Instructions to Authors

1. GENERAL

Proceedings: Biological Sciences is published monthly. It contains announcements of important new developments in biology. Papers crossing the boundaries of subjects are particularly welcome. The normal maximum length is 4000 words including the abstract and references (plus four figures and/or tables; equivalent to five printed pages). With the same restriction on length, reviews containing original and interesting ideas, and extensions to, or criticisms of, papers already published (subject to the criteria of interest, originality and good manners) will also be acceptable. The target publication time is three months from receipt of a paper, excluding the time that the typescript is in the hands of the author. Authors are advised that papers prepared in accordance with these instructions will be given priority. Acceptance of a paper will be determined by its quality and interest.

The format of the journal is A4 (297 mm \times 210 mm), double column, with a normal text area of 255 mm \times 167 mm.

2. SUBMISSION

Submitted papers must not have been published previously, nor be under consideration for publication elsewhere. From 1 May 1993 authors should send papers to the *Proceedings* B Editorial Office, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG, U.K. The date of the paper's receipt will be published if the paper is accepted. Authors are asked to include their telephone numbers, fax numbers and/or electronic mail addresses in correspondence about the paper.

Four copies of the typescript and any figures (together with one set of original drawings and prints) are required. A word count should be included. The extra copies of any photographs should be prints rather than photocopies.

Submission on computer disk is welcomed, but only the *final* version should be on disk (hard copy will be required for refereeing and a definitive copy should also accompany the disk). Use of the disk cannot be guaranteed, but will depend on the format, the program used and the nature of the material. MS-DOS and Macintosh disk formats are acceptable; the preferred word-processor format is Word-Perfect but documents prepared in Microsoft Word and Wordstar can be used.

3. COPY

Papers should be clearly typewritten, with double spacing throughout, on one side of the paper only, with a margin of at least 3 cm all round; all sheets should be numbered serially and securely clipped together. Typescripts must be carefully corrected by authors before being sent in. Spelling should conform

to the preferred spelling of the Shorter Oxford English Dictionary. Footnotes should be avoided.

4. TITLE AND SUMMARY

It is **very important** that both the title and the summary should be comprehensible, and interesting, to the non-specialist. Authors are asked to make their titles as short and general as possible. The title should be typed on a separate covering sheet which should also bear the names of the authors and that of the laboratory or other place where the work has been done. Addresses for correspondence, where these differ from the place of work, should also be given, indicating which author correspondence should be addressed to, and giving telephone and fax numbers. A very short title (maximum of 50 letters and spaces) suitable for page headings should also be given. The summary should not exceed 200 words, and should be precise and informative.

5. SECTIONS

Papers may be divided into sections, described by short headings. Subsections should not be used. Materials and methods sections should be marked in the margin for small type.

6. UNITS, SYMBOLS AND ABBREVIATIONS

As far as possible the recommendations contained in *Quantities*, *units*, *and symbols* (1975, The Royal Society, $\pounds 2.50$) should be followed; in particular the International System of Units (SI) should be used whenever it is practicable to do so.

Wherever possible, only internationally agreed abbreviations should be used; see, for example, the list of accepted abbreviations for use in the *Biochemical Journal*.

7. STATISTICS

As far as possible, the presentation of statistics should follow the guidelines published each year in the July issue of the *Proceedings*, starting from July 1992.

When referring to computer programs, authors should specify clearly the procedures used, and should quote publications that will allow the reader to ascertain how they are carried out.

8. ILLUSTRATIONS

Duplicate figures (e.g. Xerox or photographic copies, as appropriate) should be supplied with each copy. The author's name and the number of the figure should be written on the back of all illustrations. Figures should be numbered in one sequence throughout the paper.

Colour illustrations will be included only if scientifically necessary and if the cost is met by the author (unless an acceptable case is made by the author why funds are not obtainable).

