EPS Meetings in Berlin-West

COUNCIL

With most of the national physical societies in Europe represented, practically all the EPS Divisions in evidence, all the delegates of the Associate Members present and a fair turn-out of delegates of the Individual Ordinary Members, the Council of the European Physical Society met for its 1985 meeting in Berlin-West on 22/23 March. The agenda was long, but without noticeably limiting the exchanges, the President, G.H. Stafford contrived to cover all the issues that were raised.

Advisory Committees

He opened by summarising the work of the Advisory Committees and recorded the Society's appreciation of the contributions of the outgoing Chairmen of the Education Committee — L. Samuelsson (Linköping) and the Publications Committee — G. Eilenberger (Jülich) whose positions were now filled respectively by J. Depireux (Liège) and J.M. Araujo (Porto). The **Education Committee** had of late been turning its attention to the creation of a network to connect people and centres in different European countries concerned with physics education. This would be manifest in a series of summer schools and seminars during which new thinking in physics education would be explored. The **Publications Committee** had proposed a reorientation of the Society's approach to journal rationalisation to coincide with the start up of *Europhysics Letters*, the full implications of which had still to be assessed. Its recommendation however that EPS should become a member of ICSTI (the International Council for Scientific and Technical Information), a new organization designed to replace and extend the competence of ICSU-AB, had been accepted. This would cost the EPS $ 500/a, but it was considered necessary to have the voice of the "user physicist" present in studies on future publishing standards and technology.

The **Conference Committee** was able to report a satisfactory rhythm of EPS organized and sponsored conferences, but there was concern over the fact that in 1984 only the Condensed Matter Division had contributed to the Young Physicists Fund which is used as support for people going to the triennial General Conference. Some 46 students had been helped to go to Prague in 1984 and whilst it looked as if the fund might be able to support a similar number at the 7th General Conference to be held in Helsinki, 10-14 August 1987, the following in the Netherlands was problematical. The decision was therefore taken to add 10% to the attendance fee in Helsinki to provide a base for the Netherlands' conference.

The **Physics and Society Committee** was currently working on a number of parallel themes: The study on employment supported by the Bernard Gregory Foundation in Paris was coming along well and a report would be published in the summer. Plans were in hand for a series of fact-finding meetings to see how physicists could help in reducing tension between nations. The first topic to be examined at an east-west workshop to be held next year would be nuclear winters and the Committee was currently looking for sponsors to add to the base fund established by the EPS. A third theme was public awareness of physics and this was being tackled through national study groups.

From the Committee had also emerged the proposal, which Council approved, for an **Interdivisional Group on Physics and Development** with E. Lillethun (Bergen) as Convener. This was designed to help physicists in the less developed countries to keep in the main stream of modern physics. The Group would initially concentrate on activities which stimulate direct person-person and institution - institution contacts for carrying out projects in research and education. More specifically, the Group would act as a liaison between physicists: collect and distribute information, help in locating funding sources, arrange meetings and establish contact with other groups such as the International Physics Group of the APS. "Less developed" includes relevant European countries but also the poorer countries of other continents, notably Africa.

At its last meeting Council had asked for a report on the implications for the future of one of the delegates to Council having been refused a visa to attend the Prague meetings [*EN*, **15** (1984) 8/9]. Examination of the development of the situation with the help of the **Scientific Freedom Committee** had shown that while EPS had acted correctly, and the Czechoslovak physicists had done their utmost, the speed of our reaction could have been greater. In consequence, Council approved the proposal that a Standing Committee should be set up consisting of the President, Vice-President and Secretary which could act rapidly in the name of the Society should such a problem arise in the future.

