EMPIRE RHEUMATISM COUNCIL

NINETEENTH ANNUAL REPORT

The nineteenth annual report of the Empire Rheumatism Council was presented by the Chairman, Dr. W. S. C. Copeman, at the Annual General Meeting held on May 1, 1956, in the State Rooms, St. James's Palace, London. H.R.H. the Duke of Gloucester, President of the Council, was in the Chair.

The Chairman first recorded the loss of the Council's distinguished Founder, Lord Horder, who died on August 13, 1955, at the age of 84; and also that of Dr. C. W. Buckley, a valued member of the Scientific Co-ordinating Committee, who died on May 28, 1955, in his 81st year.

The debt which the Empire Rheumatism Council owed to the late Lord Horder, whose reputation, like his influence and interests, was world-wide, was difficult to describe. He was the first chairman of the Council on its foundation in 1936, and only resigned the chairmanship in 1953, when he was appointed Emeritus Chairman. The Council's prosperity was due in large measure to Lord Horder. From all corners of the globe there had been received tributes to his pioneer work and to his magnetic influence. Right to the end he kept his closer interests and friendships in repair, and he left a kindly memory for which many must be grateful.

Dr. Buckley, one of the pioneers of rheumatism research and treatment, was also a valued friend. As a member of the Scientific Advisory Committee and editor of the Annals from the inception of the Council, and later as chairman of the Education Sub-Committee, his services were highly valued. He spoke with authority and was listened to with respect.

Chair of Rheumatology

During the year under review the work of the Manchester Rheumatism Centre had been consolidated and expanded, a new biophysics section having been added to the otherwise well-equipped laboratories. Both clinical and laboratory research was being energetically pursued, and there was no doubt that the creation of the University Chair of Rheumatology had been a great stimulus to work in the field of rheumatism.

A memorandum compiled by Professor Kellgren, the first professor of rheumatology, illustrated the general activities and wide scope of a university department of rheumatology. During 1955 Professor Kellgren had participated by invitation in the dedication ceremonies at the opening of the Hospital for Special Surgery in New York, as the official delegate of the council, and had also taken part in their scientific programme.

Research

E.R.C. Fellowships.—One of the E.R.C. Fellows, Dr. J. K. Norymberski (Director of Medical Research within the Sheffield Centre for the Investigation and Treatment of Rheumatic Diseases) reported as follows:

Last year's work included the following investigations (carried out with the collaboration of Miss J. I. Appleby, Mrs. S. Ingall, Dr. Jean McKenna, Mr. R. D. Stubbs, and Dr. G. F. Woods):

1. Partial reductions of steroid hormones and related substances.—The metabolic transformations of steroid hormones involve a series of reductive steps, each occurring at one site of the molecule only. Such partial reductions have now been carried out by conventional chemical means and a number of compounds of biologic interest was prepared. The reducing action of zinc in boiling aqueous acetic acid received particular attention; the reagent was found to convert steroid dihydroxy-acetones into 20:21 ketols unsubstituted at C17 (e.g. cortisol into corticosterone).

2. Determination of "zinc-resistant 17-ketogenic steroids".—In contradistinction to dihydroxyacetones the other two sub-groups of 17-ketogenic group of steroids, i.e. 17 : 20-diols and 17 : 20 : 31-triols, resist the action of zinc and consequently retain their 17-ketogenic property. This observation led to the development of an analytical method for the determination of "zinc-resistant 17-ketogenic steroids". The assay can reveal a certain type of abnormal excretion pattern which, so far, was found in pregnancy and in the adrenogenital syndrome.

3. Excretion of corticosteroids in pregnancy.—The excretion of total 17-hydroxycorticosteroids in pregnancy increases gradually to reach maximal values (10-30 mg./day) at delivery and falls during the following week to normal levels (16-14 mg./day). The corresponding increase of urinary 21-deoxyketols (a sub-group of 17-hydroxy-corticosteroids; see last year's report) is more pronounced (1-3 mg./day at delivery; 0.1-0.3 mg./day in non-pregnant women).

