

*The*  

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*Physiological*  

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*Society*  

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*Special  
Issue  
for  
Glasgow  
Congress  
1993*

*Magazine*  

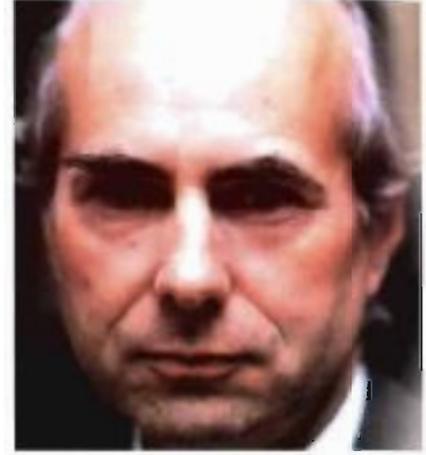
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Sir James Black, Nobel prize winner 1988 (shared with Elion and Hitchings) for his "discoveries of important principles for drug treatment [creating a] rational method for designing new compounds." Sir James became a Member of the Society in 1962 and was elected an Honorary Member in 1989.



Sir Alan Hodgkin, Nobel Prize winner in 1963 (jointly with Eccles and Huxley) given for "their discoveries concerning the ionic mechanisms involved in excitation and inhibition in the peripheral and central portions of the nerve cell membrane." Sir Alan became a Member of the Society in 1938, and was elected an Honorary Member in 1979. He has served on the Committee twice: as a Committee member from 1949 to 1953 and as Foreign Secretary from 1961 to 1967.



Sir Andrew Huxley, Nobel Prize winner in 1962 (shared with Hodgkin and Eccles). Sir Andrew became a Member of the Society in 1942 and was elected an Honorary Member in 1979. He has served as a Committee member twice: from 1957 to 1961 and from 1970 to 1974.

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*With this Special Issue of its Magazine, The Physiological Society extends a warm welcome to all participants in the XXXIInd International Congress of Physiological Sciences and in particular to the many visitors from outside the UK.*

*The purpose of this Special Issue is simply to provide information about The Physiological Society and all its activities.*

*We are a national Society, but have always had strong international interests. Although the anti-vivisectionist agitation in the UK was the main cause of the foundation of The Physiological Society in 1876, international collaboration was prominent from the very beginning and our first Honorary Secretary, G F Yeo, was, according to Sherrington, a mainspring in the movement starting the international congresses. The Society is therefore delighted to have been involved in the organisation of this fourth International Congress to be held in the UK.*

*The Society's most well known activity is probably the publication of The Journal of Physiology and this issue gives information about some exciting developments now taking place, but the Society also publishes Experimental Physiology and this journal has gained strength in recent years.*

*This issue describes the regular programme of scientific meetings run by the Society including those held jointly with other physiological societies both in the UK and abroad. We like to welcome visitors to our meetings and have a special programme enabling guests from third world countries, Eastern Europe and the former Soviet Union to participate.*

*Meetings and publications are inevitably our most visible products but, as shown in this issue, the Society is involved in many other important activities including school education, support to physiology departments in universities and attempts to influence the legal and financial framework within which physiologists have to operate.*

*We hope you will find time during the Congress to visit The Physiological Society's exhibition stands where information about our activities is displayed.*

*Our exhibition area can be used as a focus for discussion of general issues of concern to all physiologists and our staff are very willing to give information about the functions of the Society. Completed Membership and Affiliation forms (included at the back of this issue) can be handed in at the stands.*

*We hope you will enjoy the Congress and that this Special Issue may be useful in describing how The Physiological Society operates.*

## WHO ARE WE?

The Physiological Society welcomes to its membership any individual, in any country, active in the field of physiology or any of its allied disciplines. We are a highly organised registered charity (under UK law), active on many fronts. Our objectives are as follows:

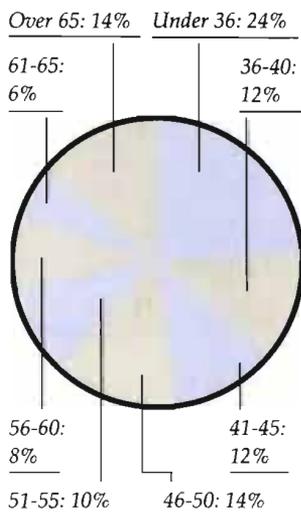
- to encourage advances in physiology on a worldwide basis, for the benefit of the general public
- to enable professional physiologists from all over the world to meet and discuss progress in many different fields within physiology

The foundation of these aims and therefore the ultimate purpose of the Society and its members is:

"..... to contribute to the progress and understanding of bio-medical and related sciences and to the detection, prevention and treatment of disease, disability and malfunction of physical processes, in all forms of life".

*Taken from the Memorandum of Association of The Physiological Society*

## WHO JOINS?



*Ages of Members and Affiliates of the Society as at June 1993*

New members, primarily professional physiologists, are elected by ballot of the existing membership. There are currently just over two thousand individuals who are members or affiliates of the Society and this figure is set to increase following recent streamlining of the procedures for membership. One effect which we have already noticed is the dramatic increase in the number of young scientists (under 35) who have joined the Society during the last three years.

Membership on a collective or corporate basis is also open to organisations whose aims are in sympathy with those of the Society.

## WHAT DO WE DO?

In working towards the aims of the Society we communicate with three rather different groups.

### 1 Professional and academic physiologists

For professional physiologists and others engaged in medical research, the Society organises a series of regular meetings which provide both a national and international forum for the discussion of the latest research results in physiology. Up to nine meetings a year have been held in recent years, with anything from 300 to over 900 participants at each meeting. The meetings attract physiologists from the UK and many countries of the world and we continue to follow our policy of free attendance to encourage as many scientists as possible to participate.

The Society encourages and rewards excellence in individual physiologists, by awarding a number of prestigious prizes to those engaged in physiological research, and to outstanding undergraduate students of physiology.



*▲ Kirsty McCulloch, 1992 winner of The Physiological Society Prize for Undergraduates, at Glasgow University*

We actively encourage younger physiologists to attend the Society's meetings by paying their accommodation costs; we also encourage overseas-based physiologists to attend by regularly sponsoring a number of Foreign Guests to come to Society meetings.

The Society owns and publishes two international journals, *The Journal of Physiology* and *Experimental Physiology*. Both publish results of original work in the physiological sciences and are highly regarded by the international scientific community. *The Journal of Physiology* is the leading international journal in the physiological sciences and a leading journal in the neurosciences. The Society is currently in the process of improving the presentation and management of the *Journal*, seeking to respond effectively to its readership and to maintain its excellent reputation.

### 2 The general public, particularly school children and students

The Society places just as much emphasis on informing the wider public of the attractions and importance of physiological research, and its relevance to everyday life. To this end it organises regular workshops for school science teachers, arranges for its members to go into schools to talk about their research and arranges conferences for undergraduate and school students.

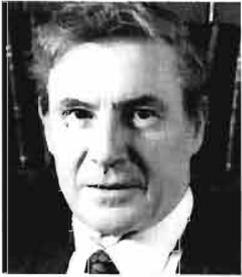
The coming years will see the Society more active in these areas with plans afoot to prepare study guides on specific topics for school teachers and to seek greater media coverage for physiology as a subject.



*Two young enthusiasts - future biomedical scientists?*

### 3 Opinion formers and policy makers in public life and the government

Nationally, the Society acts as the voice of physiologists and supports organisations, such as the Research Defence Society, whose aims are compatible with our own. The Society also seeks to influence Government policy towards science by a combination of discreet representations and presentation of evidence to appropriate Committees of the Houses of Parliament as necessary.



△ John Widdicombe, Honorary Treasurer. Photograph by courtesy of Andrew Rollands



△ Richard Boyd, Honorary Secretary and supervisor of the Administration Office. Photograph by Ander McIntyre



△ Jim Gillespie, Meetings Secretary. Photograph by Wilfred Francis



Ole Petersen, Foreign Secretary



Graham Dockray, Chairman

### HOW ARE WE ORGANISED?

The Society is a highly democratic organisation. The membership of the Society elects individual members to the Committee of the Society and also to posts on the editorial boards of the Society's two journals. Committee members have the status of directors of the Society and are responsible for managing the finances and affairs of the Society.

The full Committee meets regularly throughout the year but much of its detailed work is delegated to specialised sub-committees formed to concentrate on particular areas of activity. In addition, individual Officers deal with specific aspects of the Society's business, and individual members are appointed as representatives of the Society to other organisations, national and international.

The task of managing the Society's considerable investments and budget is delegated to the Treasurer, currently John Widdicombe. Organisation of the Scientific meetings is the responsibility of the Meetings Secretary, Jim Gillespie. Interactions with overseas societies are co-ordinated by the Foreign Secretary, Ole Petersen. The overall business of the Society is overseen by the Committee Secretary, Richard Boyd. The Committee elects one of its members to chair its proceedings. The current Chairman is Graham Dockray.

In order to maintain a healthy turnover of Committee members, essential for ensuring the continued vitality of the Society's executive, all Committee members, Officers of the Society and editors of the Society's Journals have to submit themselves to re-election by ballot of the entire membership, at each Annual General Meeting of the Society. There are also strict curbs on the length of tenure of all positions in the Society. No Officer can serve for more than six years and ordinary Committee members cannot serve for more than four years at a time.

To ensure the smooth running of the Society, on a long term basis, continuity in the administration of the Society is provided by the Administration and Publications Office based in Oxford. This Office has the following five main functions

- it provides general administrative support
- it processes membership and affiliation application forms, administers the collection of subscriptions, organises the distribution of journals and meetings papers to members and affiliates and deals with their problems and enquiries.

- it undertakes research and provides information to the Committee
- it compiles and performs the desk-top publishing for the Society's magazine, annual report and directory of members' addresses and interests (the *Grey Book*)
- it responds to requests from the public for information, in particular enquiries from school children, students and teachers concerning physiology and the supply of careers information.

The Office is under the overall control of the Society's Committee Secretary (Richard Boyd) and the full-time staff of the Office comprises Heather Dalitz (the Society's Administrator), Jane Ault (Administration and Publications Assistant), and Kimberly Kustra (DTP operator and secretary).



