

EPS internally; they are mainly connected with the classical rôle of a learned society.

There are, however, tasks which can only be solved on a Society level as opposed to the Division level but are important for, and indeed characteristic of, a modern organization. Such tasks include, for example, the mobility programme mentioned above. The advisory rôle is another. International organizations prefer to ask for advice from bodies which do not have executive duties but possess a broad and large pool of knowledge. So it is perhaps not unexpected that the European Union, UNESCO, the European Science Foundation (ESF), the European Union of Physics Research Organizations (EUPRO), and other similar organizations are increasingly relying on our expertise.

Bridging the gap between research and industry is also one of our general tasks. The Action Committee for Applied Physics and Physics in Industry (ACAPPI) is a natural body in which to involve people from industry into our life. I would be glad if the number of active industrial members of EPS could be increased, with their greater participation in Council, Divisional boards and action committees. Physics teaching at the undergraduate level is the basis of general, medium-level science education while many graduate-level research and engineering professions are based on physics curricula. In order to integrate all levels of physics teachers into our Society we have recently organized an Interdivisional Group on Education to coordinate work in this important field.

Building up an interface between research and the general public is badly needed, both at the national and European levels, and we have to take up our share of this task. The Physics and Society Committee is an appropriate group to lead this activity. At the professional level, qualifications are playing an increasingly important rôle in physics, mainly in some applied areas. We shall ask Council in Cracow to decide upon the launch later this year of a proposed scheme.

Publication efforts have also to be implemented at the Society level. *Europhysics News* is a good bulletin with much useful information. My feeling is that science policy issues as seen from the Executive Committee should be published in it more frequently, and Divisions should be given greater encouragement to use it to inform the membership on their affairs. *Europhysics Letters* is a great success. I am glad to see a growing impact of this journal on European physics and an increasing number of high-quality papers, mainly in condensed matter physics. The EPS label on different European journals is prestigious and our Publications Committee keeps an eye on it to preserve scientific and editorial standards. The *Europhysics Conference Abstracts* series are of great value for obtaining the latest information on tendencies in particular fields of physics.

If EPS is strong internally we can pay more attention to, and be more self-confident in, strengthening our position on the European scene. This evolution is important because it leads not only to a possible increase in financial support from outside, but also to the Society being able to contribute more easily and efficiently to strengthening the position of physics research. But EPS is not the only physics-related society in Europe; contacts with other societies should be strengthened. We have formed a joint Division with the European Astronomical Society and have



The President (second from the left) with three of the winners of the 1993 Hewlett-Packard Europhysics Prize. The photograph was taken during the 1993 General Conference of the Condensed Matter Division held in Regensburg with the German Physical Society's, Arbeitskreis Festkörperphysik. The 3777 participants meant it was the largest physics meeting ever held in Europe.

good relations with the European Materials Research Society; discussions with the European Optical Society have also started so as to improve relations.

Connections with the outside world are constantly improving. There are strong links with The American Physical Society which has Collaborating Society status, together

with The Physical Society of Japan and The Japan Society of Applied Physics; the Asian Pacific Physical Society is also a partner. Last but not least, let me mention the Associate Members. These are companies, institutions, research institutes, and university chairs or institutes which give us significant financial and moral support; we have to find ways to make ourselves more useful to them. It is of course desirable that their number should increase.

The real European spirit of our Society is represented by the individual members. These are the people whose first question is not what they get from EPS but what they can do for European physics. It would be very satisfying to see their number increase and to be able to count upon their support in the future as the Society moves to involve members of national societies in the Divisions. Looking at the history of EPS as documented, for example, in the July/August 1993 issue of *Europhysics News*, we can be proud to see how much has been done by both our predecessors and ourselves in developing European physics. My experience is, however, that the more I am involved in EPS affairs the more problems I see which remain to be solved. The challenge is to do one's best to solve as large a fraction as possible of them by making use of the many opportunities that exist.

N. Kroó, KFKI, Budapest

THE TREASURER REPORTS

Donations Allow More Activities

The Society's Treasurer, Hans Beck from Neuchâtel, took over in March 1993 what was basically a sound ship thanks mainly to vigorous efforts by Philippe Choquard, the outgoing Treasurer, to stimulate income and to rein in costs. It had been proposed to the 1993 Council that the accumulated deficit would be reduced to essentially zero (SFR 5600 to be exact) and the provisional final result is SFR 6000. The satisfactory outcome was achieved in spite of increasing the amount spent on targeted activities, where Council agreed to spend 17 kSFR. This was substantially more than the 10 kSFR proposed for 1992, with the provisional final figures for 1992 — which will receive the Auditor's approval in a few days — showing 14.5 kSFR.

