

Postgraduate Medical Journal

Editor

A. A. G. LEWIS B.Sc. M.D. F.R.C.P.

Advisory Editorial Board

A. G. Apley F.R.C.S.

D. Barltrop B.Sc. M.D. M.R.C.P. D.C.H.

E. M. M. Besterman M.A. M.D. F.R.C.P.

E. H. Brown D.M. M.R.C.P. D.C.H.

A. E. R. Buckle F.R.C.S. F.R.C.O.G.

H. L. Cochrane F.R.C.S.

J. O. Craig F.R.C.S.I. D.M.R.D. F.F.R.

P. D. B. Davies M.A., M.D., M.R.C.P.

H. Ellis M.A. D.M. F.R.C.S.

J. D. Griffiths M.S., F.R.C.S.

J. P. Hopewell F.R.C.S.

D. G. James M.A. M.D. F.R.C.P.

S. B. Karani D.P.H. F.R.C.P.

C. E. Newman C.B.E. M.D. F.R.C.P.

K. I. Nissen F.R.C.S.

J. W. Paulley M.D. F.R.C.P.

T. A. J. Pranker M.D. F.R.C.P.

N. E. Stidolph F.R.C.S.

P. K. Thomas B.Sc. M.D. F.R.C.P.

Editorial Representative for U.S.A.

D. Rabinowitz M.D. M.R.C.P. M.R.C.P.E.

Johns Hopkins University School of Medicine, Baltimore, Md

Editorial Representative for Australia

Sir Clive Fitts M.D.(MELB.) F.R.C.P. F.R.A.C.P.

Editorial Assistant

Mrs M. E. Coops B.Sc.

Postgraduate Medical Journal is published monthly for the Fellowship of Postgraduate Medicine by Blackwell Scientific Publications Ltd. The annual subscription is 120s (\$20.00) post free, and the price of single issues 15s (\$2.50) postage extra. Orders for back issues published up to December 1966 and correspondence from Fellows and Associates should be sent to The Secretary, The Fellowship of Postgraduate Medicine, 9 Great James Street, London, W.C.1 (tel: CHAncery 6900); other orders and business correspondence should be addressed to Blackwell Scientific Publications Ltd, 5 Alfred Street, Oxford (tel: Oxford 40201).

All editorial correspondence should be addressed to Dr A. A. G. Lewis, The Postgraduate Medical Journal, 9 Great James Street, London, W.C.1 (tel: CHAncery 6900).

Advertisement enquiries and bookings should be addressed to S. & H. Fretwell Ltd, 267 Portland Road, London, S.E.25 (tel: 01-654 8921).

The Fellowship of Postgraduate Medicine was founded by a group of London consultants after the First World War to assist postgraduates, particularly those coming to London from the Commonwealth, to pursue their studies. The Fellowship first published the *Postgraduate Medical Journal* to give infor-

mation about lectures, conferences and courses and to provide a monthly review of all branches of medicine.

Postgraduate Medical Journal publishes original papers on subjects of current clinical importance and welcomes review articles with extensive, up-to-date bibliographies as guides to further reading. Several symposia are published every year, each devoted to a single subject and written, by invitation, by specialists in different disciplines. Every issue includes authoritative Current Surveys of clinical problems, as well as well-documented Reports of cases of particular interest, Book Reviews and Postgraduate News.

A 'Notice to Contributors' is published on the inside back cover of this issue. The Editor reserves the right to make changes which may clarify or condense papers where this is considered desirable.

© The contents of this Journal are copyright and, subject to the provisions of Section 7 of the Copyright Act, 1956, they may not be copied, adapted or reproduced without permission. Requests for permission to reproduce material elsewhere, either in whole or in part, should be addressed to the Editor, Postgraduate Medical Journal, 9 Great James Street, London, W.C.1.

Discussion to the paper by Ralph Wright

CHAIRMAN: DR GEOFFREY WATKINSON

CHAIRMAN. Was the frequency of this antibody in ulcerative colitis more common in patients who had systemic complications?