A paper was presented at the International Congress of Biochemistry in Brussels by Dr. Norymberski on work done in collaboration with Mr. R. D. Stubbs:

Differentiation of Urinary 17-ketogenic Steroids.—Treatment with zinc dust in 50 per cent. aqueous acetic acid transforms 17 : 21-dihydroxy-20-oxosteroids into products which no longer can be converted into 17-oxosteroids by sodium bismuthate. Under identical conditions other 17-hydroxycorticosteroids retain their 17-ketogenic property and 17-ketones are unaffected. This selective elimination of 17 : 21-dihydroxy-20-oxosteroids as potential precursors of 17-oxosteroids can be brought about in the urine and hence a simple means becomes available for the differential analysis of urinary 17-ketogenic steroids.

The Council's laboratory at the Hospital of St. John and St. Elizabeth had continued to be used as an adjunct by Miss I. H. M. Muir, another E.R.C. Fellow working at St. Mary's Hospital, Paddington. Professor G. W. Pickering, Director of the Medical Unit at St. Mary's
Hospital, Paddington, reported on Miss Muir's work as follows:

During the course of the year the work has been largely concentrated on the structure of connective tissue polysaccharides and has been devoted to (a) the development of new and improved techniques for isolating and studying these substances, and (b) the study of the structure of highly polymerized chondroitin sulphate which is one of the chief polysaccharides of connective tissue and which has hitherto been mainly studied in a comparatively degraded form.

(a) Developments of Technique

(1) Paper chromatography of large molecules presents very considerable difficulty, but if successful will afford qualitative and semi-quantitative information with extremely small amounts of material. It should therefore be suitable for the study of biopsy specimens. After an extensive search a suitable paper and solvent system was found which clearly separated degraded chondroitin sulphate from the highly polymerized material, so that not only could the two materials be distinguished from each other, but the approximate amounts in any given sample or mixture could be estimated. This can only otherwise be done by complicated indirect physical measurements obtained, for example, from sedimentation studies on the ultracentrifuge.

(2) One of the main difficulties to be met in the study of the chemical structure of connective tissue is that of isolating and purifying polysaccharides from protein, without degrading the polysaccharides. Various basic organic substances have been studied, some of which may prove generally useful, as they do not precipitate such proteins as acid-soluble collagen, gelatin or plasma proteins, but form very insoluble salts with acidic polysaccharides such as heparin and chondroitin sulphate. The free polysaccharide can be regenerated without any change of physical or chemical properties. This work is being further investigated.

(3) The accurate micro-estimation of sulphate is required to determine the structure of pure sulphated polysaccharides, and also affords a measure of the amount of such polysaccharides in whole connective tissue. The methods available are not only tedious but often erratic. An improved modification of the benzidine sulphate method has been developed which has proved to be quite reliable and accurate at 100 mg. SO₄, although very much smaller quantities can be determined with some loss of accuracy.

(b) Structure of Highly Polymerized Chondroitin Sulphate

Chondroitin sulphate is generally extracted from cartilage under alkaline conditions. The product obtained is of comparatively low molecular weight and is a simple polymer of glucuronic acid and N-acetylgalactosamine sulphate. However, when chondroitin sulphate is extracted with neutral calcium chloride a very viscous product is obtained, with a molecular weight 10-15 times greater than material obtained by alkaline extractions. The structure of this highly polymerized chondroitin sulphate has been investigated after extensive purification, both by analytical methods and by the use of enzymes.

Analyses showed that this material was not a simple polymer of glucuronic acid and N-acetylgalactosamine sulphate, but contained a small proportion of amino-acids, which have been identified by paper chromatography. Further purification did not change the amino-acid pattern. The substance was stable to heat and did not flocculate with any protein precipitants, but it was very rapidly degraded by weak alkali.

Pure proteolytic enzymes had different effects on the viscosity and chromatographic behaviour. Some loss of viscosity was produced by trypsin chymotrypsin and carboxypeptidase, but the behaviour on paper chromatograms did not change. Pepsin caused a 48 per cent. fall in viscosity and some change in chromatographic behaviour. However, crystalline papain brought about an immediate and large fall in viscosity, 83 per cent. of the viscosity being lost in 15 minutes. The product behaved in a similar manner on paper chromatography. The alkali sulphate and polysaccharide, and the viscosities of the two degraded products showed that they had similar molecular weights. Papain digestion also produced some dialysable sulphate and hexosamine, showing that small fragments had been broken from the polysaccharide molecule. Inhibition studies and control experiments proved that the effect was genuinely due to papain and not to an impurity. The papain-digested polysaccharide did not contain amino-acids.

