" or "rheumatism" are too frequently used.

A summary of the recent literature connected with studies of the prevalence and incidence of the rheumatic diseases by various types of sickness survey technique is given in Annex 2 (see page 21).

The committee considered that, except for rheumatic fever, these and other studies have not yet been made either on a scale sufficiently wide or by methods which were intensive enough to allow particular environmental or socio-economic factors to be designated as being important or otherwise in the etiology and pathogenesis of rheumatic disease.

In the etiology of rheumatic fever, which starts mainly though not entirely as a juvenile disease, there are most probably infective and socio-economic factors on which, however, the committee was not expected, nor indeed prepared, to comment.

No definite conclusions about etiology and pathogenesis can be drawn from the studies so far made of the prevalence and incidence of the other diseases commonly accepted as rheumatic. The general features which emerge from these studies concern age and sex incidence, and are that, in rheumatoid arthritis, there is a markedly higher incidence in the middle age-groups of the female sex than of the male, and that there are also differences in the sex incidence of osteo-arthritis, a disease in which the incidence appears to rise steadily with age. There are strong indications from some studies that, among men, laborious occupations are associated with the onset at an earlier age than among the general population of some chronic diseases with rheumatic features (e.g., lesions of the intervertebral disk).

Among many beliefs based on clinical impressions which have not been fully confirmed by means of statistical studies is that of the association of climate, housing, occupation, heredity, and socio-economic status with some rheumatic diseases.

Future statistical studies

The committee considers it to be important to begin by collecting data concerning general incidence and prevalence in the whole population of

different countries or smaller units, but it should be realized that the data needed for this purpose are different from those needed for research into the epidemiology of rheumatic diseases.

Population and occupational groups with an exceptional prevalence or incidence of one or more of the rheumatic diseases offer the best opportunities for the investigation of etiological factors connected with environment and socio-economic status. Such groups almost certainly exist, but the surveys so far carried out have not been sufficiently numerous or widespread to detect them. There are, for instance, almost no survey data of any kind from tropical or sub-tropical areas. The great difficulties involved in work of this kind where medical services are relatively undeveloped is fully appreciated by the committee, which nevertheless considers that if a few adequate pilot investigations could be carried out in the neighbourhood of medical teaching centres in such areas, as soon as circumstances permit, it is likely that much useful information would be obtained.

It is only surveys of rheumatic sickness in which the home visiting is done by doctors with special training and interest in the rheumatic diseases and who have available special facilities which they can use for making and checking diagnosis that are likely to yield data which will enable statisticians to make satisfactory studies of the chronic rheumatic diseases. Special surveys of this kind need considerable medical and technical organization and planning, occupy a great deal of time, and are expensive to carry out. However, the committee considers it to be very desirable that surveys using this technique should, if possible, be undertaken on a wider scale. In order that the data so obtained shall be comparable from country to country as well as useful for the other purposes set out at the beginning of this section, it appears necessary to suggest a short list of diagnostic headings under which such information might be collected. The following is put forward for this purpose :

Rheumatic fever

Rheumatoid arthritis (and allied conditions such as ankylosing spondylitis, Still's disease, etc.)

Osteo-arthritis (arthrosis)—including the spine

Other forms of arthritis—infective and traumatic

Gout

Lesions of the intervertebral disks

Non-articular rheumatism ("fibrositis")—in various parts of the body

"Rheumatism" unspecified

Where facilities are limited a survey could be restricted to conditions which are easily diagnosed clinically, are of greatest public-health importance, and cause most economic loss, i.e., rheumatic fever, rheumatoid

arthritis, osteo-arthritis, and non-articular rheumatism (which for this purpose need not be further sub-divided).

When such surveys are being planned it is essential that the advice of a medical statistician should be obtained at an early stage. Only by doing this can it be ensured that the technique used will enable the observations made to be properly interpreted.