WRIGHT. No, no correlation at all.

CHAIRMAN. Disappointing.

WRIGHT. Yes it is.

MCCONNELL. Does the titre of mitochondrial antibody vary with treatment? In other words, if you put the biliary cirrhotic on to steroids, does this change the titre?

WRIGHT. I don't know. But certainly some of the titres of the antinuclear factor vary with treatment. We have no personal experience of this.

QUESTION. It is interesting that a bacterial antigen to the intestinal flora has been suggested again in ulcerative colitis as was suggested 2 or 3 years ago.

WRIGHT. No further work has been done. The other attempts along these lines have been to study the lymphocytes of patients with ulcerative colitis which have been stimulated with various antigens, including colonic and bacterial antigens. When transformation of lymphocytes occurs in response to antigens this

has been taken as an index of delayed hypersensitivity.

QUESTION. Is there any direct experimental evidence to show that these antibodies as opposed to lymphocytes actually produce lethal or damaging effects to the cells on which they become attached?

WRIGHT. I think that the only possible evidence is in relation to thyroid where it has been shown that if the cells are close enough to burst in tissue culture then the circulation of the thyroid antibody inside the cytoplasmic antibody will kill the cell, one has to know how to handle the cell first. The suggestion is that these cellular antibodies might react synergistically with the intestinal cells. Again it might well be that we have identified the wrong type of antibody.

This may well be so, because we are looking at antibodies which are reacting with cell cytoplasm and nuclei. We are not looking at antibodies which are reacting on the cell surface. And if these antibodies are going to cause cell destruction this might mean that we'll have to examine the cell surface, but we just haven't got the technique which enables us to do this.

Acknowledgments

The Council of the Fellowship of Postgraduate Medicine gratefully acknowledge the help of the following in the production of these two issues on 'Postgraduate Gastroenterology':

Berk Pharmaceuticals Limited
Boehringer Ingelheim Limited
Glaxo Laboratories Limited
Parke, Davis and Company
Sandoz Products Limited
G. D. Searle and Company
John Wyeth and Brothers Limited
Pfizer Limited

Books received

- Hearing Mechanism in Vertebrates.* Edited by A. V. S. DE REUCK and JULIE KNIGHT. Pp. 331, Illustrated, London: J. & A. Churchill, 1968. 65s.
- Growth of the Nervous System.* Edited by G. E. W. WOLSTENHOLME and M. O'CONNOR. Pp. 306, Illustrated. London: J. & A. Churchill, 1968. 65s.
- Circulation in Skeletal Muscle.* By O. HUDLICKA. Pp. 366, Illustrated. Oxford: Pergamon, 1968. £6.
- Renal Failure.* By A. N. BREST and J. H. MOYER. Pp. 305, Illustrated, London: Pitman Medical, 1968. £9.
- Monoamine Oxidase Inhibitors: Relationship between Pharmacological and Clinical Effects.* By J. CHEYMOL and J. R. BOISSIER. Pp. 101, Illustrated. Oxford: Pergamon, 1968. 70s.
- The Lung.* Edited by AVERILL LIEBOW and DAVID SMITH. Pp. 412, Illustrated. Baltimore: Williams & Wilkins, Edinburgh and London: E. & S. Livingstone, 1968. £6 17s. 6d.
- Surgical Principles.* By JAMES MORONEY and FRANCIS E. STOCK. Pp. 381, Illustrated. Edinburgh & London: E. & S. Livingstone, 1968. 65s.
- Proceedings of a Second Symposium on Scoliosis: Causation.* Edited by P. A. ZORAB. Pp. 68, Illustrated. Edinburgh & London: E. & S. Livingstone, 1968. 30s.
- Cell Structure.* By P. G. TONER and KATHARINE CARR. Pp. 202, Illustrated. Edinburgh & London: E. & S. Livingstone, 1968. 40s.
- Victory with Vaccines.* By H. J. PARISH. Pp. 255. Edinburgh & London: E. & S. Livingstone, 1968. 30s.
- The Mentally Abnormal Offender.* Edited by A. V. S. DE REUCK and RUTH PORTER. Pp. 267. London: J. & A. Churchill, 1968. 65s.
- An Introduction To Histochemical Techniques.* By J. D. BANCROFT. Pp. 278, Illustrated. London: Butterworths, 1968. 58s.
- Electrolyte Metabolism in Severe Infantile Malnutrition.* By J. S. ARROW, R. SMITH and E. E. WARD. Pp. 168. Oxford: Pergamon, 1968. 67s. 6d.