The position of each illustration should be clearly marked in the typescript thus:

Figure 2 near here

Line drawings

Any labelling necessary for the understanding of a figure should be applied directly on the original drawings before duplicate copies are taken. All lettering should be in lower case except for the initial capital letters of proper names or where capitals are essential, e.g. for chemical abbreviations. Times or a close equivalent should be used. The height of capital letters *after reduction* should be as close to 2 mm as possible. When in doubt use smaller rather than larger lettering.

Consultation between authors or their draughtsmen and the Editorial Office (telephone 071-839 5561, extension 229) will help ensure satisfactory results.

Legends

These should be typed with double spacing on a separate sheet at the end of the paper. Figure legends should follow the style given below:

Figure 7. Time-course of changes in fibre type composition during post-stimulation recovery. (a) Type 1 fibres. (b) Type 2A fibres, including the transitional fibres (asterisks) referred to in the text. (c) Type 2B fibres. Bands indicate the range (mean \pm s.d.) for the corresponding fibre type in control muscles.

Photographs

When it is essential to include photographs they should make the most efficient use of the space required. The area covered by the photographs should be restricted to the subject in question, or to a minimum representative area in photomicrographs, etc. This enables the photograph to be reproduced at the largest possible scale. The text area available in Proceedings B is $255 \text{ mm} \times 167 \text{ mm}$. Photographs will be printed with the text, not on plates.

Authors should supply unlettered, unmounted glossy prints marked on the back with the authors' names, the number of the figure and with the top and bottom indicated. A rough set should be provided with any required lettering clearly marked. Each micrograph must include a scale bar, either applied directly to the original or marked on the rough set, with an indication of the exact length.

9. TABLES

Tables, however small, should be numbered in arabic numerals and referred to in the text by their numbers. The position of each table should be shown as follows:

Table 3 near here

Table headings should be a brief title only; descriptions of experimental detail should follow, starting on a new line, in parentheses. Column headings should be in lower-case lettering except for the capital initial letters of proper names. The units of measurement and any numerical factors should be placed unambiguously at the head of the column, e.g. F/MHz , $10^{28}\sigma/\mathrm{m}^3$ or $q/(\mathrm{kJ}\;\mathrm{mol}^{-1})$.

10. REFERENCES

References to the literature cited must be given in double-spaced typing, in alphabetical order at the end of the paper. They should be prepared following the style of recent issues of *Proceedings* B.

Reference citations in the text are made by the name and year method; references by number are not permitted.

11. PROOFS

On acceptance of a paper, the Society's Editorial Office will inform authors when they may expect to receive proofs for checking. Because of the need for fast publication, only a few days may be available for checking proofs, so authors who may be absent from their normal address should either inform the Society of their intended whereabouts or make other arrangements for the proofs to be checked quickly. Fax numbers are welcomed; the Society's is 071-976-1837 for publication matters.

Authors are liable for the cost of excessive alterations to their proofs.

12. OFFPRINTS

Fifty offprints of each paper will be supplied free of charge; further copies may be ordered at extra cost at proof stage.

13. COPYRIGHT

In order to give the Royal Society authority to deal with matters of copyright, authors will be asked to assign to the Society the copyright in any article published in the journal. In assigning copyright, authors will not be forfeiting the right to use their original material elsewhere subsequently. This may be done without seeking permission and subject only to normal acknowledgement to the journal. However, it would be appreciated if authors would inform the Society in this event.