4. Medical Education and Research

Medical education

The committee unanimously agreed on the paramount importance of medical education in the control of rheumatic disease. Success can be attained only if the medical profession as a whole shows more interest in both the medical and the social problems connected with this group of diseases. More specialist physicians interested in rheumatic diseases are needed for staffing special clinics and departments in hospitals. Greater co-operation must be obtained from general practitioners because they are usually the first to be consulted by the patient, and early diagnosis therefore largely depends upon their understanding of this group of diseases. The confirmation by a specialist of the diagnosis of a rheumatic disease at an early stage should not necessitate the whole treatment being given in a hospital or outpatient clinic. Nearly always it is preferable for at least part of the treatment to be undertaken by the general practitioner.

Medical education with regard to this group of diseases has hitherto been much neglected in most countries, and therefore many doctors in general practice are not familiar with the best methods of treatment for rheumatic patients.

In view of the great importance of this group of diseases to the general practitioner, the committee recommended that a special centre or department, with full facilities for inpatient and outpatient treatment, should be set up in every general teaching hospital, and that some universities should consider establishing special professorial Chairs in the subject of the rheumatic diseases. There should, in any event, be a close link between special centres or departments for rheumatic diseases in teaching hospitals and the university medical teaching and research departments, including those of the basic sciences.

Undergraduate education

The committee was fully aware of the difficulty of finding sufficient time for this subject in the already overcrowded curriculum of the medical

student. Nevertheless, it felt that some of the senior students' time should always be allocated to lectures on the rheumatic diseases. During these lectures, attention should be drawn to the economic and social importance of these diseases as well as to their medical aspects. A period of bedside teaching and medical clerking on rheumatic patients should be introduced whenever possible. The committee considered it preferable that this period should occupy as late a stage as practicable in the students' clinical training. At this stage, the student should obtain personal experience of rheumatic patients, and should be instructed in the differential diagnosis of other diseases presenting rheumatic features as well as in the indications for the various forms of special treatment used for the rheumatic group of diseases.

In countries where, for the time being, circumstances prohibit the setting up of special centres or departments in teaching hospitals, the teachers of general and social medicine should deliberately devote some of their lectures, and a part of their bedside teaching, to the rheumatic diseases.

Post-graduate education

Post-graduate teaching is essential, for many doctors already in practice received very little instruction on the rheumatic diseases when they were students. The committee considered that a special course of about a week's duration should be given for this purpose at least every year in all rheumatic centres attached to teaching hospitals. The syllabus for this course could be a condensed form of the instruction normally given to the undergraduate student stressing particularly (a) the importance of early recognition and prompt treatment; (b) the practicability in many cases of treatment at home with simple methods; (c) the use of remedial exercises and simple splinting and other orthopaedic measures; (d) the indications for reference to a specialist; and (e) the importance of medical rehabilitation being started at as early a stage as possible, and of systematic medical care over a long period.

In medically underdeveloped countries, the best plan is probably to include instruction on simple methods of dealing with rheumatic diseases as part of a wider syllabus in such post-graduate courses.

Organization of research facilities

Special facilities for research into the rheumatic diseases should be located in special centres or departments dealing also with the diagnosis and treatment of these diseases. These centres should be situated in teaching

hospitals to ensure that such facilities could be readily associated with other university departments of medical research, and also with those of the basic sciences.

The physician in charge of a centre for rheumatic diseases provided with research facilities should be a fully trained specialist in general medicine as well as in the rheumatic diseases. His junior staff could consist chiefly of younger physicians, who would be attached to the centre as part of their special training in the rheumatic diseases. Where such centres already exist and carry responsibility for medical teaching and research these physicians have in some instances been made professors in this subject, while in others they rank as university readers.

It is essential that a centre in which it is intended to undertake research on the rheumatic diseases, as well as treatment, should be provided with beds specially allocated for rheumatic patients. There should, if possible, be some beds for children, so that cases of rheumatic fever and juvenile rheumatoid arthritis could be admitted and treated with the co-operation of the cardiological and paediatric colleagues of the physician in charge. It is also important for reasons of economy that a research centre should have available within a short distance premises provided with long-stay beds to which patients could be moved, and with rehabilitation facilities.

National committees

The committee suggested that national central health authorities should in all cases either officially recognize some existing committee of medical men working in the field of the rheumatic diseases, or else sponsor the establishment of such a committee, so that all national projects and research schemes affecting this subject could be recorded, and where possible co-ordinated, at an official or semi-official level. The existence of such a committee in any given country marks the first step towards international co-operation and co-ordination, and also renders it easier for help to be received from international bodies such as WHO should this be offered.