New Editions

- Handbook of Medical Treatment.* Edited by M. J. CHATTON, S. MARGEN and H. BRAINERD. Pp. 769. Eleventh Edition. Los Altos, California Lange Medical Publications. 1968. 50s.

Book reviews

A System of Orthopaedics and Fractures

By A. GRAHAM APLEY. Third Edition. Pp. x + 524 (+ index), illustrated. London: Butterworths. 1968. £6 6s.

The virtues of this work, of which the third edition has just appeared, are already well established and appreciated. The clear description and orderly approach, together with the convenience of having orthopaedics and fractures comprehensively covered in one volume, have made many friends for this book amongst surgical postgraduates and those who teach them.

In these circumstances it might have been tempting for the author, in producing the new edition, to content himself with bringing his book up to date without any radical changes in style of presentation. Mr Apley, in scorning any such slothful approach, has transformed his book and greatly broadened its appeal. Certainly the text has been refreshed by the incorporation of recent work—tuberculosis, polio and other topics of diminishing urgency have been correspondingly restricted, although the examination candidate will find more than enough for his needs—but the innovation lies in the use, for the first time in this book, of illustrations; these are in great number and most impressively arranged.

There were no pictures in the first two editions of the book, the author placing his faith, not without justification, on the skilful use of accurate verbal description to convey clinical and radiological appearances. This austere approach has now been abandoned, and in one splendid leap Mr Apley has gone from putting in no pictures at all to using 1802 (one has taken his word for the total), arranged as 312 'composites'. Throughout the book, X-rays, clinical photographs, drawings and diagrams have been assembled in groups to supplement the text and to make their own contribution. Sometimes a

dozen or more small pictures or X-rays go to make up a single illustration; but the consistently high quality of the material used has permitted many interesting rarities to be shown without their usurping the space required for the basic essentials of orthopaedic and fracture surgery.

As the result of introducing illustrations and contriving such a worthwhile concordance between pictures and text, the author has now made his book much more accessible to undergraduates, nurses and physiotherapists, as well as consolidating its value for postgraduates. Moreover, he has provided a yardstick against which later efforts in textbook illustration must expect to be measured.

There are, inevitably, minor personal quibbles with some of the opinions voiced and the techniques advocated but this book reflects much credit on the stable at Pyrford which produced it and is a worthy testament to the healthy state of present-day British orthopaedic surgery and teaching.

Cross-Reacting Antigens and Neoantigens (with Implications for Autoimmunity and Cancer Immunity)

Edited by J. J. TRENTIN. A conference sponsored by the Committee on Tissue Transplantation, May 1967. Pp. 122 illustrated. Baltimore: Williams & Wilkins; Edinburgh and London: E. & S. Livingstone. 1968. 62s. 6d. (bound edition available at 85s.).

The Committee on tissue transplantation has held a variety of conferences under the auspices of the United States National Institute of Health since 1959. Some of the meetings have been concerned with clinical renal transplantation and others with more basic biological aspects of immunity and one of them, cross-reacting antigens and neoantigens, falls into the second category.

Postgraduate news

FELLOWSHIP OF POSTGRADUATE MEDICINE

The Fellowship usually holds the following courses each year (approximate dates and times in parentheses):

Medicine (M.R.C.P.)