From left to right: Kimberly Kustra, DTP operator and secretary, Heather Dalitz, Administrator, Jane Ault, Administration & Publications Assistant. Photograph by Ander McIntyre

### FINDING OUT MORE ABOUT THE SOCIETY

All general enquiries about the Society, including membership and all publications, should be addressed to:

The Physiological Society  
Administration and Publications Office  
PO Box 506  
Oxford  
OX1 3XE

Phone: 0865 798498  
Fax: 0865 798092  
International Fax: (+44) 865 798092

Enquiries about the Society's policies and views should be directed to Richard Boyd (the Committee Secretary) at the above address and for enquiries about the meetings contact Jim Gillespie, phone and fax: 091 222 6988.

Letter from John Burdon Sanderson inviting Edward Schäfer to the original meeting that discussed forming "an association of Physiologists". Taken from E A Sharpey-Schafer (1927) *History of the Physiological Society during its first fifty years*. Cambridge University Press, pp 6-7, reproduced courtesy of the Wellcome Centre Medical Photographic Library

The Physiological Society was originally formed in the late spring of 1876. In the early days, regular meetings which provided the opportunity for a frank and open exchange of ideas between physiologists, at home and abroad, were an essential function of the Society. This continues to be the case today but during the last 117 years the Society has developed its activities, refining its meetings format, building links with the international scientific community, gaining a reputation for high quality academic publishing and making a significant impact in the field of medical education and also in science education at both undergraduate and secondary levels.

## THE BIRTH OF THE SOCIETY

### The origins of physiology

Physiology began to emerge as an independent scientific discipline, clearly distinct from anatomy, in the mid nineteenth century. William Sharpey, Professor of General Anatomy and Physiology at University College London from 1836 to 1874, is recognised as the Founding Father of Physiology in Britain. Three of his former pupils and colleagues from University College were particularly influential in establishing physiology as an experimentally based academic field of study: Michael Foster (later Professor of Physiology at Cambridge), Edward Schäfer (who became Professor of Practical Physiology at University College London and later Sharpey-Schafer, Professor of Physiology at Edinburgh [he changed his name as a mark of respect to his mentor during his time in Edinburgh]) and John Burdon Sanderson (who succeeded William Sharpey at UCL and who later became Professor of Physiology at Oxford).

The need for a learned society for physiologists had become apparent by the late 1860s. Around that time some of the experimental methods used by physiologists, notably those involving living animals, began to attract a great deal of public concern. In 1875 a Royal Commission was appointed to look into the matter and report to the Government. In the light of the Commission's recommendations for legislation, Burdon Sanderson convened a discussion meeting at his house in March 1876, at which it was agreed to form an association of physiologists for mutual benefit and protection. That association was The Physiological Society and, after further meetings to agree a constitution, the formal inaugural meeting of the Society was held at the Criterion Restaurant in London on 26 May 1876.

## THE DEVELOPMENT OF THE SOCIETY

### Early meetings of the Society

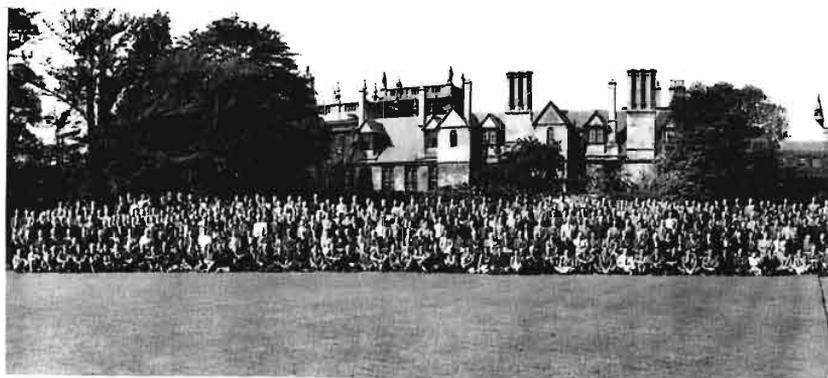
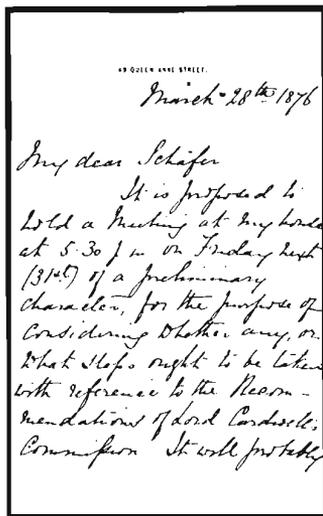
The early meetings of the Society all took place over dinner in various London restaurants. The innovation of having scientific discussions or demonstrations before dinner was first introduced in January 1879 and became a regular part of the Society's activities during the 1880s. As a consequence the Society began to hold meetings in laboratories. In the early years King's College and University College in London most often played host but Cambridge held its first Society meeting in 1881 with Oxford joining in three years later. From 1889 other London medical schools and laboratories became part of the enlarged circuit: in 1901 the first meeting in Scotland was held in Edinburgh, and in 1908 Charles Sherrington invited the Society to hold a meeting in Liverpool, its first in the north of England. Seven meetings were held in the Society's 50th year and, apart from a break during the Second World War (1939-1945), eight or nine meetings have been held every year since then.

### International collaborations

The Society has always recognised the international nature of physiology. At the inaugural meeting in 1876 a toast to 'Foreign Physiologists' was proposed to the guests present - Donders of Utrecht, Marey and François-Franck of Paris and Lovén of Stockholm. In 1881, when the International Medical Congress met in London, the Society organised a special dinner to welcome all the physiologists from abroad. Foreign guests have been invited frequently to the Society's meetings and in recent years meetings have been held regularly outside Britain, often in conjunction with a sister society. The first such venture was in 1930 in Louvain, when members were given a reception by the King and Queen of Belgium, and Belgium also acted as host for the Society's first post war meeting to be held outside Britain, organised by ZM Bacq in 1951.

The initiative leading to the first International Congress of Physiology in Basel in 1889 was taken by the Society in 1887 when Yeo, the Society's first Honorary Secretary, communicated with H Kronecker in Bern, Switzerland, with a view to organising an international meeting of physiologists. In 1888 Yeo,

XVII International Physiological Congress, Oxford, July 1947. From The Physiological Society's Photographic Archives



as the Society's Secretary, and Gaskell as Treasurer, together with other Committee members, signed a letter which was then sent to over 100 physiologists in different countries suggesting that a first International Congress of Physiological Sciences should be held in Switzerland the following year. The replies received were overwhelmingly positive and the Congress took place in 1889, with the Society playing an important role in its organisation.

#### The Society and academic publishing

In the mid 1870s Michael Foster, then Praelector in Physiology at Trinity College, Cambridge, collected together the papers published by workers in his laboratory. The success of the bound copies of *Publications from the Cambridge Physiological Laboratory* inspired him to establish *The Journal of Physiology*, the first volume of which appeared in 1878. The early issues of the *Journal* contained original research papers and a bibliographic section summarising the world physiological literature of the period. As the Society's meetings began to include more scientific demonstrations and communications, details of these were included in the *Journal* from 1886 onwards. Publication of these as part of the Society's *Proceedings*, produced as a separate volume of the *Journal* since 1991, is decided by a vote of the membership after each presentation at a scientific meeting.

From its inception the *Journal* had an American editor and received regular contributions from American laboratories, until the appearance of the *American Journal of Physiology* in 1898. In Britain, *The Journal of Physiology* was still privately owned by its then proprietor, JN Langley, and contributors became increasingly discontented with its authoritarian editorial attitude. Such disquiet grew and resulted in the establishment, in 1909, of the *Quarterly Journal of Experimental Physiology*. This later became *Experimental Physiology* and today both journals are owned by The Physiological Society.

#### The Society's role in Education

The Society's early involvement with education concentrated on that of medical students. This was established through contact with the General Medical Council (GMC) and by representation on examination committees of the Royal College of Physicians and of

the Royal College of Surgeons. The Society has continued to act in an advisory capacity on the teaching of physiology since then.

In 1904 Charles Sherrington and Victor Horsley proposed a standing educational committee to work with the Board of Education to discuss the teaching of physiology and hygiene in schools. In 1943 the Society, stimulated by preparing evidence for a Government enquiry on medical education (through the 'Goodenough' committee), and encouraged by Samson Wright, expanded this initiative by establishing a sub-committee to survey University teaching departments, to debate the introduction of physiology into the secondary school curriculum, and to plan specialised training for technicians.

In the mid 1960s a Royal Commission on medical education, coupled with a request from the GMC for consultation on physiology in medical education, led the Society to form a new education sub-committee. This continues to play an active role in education today, and produces study guides, career booklets and video material about physiology. It also organises regular symposia on aspects of teaching physiology, refresher courses for school teachers and introductory lectures for school pupils.

#### The Society and the future

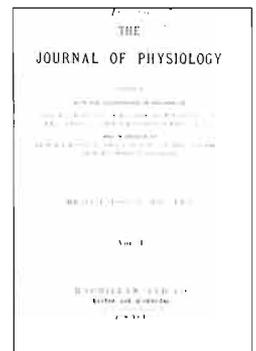
The Physiological Society continues to undertake new initiatives in all areas of its activities. The Society's meeting agenda and formats are under regular review and its publishing methods are currently being updated to take advantage of new technology and respond to a more demanding scientific readership. Refusing to shy away from its responsibilities to its members, the Society is also becoming more active in its support of medical research using animal experimentation. It continues to press for better funding for research scientists and students and sees one of its major goals for the 1990s as the achievement of an increased awareness, amongst Government policy makers and the public in general, of the role which physiology has to play in today's world.

#### Further reading

Bynum, WF (1976) A short history of the Physiological Society. *J Physiol* 263: 23-72

Sharpey-Schafer E (1927) History of the Physiological Society during its first fifty years 1876-1926. First published by Cambridge University Press, a new facsimile edition is now available from the Society's Administration Office.

