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Cover illustration

The measured temperature distribution over the 2 mm² Si membrane of a micromechanical optical device. The membrane is heated by applying a current to a 1 mm²-square, structured metallic thin-film deposited at the centre (the temperature varies from about 70 °C to about 450 °C). The device can serve as an infra-red microradiator or as a deformable micromirror for gas analysis. (Courtesy: IPHT, Jena; see page 207)

Well-Founded Optimism

National Society Members of EPS have been eligible for EPS activities since Council voted in the new category last March. In practice, the new arrangements start in January and some fine-tuning continues (see p. 189). In the meantime, many national societies have been asking members to indicate the Divisions of Groups they wish to join, so EPS finds itself addressing directly many more people, including young physicists and teachers.

Efforts to extend activities have in some cases meant taking stock of the situation. With regard to physics teaching, the Forum on Education has carried out a survey that aimed to map out the relations between teachers and their national societies. Professor Gunnar Tibell from Uppsala, the Forum's Chairman, thinks the information should help in developing new initiatives that will not only focus attention on the importance of a good physics education, but also address specific topics such as encouraging research centres and research organizations, and indeed physics research in general, to become more involved in education. In addition, the Forum hopes to improve the pre- and in-service training of teachers, encourage high-quality textbooks via initiatives such as the EPS-sponsored Amaldi Prize (see p. 206), and promote modern teaching aids.

Europe being Europe, the profiles for the national societies are very different when it comes to teachers and education. Nonetheless, some conclusions can be drawn, although the table on p. 216 summarising the results available so far suggests at first sight

that this optimism is unfounded. Teacher memberships vary from none (in the sense that teachers are not identified) to more than 60%, with maybe half of the national societies having significant numbers of teachers who are often organized in a Section or Division and considered as full members. However, countries which organize a division for education usually have a parallel association and/or union for teachers, suggesting that a strong national structure for teachers spills over into physical societies — a feature that may be relevant at the European scale. Slightly surprising is the patchy collaboration between the societies and these other bodies (and indeed with international bodies such as IUPAP and the European Commission), suggesting that a useful first step in building up activities would be to improve contacts at both national and international levels.

Relatively few societies organize an annual conference for teachers, preferring instead to dedicate part of a general scientific meeting to education. As might be expected, societies arranging such activities are usually able to complement them with seminars, symposia, courses, lectures, etc. for teachers.

Even rarer are societies which are directly involved in advising government on educational matters, although several take it upon themselves to analyze and reflect on aspects of physics teaching. Very few publish a bulletin for teachers, but most use their national bulletin to communicate to teachers. The amount of material offered varies greatly and never amounts to more than about 10%, excluding scientific articles, which some but by no means all national societies consider as being tailored for teachers. One or two societies have been

able to find the resources to publish books and booklets promoting physics in schools, notably Norway which tied a publication to a very successful museum exhibit.

Links between teachers and university academics are increasing over and above the conventional arrangements such as in-service training by specialised university departments. Some of these initiatives are innovative with, for example, laboratory visits in Belgium, teachers acting as tutors in Holland, and a resource centre in Sweden. Much less developed are links between teachers and non-academic institutions, a notable exception being the Hungarian scheme whereby teachers work temporarily in research institutes. None of the societies that replied to the survey questionnaire mentioned exchange schemes for teachers to work for a time outside their own country. However, teachers in Sweden move locally between schools, and one or two countries are arranging for teachers to attend conferences elsewhere.

Participation in the Physics Olympiad is fairly universal, with some societies arranging special training for student competitors. However, except for Holland which awards grants to develop teaching materials, remarkably few offer prizes and other forms of encouragement to stimulate teachers and physics teaching.

It would be helpful if the 15 or so societies that have not formally responded to the questionnaire did so before drawing firm conclusions. However, from the replies received so far one feels that many people see the education issue as vital, and having a firm national basis on which to build a coherent European involvement via the Forum.

P.G. Boswell