CORRESPONDING EDITORS

Australia

Professor W. J. Ewens, 1 January-20 August: Department of Mathematics, Monash University, Clayton, Victoria 3168 (Fax. 613 565 4403)

Professor P. W. Gage, Department of Physiology, The John Curtin School of Medical Research, The Australian National University, P.O. Box 334, Canberra, ACT 2601 (Tel. 062 49 2893; Fax. 062 47 4823)

Dr M. D. Hatch, Division of Plant Industry, CSIRO, G.P.O. Box 1600, Canberra, ACT 2601 (Tel. 062 465 264; Fax. 062 473785)

Sir Gustav Nossal, The Walter and Eliza Hall Institute of Medical Research, Post Office, Royal Melbourne Hospital, Victoria 3050 (Tel. 613 345 2550; Fax. 613 347 0852)

Dr W. J. Peacock, Division of Plant Industry, CSIRO, G.P.O. Box 1600 Canberra, ACT 2601 (Tel. 61 62 465250; Fax. 61 62 576844)

Professor J. D. Pettigrew, Vision, Touch and Hearing Research Centre, Department of Physiology and Pharmacology, University of Queensland, St Lucia, Queensland (Tel. 07 377 2396; Fax. 07 371 7433)

Canada

Dr L. Siminovitch, Mount Sinai Hospital Research Institute, 600 University Avenue, Toronto, Ontario M5G 1X5 (Tel. 416 586 8224; Fax. 416 586 8588)

Professor M. Smith, Room 237, Westbrook Building, University of British Columbia, 6174 University Boulevard, Vancouver, British Columbia V6T 1W5 (Tel. 604 228 4838; Fax. 604 228 2114)

Germany

Professor B. Sakmann, Max-Planck-Institut für Medizinische Forschung, Abteilung Zellphysiologie, Jahnstrasse 29, Postfach 10 38 20, D-6900 Heidelberg 1 (Tel. 6221 486 460/461; Fax. 6221 486 351)

France

Professor P. Chambon, Unité de Biologie Moléculaire et de Génie Génétique, CNRS-LGME, Institut de Chimie Biologique, 11 rue Humann, 67085 Strasbourg Cedex (Tel.

33 8837 1255; Fax. 33 8837 0148)

Professor J.-P. Changeux, Section de Neurobiologie Moléculaire, Institut Pasteur, 28 rue du Dr Roux, 75724 Paris Cedex 15 (Tel. 1 4568 8000; Fax. 1 4306 9835)

Professor F. Jacob, Département de Biologie Moléculaire, Institut Pasteur, 25 rue du Dr Roux, 75724 Paris Cedex 15 (Tel. 1 4568 8593; Fax. 1 4568 8639)

Professor F. Jacob, Département de Biologie Moléculaire, Institut Pasteur, 25 rue du Dr Roux, 75724 Paris Cedex 15 (Tel. 4783 8312; Fax. 1 4568 8521)

Hungary

Professor J. Szentágothai, Semmelweis University Medical School, Tüzoltó utca 58, 1450 Budanest (Tel. 00 36 11 138 806; Fax. 00 36 11 135 405)

India

Professor P. Narain, Principle Scientist (Statistics), Directors Office, Indian Agricultural Research Institute, Pusa, New Delhi 110 012 (Tel. 582817)
Professor O. Siddiqi, Molecular Biology Unit, Tata Institute of Fundamental Research, Homi Bhabha Road, Colaba, Bombay 400 005 (Tel. 495 2971)
Professor M. S. Swaminathan, 11 Rathna Nagar, Teynampet, Madras 600 018 (Tel. 044 45 5339)
Professor G. P. Talwar, National Institute of Immunology, Shahid Jeet Singh Marg, New Delhi 110 067 (Tel. 662608; Fax. 9111 686 2316)

Professor S. Ebashi, National Institute for Physiological Sciences, Myodaiji, Okazaki 444 (Tel. 0564 54 1111; Fax. 0564 52 7913)
Professor M. Kimura, National Institute of Genetics, Yata 1, 111, Mishima 411 (Tel. 0559 75 0771; Fax. 0559 71 3651)
Professor Y. Nishizuka, Department of Biochemistry, Kobe University School of Medicine, Kobe 650 (Tel. 81 78 341 7451; Fax. 81 78 351 0082)