Title page of the first volume of *The Journal of Physiology*. This was owned by Mr W Horscraft Waters, Demonstrator in Physiology at Owens College, Manchester. Reproduced courtesy of the Wellcome Centre Medical Photographic Library



Title page of the first volume of the *Quarterly Journal of Experimental Physiology*. Reproduced by courtesy of the Radcliffe Science Library, Oxford





experimentation continues to be a subject of much public misunderstanding and the Society has an obligation both to its members and to the wider community to maintain a balanced and well informed view of necessary animal experimentation.

### IN DEFENCE OF THE SCIENCE BASE

The Society also has an important role to play in defending the future of scientific excellence in Britain. On behalf of the Committee, the Committee Secretary's Science Policy Advisory Group has responded enthusiastically to requests for advice from Government agencies on several key issues including:

- the University Funding Council's Research Selectivity Exercise
- the transfer of dual support from Universities to Research Councils
- the Government White paper on The Future of Science and Technology
- the future training of PhD students

*A physiology PhD student at work in the lab*



In formulating these responses we have taken account of the views of a number of our sister scientific societies as well as those of the Committee, to help project a more coherent approach to the Government.

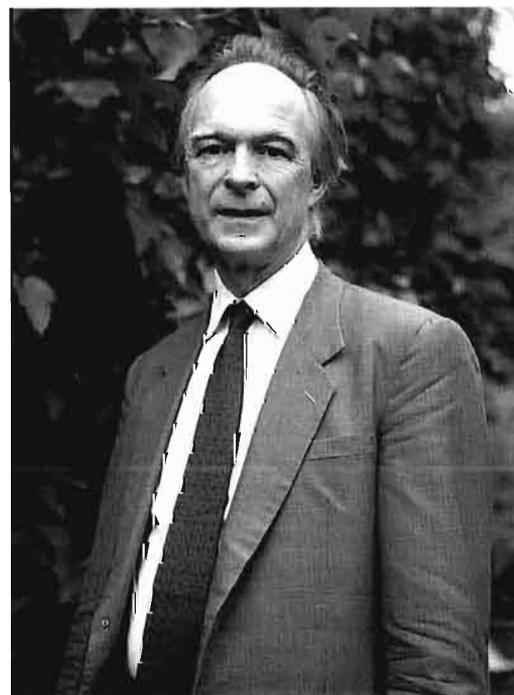
The Society has been vocal in arguing for continued financial support from the Government for tertiary education as well as for research. This has been done both through the work of its Officers in meeting Ministers, civil servants and representatives of the Research Councils and the Advisory Board to the Research Councils (ABRC), and by its support for Save British Science (SBS). A large number of physiologists are amongst the founders of this scientific pressure group which can be more political in its actions than the Society, the scope of which is limited by its



*Prof J F Lamb, Chairman of SBS*

charitable status. Numerous members of the Committee, including its Officers, have had detailed and lengthy discussions with policy-formulators in trying to modify Government policies and attitudes.

In our dealings with government policy and decision makers, we have often found that informal discussion in a relaxed setting achieves progress where formal confrontation fails. Committee Dinners, well known among attendees for their friendly and convivial atmosphere, are an integral part of the business of the Committee and continue to be essential to our aim to cultivate a wide range of contacts in science, industry, politics and the media in order to promote physiology and to support the people who work so hard to maintain its excellent standards.



*Prof D Noble, a founder of SBS and current member of SBS Executive Committee*



Participants at the joint meeting with the Japanese and Korean societies held in Cambridge in 1991, enjoying sherry in the college gardens. Photograph provided by Yung Earm

Banner of welcome for the Cambridge Joint Meeting in 1991. The large characters translate roughly as "a warm welcome to Japanese and Korean physiologists" (literally, reading downwards: Warm Welcome Japanese Korean Life-Logic-Study Members")

### THE IUPS CONGRESS

Collaboration with the international scientific community has always formed a prominent part of the Society's activities. The IUPS Congress in Glasgow this year is the fourth to be held in the United Kingdom, the previous three having been held in Cambridge in 1898, Edinburgh in 1923 and Oxford in 1947. Joint meetings with physiological societies of other countries have long been major events of our meetings calendar. These have generally been held either in the UK or in continental Europe, but after a very successful joint meeting with the Japanese and Korean Societies in Cambridge in 1991, we now have firm plans for a joint meeting with the Japanese Physiological Society to be held at the National Institute of Physiological Sciences (Seiriken) in Okazaki, Japan in 1995.

introduced a special programme for inviting guests to our meetings from third world countries, Eastern Europe and the Commonwealth of Independent States (CIS: the former Soviet Union).

### THE CHALLENGES OF INTERNATIONALISM

On several occasions in this century, international collaborations between physiologists have been endangered by major upheavals in the world. The Society has always tried to maintain a truly internationalist policy, even during the two World Wars when there was a catastrophic breakdown in normal relationships between European scientists.

An illustrative example of this is provided by a letter, written in 1919 by a member of the Society to Sherrington, demanding the removal of all German professors from The Physiological Society. Although many physiologists were sympathetic to this point of view at the time, Sherrington, a committed internationalist, refused to succumb to pressure of this kind (see JC Eccles and WC Gibson, *Sherrington, His Life and Thought*, Springer, 1979). Certainly, in protest against the participation of German physiologists, very few colleagues from France attended the International Congress in Edinburgh in 1923. The French had excluded their German colleagues from the preceding Paris Congress in 1920. It is worth noting that the British physiologist AV Hill had refused to go to the Paris Congress because of this exclusion and the mistake of imposing such restrictions was not repeated after the Second World War at the 1947 Oxford Congress.

Political events in the 1930s involved the Society, and particularly AV Hill (Foreign Secretary of the Society at the time), in much work to aid refugees from Germany in settling in Britain. The Society voted financial aid for this purpose on several occasions in these years and was, as WF Bynum writes in his short history of The Physiological Society (published in *J Physiol*, 263, 23-72, 1976) "amply rewarded for its efforts, for during the 1930s it was enabled to elect to

### OUR INVITATION TO FOREIGN GUESTS

We also try to encourage international collaboration in other ways. In 1962, Alan Hodgkin, then Foreign Secretary of the Society, announced the setting aside of an annual sum to enable three guests from Europe to be invited, each year, to one of the Society's ordinary meetings. Since then, the programme has been expanded and we now have several foreign guests at virtually every scientific meeting. Recently, in recognition of the financial difficulties currently prevailing in many parts of the world, the Society has



membership such colleagues as Blaschko, Bülbring, Katz, Schild and Vogt”.

Today, we face a different but nevertheless major challenge in providing support for our fellow physiologists in the eastern part of Europe, particularly in Russia and Ukraine as well as the other CIS countries. The end of the ‘cold war’ has unfortunately not lifted all barriers to communication across what was the ‘iron curtain’. The extreme financial difficulties in all parts of the former Soviet Union have created problems which block collaborations just as effectively as the former political differences.

The current Committee has faced these problems directly in regard to attendance at this year’s Congress in Glasgow. In addition to its general financial support of the Congress, we have therefore made a special grant available to enable a number of mostly Russian and Ukrainian colleagues to attend and contribute. We have also applied for, and obtained, funds from the Commission of the European Communities to pay the expenses of physiologists from Poland, Hungary, the Czech Republic, Slovakia, Romania, the Baltic Countries and Bulgaria. These measures will go some way to achieving a more fully international Congress than we could otherwise have had.

#### NEW INITIATIVES

As The Physiological Society now has a reasonably secure financial base, it is in a position to help in more general ways. We have recently concluded collaborative agreements with both the Russian and Ukrainian Physiological Societies which will allow some of our members to attend specialist workshops in these countries. Plans will be discussed this year to firm up proposals and to agree the final details. One very successful and exciting joint workshop on “Mechanisms of Ca<sup>2+</sup> homeostasis in excitable cells”

was held in Kiev in May this year. This workshop, organised by Alexei Verkhatsky acting as Secretary of the Ukrainian Physiological Society, was supported by UNESCO as well as The Physiological Society. Led by Kostyuk, it took place at the Bogomoletz Institute of Physiology and allowed ample time for discussions and laboratory demonstrations, providing the atmosphere of intensive scientific and personal interaction that seems to have been a prominent feature of the early international congresses. This type of meeting will provide a valuable model for the future.

#### THE FUTURE

Clearly, it is not possible for a single national society to solve big international financial problems, but we can identify excellent research groups in countries with severe shortages of funds and provide help that can make a real difference to the life and work of some of our colleagues. It is obvious that more effective help could be given if different physiological societies could collaborate and co-ordinate their actions. Formal international collaboration has been restricted so far to the organisation of International Congresses, but new tasks are emerging that cannot always be easily managed by individual societies. In Europe, the Federation of European Physiological Societies (FEPS) was established in 1991. The organisation is still very young, but should soon be able to take concrete steps to increase effective inter-European collaboration. An over-riding consideration for the Society is to ensure that such negotiations do not put off until tomorrow the help which is so sorely needed today.

In conclusion, we envisage that The Physiological Society, with its long history of international activities and an organisational and financial structure that allows a wide range of initiatives to be taken, will continue to play a very active international role well into the next century.

● indicates locations of Members of the Society outside the British Isles; ● indicates countries whose physiological societies have participated in joint meetings with The Physiological Society, either as hosts or as visitors to the British Isles



Scientific meetings have been an important feature of The Physiological Society since its early days. At present, we are continuing to experience a period of change in the structure and organisation of our scientific meetings which has resulted from many years of debate between our members. Ideas for changing the meetings have been a recurring theme in the Society's history and the task of managing such change falls to the Meetings Secretary of the time. Because of the interdependence of different aspects of the Society, radical changes within such a fundamental feature of the Society's activities can set off a chain reaction and their implementation must be considered very carefully.