It is concluded from these results that chondroitin sulphate exists in tissues as a complex of large molecular weight consisting chiefly of polysaccharide cemented by small amounts of peptide or protein, which is destroyed by papain and alkali. Since a large fall in molecular weight of a highly asymmetric molecule such as chondroitin sulphate produces a marked change in physical properties, it is possible that if such a breakdown occurred in the tissues there would be a marked change in mechanical properties, the tissues becoming less elastic and less resilient. Some of the pathological and degenerative changes of connective tissue might thus be explained.

Work is being concentrated on this aspect because if this complex is an important structural feature, complete proof must therefore be obtained and any differences between different tissues and between normal and pathological tissue established.

Effect of Pathological Fluids and Serum on the Chondroitin Sulphate Complex.—Serum and synovial fluids from the knee joint of four cases of acute rheumatoid arthritis were tested for their effect on the chondroitin sulphate complex, in case they contained an enzyme having a similar effect to that of papain on the polysaccharide, but no fall in viscosity or change in chromatographic behaviour was observed. However, the polysaccharide was not of human origin, the negative result is not conclusive.

A paper published by Dr. W. C. Boake and Miss Muir in The Lancet is abstracted on p. 206 of this issue.

The following is an abstract of a paper given by Miss Muir to the Medical Research Society:

A Highly Polymerized Chondroitin Sulphate Complex from Cartilage.—Chemical investigation of the structure of chondroitin sulphate from cartilage has been mostly carried out on material extracted under alkaline conditions which yield relatively degraded material, as judged by molecular weight. However, Blix and Snellman (1945) have obtained the polysaccharide with ten to fifteen times the molecular weight, namely 150,000-250,000, by extraction with neutral 10 per cent. CaCl₂. This material was very sensitive to alkali, being rapidly degraded by 0-01N. NaOH.

Chondroitin sulphate was prepared by this method from hog laryngeal cartilage and purified by precipitation with Co(NH₃)₆Cl₂ (Mathews and Dorfman, 1953; Mathews, 1955). The polysaccharide thus obtained was noticeably viscous; the relative viscosity of 0-5 per cent. solution in water was 6-1 at 25° C. It contained 26-3 per cent. hexosamine, 14-1 per cent. sulphate and 4-47 per cent. nitrogen. By difference, the non-hexosamine nitrogen was 2-4 per cent. This was due to the presence of amino-acids, as shown by paper chromatography. Further attempts to purify the polysaccharide did not reduce the non-hexosamine nitrogen or change the amino-acid pattern, which was remarkable in showing almost no aromatic amino-acids. This was confirmed by ultraviolet spectroscopy.

The material was not stable above pH 8·5. In 0-015N. NaOH the viscosity diminished rapidly, reaching a limiting value. The polysaccharide was stable to heating at 100° C. for 30 minutes in water. No change occurred either on heating or on treatment with protein precipitants.

The viscosity was affected to different degrees by crystalline proteolytic enzymes. Carboxypeptidase, trypsin, and chymotrypsin caused 2 to 8 per cent. reduction in viscosity in 15 minutes, finally reducing the viscosity by 25-28 per cent.
Pepsin reduced the viscosity by 38 per cent. in 15 minutes, and finally by 48 per cent. Unlike these enzymes, papain, activated by cystine and versene, caused an immediate and large fall in viscosity. The viscosity was reduced by 80 per cent. in 10 minutes and finally by 83.5 per cent. This effect was completely inhibited by \( 10^{-4} \text{M} \) p-chloromercuribenzoate and therefore was not due to contamination of papain by papaya lysozyme (Smith, Kimmel, Brown, and Thompson, 1955). Treatment with papain liberated 4 to 6 per cent. of dialysable hexosamine and sulphate, showing that some comparatively small fragments had been split from the molecule.

Paper chromatography of chondroitin sulphate proved a sensitive method for distinguishing between degraded and undegraded chondroitin sulphate. 45 per cent. (v/v) n-propanol/55 per cent. 0.2M boric acid was used with Whatman No. 2 papers. Papain-digested polysaccharide moved as a compact spot with \( R_f = 0.58 \). Alkali-degraded material behaved similarly. Untreated material remained at the origin, as did material treated with those proteolytic enzymes, which only caused small changes of viscosity. Partially degraded polysaccharide showed both the spots and intermediate streaks.