New Zealand

Professor G. B. Petersen, Department of Biochemistry, University of Otago, P.O. Box 56, Dunedin (Tel. 03 479 1100; Fax. 03 474 1607) Dr J. R. Slack, Department of Physiology, University of Auckland, Private Bag, Auckland (Tel. 0649 795 780; Fax. 0649 770 956)

Professor A. García-Bellido, Centro de Biología Molecular, Facultad de Ciencias, Universidad Autónoma de Madrid, 28049 Madrid (Tel. 91 397 5070; Fax. 91 397 4799)

Switzerland

Professor J.-C. Cerottini, Ludwig Institute for Cancer Research, Ch. Boveresses 155, CH-1066 Epalinges (Tel. 021 336 275; Fax. 021 334 474)
Professor J. G. Nicholls, Biocenter, Universität Basel, Klingelbergstrasse 70, CH-4056 Basel (Tel. 41 61 267 2230; Fax. 4161261 6760)
Professor H. Reuter, Pharmakologisches Institut, Univerität Bern, Friedbuhlstrasse 49, CH-3010 Bern (Tel. 31 643 281; Fax. 31 262 419)
Professor W. Wahli, Institut de Biologie Animale, Université de Lausanne, Bâtiment de Biologie, CH-1015 Lausanne-Dorigny (Tel. 41 21692 2492; Fax. 41 21692 2540)

U.S.A.

Dr A. Celada, Cancer Research Center, La Jolla Cancer Research Foundation, 10901 North Torrey Pines Road, La Jolla, California 92037 (Tel. 619 455 6480; Fax. 619 453 6217)

Professor B. Chance, Department of Biochemistry and Biophysics, School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania 19014-6089 (Tel. 215 898 4342; Fax. 215 898 1806)

Professor Nam-Hai Chua, Laboratory of Plant Molecular Biology, The Rockefeller University, 1230 York Avenue, New York, New York 10021-6399 (Tel. 212 570 8126; Fax. 212 570 8327)

Prof. F. Doolittle, Center for Molecular Genetics M-034, University of California, La Jolla, California 92093-0634 (Tel. 619 534 4417; Fax. 619 534 4985)

Professor P. R. Ehrlich, Department of Biological Sciences, Stanford University, Stanford, California 94305

Professor W. J. Ewens, 21 August-31 December: Department of Biology, University of Pennsylvania, Philadelphia, Pennsylvania 19104 (Tel. 215 898 7109; Fax. 215 898 8780)

Professor G. D. Fischbach, Department of Neurobiology, Washington University School of Medicine, Box 8108, 660 South Euclid Avenue, St Louis, Missouri 63110 (Tel. 314 362 7043; Fax. 314 362 9862)

Dr N. B. Gilula, Department of Molecular Biology, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, California 92037 (Tel. 619 554 9770; Fax. 619 554 9960)

Professor S. F. Heinemann, Molecular Neurobiology Laboratory, The Salk Institute, P.O. Box 85800, San Diego, California 92138-9216 (Tel. 619 453 9313; Fax. 619 450 0509)

Professor G. Hess, Section of Biochemistry, Molecular and Cell Biology, 216 Biotechnology Building, Cornell University, Ithaca, New York 14853-2703 (Tel. 607 255 4809; Fax. 604 255 2428)

Professor R. O. Hynes, Center for Cancer Research, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 (Tel. 617 253 6422;

Professor K. O. Hynes, Center for Cancer Research, Massachusetts Institute of Technology, // Massachusetts Avenue, Cambridge, Massachusetts 02139 (1el. 617 253 6422; Fax. 617 253 6357)

Professor Y. W. Kan, Howard Hughes Medical Institute, University of California, San Francisco, California 94143-0724 (Tel. 415 476 5841; Fax. 415 566 4969)

Professor J. R. Knowles, Department of Chemistry, Harvard University, 12 Oxford Street, Cambridge, Massachusetts 02138 (Tel. 617 495 5219; Fax. 617 495 1333)