## BACKGROUND TO CHANGES

The most recent changes to meetings probably take their origin from the mid 1970s when Denis Noble was Meetings Secretary. Small undivided meetings,



*When amendments to a Communication are required, the text is edited on disk at the meeting immediately after the session*

spread over one or two days, with 20 Demonstrations and 30 Communications, were common features of meetings held at that time. Abstracts to be presented at meetings were accepted strictly on a first come first served basis. As pressure on the Society's meetings grew, abstracts were rejected, even when sent in on time, and members began to resort to all sorts of strategies to get their work included. These included going to

the home of the Meetings Secretary and slipping abstracts in under the front door on the first day for receipt of abstracts!

The increased pressure on meetings reflected the explosion in scientific activity that occurred in the 1970s, fuelled by factors such as the expansion in the universities which had taken place in the 1960s and the explosive growth in new disciplines such as neuroscience. It also resulted from a move by the Society at this time to simplify the procedures for gaining membership. Inevitably, this encouraged many more active researchers to join and many of these wanted, quite understandably, to present their work at meetings of the Society. Demand continued to grow, especially with a period of increased joint meetings with other societies and the Society recognised that something had to be done.

## PUTTING THE CHANGES INTO ACTION

The first step that we took was to have divided meetings with up to six lecture theatres being used simultaneously at some large meetings. Whilst solving some problems, this created others. The entry and exodus from the theatres which resulted from these early divided meetings soon persuaded the Meetings Secretary to make concessions to a structured programme and to introduce posters.

Meetings continued in this format until the early 1980s when they became subjected to pressure of a different kind. At that time, the growth of specialist societies such as the Neuroscience Association, the



Brain Research Association and the Endocrinology Society meant that some members, particularly younger members who could afford to attend only a few of the Society's meetings, were favouring presentation of their work at these other more focused conferences.

*Participants at the UCL Meeting, 1993, voting to accept a Communication for publication*

To counteract this, groups of members within the Society who were working in the same specialist area began to arrange to submit their abstracts together at the same meetings, so ensuring there would be focused sessions in their area of interest during that meeting. At the same time, other unofficial special interest groups started to hold mini symposia or meetings either before or after the Society meeting. The mounting pressure for more specialist sessions was not, however, shared by all members. Those who attached great importance to holding general sessions where a wide range of physiological presentations were subjected to the critical comments of the whole Society took the view that such general sessions had an educational value beyond that of individual presentations.

Peter Baker and Reg Chapman took on the unenviable task of coming up with proposals which reconciled these two camps. Their recommendations were devised to preserve general sessions but to have these run in parallel with specialist sessions at each meeting. Designated (specialist) sessions were to be advertised so that members would know well in advance at which meeting there would be a designated session in their area. To attract wider interest, each specialist group (Special Interest Group) was to be encouraged to ask outside speakers to give a plenary lecture to the whole Society in association with the relevant specialist interest group session, and the special interest groups were encouraged to arrange mini symposia and workshops in association with the meetings. These proposals were accepted by the membership after full consultation and their implementation has occurred largely during David Cotterrell's tenure as Meetings Secretary.

## HOW MANY MEETINGS PER YEAR?

A feature of the Society is the high frequency of its meetings, thus providing a forum for rapid exchange and publication of new data by members. In recent years nine meetings per year have been the norm, but, in response to pressure from the membership related to the expense of attending such a large number of meetings, this number is now being scaled down.

## CURRENT MEETINGS

Profile of the Leeds meeting: Leeds University Department of Physiology, January 1993

Duration:	2 days
Number of delegates:	300
Oral communications:	79
Poster communications:	12
Demonstrations:	13
Specialist sessions	Autonomic Function Group Comparative and Invertebrate Neuroscience Group Gastrointestinal Tract Group
Plenary lecture	What can activity in sympathetic neurones tell us about coupling between sympathetic systems and respiration? Given by: Wilfred Jänig as part of the Autonomic Function Group session.
Society lecture	The GW Harris prize lecture on The gut endocrine system and its control. Given by: Graham Dockray
Symposia	none

Profile of the Oxford meeting: Oxford University Laboratory of Physiology, July 1992

Duration:	4 days
Number of delegates:	900
Oral communications:	158
Poster communications:	19
Demonstrations:	14
Specialist sessions	Developmental Physiology Group Ion Channels Group Membrane Transport Group Respiratory Physiology Group Somatosensory Physiology Group
Plenary lecture	Volume transmission in the spinal cord: effects of neuropeptides on nociceptive dorsal horn neurones in the pentobarbital anaesthetized rat. Given by: J Sandkühler during the Somatosensory Physiology session
Plenary lecture	The carotid body: upstream of transmitters Given by: RW Torrance during the Respiratory Physiology session.
Society lecture	The Annual Review lecture entitled "All hands to the sodium pump" Given by: Ian Glynn
Symposia	A symposium on ATP-regulated potassium channels was held on the fourth day of the meeting.

The profiles of the two meetings shown here illustrate the format used for small and large Society meetings. Meetings may differ in size and character but they all provide a combination of a forum for rigorous scientific debate and a relaxed environment for scientific and social discussions. Hard work is always mixed with good food, wine and relaxation: on the evening of the first day of the Leeds meeting 150 of the participants

attended the Society dinner which was held at the Civic Hall by invitation of the Lady Mayoress of Leeds. Participants at the Oxford meeting were similarly entertained. Dinner on both occasions was followed by adjournment to the bar (in Leeds the drinks were provided free by the Department of Physiology) and members were able to continue their discussions until the early hours of the morning.

The *Journal of Physiology* is by any measure one of the leading and most influential international scientific journals. The *Journal* publishes only original papers, representing complete pieces of work, in any branch of the physiological sciences. The sole criterion for acceptance of papers has always been scientific excellence; the length of a paper has never been a bar to publication and so contributions range from a length of 12 pages through the average of 18-20 pages, to a maximum of 40 pages.

One objective measure of the influence of papers in any journal is the impact factor. This is calculated by dividing the number of citations in a given year to papers published in the two previous years by the number of 'source papers' published in those years. The graphs below give the most recent data available for large journals (ie those with at least 10,000 citations), based on information from 1989-1991. This measure gives an index of the short-term influence of papers in the journal and on this crude measure *The Journal of Physiology* is the leading specialist research journal in the field of physiological sciences. Longer term influence can be gauged by looking at the total number of citations (in 1991 to papers published in all years) and dividing by the average number of papers published each year in the journal. *The Journal of Physiology* has, in recent years, published about 420 papers per year and it may be inferred that each paper attracts an average of 76 citations.

Rather surprisingly, given that it caters for all branches of the physiological sciences, it is also the second leading journal in the field of neuroscience, being more influential than large specialist journals such as *Neuroscience*, *The Journal of Neurophysiology* and *Brain Research*. All of this is fine but, true to its forward-thinking nature, the Society has ambitious new plans for the *Journal* to ensure that it continues to go from strength to strength.

### EDITORIAL STRUCTURE AND POLICY

Throughout its history, *The Journal of Physiology* has had an international editorial board. In fact, the majority of published papers in the *Journal* have come from outside the United Kingdom for many years. The Society is understandably proud of the consistently high international impact of the *Journal* and of the fact that the two most recent Nobel Laureates in Physiology, Erwin Neher and Bert Sakmann (both members of the Society) have been active for many years on its editorial board. In fact, we have had at least one Nobel prize winner on the *Journal's* editorial board for each of the last 13 years.

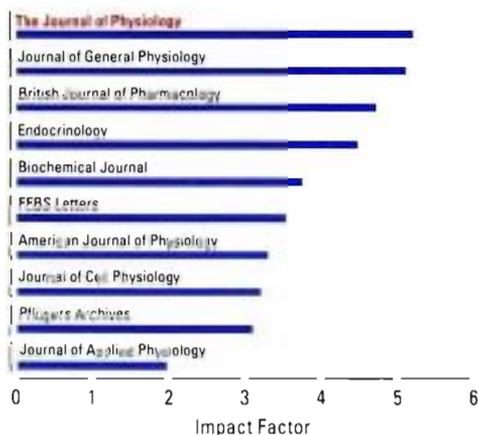
As a sign of the democracy of the Society, editors, like Committee members empowered to act on behalf of the Society, have to submit themselves to re-election each year by the membership of the Society. No one editor can serve for more than seven years, this rule being designed to prevent an individual editor from exerting undue influence.

### TREATMENT OF MANUSCRIPTS

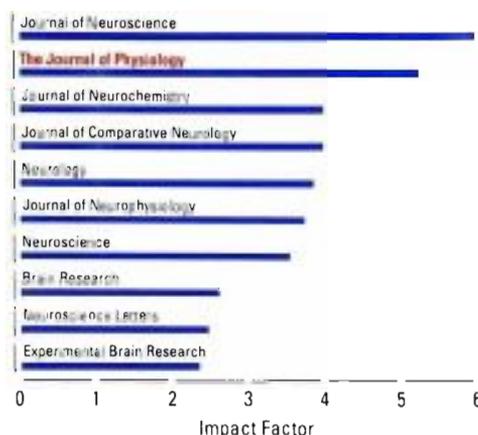
The Society maintains its own Press Office, sited in Cambridge and staffed largely by science graduates, some of whom have doctorates in the biological sciences. Manuscripts submitted to the *Journal* are received in the Press Office, allocated a number and passed on to one of three Distributing Editors who each have responsibility for work in certain broad fields. The Distributing Editor then seeks a review from an editor, who will in turn seek at least one report from an expert referee, so that a minimum of two reports are returned to the Distributing Editor.

The final decision to accept a manuscript or not is made by the Distributing Editor on the basis of these reports, but even the most expert of referees can make errors of judgement and no author should feel that any editorial opinion is above question. If an author feels that his or her manuscript has been unjustly treated, he or she can write, giving reasons, to the Distributing Editor who then arranges further reviews of the manuscript and takes into account any fresh suggestions for acceptance that arise. Manuscripts accepted for publication are then returned to the Press Office where the final preparations for printing, including all copy-editing and proof reading, are performed. These also include scanning in of all figures for re-labelling and/or complete re-drawing on the Desk Top Publishing system to ensure the high quality and consistency of style that is a feature of the *Journal*.