Divisions

Although much of the work of the Divisions is concentrated on the organisation of particular conferences and schools — the Divisions with their Sections are responsible for nine major meetings in 1985 and the Computational Physics Group a tenth — this is not the sum total of their activities. All have been concerned in the recommendation of Co-editors, Advisory Editors and referees for *Europhysics Letters* for example. In addition, the **Plasma Physics Division** has recently instituted a Newsletter which is circulated with *Plasma Physics and Nuclear Fusion*. A similar initiative is being taken by the **Quantum Electronics Division** which it will be recalled has for a number of years published a "Who's Who" — an example that other Divisions were encouraged to emulate. One might note here also the *Who's Who in Molecular Beams* compiled by H. Haberland, Freiburg.

The **Atomic and Molecular Physics Division** has settled on a 4-year cycle for its General Divisional Conference although there are specialised conferences at more frequent intervals.

An interesting point of principle was raised in regard to the proper role of the **Computational Physics Group** in the development of interconnexions between computers in different locations. Of the two systems quoted — the hook-up between various high energy physics laboratories [Hine M.G.N., *EN* **14** (1983) 2] and the European Research Network, linking some 100 universities throughout Europe, the first was initiated by the physicists at the working level, while the second was essentially IBM led. In other words there were no fixed precedents at the moment and it was difficult to see how EPS could make a useful input particularly when other agencies were able to expend considerable sums on related activities (*e.g.* 'Esprit').

The **High Energy and Particle Physics Division** outside the direct task of organising the Bari Conference in July had been pursuing the policy of having closer links with CERN as the main European HEPP centre. One step in this direction

had been to invite the European Committee for Future Accelerators (ECFA) to send an observer to Board meetings and for the Board to be represented as such at ECFA meetings.

Most recent of the Divisions of EPS to be formed is the **Optics Division** which has at present a Board essentially composed of representatives of national societies. Steering a course between the different European interests with their historical loyalties, different conceptions of physics and engineering and trying to cooperate with the vigorous and agile American society SPIE was not the simplest of operations. However, the ECOOSA conference held in conjunction with the QE Division in October 1984 had been very successful and steady progress was being made towards rationalising the European scene.

EPS Publications

Both the *European Journal of Physics* and *Europhysics Conference Abstracts* were now contributing to the EPS income — or more strictly in the case of *Eur. J. Phys.*, steadily paying off its accumulated deficit. The retiring editor G.W. Series had earned the Society's warmest thanks for his tremendous personal effort and was congratulated on his success in establishing the journal as a high quality publication. His successor is J. Pisut of Bratislava.

According to the agreement between EPS and the publishers, The Institute of Physics, members of the Editorial Board retire after serving for a maximum period of two terms of three years. The Board has up to 20 members of whom 10 are nominated by EPS and the rest by the IoP. New members joining the *Board* from the beginning of this year are:

J. Bicak, Prague (EPS)
J.-M. Levy Leblond, Nice (EPS)
S. Stenholm, Helsinki (EPS)
W.F. Vinen, Birmingham (IoP)
F.J. Wright, London (IoP)

Europhysics Letters

Good progress could be reported on the preparations for launching *Europhysics Letters* on 1 January 1986. As reported in the February issue, N. Kurti of Oxford has been appointed Editor-in-Chief and the list of Co-Editors is being finalised. At the time of the Council meeting some uncertainties remained over availability but the complete list should be defined shortly. Similarly in regard to the Advisory Editors, a list of names submitted by the Divisions had already been drawn up and with the help of national societies, this was being developed to ensure a reasonably wide geographical distribution. Whilst the Co-Editors were responsible for accepting or rejecting submitted papers on the basis of the opinions of (at least two) referees, the Advisory Editors had the multiple role of monitoring policy, encouraging contributions and readers, and helping in forming the body of referees.