It is suggested that chondroitin sulphate normally exists as a complex of large molecular weight composed chiefly of polysaccharide cemented by a small amount of polypeptide or protein, which is destroyed by papain and by alkali. Since changes of molecular size of a highly asymmetric molecule such as this will produce large changes in physical properties, some of the degenerative changes of connective tissue such as loss of elasticity or increased permeability could perhaps be explained by a breakdown of the polysaccharide complex by a proteolytic enzyme.


Dr. Madeline Keech had been appointed a third E.R.C. Fellow as from October 1, 1955; she was working principally in Professor Tunbridge's department at the General Infirmary, Leeds, with some additional clinical work in the Rheumatic Clinic with Professor Hartfall. Her special project was to observe the morphological changes that occur in collagen, elastin, and connective tissue under the action of enzymes, and the effects of denaturation of collagen and elastin, prepared in different ways and subjected to the action not only of enzymes but also of physical agents. Having obtained certain basic information, Dr. Keech intended to proceed to the analysis of changes in connective tissue resulting from degenerative changes and disease processes, and to examine some of the basic pathological changes associated with arterial degeneration, osteo-arthritis, and particularly the rheumatic infections. It was hoped that such research might yield results of fundamental importance.

**Geigy Travelling Fellowships.**—Out of the Geigy Travelling Fund the Council had been able to depute Dr. H. F. West as an official delegate to the Annual Meeting of the American Rheumatism Association held in San Francisco in June, 1955.

Dr. Malcolm Thompson, the first travelling fellow, of the Rheumatic Unit, Northern General Hospital, Edinburgh, had recently returned from the U.S.A. where he had received an honorary appointment as Clinical and Research Fellow to Harvard University, and had worked in the arthritis unit of the Massachusetts General Hospital, under the direction of Professor Walter Bauer. Dr. Thompson’s report at the end of his 9 months’ tour was an informative document:

Work was done on the methodology of the estimations of ascorbic and dehydro-ascorbic acids, and of coeruleoplasmin. The plasma levels of these substances were estimated in normal subjects as well as in patients suffering from rheumatoid arthritis and patients with various other diseases. Although abnormalities in ascorbic acid metabolism were demonstrated in rheumatoid arthritis, similar abnormalities were found in many other diseases involving inflammation, tissue damage and new growth. Raised levels of plasma coeruleoplasmin were demonstrated in patients suffering from rheumatoid arthritis, but again, raised values were recorded in a variety of illnesses, especially those in which inflammation, tissue damage, and new growth were involved.

Studies on capillary resistance revealed abnormally low values in a high proportion of rheumatoid patients, compared with control subjects. Further studies are being made to determine the significance of this finding, which accords with recent histological work indicating widespread lesions of small blood vessels in the early stages of rheumatoid arthritis.

Dr. Thompson had also visited the principal rheumatic and rehabilitation centres in the Eastern and Mid-Western States of the U.S.A. and in Canada; he had attended the 1955 meetings of the American Rheumatism Association and the Canadian Rheumatism Association, and had presented a paper at the latter meeting.

The second Geigy Travelling Fellow, Dr. J. Sharp (Lecturer in Rheumatic Diseases, Manchester University), had just left for a study tour relating to ankylosing spondylitis in the U.S.A.

The third Geigy Travelling Fellow, Dr. J. Ball (Senior Lecturer in Pathology in the Rheumatism Centre, Manchester University), had visited leading research centres and attended meetings in San Francisco and Atlantic City. His report included the following observations:

At the Armed Forces Institute of Pathology (Washington) methods for cutting histological sections of compact bone had been devised. The possibilities of tissue culture for studies of connective tissue metabolism had been re-explored with considerable success at the Presbyterian Hospital (New York) and researches using this method were in progress at other rheumatism centres. At the Rockefeller Institute tissue culture had proved useful in demonstrating the effects of anticollagen antibodies. At Madison, studies on experimental Lathyrism indicated another useful approach to connective tissue problems. Combined histological and immunological studies at Johns Hopkins Hospital had clarified the pathogenesis of experimental serum disease. Chemical methods were being widely used in studies of the sheep cell agglutinating factor; and an essential chemical method of quantitating this factor was described.
at the June meeting of the American Rheumatism Association. Dr. Ball also noted recent work at the Histochemical Laboratory (Columbia University) indicating that the primary nuclear abnormality in D.L.E. involved nuclear histone rather than desoxyribose nucleic acid.

