

europphysics news



BULLETIN OF THE EUROPEAN PHYSICAL SOCIETY

J.A. Volume 9 Number 4

April 1978

Declaration on Physics Education

The Council of the European Physical Society, meeting in Helsinki and advised by its Education Committee, wishes to express its concern about the reduction which is occurring in the time and effort devoted to physics in secondary schools in some European countries.

A sound knowledge of physics and mathematics is the basis for an education in both the natural sciences and technology. Knowledge and understanding of the physical world are essential components of modern culture. A continuation of the present tendency to neglect the learning of physics may therefore have a profound impact on the future of our civilization.

As the powdery snow swirled round the frozen streets of Helsinki, drifting across the solid sea that locked the off-shore islands in winter's grip, members of Council and delegates to the Advisory Committee on Physics and Education and the Publications Committee assembled at the Finnish-Swedish Cultural Centre of Hanasaari, a few kilometres outside the city. For those who arrived a few days early, a glimpse was had of the bright nordic sun that can transform the country, but for the majority, the ice and snow outside created a compelling backdrop to the serious work going on in the elegant and warm surrounding of the Centre, which the Finnish Physical Society had been at such pains to prepare.

Interaction with Finnish Physicists

But it was not only the Centre the delegates saw. Almost half of those participating in the meetings had the opportunity of visiting one or more departments of physics in the various

- Interacts with Finnish Physicists
- Launches Scholarship Scheme
- Sees Deficit Wiped Out
- Plans Future Economic Stability
- Debates Physics in Education
- Elects New President and Executive

universities and technical colleges around the country, where they were shown the work going on and, in their turn, gave a lecture on their own field of interest.

In his address of welcome to the Council, the President of the Finnish Physical Society, Vesa Ruuskanen (succeeding J. Routti from the beginning of the month) made reference to the problem of maintaining a high scientific level in a small country. It is obvious that a small country (and in Europe, perhaps all countries, with the possible exception of the USSR, are small) cannot independently expend the effort necessary to maintain a high level of competence in all fields. It must make a selection of those fields where physical or historical circumstances allow the greatest return to be made, relying on contacts with the outside world for current awareness of progress in other fields.

Here was a most important role for EPS — to help guarantee a proper distribution of knowledge and also create a climate in which everyone willing to do so, could make their contribution in a given area. It was relatively easy for big groups to maintain contact, but there must also be room for the individual, and his importance recognized. The danger of isolation was not simply that effort was wasted but that its effect was negative, depreciating the value of the higher quality work that was going on elsewhere, and diluting the general

level of the rest of the community. In Finland these problems were recognized and whilst there were some areas where the effort was sub-critical, so far, through international contacts, a good average level had been established.

The interaction of so many European physicists with the Finnish community was far less one-sided than many had supposed would be the case. A number of the lecturers undertook the task of going out to the departments with a sense of duty, and as a gesture to the Finnish Physical Society that had made such an effort to transform the Council meeting into a national event. To their surprise, they found the experience highly rewarding to them personally, discovering points

COUNCIL

Contents

Council Report	1
EPS Scholarship Scheme	3
York Plenary Lectures	4
Trends in Physics	5
Symposium B1	5
Symposia A, B2	6
Symposia C1, C2, D	8
Symposium E2	9
Symposium E1	10
Physics and Society	10
Physics and Piaget	11
Society News	12

of view, techniques, methods of approach, applications that were to them novel, and receiving a stimulation from their hosts that they had not expected. At this meeting in Helsinki, Council members found they had broken out of the uninspiring routine of administration and had initiated a quite new form of physics interaction with the host country, that surely will become a pattern for the future.

A Call for Boldness

In opening the meeting, the President, I. Ursu directed the attention of Council to the new opportunities opening up in front of the Society. The Society had now paid off its deficit and for the first time for many years could look forward without a financial mill-stone round its neck. During these past years we had to think so often of restricting our activities, cutting down on expenditure, and all the time of money. This could become a habit, and could result in initiatives being postponed just because of this background of having to think negatively. In future, our attitude should be positive – not to say bold.