5. Prevention and Control

Specific preventive measures

Except for rheumatic fever, in which streptococcal infection is probably an etiological factor which might be countered by the use of antibiotics and of the sulfonamide drugs, the committee considers that there are no proven specific measures of prevention which can be applied at present to the rheumatic diseases.

Early recognition and prompt treatment

The committee agreed that, because specific preventive measures were not available, early recognition and prompt treatment were of particular importance. Rheumatic fever, rheumatoid arthritis, and ankylosing spondylitis are diseases in which adequate facilities for this purpose are essential. Hospital clinics or departments staffed by specialists skilled in the diagnosis of these diseases, as well as hospital beds, are necessary. In most countries, the family doctor needs more encouragement to use such specialized clinics or departments, where they exist, as fully as possible. The provision of such facilities in medically underdeveloped countries may be difficult, and in present circumstances it seems more important to educate family doctors in early diagnosis, and to instruct them in the prompt use of simple forms of treatment which can be applied at home or elsewhere.

Disability limitation

The committee considers that it is particularly important in the case of patients with rheumatoid arthritis and ankylosing spondylitis that measures to prevent disability should be initiated as soon as the diagnosis is made. In those diseases, attention should also be given from the beginning to the patient's home and occupational conditions. Many specialist physicians and clinics have found it useful to provide a pamphlet, and even organized lectures, explaining to the patient and his relatives that one of the main objectives of treatment is to prevent the development of disability and contractures, and the rationale and importance of the measures prescribed for this purpose.

Rehabilitation

In some countries facilities for rehabilitation have been developed to a much greater extent than in others. The general trend appears to be to provide in connexion with all large general hospitals a specially trained team with a full range of equipment designed to meet the needs, as regards medical rehabilitation, of all types of patients, and to supplement this with a limited number of centres, not necessarily located in hospitals, providing facilities for the vocational stage of rehabilitation. The committee considered that facilities provided on this general plan were adequate to the needs of most rheumatic patients and that special rehabilitation facilities were usually not required. Rheumatic patients undergoing rehabilitation should remain under regular observation by the specialist in rheumatic diseases.

The committee considers that the housewife with rheumatoid arthritis and outdoor workers with chronic rheumatic disease present particularly

difficult rehabilitation problems which need special attention. Generally speaking, in the vocational rehabilitation of rheumatic patients the selection of the type of work is at least as important as the re-training, and for rheumatoid arthritis patients it usually becomes necessary to choose an indoor occupation. Preparatory educational measures to this end should be instituted as soon after the beginning of treatment as possible.

Social security measures

In many countries the adequate rehabilitation of rheumatic patients, as of others, is hindered either by the lack of any co-ordinated system of social security or by systems which are not sufficiently comprehensive. In rheumatic patients rehabilitation is a much longer process than in patients with other disabling conditions who ordinarily undergo this procedure (e.g., accident cases). In many countries, therefore, the rehabilitation of rheumatic patients tends at present to outrun the duration of the available sickness benefits, and in other countries the financial assistance given to partially disabled persons may not be sufficient to complete the rehabilitation process. The committee considers that any type of social security system which facilitates the lengthy process of rehabilitation that is necessary for many rheumatic patients is not in the end extravagant because of the saving achieved by the prevention of disablement.

Health education

Health education is aimed at the correction of erroneous public, or even professional, opinions on health matters, as well as being concerned with the dissemination of information regarding preventive measures.

Except for rheumatic fever, in which measures aimed at the prevention and early treatment of streptococcal throat infections are very important, there are no specific preventive procedures applicable to the rheumatic diseases on which information can be usefully disseminated.

The most important function of health education in relation to rheumatic disease concerns the prevention or limitation of disability, especially in rheumatoid arthritis. There is often a mistaken belief on the part of the patient and his relatives that this disease is incurable, is practically speaking untreatable, and that usually it will be completely disabling. Such a belief needs to be corrected if the patient is to obtain the full benefit available from medical treatment and from rehabilitation.

6. Treatment

In the rheumatic diseases, as in many other disease groups, correct treatment will yield good results in spite of the fact that some of its principles remain empirical.