On the material side, the basic agreement between the initial Partners: the EPS, the French Physical Society, The Institute of Physics and the Italian Physical Society had been approved; the publishers had been chosen on the basis of the offer presented jointly by the French and Italian physical societies; the staff editor had been appointed and would be settling in at the EPS Secretariat from 1 July. Addressing the CMD Conference, Kurti declared — "This is *not* just *another* physics journal. It is the amalgamation of *Journal de Physique Lettres* and *Il Nuovo Cimento Lettere* plus some of the letters from the *Journal of Physics C*". He then gave his maxims as quality, speed and impartiality. Detailed attention was now being given to transfer mechanisms and the establishment of editorial procedures. All systems seemed to be GO, and the count down had begun.

Members

With the death of P.A.M. Dirac the number of Honorary Members of EPS had been reduced to three. Our constitution has set the limit at 50 and the Executive Committee considered it proper that a small number of Honorary Members should be put to Council each year. In this spirit, members were invited to send their suggestions for 1986 to the Secretariat for consideration by the Executive. In the meantime, Council applauded the Committee's proposals for 1985 and unanimously elected as Honorary Members:

H.O.G. Alfven, Sweden
E. Amaldi, Italy
N.N. Bogolubov, USSR
F. Hund, Fed. Rep. of Germany
N. Mott, UK
L. Neel, France

Individual Ordinary Members

A recurring theme at Council meetings is the need to increase our paying membership notably the Individual Ordinary Members and the Associate Members. From the point of view of economy it is evidently necessary to take lapsed members off the books and the new regulations approved by Council were published last month. Implementation of the system will be made much easier — at least in principle — by the computerisation of our membership lists which will have been completed by the Budapest office before the summer.

Council is anxious to maximise the return to IOMs. Currently they receive *Europhysics News* free of charge, a generous reduction in the subscription to *Eur. J. Phys.*, a special price for *Formulae and Methods in Experimental Data Evaluation* (the Handbook prepared by the Computational Physics Group) a generous reduction on the proceedings of EPS General Conferences (see page 16), as well as significant reductions on personal copies of a number of non-EPS publications and on conference fees. Moreover, offer of *Europhysics Letters* at a run-on price will be seen as a most significant benefit. Nevertheless, a further inducement to young physicists was considered appropriate and Council approved a 50% reduction in fee for those below 30 years of age (as reported last month). In addition it approved the principle that all those joining in the second half of year X would have their fees for that year waived provided they paid at once their fee for year $X + 1$.

As a delegate of the Individual Ordinary Members, F. Mezei put forward the thesis that EPS should still be more consciously a society of IOMs with a representation in Council that was more nearly the same as that of the corporate members. An immediate argument is that the present income is derived from IOMs: 20%; corporate members: 45%; Associate Members: 35%, whereas the proportion of IOM delegates in Council is 11%, as against 73% for the corporate members. However Division leaders make up a further 11% and the society representatives regard themselves in large measure as representing a body of physicists rather than an administrative structure. The prevailing argument however, was that years of negotiation had gone into the formulation of the present balance and this was not lightly to be disturbed. In any case, the highest authority in the Society is the General Meeting and here the IOMs could outnumber the corporate members by 150 to 1 — if they all turned up.

Associate Members

Apart from the need to continue to recruit new Associate Members (because there is in any case a small but steady wastage), much thought was given to how the Associate Members could be drawn more actively into the life of the Society. The present **Advisory Committee on Applied Physics and Physics in Industry** seems the obvious channel of communication and representatives of the Associate Members

had met first with ACAPPI (where they were in the majority) and then with the Executive Committee to consider the subject.