EPS Scholarships

Such a mood was much in evidence when Council came to consider the EPS Scholarships scheme, reported by P. Choquard standing in for B. Giovannini. Four countries have now confirmed their offers of scholarships to be awarded through EPS and, although time is short, Council decided that the scheme should be launched at once so that the first placements could be made in time for the 1978/79 academic year.

Details of the scheme are given in the following article. What is now needed is publicity to acquaint potential applicants with the possibilities. All readers of *Europhysics News* are asked to help in making the scheme as well known as possible.

Finance

Announcing the good news that EPS was now solvent, A.R. Mackintosh regretted that O.S. Heavens, the Treasurer was not there in person to share the general satisfaction. The Society could not however rest on its laurels and an increase in the unit fee would have to be made to absorb the effects of inflation. Happily, inflation in Switzerland had been lower than the general European level and the Executive had been able to manage without the increase from 7 to 7½ Sw. Fr. that the Council had authorized in 1975, but Council accepted

that it was reasonable to contemplate an increase to 8 Sw. Fr. from the beginning of 1980.

One constriction on the work of the Society was the blockage of funds resulting from certain fees being paid in non-convertible currency. At the beginning when the Society was formed, it had been assumed that even if there were difficulties in some instances in the transfer of funds from East to West, mobility within the eastern countries would permit certain activities to be performed there. However, with some exceptions such as the printing of the Members' Handbook in Poland, it had not proved possible to exploit the reserves in the various eastern centres. If these could be made convertible the increase in effective income to the Society would be significant. It is to be noted that Romania and the USSR, as well as Yugoslavia and the market economy countries pay their contributions in Swiss francs and all have manfully accepted the consequences of the increasing strength of this currency over the past years.

Physics and Education

Prior to the Council meeting, the Physics and Education Advisory Committee had been in conference over two days and the Chairman, A. Janner was there to review the work currently going on. As a basis for its studies the Committee holds fast to two principles.

- 1) physics education plays an essential role in the development of physics
- 2) physics education is of great importance in providing the coming generations with a balanced view of life.

Against this background, the committee has been assembling data on current practices in secondary education in now 18 different European countries, through the collaboration of the national societies. A review of this information is under way and will be presented in a future publication of *Europhysics Education News*.

Considerable interest has been expressed in a survey of the views of 3000 physics teachers in the German Federal Republic and an effort will be made to extend this to other countries.

Now that the activity at the secondary school level is proceeding steadily, attention is being focused also on teaching at the university level, and studies are in hand on the proper balance between research and instruction and to what extent the student can participate in a research

programme. There is a strong feeling that whilst it is accepted that research is a necessary adjunct to teaching for the professor, research is also necessary for the student to develop his understanding. More will be heard at York on this subject (see p. 11).

A practical aspect of the Committee's activity at the University level was the nomination of an international editorial board for the new journal on education in physics which is to be launched by EPS in collaboration with The Institute of Physics of the U.K. The contractual aspects of the collaboration are examined by the Publications Committee (under E.R. Dobbs) leaving to the Executive the problems of finance.

Whilst it may be apparent to physicists that a physics education is a *sine qua non* of a modern cultured man, concern was expressed by speakers from several countries that education authorities were drifting away from this principle and in some cases adopting policies which militated against a proper teaching of the basic fundamental laws that governed all matter, whether live or inert. Physicists needed to speak up for physics; if they did not it would be assumed that there was tacit agreement with the tendency that seemed to be under way.

Council was unanimous in deploring the situation and approved the declaration from the meeting that appears on page 1 of this issue.

Elections

Election of the new officers of the Society and members of the Executive Committee produced no surprises as the proposals of the outgoing executive were accepted without modification. No longer eligible for consideration were I. Ursu and O.S. Heavens and proper appreciation was expressed of the contribution they had made to EPS during their period in office.

The Executive Committee for the next 12 months is composed as follows:

President : A. Zichichi, CERN
Vice President : S. Kapitza, Moscow
Secretary : M. Guenin, Geneva
Vice-Secretary : E.A. Müller, Geneva
Treasurer : L.A. Thomas, Wembley
Vice-Treasurer : A.R. Mackintosh, Copenhagen

Members : A. Lösche, Leipzig
W. Martienssen, Frankfurt/Main
A. Milojevic, Belgrade
P. Radvanyi, Orsay
Z. Wilhelmi, Warsaw

Further information on Council next month.