This being so, it is evident that general practitioners, on whom falls the burden of treating a majority of sufferers in all countries, ought to be interested and instructed in such methods as are now available. This is perhaps particularly important in medically underdeveloped countries which cannot yet support a separate medical speciality in this field. In highly developed countries where the importance of the subject is already realized, co-operation between the specialist in rheumatic diseases and the general practitioner is essential and likely to be fruitful.

Methods of treatment

In view of the differing and mostly unknown etiology of the various components of the rheumatic group of diseases, there is unlikely to be any one completely specific form of treatment. The correct management of any rheumatic patient calls for a suitable combination of therapeutic methods which must be skilfully adapted to the needs of each individual sufferer. Thus, the treatment programme laid down for each patient, although it may contain a number of different methods, must be regarded as a unity which should be controlled throughout by the physician concerned. This should not, however, prevent the specialist in rheumatic diseases from inviting the collaboration of colleagues who specialize in certain other fields of therapy, such as physical medicine.

Apart from the nature of the treatment advised, the cardinal principles to be observed are that it shall be started at the earliest possible stage in the disease, and that it shall be possible to admit the patient to hospital at any time during the course of the disease if, in the opinion of the specialist, this is likely to improve the final therapeutic result. Even very long stays in hospital will be found to result in an ultimate saving in the total cost of treating the disease if, in the end, crippling can be avoided thereby. A further desideratum is an adequate "follow-up" system whereby the specialist in rheumatic diseases can keep in touch with his patients over many years. In this way, if relapses of the disease occur they will be dealt with promptly and efficiently with a full knowledge of the patient's previous medical history and response to varying therapeutic procedures.

The chief methods of treatment which are generally employed for the rheumatic group of diseases comprise general medical measures (including the technique of using special drugs such as gold), physiotherapeutic

methods (which may be continued during the later stages of treatment in the convenient surroundings of a spa if there should be one nearby), and orthopaedic techniques, including methods of splinting and sometimes manipulation as well as operative measures. The facilities for the application of all these and other methods, together with those incidental to the complete investigation of each case (pathology, x-rays, etc.), must therefore be available.

More recently, the use of active steroid and other hormones has had to be considered. This method can be of great value in carefully selected cases, but it is still largely in the experimental stage. In the opinion of the committee the general use of these hormones cannot yet be advocated, and they should continue to be reserved for selected patients under the supervision of specialists attached to hospital departments and clinics for the rheumatic diseases.

Organization of treatment facilities

It has already been stated that admission of the rheumatic patient to hospital is often needed, sometimes for long periods. This is especially true of rheumatic fever, rheumatoid arthritis, and ankylosing spondylitis. At present in most countries there are relatively few beds available for these patients, and these beds are usually situated in the general medical wards.

This arrangement has many disadvantages. When the number of beds is limited, it is often very difficult to secure the admission of rheumatic patients, because the available beds are required for short-stay patients with more-acute diseases. Moreover, the treatment of rheumatic patients often needs not only special medical knowledge but also the co-ordinated use of special nursing and equipment, as well as facilities for intensive physiotherapy and occupational therapy, which is not always possible in general medical wards.

Although accurate information is lacking regarding the etiology of most of these diseases, a great deal of knowledge and experience exists regarding the successful treatment and management of rheumatic patients, and it is well established that severe disablement can now be prevented in a large majority of cases if adequate treatment is applied sufficiently early.

To the committee it therefore seems advisable that, in the larger general hospitals, a specialist in rheumatic diseases should be attached to the staff as soon as possible, and that special departments, provided with all the facilities necessary for adequate diagnosis and treatment, should be established for rheumatic patients. Such a department for rheumatic diseases can be started on a small scale as a part of the arrangements for

general medicine, and later be enlarged according to the needs of the district covered by the hospital.

In view of the urgent necessity of better undergraduate and post-graduate medical education and of research wherever possible, larger special centres for the rheumatic diseases should be developed in the teaching hospitals; in certain circumstances, universities should consider the establishment of a special professorial Chair in the subject.