General Medicine. Connaught, London Chest, Whipps Cross Hospitals (four weeks, twice yearly, April/May, October/November), St Stephen's Hospital (evenings, four weeks, twice yearly), Whittington Hospital (evenings, five weeks, twice yearly, May/June, October/November). Queen Mary's Hospital for the East End (weekend, twice yearly, June, December). Ashford Hospital, Middlesex (two Saturdays, twice yearly, May, November).

Infectious Diseases. Hither Green Hospital (weekend, twice yearly, March/November).

Paediatrics (D.C.H.). Princess Louise Kensington Hospital (weekend, twice yearly, March, September/October).

Surgery (F.R.C.S.)

General Surgery. Connaught Hospital (weekend, twice yearly, April, September/October). Queen Mary's Hospital for the East End (weekend, once yearly, February). Royal Marsden Hospital (twice yearly, March, September).

General Surgery and Orthopaedics. Fulham Hospital (three weeks, evenings, twice yearly, March/April, September/October).

Orthopaedics. Rowley Bristow Hospital, Pyrford (three alternate weekends, twice yearly, March/April, September/October).

Please note that instruction arranged by the Fellowship of Postgraduate Medicine is open only to Associates (annual subscription, 21s). Detailed syllabuses are published approximately 6-8 weeks before courses begin and are circulated to all Associates. No entries to courses can be accepted in advance of the syllabus being published.

CURRENT COURSES

Thoracic surgery. North Middlesex Hospital, London, N.18. Weekend 4, 5 and 6 October. Fee £8 8s.

General Surgery. Royal Marsden Hospital, London, S.W.3. Monday and Friday evenings, 9 September to 25 October. Fee £21.

General Surgery. Fulham Hospital, London, W.6. Week-day evenings, 30 September to 25 October. Fee £25.

General Surgery. Connaught Hospital, London, E.17. Weekend 19 and 20 October. Fee £6 6s.

All these courses are recognized for study leave under HM 67 (27).

Information regarding courses can be obtained from the office between 10 a.m. and 5 p.m., Mondays to Fridays (Telephone 242-6900), or by writing to the Secretary, Fellowship of Postgraduate Medicine, 9 Great James Street, London, W.C.1.

THE COMMONWEALTH AND INTERNATIONAL MEDICAL ADVISORY BUREAUX

The Bureaux are maintained by the British Medical Association to provide a personal advisory service to doctors visiting the United Kingdom from all parts of the world. General information, as well as that on postgraduate education and accommodation is given.

All enquiries should be addressed to the Medical Director, Commonwealth and International Medical Advisory Bureaux British Medical Association, Tavistock Square, London, W.C.1.

CAMBRIDGE

Cambridge University Postgraduate Medical School

A summary of postgraduate facilities available at Addenbrooke's Hospital from October to July can be obtained from the Secretary of the Medical School. Arrangements can be made for practitioners to attend the practice of the Teaching Hospital Group for short or long periods.

The third course on *Progress in the Biological Sciences in Relation to Dermatology* will be held from 23 to 28 September in the University Chemical Laboratory. Course fee £12 12s. Programmes and enrolment forms, with details of College accommodation arrangements, obtainable from the Secretary, The Medical School, Tennis Court Road, Cambridge.

LIVERPOOL

University of Liverpool. Courses are held in Anaesthesia, Child Health, Medicine, Obstetrics and Gynaecology, Orthopaedic Surgery, Otorhinolaryngology, Psychological Medicine, Public Health, Radiodiagnosis and Radiotherapy, Surgery, Tropical Medicine and Hygiene and Venereology. After fulfilling the regulations, candidates may become eligible to take the Degrees of Ch.M., M.Ch.Orth. and M.Ch.Otol., and the Liverpool Diplomas, D.P.H., D.P.M., D.T.M.&H., D.M.R.(D) or D.M.R.(T).

The other courses are designed for students working for the London Diplomas.

There is also a day-release course in the Basic Medical Sciences for junior hospital staff.

Further information may be obtained from the Heads of the appropriate departments of the University, Liverpool 3.