Dr E. G. Krebs, Howard Hughes Medical Institute, Research Laboratories, University of Washington School of Medicine, Mail Stop SL-15, Seattle, Washington 98195 (Tel. 206 543 8500; Fax. 206 543 0858)

206 543 8500; Fax. 206 543 0858)

Professor K. L. Magleby, Department of Physiology and Biophysics, University of Miami School of Medicine, P.O. Box 016430 (R-430), Miami, Florida 33101 (Tel. 305 547 6236; Fax. 305 547 5931)

Professor P. Marler, Department of Zoology, University of California, Storer Hall, Davis, California 95616; Fax. 916 752 1449

Professor V. A. McKusick, Department of Medicine, Johns Hopkins University Hospital, Baltimore, Maryland 21205 (Tel. 301 955 6641; Fax. 301 955 4999)

Professor A. G. Motulsky, Center for Inherited Diseases, RG-25, School of Medicine, Department of Medicine, University of Washington, Seattle, Washington 98195 (Tel. 206 543 3593; Fax. 206 545 8675)

Dr R. A. Nicoll, Department of Pharmacology, School of Medicine, University of California, San Francisco, California 94143-0450
Dr W. E. Paul, Laboratory of Immunology, Building 10, Room 11N311, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland 20892 (Tel. 301 496 5046; Fax. 301 496 0222)
Professor J. M. Ritchie, Department of Pharmacology, Yale University School of Medicine, Sterling Hall of Medicine, 333 Cedar Street, New Haven, Connecticut 06510-8066 (Tel. 203 785 7670; Fax. 203 785 6537)

(1et. 203 /85 /07); Fax. 203 /85 953/)
Professor G. Westheimer, Department of Molecular and Cell Biology, Division of Neurobiology, Life Sciences Addition, Box 211, University of California, Berkeley, California 94720 (Tel. 510 642 4828; Fax. 510 643 6791)
Professor E. O. Wilson, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138 (Tel. 617 495 2466)

THE ROYAL SOCIETY

Proceedings: Biological Sciences

Series B Volume 252 Number 1333 22 April 1993

CONTENTS

| V W G A D T G | 1 6 |
|---|-----------|
| L. W. SIMMONS & D. T. GWYNNE Reproductive investment in bushcrickets: the allocation of male and female nutrients to offspring | pages 1–5 |
| M. Gomendio & E. R. S. Roldan Coevolution between male ejaculates and female reproductive biology in eutherian mammals | 7–12 |
| M. P. Young The organization of neural systems in the primate cerebral cortex [Plates 1 and 2] | 13–18 |
| N. P. Rowe, T. Speck & J. Galtier Biomechanical analysis of a Palaeozoic gymnosperm stem | 19–28 |
| E. J. MILNER-GULLAND & J. R. BEDDINGTON The exploitation of elephants for the ivory trade: an historical perspective | 29–37 |
| L. W. Buss & J. Rimas Vaišnys Temperature stress induces dynamical chaos in a cnidarian gastrovascular system | 39–41 |
| P. Roessingh, S. J. Simpson & S. James Analysis of phase-related changes in behaviour of desert locust nymphs | 43–49 |
| A. P. Møller Morphology and sexual selection in the barn swallow <i>Hirundo rustica</i> in Chernobyl, Ukraine | 51–57 |
| K. McComb, A. Pusey, C. Packer & J. Grinnell Female lions can identify potentially infanticidal males from their roars | 59–64 |
| T. KIYOSUE, A. J. SPINDLER, S. J. NOBLE & D. NOBLE Background inward current in ventricular and atrial cells of the guinea-pig | 65–74 |
| M. G. TAYLOR, K. SIMKISS, G. N. GREAVES, M. OKAZAKI & S. MANN An X-ray absorption spectroscopy study of the structure and transformation of amorphous calcium carbonate from plant cystoliths | 75–80 |

Instructions to Authors