Special centres for rheumatic diseases in teaching hospitals need to have beds allocated for investigation and research as well as for treatment purposes, and also some conveniently situated long-stay beds for the rehabilitation of rheumatic patients.

The establishment of general hospital departments and regional or national teaching hospital centres on this plan will ensure that treatment, teaching, and research in the field of the rheumatic diseases is maintained on the highest level, and that progress in this field continues.

7. Role of WHO in Relation to Rheumatic Diseases

The committee learned with pleasure that WHO had already awarded travelling fellowships in rheumatic diseases as part of its medical education programme, and expressed the hope that further awards of this type would continue to be made.

In another section of this report (see page 9) the committee has drawn attention to the great need for further surveys of rheumatic illness to be conducted in many parts of the world. The committee recommends that WHO should give every assistance within its power to the planning and execution of these surveys, especially those in medically underdeveloped countries. The committee had particularly in mind, in this connexion, the provision of technical statistical advice where this is not already available, and the publication of a small brochure on the planning of such investigations would be helpful.

In its review of current research on the rheumatic diseases, the committee agreed that there were at least two matters of great interest and outstanding importance at the present time.

The first is that there appears to be a possibility that rheumatic fever, a disease in which infection with haemolytic streptococci is believed, on good evidence, to be an important initial factor, can be controlled and perhaps prevented by the use of antibiotics and of sulfonamide drugs. This possibility, if eventually substantiated, will offer an opportunity for preventive action on a worldwide scale, which cannot fail to be a major concern of WHO.

The second is that, in many parts of the world, important fundamental research is now being developed on the biology and pathology of connective tissue. This research cannot fail to throw light on the obscurities associated with the etiology and pathogenesis of the rheumatic diseases.

The committee recommends that WHO should consider the possibility of providing an opportunity for experts in these two matters from all over the world to meet together to discuss their work, and its prospective practical application in the form of preventive measures.

The committee suggested that in order to avoid unnecessary division of interest between medical experts whose chief interest lay in the wider field of the rheumatic diseases and those whose major interests were more specialized, the former group should be represented on any future committee dealing with any aspect of the rheumatic diseases.

Annex 1

PROVISIONAL CLASSIFICATION OF "RHEUMATIC" DISEASES *

I. Diseases Commonly Accepted as Rheumatic

(1) *With articular localization*(a) *Inflammatory*

Rheumatic fever
Rheumatoid arthritis

Special forms :

Psoriatic arthritis
Still's disease
Felty's syndrome
Sjögren's syndrome

Ankylosing spondylitis or rheumatoid spondylitis
Arthritis due to specific infection
Reiter's syndrome
Articular hypersensitivity against drugs, protein, etc.
Palindromic rheumatism and intermittent hydrarthrosis

(b) *Degenerative*

Osteo-arthritis or degenerative joint disease including the spine
Chondromatosis
Intervertebral disk lesions

(2) *With non-articular localization*

for example :

Fibrositis (various types)
Bursitis
Tenosynovitis
Peri-arthritis, etc.

* This list is based on a classification drafted by a committee of the International League against Rheumatism.

II. "Para-rheumatic", Collagen, and Other Diseases Presenting Rheumatic Features

- (1) *Inflammatory idiopathic diseases*
 - Lupus erythematosus disseminatus
 - Peri-arteritis nodosa
 - Dermatomyositis
- (2) *Diseases primarily associated with :*
 - (a) *Skin disorders*
 - Scleroderma
 - Erythema exudativum
 - Erythema nodosum
 - Purpura (various types)
 - (b) *Metabolic disorders*
 - Gout
 - Ochronosis
 - (c) *Endocrine disorders*
 - Acromegaly
 - Myxoedema
 - (d) *Blood disorders*
 - Haemophilia
 - Leukemia
 - (e) *Pulmonary disorders*
 - Sarcoidosis
 - Hypertrophic pulmonary osteo-arthritis
 - Caplan's syndrome
 - (f) *Trauma*
 - Traumatic arthritis
 - Microtraumatic joint injuries
 - Meniscus injury
 - (g) *Nervous-system disorders*
 - Neuropathic arthritis (Charcot joints, etc.)
 - Reflex dystrophy
 - (h) *Neoplasms*
 - Neoplasms of joints and bones
 - (i) *Psychiatric disorders*
 - Psychogenic rheumatism (psychalgia)