Impact Factor of Journals in the Physiological Sciences



Impact Factor of Journals in the Neurosciences





The Society's  
Press Office,  
Cambridge

but the reality is that the *Journal* has been absent from the Current Periodicals display shelves in libraries because of this out-dated format. Even more importantly, the *Journal* has outgrown its hard-backed format: to expand it must change, and soft bindings give much greater flexibility to increase the number of papers published.

The individual issues making up a volume of the *Journal* will be colour coded and together with other, internal alterations, will form part of an exciting period of revamping of the *Journal* - we also plan to accept more manuscripts submitted on disk and to involve the extensive use of colour.

An important part of this package of changes is the reduction in publication time of papers appearing in the *Journal*. It is planned that the total delay from receipt of a manuscript to publication could be down to four months for all short papers and papers requiring only minor revisions by the authors. For papers requiring more extensive revisions we are aiming for a transit time of no more than seven months, although this will depend to a large extent on the time taken by authors to complete revisions. Publication delays of this order for papers of the length typically appearing in the *Journal* will make it fully competitive with other publications of the same type.

#### CHANGES TO THE JOURNAL

One format change which has already been put into practice has been the introduction of a new category of "short papers" for rapid publication and 1994 will see a series of further exciting developments taking place in the *Journal*. Perhaps the most noticeable of these will be the change to a new design: soft cover, American A4 size which, it is hoped, may be introduced by January 1994. Many readers will regret the passing of the hard-covered 'book' appearance

#### LOOKING AHEAD

The last few years have witnessed a period of rapid changes in the *Journal* from the listing of authors' names in non-alphabetical order, through increasing the number of papers published, to the imminent changes described above. No doubt further changes will follow as the Society constantly seeks to improve its standards. In the case of the *Journal*, to be one of the best is just the start.



A new look for  
The Journal of  
Physiology -  
mock-ups  
illustrating how  
the new design  
will work.  
Photograph  
provided by  
Adrian Chilvers

The Physiological Society is active in the field of education on two broad fronts. Within the Society events and meetings ensure on-going educational initiatives which keep members informed about progress in all areas of physiology. We also contribute to and support biology teaching in UK secondary schools, colleges and, as a recent initiative, in universities and colleges of higher education.

## SUPPORTING BIOLOGY TEACHING IN SCHOOLS

### Sixth form symposia and teachers' workshops

Sixth form symposia are one or two day events, run by the Society, which comprise an organised mixture of lectures and hands-on experience of experiments which demonstrate some classical physiology. Both the lectures and the simple experiments are designed to contribute to A (Advanced) level biology teaching and to introduce the concepts of basic physiology. Where relevant, some more recently acquired knowledge is included to show how the methods

have been developed and to demonstrate their medical importance and application.

Both one and two day courses give prospective students a glimpse of what physiology at university might be like - the longer courses giving a true 'taster' of university life!



*A Physiological Society workshop: an experiment to determine the location of taste buds on the human tongue*

Teachers' workshops are one day events which are run with two basic aims in mind:

- to bring the teachers up to date on some aspects of physiology
- to devise simple and cheap experiments which the teachers may like to use or develop in their A level biology teaching

Attendance at the symposia and workshops is free and all events are made possible by the enthusiasm and support of colleagues in the host departments. The support of the Research Defence Society is also an essential component since a common feature is to have a small group discussion of the use of animals in medical research.

### The Association of Science Education (ASE)

#### Annual meetings

The Education and Information sub-committee of the Society arranges a small exhibition at the annual meeting of the ASE, usually held at the beginning of January each year. The ASE meeting usually attracts around 4000 science teachers, over the four or five days of the conference. The Society provides lectures on modern day physiology, acts as an information source and also advertises its educational activities.

### The Physiological Society Video: Physiology - An Inside View

*Physiology - An Inside View* is presented by David Bellamy and provides an interesting and entertaining

overview of the question "What is Physiology?". Aimed at 16-18 year old pupils studying science who might like to consider physiology as an education or as a career, it is available on free loan and it may be copied by schools.

### Career booklets

The Society has produced a new career booklet for 15-18 year old students considering their future education and career. The new booklet is in full colour and makes use of a modern and accessible style, combining informative text with photographs and illustrations, supplemented by cartoons and other features designed to have maximum impact on an audience of young people who are increasingly seeing scientists as 'dry and boring'. It will be circulated to schools later this year.

*Cell to Man - Physiology: Education and Career, the Society's new career booklet*



### Talking Point in the Biological Sciences

Talking Point is an initiative run by the Biomedical Research Educational Trust (BRET) and founded with help and advice from the Society. The scheme provides a mechanism for supplying schools with free lectures on modern science, career opportunities and higher education. Many physiologists participate and regularly give well-received talks in schools throughout the UK.

Lectures and discussions on the topic of animals in research can also be provided through the BRET, an organisation which is fully endorsed by the Society.

*Talking Point leaflets*



### Debates on the use of animals in medical and basic research

In participating in the debate concerning the continued use of animals in medical and essential fundamental research, the Society aims to contribute to school science education and also to make teachers and students aware that The Physiological Society is a valuable source of information on this important and emotive topic.

### EDUCATIONAL INITIATIVES IN HIGHER EDUCATION

#### The Annual Undergraduate Prize in Physiology

The Physiological Society provides and administers the Undergraduate Prize in Physiology. This is awarded annually to an outstanding student in each established Physiology department in the UK and Eire.

#### Undergraduate symposia

The Society has recently instituted a programme of undergraduate symposia aimed at final year students. The events take place during one day and consist of lectures from eminent UK physiologists. The pilot event, held in Leeds in December 1992, was a great success with over 300 attenders. The Society hopes to hold one or two events per year in the future.

#### Support to Physiology Departments

In addition to the initiatives described above, The Physiological Society also

- provides appreciable financial support to University departments throughout the UK and Eire for their seminars schemes.
- participates in the organisation of computer workshops.
- provides departments with literature on use of animals in medical research with the aims of:
  - a raising awareness of what is available
  - b providing information for current undergraduates
  - c providing information for prospective undergraduates

#### GL Brown lectures

The GL Brown lectures are a series of lectures given by eminent UK physiologists nominated by the Prizes and Prize Lectures sub-committee of the Society to undertake a lecture tour in the UK and Eire during January - March. Visits are made to a number of UK departments.

Recent tours have been based on the following topics:

- 1988 S Zeki - the visual image of the brain
- 1989 A Angel - adventures in anaesthesia
- 1990 C Blakemore - development of the primate visual system
- 1991 N B Standen - potassium channels, metabolism and muscle
- 1992 R N Lemon - cortical control of the primate hand
- 1993 J F Ashmore - the cellular machinery of the cochlea

1994 A C Dolphin - why neurones need calcium channels

### Forum for the discussion of teaching physiology to medical students

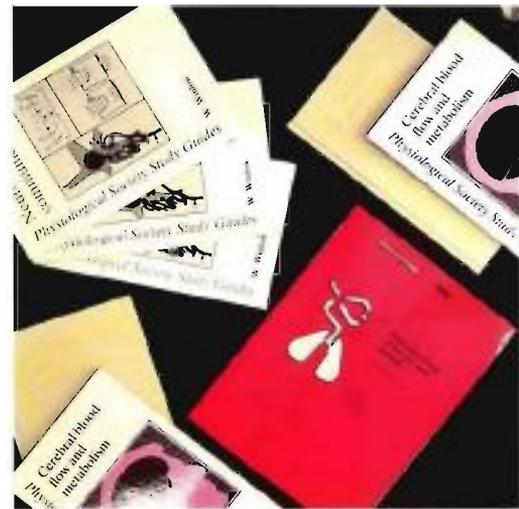
The Physiological Society has consistently tried to provide a forum for discussion of the teaching of physiology within medical schools. The most recent forum was organised in conjunction with the Biochemical Society and focused on the General Medical Council Education Committee document, covering their suggestions on how medical education should be developed in the 1990s. This was a great success, attended by 100 people, with good active participation and debate.

### EDUCATIONAL INITIATIVES WITHIN THE SOCIETY

#### Teaching symposia

Teaching symposia are run in conjunction with Society meetings about twice per year. This is a popular feature of meetings which was introduced 10 years ago. Teaching symposia aim to provide information to physiology teachers, postgraduate and postdoctoral students and any other interested person, on a wide range of topics. The Society publishes study guides arising from these symposia to ensure that a wide readership also benefits.

The last title in the list is the first in the series *Studies in Physiology*: the Society recently changed publishers to Portland Press, updating the format and approach of the guides to take them up to the 21st century.



Study guides which have been published include: Acid/base balance; Control of breathing in man; Amino acid transport in animal cells; Neuronal communication; Cerebral blood flow and metabolism; Pathophysiology of the gut and airways

### THE FUTURE

The Society aims to continue its active promotion of physiology education both within the organisation and outside it. Many new initiatives are being devised to maintain and develop the commitment to secondary education to ensure that physiology continues to grow through the influx of bright and able young scientists.

G L Brown  
lecturers



J F Ashmore



C Blakemore



A C Dolphin

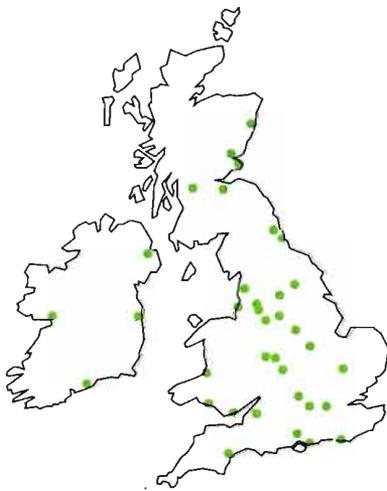


R N Lemon

**SETTING THE SCENE:  
AN OVERVIEW OF  
PHYSIOLOGY IN THE UK**

**UK centres of teaching and research**

Physiology is a well established discipline in the UK, being taught in almost all of our universities and other institutes of higher education. The majority offer undergraduate courses in physiology which can be taken by science, medical, dental, nursing and veterinary students. As with other sciences, the main postgraduate training offered in UK universities continues to be the PhD degree. However, this balance is set to change in the future. A growing number of establishments are now offering Masters courses in physiology and the government has just announced plans which will lead to an increase in the relative numbers of postgraduate students taking Masters degrees.