The Treasurer, Hans Beck, speaking at the 1993 General Meeting of EPS members in Florence.



Important contributions from national societies to help cover the shortfall in membership income from societies in east and central Europe allowed this development of targeted activities. Some 12 kSFR was donated for sponsorships in 1992 and 24 kSFR in 1993 comprising 10 kSFR from The Institute of Physics, 9 kSFR from the German Physical Society, 3 kSFR from the Swiss Physical Society, and 1 kSFR from both the Swedish and Finnish societies.

Few Surprises

Turning to some of the details for 1993, the table shows that overall income was close to the 931 kSFR accepted by Council for the 1993 budget. Among the various items, the anticipated membership income was accurately estimated, income from *Europhysics Letters* was higher than anticipated and sponsorship of special issues of *Europhysics News* (a new item introduced in 1993) was not as high as was sought. On the expenditure side, apart from slightly higher Secretariat expenses, everything remained as expected.

The overall evolution of the Society's finances thus offers few surprises, with the figure showing how membership income has increased progressively since 1990 along with miscellaneous income and donations, while *Europhysics News* has been able to keep a relatively stable income. Regarding expenditure, salaries and expenses of the Secretariat dipped during the years the Executive Secretary was based in Budapest, and the increase in the costs attributed to *Europhysics News* was halted last year by reducing the number of issues published each year from 11 to 10. The major problem was

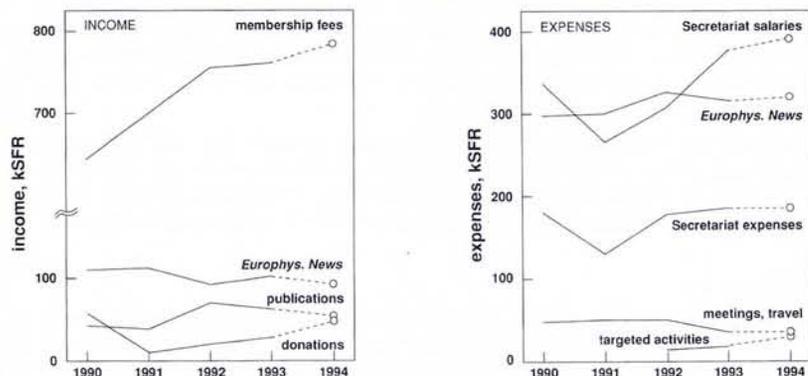
INCOME

	Budget accepted by Council	New estimate
Membership fees		
Art. 4a)	10 800	10 800
Art. 4c)	162 000	162 000
Art. 4d)	9 450	9 450
Art. 4b)	355 000	344 000
Associates	200 000	215 000
<i>Europhysics News</i>	108 500	102 100
Other publications	55 000	62 000
Donations	30 000	32 000
Total income	930 750	937 350

EXPENDITURE

	Budget accepted by Council	New estimate
Salaries	374 000	374 000
Administration	177 000	184 000
<i>Europhysics News</i>	317 000	317 000
Meetings, travel	36 000	36 000
Associate Members	5 000	5 000
East/West	5 000	5 000
Education Forum	2 000	5 000
Mobility Scheme	5 000	5 000
Total expenditure	921 000	928 000

EPS income and expenditure (in SFR) for 1993: as accepted by Council in March 1993 and the latest estimates submitted by the Treasurer to the Executive Committee.



Summary of EPS finances (in SFR) for the period 1990-94. The 1990 and 1991 figures are the final (audited) results, those for 1992 and 1993 are provisional estimates, while those for 1994 correspond to the proposals to Council. Note that *Europhysics News* received a special donation of 43 kSFR in 1990 which is included in Donations.

B. Pontecorvo

Bruno Pontecorvo, died on 24 September 1993. He was born in Pisa in 1913, the son of Maria and Massimo Pontecorvo who owned and managed an important textile firm; Bruno's elder brother, Guido, is a distinguished geneticist and his younger brother, Gillo, is a well-known film director.

After graduating from secondary school, Bruno entered the University of Pisa but after a year, following his brother Guido's advice, moved to Rome to study physics in the stimulating atmosphere of Fermi's school. The young Pontecorvo soon caught Fermi's attention and he was still an undergraduate when his name began to appear on papers on neutron physics. In 1937, Pontecorvo went to Paris to work on artificial radioactivity with the Joliot-Curie group at the *Institut du Radium*. His stay in Paris should have been a short one but it actually lasted more than three years because Italy's antisemitism laws deprived Bruno of his job in Rome. In Paris, Pontecorvo worked on slow neutrons, and on nuclear isomery: he showed that isomery could, in some cases, as he had previously suggested, lead to β -stability. For this work and for his research on nuclear phosphorescence he was awarded the Curie-Carnegie Prize. He fled (by bicycle) to Spain in June 1940 to avoid being captured and from 1940 to 1943 he worked in the USA for an oil company. He then joined the British-Canadian group at Chalk River engaged in the design and construction of a heavy water reactor. Besides working on reactor physics, Bruno turned his attention to neutrinos and mesons. In a beautiful paper published in 1946 he

described a neutrino detector based on the measurement of the amount of Ar^{37} produced by the neutrinos absorbed by Cl^{37} . This method was used many years later by Raymond Davis to measure the solar neutrino flux. Pontecorvo also pointed out in his paper that his detector could in principle be used to verify whether or not neutrinos coincide with their antiparticles.