The main conclusion was that with its present structure, ACAPPI could do little more than exercise a distant influence on events, notably by trying to modify the programmes of conferences already largely circumscribed. What was needed, and Council supported the principle, was a direct input into the Boards of the Divisions and Sections with a significant applied relevance, so that the interests of the project-orientated physicists (not all of whom were in industry) could be permanently in view. It had been proposed, therefore, that the active core of ACAPPI be made up of people from the Associate Members and that representatives become members of relevant Divisional and Sectional Boards. The term representative is used advisedly as it would be the responsibility of such Board members to canvass the views of the rest of the Associate Members in regard to future programmes. Consideration could also be given to holding specialised workshops in emerging technologies that were inspired by industrial

In addition to these rather explicit actions, ACAPPI had a continuing role to seek ways of bringing academia and industry closer together. Delegates of the Associate Members also laid emphasis on the importance of education — updating and reorientating, and a warning was given against too much accent on "with-it" physics. What industry in particular needed were well tailored didactic meetings — possibly of the Gordon type — to which those becoming stale could go and there receive a new impetus and a wider horizon. These are just some of the ideas exchanged in the different discussions which ACAPPI, the Executive Committee and the Divisions will be mulling over.

Finances

Council was presented with and accepted a budget for 1985 that shows a small surplus only. Whereas 1984 was showing a surplus of income over expenditure of Sw.Fr. 34400.–, of which Sw.Fr. 14400.– was allocated to amortizations and Sw.Fr. 5000.– to contingencies, leaving Sw.Fr. 15000.– to be put into the Special Development Fund, 1985 would show a gross surplus of a mere Sw.Fr. 7000.–. The inevitable trend implicit in these figures (remembering the surplus of Sw.Fr. 70000.– in 1983) pointed to a rise in the unit fee as announced last month. But continued vigilance is necessary and recruitment remains a key issue.

People

The new Executive Committee elected by Council was published last month.

Herman Haken of Stuttgart had agreed to be this year's EPS lecturer. He will be offering a choice of four lectures, the first three essentially physics, and the fourth mathematics. They are:

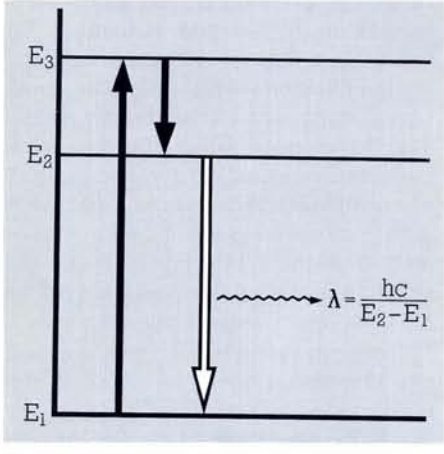
Synergetics: An overview.

Theory of non-equilibrium phase transitions, slaving principle and order parameters.

Pattern formation in systems far from thermal equilibrium.

Bifurcation theory of tori.

Klaus Dransfeld of Constance had agreed to be the Chairman of the International Programme Committee for the 7th General Conference to be held in Helsinki in 1987. Olli Lounasmaa is Chairman of the Local Organizing Committee.



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A Gift

The German Physical Society completing the hospitable welcome we had received from our hosts in Berlin-West, offered to EPS without charge the computer with its soft-ware that they had been using but had now out-grown. Council warmly applauded this gesture and a study will be made of its suitability to see if in the near future the main Secretariat as well as the Supplementary Secretariat in Budapest can be equipped with modern devices.

Next Meeting

The next meeting of Council will be held in London following the Seminar on International Research Facilities which will be held from 17 March p.m. to 19 March 1986, mid-day.

5th CMD General Conference

Orchestrated with discrete efficiency, the 5th EPS General Condensed Matter Conference took place in Berlin-West 18-22 March — not as foreseen in the new Physics Department of the Technical University, finished ahead of schedule in order to be available — but in the University's conference building because the number of registrations had become so large. The Condensed Matter Division has been gratified in the past by the number of participants at its general conferences but this was something different: 1550 registrations, over 1000 submitted papers; five days of poster sessions with 190 posters/day which drew an average attendance of over 1000.