Where Physiology is taught in the British Isles

Physiology departments within UK universities vary in size but if we exclude those in medical schools then the average number of full time staff employed per department is 17. Our largest department of Physiology or, strictly speaking, Physiological Sciences is that at the University of Manchester where 36 full time academic staff are employed while one of the smaller departments, at the University of Wolverhampton, employs only four full time academics.

**Funding for physiology teaching and research**

Physiology departments, in common with other science departments in UK institutes of higher education, can receive support from two different

government agencies: the Higher Education Funding Council (HEFC) and the Research Councils. The cost of research not met by these agencies is covered by funding from charities or industry. Over the last decade, the income to universities from grants and contracts awarded by the government has remained roughly static while income from other sources has increased, with income from charities, particularly that of the Wellcome Trust, showing the largest rise in real terms.

**PROBLEMS ASSOCIATED WITH HEFC FUNDING**

HEFC support has two components. One, the T-component, is based on the number of students taught and is supposed to cover the cost of teaching each student. The other, the R-component, is based on the number and quality of active researchers and pays for the time spent by academics in the research laboratory. It does not, however, cover the overheads associated with that research.

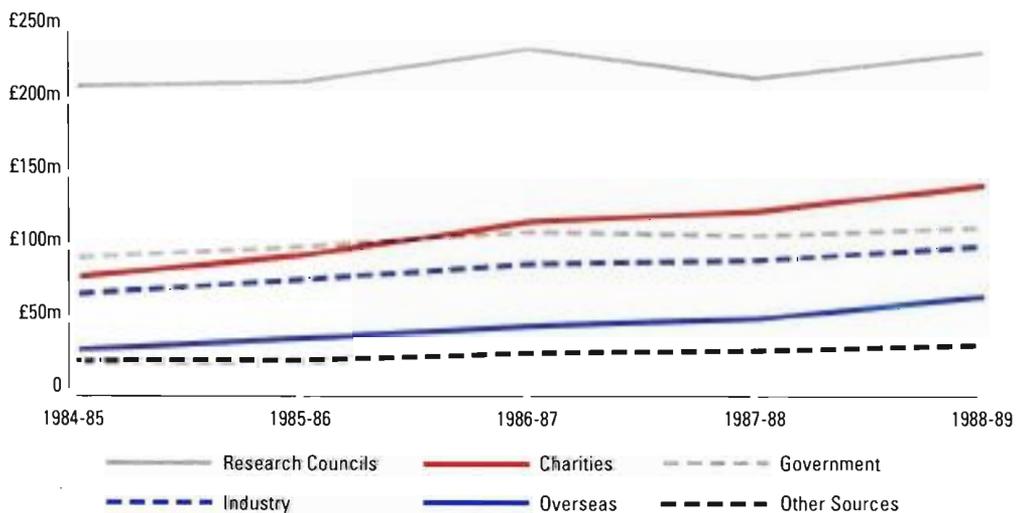
**1 Physiology teaching**

The last few years have seen a decrease, in real terms, in the money provided by the government to cover the costs of teaching each student taking an undergraduate physiology course (T-money). The main way of making up for the shortfall in income has been to recruit additional students. This is precisely what the government intended, as an object of the exercise has been to increase the numbers of students in higher education. However, this has been done without allowing the costs of financing Higher Education Institutes (HEIs) to increase in proportion, resulting in an overstretching of the funding available. The continuing government pressure to increase access to higher education is one that everyone would support, but the attempt to do this on the cheap threatens to undermine HEIs in their ability to carry out internationally competitive research.

**2 Physiology research: the research selectivity exercise**

The distribution of the R-component of HEFC funding to HEIs is based on the results of a research selectivity

University grant and contract income, 1984-89, in real terms (ie adjusted with reference to the Universities Pay and Prices Index to 1990 values)



exercise which was carried out over the summer of 1992 and was based on research records of the preceding three years.

Departments in each HEI were invited to submit the research records (ie publications and grants obtained) of all of their active researchers and each researcher was asked to identify the two publications of which he or she felt most proud. The record of each researcher was examined by a panel. For physiology researchers this consisted of senior Physiological Society members. The task of the panel members was to assess the quality of each individual researcher's output. This was a mammoth undertaking and involved panel members making frequent trips to libraries to read the latest papers published by the researchers. Such care was important as significant sums of money depended directly on the grading awarded to each department.

Departments were allowed to choose how many staff to enter for the selectivity exercise but did not know how this variable would translate into funding. Only after the exercise were departments informed how the R-component would be determined, which was a function of the grading obtained and the number of full-time equivalent staff, the final calculation varying according to whether the department was dealt with by the Higher Education Funding Council for England, for Scotland or for Wales.

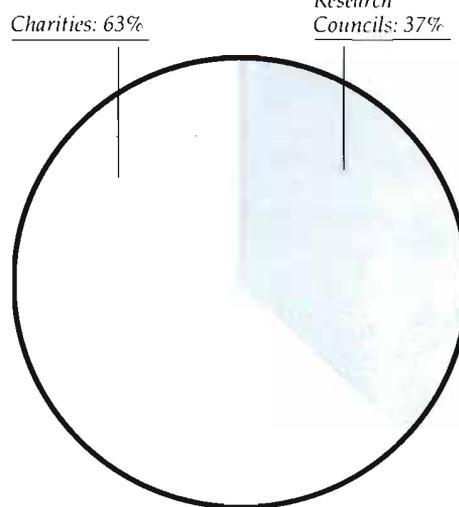
The top grading of 5 was awarded to departments whose projects were all nationally excellent, some of them being internationally excellent. The lowest grading of 1 went to departments whose research attained the standard of national excellence in few or no areas. Departments could choose to be entered for assessment on their own or as part of a larger grouping - preclinical studies, for example. Nineteen departments were assessed on their own and of these eight obtained gradings of 4 or above.

The total amount of R money to be distributed among universities has remained approximately constant in real terms and so the competition inherent within the selectivity exercise has resulted in high scoring departments gaining a bigger slice of the same funding cake. HEIs differ greatly in how much of the T and R money earned by individual departments is actually passed on to those departments but clearly HEIs with departments obtaining high gradings do stand to obtain a higher proportion of the funding available than those whose departments obtained low gradings.

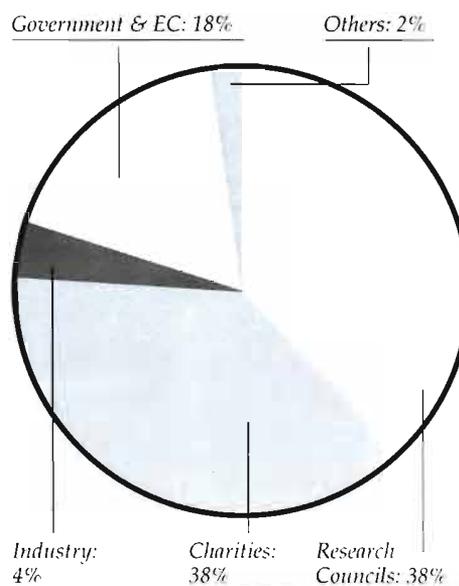
#### **PROBLEMS ASSOCIATED WITH FUNDING FROM CHARITIES**

Research income from charities is particularly important in the case of physiology - surveys show that charities are used as the primary source of external funds by 63% of physiologists while Research Council funding is used by the remaining 37%. The Research Councils and charities are each used as a secondary or tertiary source of funding by 38% of physiologists, the Government and EC by 18% and industry by 4%. Few other disciplines are as dependent on charitable funding, so physiologists are in rather an exposed position.

Primary funding sources



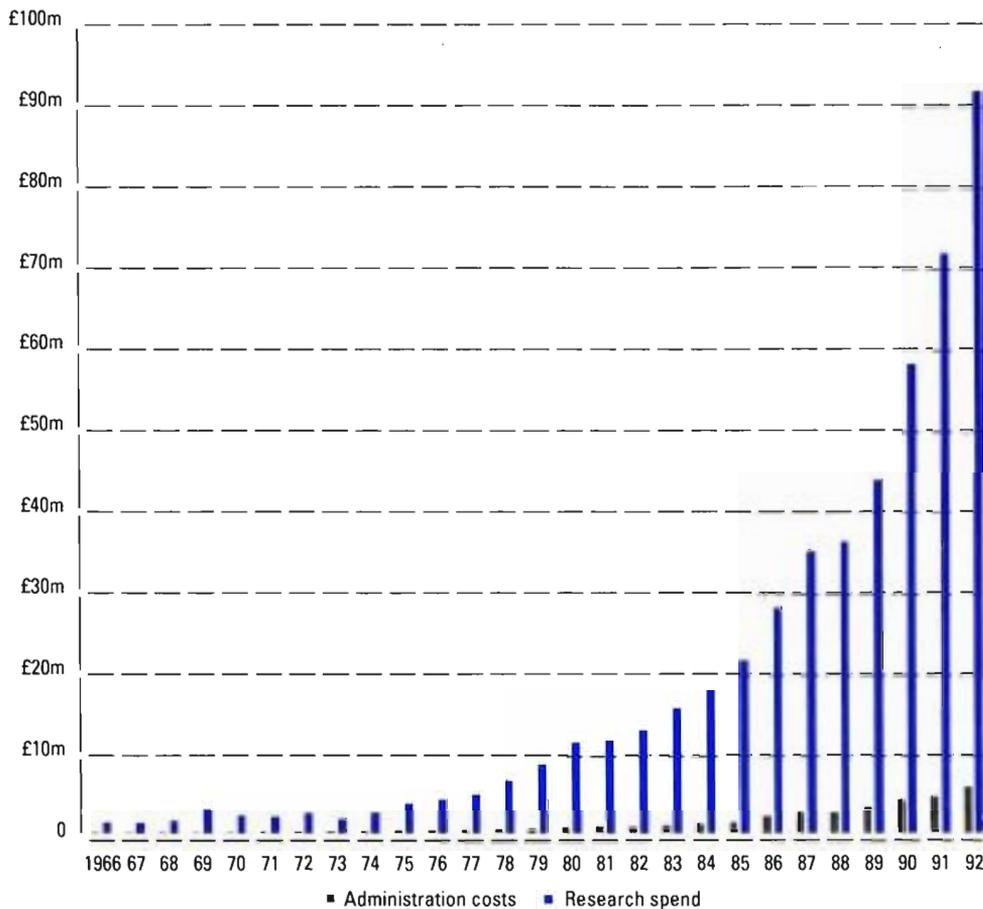
Secondary/tertiary sources



*Permanent academic staff were asked what their three major sources of external (non-university) funds were. The upper chart shows the frequency with which each source was used by such researchers as a primary source of external research funds. The lower chart shows the frequency with which each source was used as a secondary or tertiary source of external research funds. Data from Research Support for Young Investigators (Policy Study No 7), by courtesy of SEPSU*