Annex 2

**A SUMMARY OF RECENT STATISTICAL STUDIES
OF THE PREVALENCE AND INCIDENCE
OF THE CHRONIC RHEUMATIC DISEASES ***

During or since the second World War statistical studies of the prevalence and incidence of the chronic rheumatic diseases have been made in the USA (Woolsey ⁷), in England (Brooke,³ Kellgren et al.⁴), in France (Mathieu-Pierre-Weil et al.⁵), in Sweden (1941 experts' report on the care of rheumatic patients ⁶), and in the Netherlands (de Blécourt ²).

The published results of these inquiries can be briefly summarized as follows.

USA ⁷

In September 1951 a "probability" sample of the population was questioned about arthritis and rheumatism. This survey formed part of one of the regular monthly canvasses conducted by interviewers of the Census Bureau who periodically visit about 25,000 households scattered in 68 areas in 42 States and the District of Columbia.

The main conclusion was that there were about 10 million persons in the USA over the age of 14 years (i.e., about one-tenth of the total population over this age) who believed that they were suffering from either "arthritis" or "rheumatism". It was estimated that about 6 million of these 10 million persons had been told by a doctor that their complaints were due to one or other of these two conditions.

For the cases classified as "arthritis", the prevalence percentage for females considerably exceeded that for males, but there was no significant statistical difference in the sex prevalence for the cases classified as "rheumatism".

The prevalence of both "arthritis" and "rheumatism" was higher in the rural populations than in the city populations. From the evidence of this survey it was not felt that this rural preponderance could necessarily be attributed to occupation (e.g., farming and outdoor work generally).

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England

In 1949 and 1950, during a sickness survey carried out on behalf of the General Register Office (Brooke³), a representative sample of the population at ages 16 and over was interviewed. People were visited in their own homes and questioned by specially trained interviewers about illnesses, including rheumatism, they had suffered during the two preceding months. There was no subsequent medical examination of those questioned and the data thus obtained were grouped as regards rheumatic diseases under four headings—namely, rheumatic fever (including chorea), arthritis (all forms), muscular rheumatism (including lumbago), and rheumatism unspecified. Allowing for the limitations obviously imposed by the technique employed, it appeared possible to conclude that, in all four groups, incidence rates increased with age for both sexes; that the muscular-rheumatism and rheumatism-unspecified groups had rates which were maximum in winter and minimum in summer; that, for the arthritis group, the sex ratio of females to males was 2 : 1; that one in every four housewives complained of a rheumatic illness; and that men in rural areas showed a higher incidence of rheumatic diseases than men in urban areas.

In Leigh, an industrial town in south Lancashire with a population of 48,000, a random sample of every tenth house was visited during 1949 and 1950 and all persons over the age of 15 years ordinarily resident therein were interviewed by a specially trained medico-social worker (Kellgren et al.⁴). In this way, individuals with rheumatic symptoms, either at the time of the inquiry or during the previous five years, were identified, and almost all were subsequently visited by a member of the medical staff of the Manchester University Rheumatism Research Centre. This physician checked the history and carried out a simple clinical examination designed to exclude complaints not due to rheumatic diseases and to enable the rheumatic complaints to be classified under certain designated headings. In this survey, 3,515 persons were questioned in 1,393 houses, and 1,407 persons with rheumatic complaints were found. Of these, 1,309 were examined by the physician from the research centre who found that a majority of the rheumatic complaints could be classified under four main headings, i.e., osteo-arthritis, rheumatoid arthritis, disk disorders (comprising disk prolapse and disk degeneration), and "pains of undetermined nature". Notwithstanding the elaborate organization of this inquiry and the special attention paid to diagnosis, about one-third of the persons with rheumatic complaints (30% of the population interviewed) had to be assigned to the "undetermined" diagnostic category. Outstanding findings were the high incidence of osteo-arthritis in females (9.4% against 5.8% in males) and the importance of disk disorders as a cause of pain and disability, especially in men (incidence rate, 7.2%, as against 3.0% in

women). Both osteo-arthritis and disk disorders were found to be connected with a heavy occupation and a history of injury. This survey did not throw any new light on the etiology of rheumatoid arthritis, but the usual sex preponderance in the incidence of this disease was well marked (females, 4.3%, against males, 1.7%).