A travelling fellowship had also been awarded to Dr. E. J. Holborrow, of Taplow, Berkshire, who would be leaving for America in the autumn.

Apart from the educational value of the Geigy Fellowships, they assisted in preparing fellows for appointment to consultant status, and Dr. Malcolm Thompson had recently been appointed consultant to the Royal Victoria Infirmary, Newcastle-on-Tyne.

Other Projects.—The following report had been submitted by Drs Robertson and Chapman, who were carrying out steroid research at the West London Hospital:

During the past 6 months we have been following the 17-hydroxycorticosteroid output in urine from some fifty in-patients and out-patients from this hospital and the Hospital of St. John and St. Elizabeth. This has been done in collaboration with the Department of Rheumatism, in order to assess the degree of adrenal stimulation attained with the administration of ACTH, the results being correlated with the clinical findings.

In all patients the urinary output of 17-hydroxycorticosteroids is estimated for some days before treatment is started, so that a base line or control period can be established. After this daily and then weekly or bi-weekly estimations are performed. The method of Norrymersinski (Biochem. J., 1955, 60, 453) is being used for the steroid measurement.

Some preliminary difficulties have now been overcome and patients are being assessed clinically every two or three weeks and biochemically at least weekly and in some cases much more frequently. It has been found that with a moderate level of adrenal stimulation with a daily injection of ACTH, as measured by the output of urinary 17-OHCS, there is suppression of the symptoms of rheumatoid arthritis. So far it has been difficult to achieve a constant level of adrenal stimulation.

The Council had continued to support the work of Dr. E. Wittkower, Assistant Professor of Psychiatry, McGill University, Montreal, Canada, in his “Study of Rheumatoid Arthritis in Two Contrasting Communities”.

The results of the first year’s Multi-Centre Controlled Trials comparing cortisone acetate and acetyl salicylic acid in the long-term treatment of rheumatoid arthritis had been published in the Annals of the Rheumatic Diseases (1955, 14, 353).

A supply of delta-hydrocortisone had been offered to the Council by Messrs. Boots Pure Drug Co. Ltd. and Upjohn of England, and various clinical centres had been approached regarding the use of this drug.

Dr. M. Bassiouni, Ph.D., who had received a grant to cover 6 months’ work at the Canadian Red Cross Memorial Hospital, Taplow, to enable him to continue his research into the estimation of heparin-like substances in blood tissues, had reported as follows:

It was observed during the isolation of heparin from rheumatic patients’ blood that a fine metachromatic precipitate was included in the crude dye precipitate which was not present in similar extracts from normal blood. Such metachromatic precipitate suggested that it may include an acid polysaccharide. Studies on paper electrophoresis using a modified procedure confirmed this suggestion since it had an intermediate electrophoretic mobility between beef heparin and human chondroitin sulphate under specified conditions of potential gradient of time. It had a distinct anti-coagulant activity with an A/C ratio of 37. Its complex with the basic dye Azure A has a maximum absorption spectrum at 580 mμ compared with absorption maximum of 620 mμ for human chondroitin sulphate and beef heparin. Using large amounts of blood collected from cases of acute rheumatic fever it has been shown that this acid polysaccharide was mainly derived from the white blood cells; that present in plasma is probably liberated from these cells. However, this acid polysaccharide was found to be present in variable degrees in 4 ml. blood samples from various other diseases.

Dr. S. C. Milazzo, M.B., M.R.A.C.P., of the Canadian Red Cross Memorial Hospital (Special Unit for Juvenile Rheumatism), Taplow, who had also received a grant for research, reported as follows:

There is evidence which suggests that certain rheumatic diseases such as rheumatic fever and disseminated lupus erythematosus, and possibly others, may be caused by the patient producing antibodies against components of his own tissues. Except in the case of the red blood cells these antigenic tissue components have not been extracted and adequately studied, so that an experimental tool for the study of this hypothesis has been lacking.