The dangers inherent in this dependency relate to the question of overheads for research. The Research Councils currently pay an overhead on all grants they fund. This is calculated as 40% of the salary costs of each grant. This money is meant to contribute to the indirect costs of the research, which include salaries for ancillary staff not directly involved in the project, the costs of incidental use of institutional or departmental facilities (equipment, space and services, secretarial assistance), administration and all

Wellcome Trust expenditure for the years 1965/66 to 1991/92 in actual figures (not adjusted for inflation). ■ indicates expenditure on administration ■ indicates scientific expenditure



departmental and central faculties which indirectly support research, for example, libraries. It should be stressed that the money to pay for the overheads is not new money in the system, but money formerly paid to universities by the government, via the predecessor of the HEFC, the University Funding Council (UFC), to support the infrastructure of research.

The charities have refused to pay overheads on grants they fund, pointing out that, while such payments represent no increase in government funding to universities, they would represent a significant increase in their own funding to universities and could only be paid at the expense of funding fewer grants. Resolution of this issue is of enormous importance to physiologists as the present situation is clearly unsustainable. Indeed, there is the perception in some universities that awards from Research Councils are more attractive than those from charities, simply because of the extra overhead provision.

#### THE PROBLEM OF CAREER STRUCTURE FOR RESEARCH WORKERS

Some indication of the pressing need for a coherent career structure for research workers is given by the fact that the number of scientists on short-term contracts, usually three years, has increased by 30% over the last 10 years while the number of university posts which offer long term contracts has decreased.

There is general agreement that something has to be done to correct this position.

The Wellcome Trust, because of its continuing growth in income, can consider policies which will involve increased expenditure to provide the necessary support to do this (see above). By contrast, the Research Councils, because of the pressing need of central government to reduce its expenditure, cannot consider such options and instead talk about offering selective long term support to a few lucky researchers who peak early enough in their careers.

#### THE FUTURE FOR PHYSIOLOGY FUNDING

##### The significance of the Wellcome Trust

Among the charities, the Wellcome Trust is the largest funder of biomedical research in UK universities. Fortunately for physiologists, and biomedical researchers in general, the annual research expenditure of the Trust has shown dramatic increases throughout the 1980s and this growth seems set to continue for some time yet. Following a restructuring of its investments in 1992, the Trust's annual income has risen from roughly £125 million to over £200 million in the past year. In an article written for the Society's magazine in July of last year, Julian Jack, a former Treasurer of the Society and currently one of the five scientific Governors of the Trust, offered some tentative indications as to how the Trust would

spend its additional income in the coming years. Two main aims were described:

- To create centres of excellence where there are already existing strengths in research.

The Trust would like to enable the development of a critical mass of research with relatively stable funding. In some circumstances this will require large capital grants for buildings and/or equipment.

- The improvement of research career structure.

The form of personal support offered to full-time researchers is wholly unsatisfactory and the Trust plans to encourage a much more developed, flexible career structure for researchers.

A year later the Trust has already shown evidence of its commitment to centres of excellence in its £44 million award for the establishment of a Genome Research Institute in Cambridge, its £18 million award for a Functional Brain Imaging Laboratory at the Institute of Neurology, London, and a £6 million award for a Centre of Molecular Pharmacology at UCL.

The commitment to the support of researchers in universities has been spelt out in a recent discussion document which suggests that the core of Trust support should be a Research Fellowship awarded for four years initially, reviewed at the end of year 3 and renewable for a total period of 16 years. This Fellowship could be followed by promotion to an Advanced Research Fellowship, normally applied for by the age of 43. There are also plans for Re-entry Fellowship Awards to provide opportunities to individuals (such as women with families) who have taken time off. Other competitive Fellowships and a few Wellcome Research Professorships are in the pipeline.

#### **The role of the government - the recent White Paper**

In one of his actions after winning the general election last year, John Major, the UK Prime Minister, appointed William Waldegrave Chancellor of the Duchy of Lancaster. This post comes with a seat on the Cabinet, overall responsibility for science and technology policy and control of the Research Councils - the first time for 30 years that a Cabinet Minister has held such a responsibility.

To his credit, the Minister has spent the last year engaged in a widespread consultation with the scientific and engineering community, industry, the research charities and other interested parties. The outcome has been the recent White Paper (ie, official written statement of government policy) published on the 26th May 1993. The Physiological Society has participated in the consultations, requesting the following in our submission to the government:

- production of a strategy for support of publicly funded Science as a proportion of Gross Domestic Product (GDP) to keep UK Science funding competitive with our EC and North American counterparts.
- an increase in the Science base funding
- a commitment to properly funded career and salary structures for scientists.

- use of the mechanisms of accountability and quality monitoring of Science in universities and Institutes, through research selectivity exercises, to support creativity in Science by a commitment to the re-introduction of dual support of the Science base in Universities by which government funds the indirect costs of research (through the R-component of the HEFC grant) while the Research Councils and Medical charities fund the direct costs.
- that overall funding policy should continue to support a balance of both response-mode (ie scientist-driven) and directed research

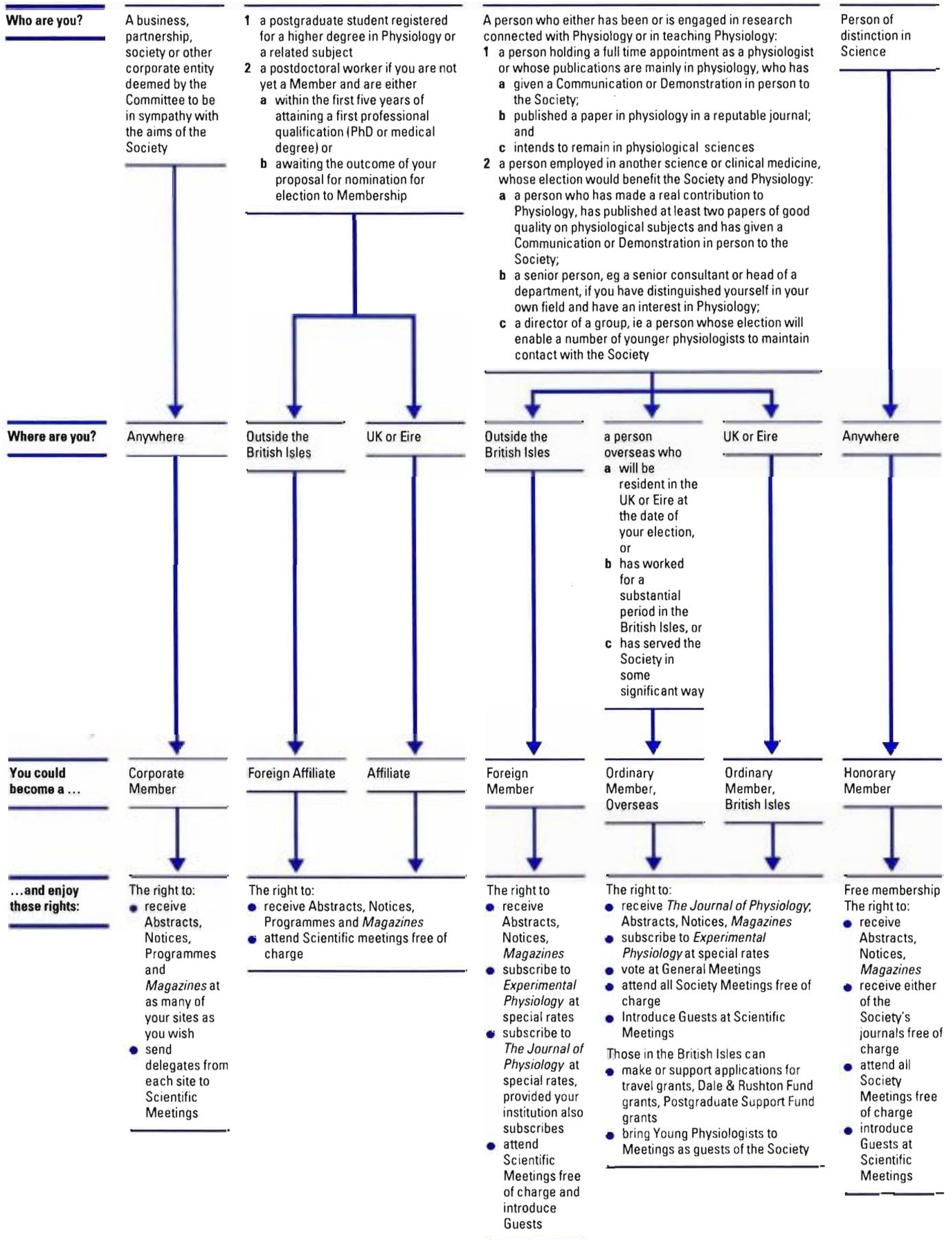
In reply the White Paper promised:

- annual publication of a national science and technology strategy looking 5-10 years ahead.
- no extra money but Research Councils to be protected from cuts
- all postgraduate students will first take an MSc before starting a PhD: there will be more five year fellowships and improved security for postdoctoral workers
- No specific commitments were made as to the re-introduction of the dual support system
- More research to be linked to the needs of industry (ie the amount of strategic research to be increased).

This was the first White Paper on scientific research for more than 20 years and perhaps marks a new-found determination of government to tackle issues of concern to the scientific community.