OXFORD

University of Oxford

Enquiries about research training and advanced studies may be addressed to the head of the relevant clinical or laboratory department in the teaching hospitals or to the Director of Postgraduate Medical Studies (below).

Neuroanatomy and physiology. A one week course suitable for D.P.M. and M.R.C.P. candidates, with lectures, discussions, demonstrations, and dissection, is held in the University Department of Human Anatomy annually in September. Fee: £10.

Psychiatry. Three day courses covering selected topics, suitable for D.P.M. Part II candidates are held 3 to 4 times a year.

Surgery. Subject to there being sufficient demand, a two-week course suitable for final F.R.C.S. candidates will be held twice a year in September and April. Fee: £15.

General Practice. Clinical attachments (including resident obstetric attachments) and individual programmes of attendance in the hospital departments, recognised under Section 48 N.H.S. Act. Occasional short courses at Oxford and District Medical Centres in the region.

Enquiries about any of the above, and about study days and courses in special subjects arranged for those in the Oxford region working for higher qualifications, to the Director Postgraduate, Medical Studies, Medical School, 43 Woodstock Road, Oxford.

GLASGOW

Surgery. An intensive course of instruction in the basic sciences suitable for candidates preparing for the Primary Fellowship Examination in Surgery is held from October to December. A modified form of the course is available for candidates preparing for the D.A. or F.F.A. examinations. Fee £30.

Anaesthetics. A course for specialist anaesthetists and for those preparing for the final part of the F.F.A.R.C.S. will be held in May. Fee £10 10s.

Medicine. An intensive course on Recent Advances in Clinical Medicine suitable for candidates preparing for the Membership Examination is held twice annually for a fortnight in March and September. Fee £15 15s.

Geriatrics. A course for trainee specialists in Geriatric Medicine or General Practitioners in charge of geriatric beds in hospitals is held in May. Fee £7 10s.

Child Health. A formal course held in May and November for those preparing for the D.C.H. and M.R.C.P. with Child Health as a special subject. Fee £15 15s.

Obstetrics. An intensive week's course of instruction in obstetrics for those preparing for the D.Obst.R.C.O.G. held in September. Fee £7 10s.

Mental Deficiency. An intensive course in Mental Deficiency is held for 3 weeks in October. The course includes lectures and demonstrations in mental handicap and deficiency, instruction in mental testing and visits to institutions. Fee £18.

Introduction to Psychiatry. An intensive course providing a general introduction to psychiatry is held for 3 weeks in November. The course includes theoretical and clinical instruction in child psychiatry and psychology and adult psychiatry. It is particularly suitable for medical officers concerned with public health. Fee £18.

Steroid Endocrinology. A course for clinicians and hospital laboratory workers with special interest in Endocrinology and for those in general medicine who wish to have a better understanding of treatment with steroid hormones is held in April. Fee £15.

Diagnostic Virology. A course for experienced laboratory workers who wish to develop diagnostic virology for epidemiological purposes in this country and abroad is held in April. Fee £25.

Histopathology of the Skin. A course for pathologists and those with some training in pathology is held for 1 week in March. Fee £7 10s.

Forensic Medicine. A postgraduate course in the University Department of Forensic Medicine is held for 10 weeks from April to June. Fee £15.

Clinical Attachments. A scheme for clinical attachments in general medicine, general surgery and various specialties has been arranged to assist those working for higher qualifications. An attachment may be started at any time. No formal instruction is given, but participants can gain intensive clinical experience by following the day-to-day work of a unit in a Glasgow teaching hospital. Fee £5 per month. Registration fee £1 1s.

Teaching Ward Rounds. Each academic term a course of ten teaching ward rounds in Medicine is arranged. These occupy one afternoon a week. Fee £8 8s.

Radiology. A course in radiological interpretation for clinicians. Lecture demonstrations on alternate Tuesdays in conjunction with Teaching Ward Rounds. Fee £5 5s.