The very big numbers were in large measure the result of the Conference being joined to the traditional March Physikertagung of the German Physical Society. Of the participants, over 900 wore badges indicating they were from the Federal Republic of Germany but many of the faces betrayed a provenance from much further away. This was evident in the list of authors which included contributors from almost the whole world and many of the papers were the consequence of joint activities with people even as far afield as China. At a rough estimate only about two thirds of those with an FRG badge were permanent residents of the country. Such is the pattern of research in the universities today in the FRG. There is a steady flux of people from abroad, maintaining a foreign population among researchers of about 20% — a population at its most inventive and productive age.

The popularity of the Physikertagung merits some reflexion. Undoubtedly over a number of years, research in the FRG has been well endowed, not least in condensed matter, and the membership of the DPG has grown impressively — 8100 in 1984, 9100 in 1985 already, but the tradition is deeper than that. Most of those attending make the trip at their own expense — as a necessary part of their career activity and the organizers encourage this by keeping the registration fees low (100-120 DM on this occasion, and students in effect free, not to mention a generous number of guests from abroad) and having available good simple accommodation (30 DM the night). Another feature is the care taken over the plenary lectures, a feature emulated this year by the International Programme Committee. Presentations were, with but one or two exceptions, of real didactic value — up to the moment, but with adequate background to give ready understanding. The arch demonstration of this was perhaps the very last lecture by H.O. Peitgen of Bremen on the somewhat forbidding subject of Phase Transitions and Complex Dynamical Systems as seen by a mathematician. What followed was an elegant introduction to the obscure Julia sets, leading on to the conception of non-integral dimensional systems and fractals. These were then illustrated through a flashing panorama of computer graphics which showed the same "sea-horse" pattern reappearing again and again as the scale was increased by orders upon orders of magnitude, to the evident delight of a packed audience whose final applause was in appreciation as much of the manner as of the substance of the talk. Again on the question of presentation one could note the generally high quality of the posters. No longer did one find boards covered with scruffy photostat copies in characters so small and inaccessible that the bifocal wearer found them impossible to read through either lens. Bold, clear and explicit was the formula of the day.

As the Chairman of the Condensed Matter Division reminded the participants, European physicists working in condensed matter used to meet at the March meeting of the APS; now they could meet in Europe. And as if to confirm the emancipation, we were also treated to a beautifully balanced talk given by the retiring President of the APS, Mildred Dresselhaus on Layered Crystals and Intercalated Compounds, following which she fielded with practised ease a question thrown at her on American defence policy because she dared in her introductory remarks to speak of a golden age in physics. Who looking round the packed halls or mixing with the chattering throng could doubt her contention?

It is never easy at such big conferences to identify the key subjects but readers can judge for themselves either by consulting *Europhysics Conference Abstracts* Vol. 9A, or the proceedings to be published in *Advances in Solid State Physics* (promised in three months!). Three topics however, caught the attention and will be reviewed later in *Europhysics News*, namely heavy fermions, the pervasiveness of tunnelling now in condensed matter measurement and the importance of applied physics in the field (see opposite).

It was noticeable that roughly half the posters were on semiconductors and the symposium on devices attracted a very large following. So too did the symposium on the quantum Hall effect. Far from this being an exhausted subject, the ramifications of the integral and fractional effects seem to be steadily widening. Turbulence, chaos and non-linear dynamics was another symposium with a large following and it is clear that this is a field of growing significance — not just in physics but right across the sciences including the live sciences, the social sciences and economics.

Too easily can it be said that the host city reserved a warm welcome to the conference — exemplified by the greeting by the Chairman of the Senate and the subsequent reception in the restored Schloss Charlottenburg — but it would be difficult to have a more convincing proof of the good-will shown than that of allowing the Conference Programme Committee to choose the programme at the famous Deutsche Oper. (That hardly sounds like two cultures!) Altogether, it was an enormously successful meeting to start off the EPS season, and the organizers led by J. Treusch as Conference Chairman, with N. Nelkowski and D.H. Haberland as Chairman and Secretary of the Organizing Committee (plus wives) and M. Cardona, Chairman of the Programme Committee fully merited the applause they received.