*William Waldegrave*





Confidential

PROPOSAL FORM FOR MEMBERSHIP OF THE PHYSIOLOGICAL SOCIETY AS:

[ ] an Ordinary Member

[ ] a Foreign Member

I the undersigned wish to be considered by the Committee of The Physiological Society for election to Membership. In compliance with the Articles of Association of The Physiological Society, I agree to accept Membership of the Society should I be elected.

I consider myself eligible under Group [ ] (as listed overleaf).

Signature ..... Dated .....

Name (IN CAPITALS): .....

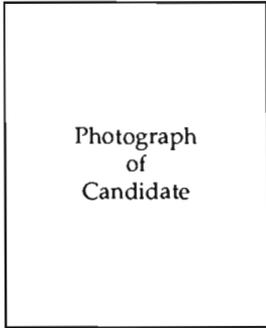
Present Position: .....

Present address: .....

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.....

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Tel: .....

Fax: .....

We the undersigned confirm that the above candidate is well known to us and that we consider him/her to fulfil the criteria for Membership as outlined in the guidelines overleaf and we support the candidate's request to be considered by the Committee for Membership of The Physiological Society.

1 ..... SIGNED      2 ..... SIGNED      3 ..... SIGNED

(NAME IN CAPITALS)

(NAME IN CAPITALS)

(NAME IN CAPITALS)

4 ..... SIGNED      5 ..... SIGNED      6 ..... SIGNED

(NAME IN CAPITALS)

(NAME IN CAPITALS)

(NAME IN CAPITALS)

Please hand this form in to the Society's stand in the Exhibition area at the IUPS Congress, Glasgow or post it to:

The Administrator (Membership)
The Physiological Society
Administration & Publications Office
PO Box 506
Oxford OX1 3XE (UK)

Receipt of proposal forms will be acknowledged in writing after the Congress and candidates will then be asked to submit any further information required, in time for consideration for inclusion in the ballot for the next elections.

## GUIDELINES TO CANDIDATES FOR MEMBERSHIP

New Members of The Physiological Society are elected annually by secret ballot. Onus is placed upon the **SIX Members** who have signed the declaration of support overleaf, to certify that the candidate fulfils the following requirements.

**Ordinary Membership:** Candidates for Ordinary Membership will reside in the British Isles or will have worked for a substantial period in the British Isles or will have served the Society in some significant way.

**Foreign Membership:** Candidates for Foreign Membership will normally reside outside the British Isles.

### *Group I*

Candidates holding full-time appointments as physiologists or whose publications are mainly in physiology, including cellular and comparative physiology. The Committee must normally be assured that a candidate

- (i) has given a Communication or Demonstration in person to the Society;
- (ii) has published a paper in physiology, including cellular and comparative physiology, and
- (iii) intends to remain in physiological sciences.

### *Group II*

Candidates employed in other sciences or clinical medicine, whose publications are largely in journals other than journals of physiology. Such candidates would be recommended to the Society only if it were clear that their election would benefit the Society and physiology. Within this group three categories of candidates may be distinguished:

- (a) Those who by their work in institutions other than physiological departments have made a real contribution to physiology. The normal requirement is that such candidates should have published at least two papers of good quality on physiological subjects and should have given a Communication or Demonstration in person to the Society.
- (b) **Senior persons.** The Committee must be assured that such candidates have a status at least equivalent to that of the Head of a Department of good standing or of a Senior Consultant, have distinguished themselves in their own field, and are interested in physiology.
- (c) **Directors of groups.** In special circumstances, such candidates may be recommended to the Society even though they do not qualify in one of the normal ways, if the Committee is convinced that their election is necessary to enable a number of younger physiologists to maintain contact with the Society.

Confidential

APPLICATION FORM FOR AFFILIATION TO THE PHYSIOLOGICAL SOCIETY

For Office use:		
A	R	L
		---

Name (IN CAPITALS) ..... Date of Birth .....

Special Scientific Interest: (eg thesis title or postdoctoral project) .....

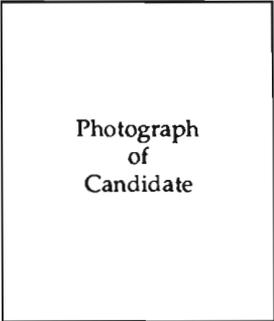
Interests: IUPS classes ..... / ..... / .....  
(See overleaf for codes)      Groups: .....  
(See overleaf for codes)

Work address .....

Tel ..... Fax .....

Electronic mail address .....

Present Course/Postdoctoral Position .....



Qualifications:			
Degree	Date	Subject	Awarding Institution

- Please delete as applicable:       I wish to receive Notices, Programmes & Magazines only.  
 I wish to receive precirculated Abstracts as well as Notices, Programmes, & Magazines.

I enclose a cheque for £. . . . . payable to The Physiological Society.

I confirm that the information given above is accurate and up to date and that I hereby authorise The Physiological Society to hold this, and such other personal information as is supplied to the Society by me or my authorised agents or representatives in future, in machine-readable form for use for the purposes registered under the Data Protection Act 1984.

Signed ..... Date .....

Members of The Physiological Society proposing Candidates should read the Guidelines overleaf and sign the following statement.

I hereby confirm that the Candidate:

- (a) is either a postdoctoral worker or registered for a higher degree in Physiology or a cognate subject, and
- (b) is a person suitable for admission to Society Meetings.

Name (IN CAPITALS) ..... Signature of Proposer .....

Tel ..... Fax ..... Date .....

Address .....

On completion, please return this form to: The Physiological Society (Affiliation), PO Box 506, OXFORD OX1 3XE, (UK), or hand it in to the Society's stand in the Exhibition area at the IUPS Congress, Glasgow.

**GUIDELINES TO MEMBERS OF THE PHYSIOLOGICAL SOCIETY  
PROPOSING CANDIDATES FOR AFFILIATION**

This form of association with the Society is intended for physiologists still in the early stages of their careers working in laboratories in the UK, Eire or abroad. It is open to postgraduate students registered for a higher degree in Physiology or a cognate subject and to postdoctoral workers who are not yet Members of the Society. It is expected that postdoctoral workers proposed as Affiliates will normally be (a) within the first five years of attaining a first professional qualification (PhD or medical degree) or (b) awaiting the outcome of their proposal for nomination for election to Membership of the Society.

The Committee has authorised the Committee Secretary to consider and accept or reject proposals for Affiliation to the Society as they are received throughout the year, so that these can be processed quickly. The Committee Secretary regards himself as free to withdraw a proposal and return the papers to the Proposer.

Affiliation is for a term of five years in the first instance. Affiliation must be renewed by payment of the appropriate fee at the start of each year (which for this purpose is the academic year, ie October to September). For administrative convenience, Affiliates registered after October will have to pay for the full year. The fees are determined from time to time by the Treasurer; they are currently:-

	UK & Eire	Europe	Non-Europe
With Abstracts	£10	£30	£35
Without Abstracts	£ 5	£15	£20

All Affiliates receive copies of programmes, notices and the Society's *Magazine*. Affiliates can attend Meetings in their own right but must be introduced by a Member of the Society when giving a Communication or Demonstration. Affiliates are not Members of the Society and do not have the right to vote at its General Meetings.

**Field of Interest:**

01 Anaesthesia	16 General Physiology
02 Anatomy & Embryology	17 Immunology
03 Biochemistry	18 Liver & Bile
04 Biophysics	19 Lipids & Steroids
05 Biomedical Engineering	20 Microbiology
06 Blood	21 Minerals, Bone & Teeth
07 Cardiovascular	22 Muscle & Exercise
08 Cellular & Tissue	23 Neuroscience
09 Comparative Physiology	24 Nutrition & Food
10 Electrolyte & Water Balance	25 Pathology
11 Endocrines	26 Pharmacology
12 Energy Metabolism & Temperature Regulation	27 Radiation
13 Environmental	28 Renal
14 Enzymes	29 Reproduction
15 Gastrointestinal	30 Respiration

*You may specify up to three fields of interest.*

**Special Interest Groups  
Current Codes**

AF Autonomic Function	HS Higher Sensory Functions
BB Blood-Brain Barrier	IC Ionic Channels
CC Cardiovascular Control	ME Microvascular & Endothelial Physiology
CI Comparative & Invertebrate Neuroscience	MC Muscle Contraction
CN Cellular Neurophysiology	NB Neurobiology
CP Comparative Physiology	NE Neuroendocrinology
DP Developmental Physiology	PP Placental & Perinatal Physiology
EM Epithelia & Membrane Transport	RP Renal Physiology
G1 Gastrointestinal Tract	RE Respiratory Physiology
HC Heart/Cardiac Muscle	SC Sensorimotor Control
HI History of Physiology	SM Smooth Muscle
HP Human Physiology	SP Somatosensory Physiology



*Sir Bernard Katz, Nobel Prize winner in 1970 (jointly shared with Axelrod and Von Euler) given for "their discoveries concerning the humoral transmitters in the nerve terminals and the mechanism for their storage, release and inactivation." Sir Bernard became a Member of the Society in 1940 and was elected an Honorary Member in 1979. He has twice been an editor of *The Journal of Physiology*: from 1957 to 1964 and from 1982 to 1989.*



*Professor Bert Sakmann, Nobel Prize winner in 1991 (shared with Neher). The Nobel Assembly said of their invention: "This new knowledge and analytical tool has during the past 10 years revolutionised modern biology, facilitated research and contributed to the understanding of the cellular mechanisms underlying several diseases." Professor Sakmann was elected a Member of the Society in 1987. He became an editor of *The Journal of Physiology* in 1987.*



*Professor Erwin Neher, Nobel Prize winner in 1991 (shared with Sakmann) given for inventing a technique for measuring the electrical currents of a living cell. Professor Neher was elected a Member of the Society in 1981. He served as an editor of *The Journal of Physiology* from 1980 to 1987.*



*Sir John Vane, Nobel Prize winner in 1982 (shared with Bergström and Samuelsson) given for "their discoveries concerning prostaglandins and related biologically active substances". Sir John joined the Society in 1953 and was elected an Honorary Member in 1988.*

## *Acknowledgements*

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