At Chalk River and later at the Atomic Energy Research Establishment at Harwell, Pontecorvo established the absence of the decay $\mu \rightarrow e + \gamma$ and, by measuring the electron spectrum in μ -decay, concluded that the electron must be accompanied by two neutrinos, thus establishing that muons are fermions. He was the first to point out that the μ^- and e^- K-capture rates by nuclei are of the same order of magnitude provided the Bohr radii of the two particles are properly taken into account. He also measured the electron spectrum of tritium and determined an upper limit (1 keV) to the neutrino mass.

In the summer of 1950, Pontecorvo, who a few months before had accepted a chair at the University of Liverpool, suddenly disappeared during a holiday in Italy and surfaced a little later in Moscow. Bruno told me many years later that he had fled because he would have found it impossible to work in the West in the event of a 3rd World War. During his stay in Paris, Pontecorvo had become a communist even if not a card-carrying member of the Party. In a long talk we had during a prize ceremony in Pisa two years ago, Bruno told me that communism had been for him a sort of religion (he used this word) which for many years made him blind to all the shortcomings and horrors of the regime. He said it never occurred to him that *Pravda* could lie. Sadly,

increased postal charges. By reducing the number of issues and modernising the production process it became possible to lower both production and distribution costs while in fact increasing the number of pages published from 220 in 1992 to 232 in 1993.

Balanced Budget for 1994

The Treasurer basically sees 1994 as a holding operation pending the introduction of the full membership arrangements whereby members of national societies can join EPS Divisions (Council will decide on modifications to the *Constitution and By-laws* in March). So he will propose a balanced budget which envisages an increase of some 20 kSFR in membership income owing to the increase in the unit fee from SFR 13.50 to SFR 14.50 that was agreed by the last Council. A slight decrease in contributions from Associate Members is anticipated because some companies and organizations are clearly having difficulty in responding in their usual way. There is an increase in 26 kSFR for the salaries of the Secretariat but essentially steady-state for the remaining items such as income to *Europhysics News* and miscellaneous items, Secretariat expenses, and travel costs.

It is planned to increase once more expenditures on targeted activities to 28 kSFR while setting aside a further 20 kSFR for Divisional activities. The latter is a new item which is needed to prepare the Divisions for an eventual increase in the numbers of members stemming from implementation of the full membership scheme. An increased amount (50 kSFR) has already been pledged by The Institute of Physics (15 kSFR) and the German Physical Society (35 kSFR) as donations to cover the cost in 1994 of targeted activities. The Treasurer is especially appreciative of this continuing generous level of support, without which it would be difficult to develop new activities.

summarizing his disillusion, he continued: "I have wasted 30 years of my life".

In the Soviet Union, Pontecorvo pursued his research on weak interactions and was one of the first to suggest that the absence of the $\mu \rightarrow e + \gamma$ decay implied the existence of two types of neutrinos. After this was established by Lederman, Steinberger and Schwartz, Pontecorvo suggested that oscillations between the two neutrinos could be the source of the low rate of solar neutrino flux. During most of the time he spent in Russia Bruno worked at JINR Dubna where he became the acknowledged mentor of several generations of Russian physicists, both theorists and experimentalists. He once told me he had tried to export to his adopted country the style of doing physics he had learnt from his teacher Fermi for whom he had, to the end of his life, and unbounded admiration.

Many honours were conferred on Pontecorvo in recognition of his extraordinary originality. He was a member of the Soviet Academy of Sciences, a foreign member of the *Accademia dei Lincei*; he received the Lenin Prize and a Doctorate *Honoris Causa* from the University of Ferrara. He remained throughout his life a modest and charming man always ready to help his friends and his students. During the last years, he was allowed to travel fairly freely without the secret police-looking "physicists" who used to accompany him during early trips. He used this freedom to make frequent journeys to Italy where he stayed with his sister in Rome, almost always making a point to visit the *Scuola Normale à la recherche du temps perdu*.

L.A. Radicati di Brozolo
Scuola Normale Superiore, Pisa