*France*⁵

The rheumatic diseases (including rheumatic fever) were studied as causes of disablement, and of long and short-term illnesses, in relation to the social security arrangements of the metropolitan area of Paris. The data obtained from the 18 social security offices in this area showed obvious inconsistencies and probably the estimates based on them were understatements of the true facts.

It was found that, in some 10% of 50,000 disabled persons, the cause of disablement was a rheumatic disease. (Nearly 40% of these 5,000 persons were, however, disabled by the cardiac sequelae of rheumatic fever.) Osteo-arthritis and associated conditions accounted for about 30% of disablement due to rheumatic diseases, and rheumatoid arthritis for about 10%. Among the latter, women outnumbered men by about 7 to 1.

Of about 50,000 cases of long-term illness (defined as illness lasting at least six months but not longer than three years) about 6% were attributed to rheumatic diseases (excluding cardiopathies due to rheumatic fever).

For short-term illness, only financial data were collected. When these were taken with the long-term illness and disablement data, the whole, translated into financial terms, was estimated to represent an annual social security expenditure on rheumatic diseases in the Paris area of at least 3,000 million French francs.^a

*Sweden*⁶

An inquiry made in 1943 showed that, during that year, 2.5 per thousand of the population had sought medical care for rheumatoid arthritis and 1.7 per thousand for osteo-arthritis; the corresponding rate for sciatica and fibrositis was 4.0 per thousand. The data also showed that, in Sweden during 1943, the total number of sufferers from rheumatic diseases (including rheumatic fever) that had received medical care was about 90,000. At least 30,000 of these patients needed inpatient hospital treatment, but only 23,000 received it. During this year, about 2,100 hospital beds were occupied by rheumatic patients, but the commission which made the inquiry estimated that the total number of beds really needed for the treat-

^a Fr. fr. 350 = US \$1.00

ment of rheumatic patients in Sweden was about 5,000, i.e., at least 7 per 10,000 of the population.

*Netherlands*²

In a sampling investigation, resembling in technique that made in south Lancashire, England, in 1949 and 1950,⁴ it was found that, among 3,378 persons interrogated in certain parts of the Netherlands during 1951 and 1952, 18.4% were suffering from a rheumatic disease which could be classified as acute rheumatism (rheumatic fever), as rheumatoid arthritis, as ankylosing spondylitis, as osteo-arthritis, or as muscular rheumatism. The sex ratio of females to males among these sufferers was 1.6 : 1 and about 1% of the population examined was found to have rheumatoid arthritis. About 55% of the persons thus found to have a rheumatic disease were placed in the muscular rheumatism group, and about 45% had some form of arthritis. No seasonal or regional differences were disclosed by this inquiry, which also did not show any correlation between the incidence of rheumatic disease and the dampness of houses.

Rheumatoid Arthritis

Clinically this is one of the best defined diseases in the chronic rheumatic group. It might be expected, therefore, that data regarding the incidence and prevalence of this disease would be more accurate than those for some of the other chronic rheumatic diseases. Recent figures are as follows :

USA

It has been estimated that there are between one and two million sufferers in a total population of 160 million.¹ The source of this estimate is not certain. It is probably based on the National Health Survey of 1935-6.

England

Estimates have varied between one of 100,000 sufferers in a population of 40 million (based to some extent on Ministry of Food figures for medical certificates issued in respect of priorities for rationed foods) and the very much larger one of 500,000, which can be derived by the application to the population of the whole country of the results of the survey of rheumatic complaints made in a Lancashire town in 1949-50.⁴

Sweden

The available figures⁶ suggest that there are at least 17,500 cases in a population of seven million.

Netherlands

If the data obtained in a recent investigation² are applicable to the whole country the total number of cases in a population of 10 million would be 100,000.

Although this is not the most common of the chronic rheumatic diseases it is one of the most serious, and it seems clear that, in all countries where reliable studies have been made, the prevalence rate is especially high among women, possibly amounting in some parts of some countries to 1 in 25 of the adult female population.

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