Dermatology. An intensive week's course in dermatology. Suitable for M.R.C.P. candidates. March. Fee £7 10s.

A week-end course in dermatology. May. Fee £3 3s.

Research Techniques in Experimental Surgery and Anaesthesia. A 2-day course giving an introduction to research techniques in Experimental Surgery and Anaesthesia. March. Fee £3 3s.

Steroid Endocrinology. A course for clinicians and hospital laboratory workers with a special interest in Endocrinology or for those in General Medicine who wish to have a better understanding of treatment with steroid hormones. April. Fee £15.

Medical Ophthalmology. An intensive weekend course on the ophthalmological aspects of general medicine. Suitable for M.R.C.P. candidates. May and October. Fee £5 5s.

GENERAL PRACTITIONER COURSES

Two Refresher Courses for general practitioners are held annually – for a fortnight in May and September. Two-week postgraduate residencies are available continuously in maternity hospitals in the Western Region.

Clinical Attachments – continuous. Full-time or part-time attachments to hospital teaching units to enable General Practitioners to increase their experience and keep up to date with recent trends and advances. Fee £1 5s. per week for full-time attachment.

Extended Courses and 1-day course covering selected topics in general subjects or the specialties held in teaching hospitals in Glasgow and principal hospitals in other parts of the Western Region. Meetings are generally held on Sundays from October to May and are arranged by the West of Scotland Faculty of the College of General Practitioners from whom full details are available.

Full-time Course. The Board offers full-time postgraduate courses in Radiology (2 years) and Radiotherapy (2 years). The University offers full-time postgraduate courses leading to the following diplomas:

- Diploma in Public Health (1 year)
- Diploma in Clinical Psychology (2 years).

Conferences. Specialist conferences on various topics are held twice a year in the Hall of the Royal College of Physicians and Surgeons. In these, invited guests and local speakers discuss current topics and time is provided for audience participation. These conferences are designed particularly for consultants and registrars.

Further information and application forms can be obtained from the Director of Postgraduate Medical Education, The University, Glasgow, W.2.

NEWCASTLE UPON TYNE

Courses of three to four sessions in various Medical and Surgical subjects on a weekly sessional basis during term-time. Suitable for those preparing for a higher qualification.

Clinical attachments, full-time or part-time throughout the year.

Attachments of 1 or 2 weeks for general practitioners in General Medicine, Dermatology, Obstetrics, Paediatrics, Psychiatry, Geriatrics and other subjects by arrangement. Recognized under Section 48 of the N.H.S. Act.

Further details from the Postgraduate Sub-Dean, Organization for Postgraduate Medical Education, The Medical School, The University, Newcastle upon Tyne.

University courses for postgraduate diplomas. D.P.M. and D.P.H. *Further details from the Assistant Registrar, Medical School, The University, Newcastle upon Tyne.*

**THE ROYAL COLLEGE
OF PRACTICAL PRACTITIONERS****Medical Recording Service**

Kitts Croft, Writtle, Chelmsford, Essex. (Tel. Writtle 316).
Selection of titles available on tape (5 in reels running at
3½ ips). These talks may be borrowed by any doctor any-
where in the world.

New titles available on tape

68-31 Drugs in School—Dr T. Bewley. 28 min.

68-35 The Study of Medical Education—Professor George
Muller (Chicago). 38 min. 12 slides.

Preliminary announcement—Tape Course on Geriatrics in
General Practice. Six talks of 30 mins by Dr M. K.
Thompson.

Postgraduate Medical Journal: Notice to Contributors

Typescripts (two complete copies) should be sent to the Editor, Dr A. A. G. Lewis, Postgraduate Medical Journal, 9 Great James Street, London, W.C.1. Papers should be typewritten on one side of the paper only, with a $1\frac{1}{2}$ inch margin, and the lines should be double-spaced. In addition to the title of the paper there should be a 'running title' (for page headings) of not more than 45 letters (including spaces). The paper should bear the name of the author(s) with their degrees and descriptions and of the laboratory or research institute where the work has been carried out. The full postal address of the principal author should be given as a footnote. (The proofs will be sent to this author and address unless otherwise indicated).