The aim of the work at present in progress has been to extract an antigenic substance which is present in reticulin fibres and basement membranes in many parts of the body, as shown by Cruickshank and Hall in Edinburgh. A simple method has been devised by which this antigen and antibody to it can be demonstrated in vitro. It has been possible to prepare a fairly pure but insoluble preparation of the antigen by removing the cellular material from renal cortex by trypsin digestion and thorough washing with saline. Attempts using various methods to extract soluble antigen from this preparation are in progress, and if successful will make available a useful tool for further research into the auto-antibody hypothesis.

Equipment and Apparatus.—A grant had been made to Dr. G. D. Kersley for the purchase of a “Uvispek” spectrophotometer for the South West Regional Rheumatism Research Unit, and to Dr. Ernest Fletcher for a “continuous electrophoretic machine” for his unit at the Royal Free Hospital, London.
Under the direction of Prof. Sir Stanley Davidson, equipment and apparatus had been purchased for the new Research Laboratories at the Northern General Hospital, Edinburgh.

Certificates of good order had been received during the year in all instances from the centres where equipment had been purchased by the Council.

**Mobile Field Unit.**—This would be established in the first instance for a period of 3 to 5 years, and would probably be based in the early stages at Manchester University. It was envisaged that such a unit would in due course undertake projects anywhere, including possibly the Dominions. Prof. J. H. Kellgren had agreed to give the benefit of his experience and advice on survey work to Dr. J. S. Lawrence, who had recently been appointed Medical Director of the unit, and would shortly be visiting other centres in Great Britain, Europe, and the United States, where field studies of rheumatic diseases were in progress, to obtain further information about the methods of survey and the most suitable staff and equipment.

It had been felt advantageous to accept an offer made by the Deputy Medical Officer of Health for Cornwall, Dr. E. R. Hargreaves, to undertake additional preliminary survey work of a similar nature in that county, so that his findings could be correlated with the whole scheme of field research; Dr. Fearney’s proposals for a survey on parallel lines to be undertaken in Gloucestershire would also be included in the general scheme. A clinical, statistical, and radiological team would be appointed in due course, and it was estimated that a capital expenditure up to a maximum of £30,000 for equipment and £7,000 per annum for running expenses would be incurred.

Prof. Kellgren had written as follows:

In rheumatism as in other diseases, prevention is ultimately likely to be more effective than cure, and it is for this reason that the council has decided to endow a field unit for the study of aetiology and prevention of the rheumatic diseases. Dr. J. S. Lawrence, who has already done important field work on the problem of rheumatism among coal miners, has been appointed clinical director of the new field unit. The field unit will further develop methods of assessing rheumatic diseases in the general population; from this important information about causation and prevention may emerge. But in view of past experience in the mining industry it seems likely that occupational factors may be very important and it is anticipated that other industries and possibly agriculture may wish to avail themselves of the services which such a field unit can provide.

A scheme conforming with the general survey was also proposed in the Wensleydale area of Yorkshire by Leeds University; it was agreed that this work should be co-ordinated with that of Dr. J. S. Lawrence, especially in the matter of radiology as experience had already shown that many technical difficulties arose in carrying out a radiological survey.

**Education**

**Handbooks.**—The *Rheumatoid Arthritis Handbook*, published by the Council for doctors to issue to their patients had proved an unqualified success. Local health authorities throughout the country had requested the handbook in large quantities and large indentures were still being received. Nearly 20,000 copies had been distributed free of charge in this way, and the Council had also gladly acceded to requests from the Queen Elizabeth Hospital, Rotorua, New Zealand, and from the Arthritis and Rheumatism Foundation, New York, for permission to reprint the handbook locally.

An *Osteo-Arthritis Handbook* was in course of preparation, and the Council was greatly indebted to Dr. Dudley Hart and Mr. Lloyd Roberts for producing a really excellent publication, and to Mr. Leslie Starke for so generously illustrating both handbooks free of charge. Copies of both would continue to be supplied free upon application to the General Secretary.

**Consultants’ Conference.**—The first Consultants’ Conference was held with the distinguished co-operation of Sir Francis Fraser (Director of the British Post-Graduate Medical Federation) from March 24 to 26, 1955; the first two days at the Arthur Stanley Institute, Middlesex Hospital, and the final day at the Post-Graduate Medical School of London, Hammersmith. The conference had been opened by Sir Francis Fraser, and distinguished rheumatologists and specialists lectured and demonstrated on a wide range of subjects. In view of the widespread interest aroused, it had been decided to hold a second Consultants’ Conference early in 1956.