Arrangement. Papers should normally be divided into: (a) Introduction; (b) Materials and methods; (c) Results, as concise as possible (both tables and figures illustrating the same data will rarely be permitted); (d) Discussion and conclusions; (e) Summary, brief, self-contained and embodying the main conclusions; (f) Acknowledgments; (g) References.

References. Only papers closely related to the author's work should be included, exhaustive lists should be avoided. References should be made by giving the author's surname, with the year of publication in parentheses. When reference is made to a work by three authors all names should be given when cited for the first time, and thereafter only the first name, adding *et al.*, e.g. Smith *et al.* (1958). The '*et al.*' form should always be used for works by four or more authors. If several papers by the same author and from the same year are cited, a, b, c, etc., should be put after the year of publication, e.g. Smith *et al.* (1958a). All references should be brought together at the end of the paper in alphabetical order. References to articles and papers should mention (a) name(s) of the author(s); (b) year of publication in parentheses; (c) title of paper; (d) title of journal, underlined, abbreviated according to *World Medical Periodicals* (3rd edn, World Medical Association); (e) volume number; number of first page of article. References to books and monographs should include (a) name(s) and initials of author(s) or editor(s); year of publication in parentheses; (b) title, underlined; (c) edition; (d) page referred to; (e) publisher; (f) place.

Standard usage. The *Concise Oxford English Dictionary* is used as a reference for all spelling and hyphenation. Verbs which contain the suffix *ize* (*ise*) and their derivatives should be spelt with the *z*. Statistics and measurements should always be given in figures, i.e. 10 min, 20 hr, 5 ml, except where the number begins the sentence. When the number does *not*

refer to a unit of measurement, it is spelt out except where the number is greater than one hundred.

Abbreviations. Abbreviations for some of the commoner units are given below. The abbreviation for the plural of a unit is the same as that for the singular unless confusion is likely to arise.

gram(s)	g	second(s)	sec
kilogram(s)	kg	cubic millimetre(s)	mm ³
milligram(s)		millimetre(s)	mm
(10 ⁻³ g)	mg	centimetre(s)	cm
microgram(s)		millicurie(s)	mCi
(10 ⁻⁶ g)	μg	millilitre(s)	ml
nanogram(s)		pound(s)	lb
(10 ⁻⁹ g)	ng	milliequivalent	mEq
picogram(s)			
(10 ⁻¹² g)	pg	R _F values	R _F
hour(s)	hr		
minute(s)	min	gravitational acceleration	g
micron(s)	μ	per cent	%

Example: mg/100 ml, for biochemical values; mEq/l

Figures. In the text these should be given Arabic numbers, e.g. Fig. 3. They should be marked on the backs with the name(s) of the author(s) and the title of the paper. Where there is any possible doubt as to the orientation of a figure the top should be marked with an arrow. Each figure must bear a reference corresponding to a similar number in the text. Photographs and photomicrographs should be unmounted glossy prints and should not be retouched. Line diagrams should be on separate sheets; they should be drawn with black Indian ink on white paper and should be about four times the area of the final reproduction. Lines and lettering should be of sufficient thickness and size to stand reduction to one-half or one-third. Letters and numbers must be written lightly in pencil. Whenever possible, the originals of line diagrams, prepared as described above, should be submitted and not photographs. The legends of all the figures should be typed together on a single sheet of paper headed 'Legends to Figures.'

Tables. There should be as few tables as possible and these should include only essential data; the data should not be crowded together. The main heading should be in capitals with an Arabic number, e.g. TABLE 2. Each table must have a caption in small letters. Vertical lines should not be used.

Page proofs will be submitted to the contributors for minor corrections and should be returned to the Editor within 3 days. Major alterations to the text cannot be accepted.

Offprints. These may be purchased if ordered on the form which will be sent to the senior author with the proofs.