The Council was deeply indebted to Dr. Oswald Savage, the Hon. Medical Secretary, for the undoubted success of the conference.

**Royal Society of Health Exhibition.**—The Council had participated in the exhibition at Blackpool from April 24-27, 1956. Drs. Fletcher and Mason, with the assistance of Prof. Kellgren, undertook to be responsible for the stand.

**Heberden Society.**—The Council had unanimously decided to continue to assist the Heberden Society by an annual grant of £100. This Society was doing extremely valuable work in arranging lectures and demonstrations at centres throughout the country on clinical aspects of the rheumatic diseases. This year’s President was Prof. R. E. Tunbridge.

**Medical Libraries.**—The Council agreed to renew its annual grant to the libraries of the British Medical Association and the Royal Society of Medicine respectively for the provision of books on arthritis and rheumatism.

**“Annals of the Rheumatic Diseases.”**—Accounts of the activities of the Council, of the Heberden Society, and of the British Branch of the European League against Rheumatism, had appeared in the *Annals*, published quarterly by the B.M.A. This was the authoritative
medium for the publication of developments in research and teaching in all fields of rheumatism, and general practitioners and others throughout the country were recommended to subscribe to the Annals so that they might be kept conversant with modern trends. As and when more material became available, it was hoped to increase the publication of the Annals of the Rheumatic Diseases from four copies to six copies per annum.

World Health Organization.—The Executive Committee had accepted an invitation to become a “sponsoring body” of the United Kingdom Committee for W.H.O., and had nominated for appointment Dr. Ernest Fletcher and Dr. G. R. Fearnley as the Council’s representatives on their Executive Board.

COMMONWEALTH

By invitation of the Minister of Health, New Zealand, the Australian Rheumatism Council, and the Council of the Royal Australasian College of Physicians, and with the endorsement of his colleagues, the Chairman had visited these two dominions towards the end of 1955 as the official representative of the E.R.C. He carried with him a personal message from their Royal President to the Governors-General of Australia and New Zealand, and from the Rt. Hon. Iain Macleod (Minister of Health) to the Minister of Health, New Zealand. He was grateful to His Royal Highness for having graciously received him personally both before and after his visit and for his kindly interest in the tour.

He had visited all the chief medical centres and many lesser ones in both countries, and at all the main centres he carried out a prearranged programme of lectures, giving clinical demonstrations and holding conferences. He had also given several broadcast talks, some of a more popular nature. Everywhere he had been received most hospitably, both officially and privately. A detailed account of his itinerary and of his activities in both dominions was contained in the official report (which had been accepted by the Commonwealth Sub-Committee of the Council and by the Executive Committee), and appeared as a supplement to the Annual Report.

Dr. G. N. Watson, on his recall to Australia, left vacant the London representation of the Australian Rheumatism Council on the Commonwealth Sub-Committee, and Dr. S. C. Milazzo, M.R.A.C.P., had been appointed at their suggestion in his stead.

Contact has been established with Dr. Mark Horwitz, of Cape Town, with a view to establishing an affiliated autonomous South African Rheumatism Council in that country. It is hoped that by next year this will be a fait accompli.

ADMINISTRATION

It had been recommended that the key administrative committees, viz. Executive Committee, Finance Committee, and Scientific Co-ordinating Committee, be re-elected for 1956-57. The Chairman said that he could not refrain from paying special tribute to Dr. Oswald Savage for so ably deputizing as acting Chairman of the Council during his absence in the Antipodes, and for the great help he had rendered to Mr. R. V. Howell, the able general secretary, during that time in the many problems which had come to hand, and also to Prof. Tunbridge for his guidance and wisdom as chairman of the Scientific Co-ordinating Committee.

CONCLUSION

In the past year the Council had extended its activities in all directions and had been greatly encouraged by the generosity of subscribers and donors which had supported its efforts to overcome the rheumatic disorders which caused more absenteeism and invalidity than any other known malady.

SOCIEDAD ESPAÑOLA DE REUMATISMO

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