

# NEWSLETTER

**girep**

Groupe International de recherche sur l'enseignement de la physique  
International research group on physics teaching  
Internationaler Arbeitskreis zur Förderung des Physikunterrichts

No.10 May 1982.

1. This newsletter aims to keep you up to date with the GIREP activities, and plans for the future. It is sent with current membership cards to all paid up members; if there are any errors with the addresses or with the membership dates please notify either the Treasurer, Marisa Michelini, Modena, or the Secretary, Brian Woolnough, at Oxford. Also enclosed with this newsletter is a Personal Form. If you have not returned such a form to Professor Loria within the last year, we would be grateful if you would do so. If you have recently completed and sent in your form, please feel free to pass on the form to someone else who you think might benefit by joining GIREP.

2. The most recent GIREP General Assembly was held at the GIREP 1981 Conference, at Balatonfured, Hungary, on 12th September 1981. The minutes of that meeting are as follows:

- (i) It was proposed and accepted that the present officers of GIREP should continue for the next two years:

President: Arturo Loria (Modena, Italy)  
Vice-President: Paul Black (London U.K.) and  
George Marx (Budapest, Hungary).  
Secretary: Brian Woolnough, (Oxford, U.K.).  
Treasurer: Marisa Michelini (Modena, Italy)

- (ii) The financial report, having been satisfactorily audited, was presented to the meeting by the Treasurer and accepted. It was noted that GIREP accounts were now held in Switzerland (Credit Suisse), Italy (Banca Popolare di Modena) and U.K. (Barclays Bank) to facilitate the payment of fees and the operation of GIREP. The Treasurer reported that the 1979 membership of GIREP was 183, 1980 was 186 and 1981 (at 25.7.81) was 110\*. It was agreed to leave the membership fee unchanged: US \$ 10., Marisa Michelini was thanked for all her hard work in mastering the very complicated GIREP funds (a brief financial statement is included page 3.

217 members for 1981 by end of year.

- (iii) Next GIREP Conference. It was proposed and provisionally accepted, that the next GIREP conference, in 1983, should be held in Holland. Peter Lijnse from Rijksuniversiteit, Utrecht, was thanked for the offer and encouraged to explore the possibilities and practicabilities further.

- (iv) GIREP 1981. The meeting being held at and during GIREP 1981 Balatonfured Conference, was well aware of the vigour and success of this conference. It was noted that 150 participants attended, from 30 countries. George Marx and his organising committee, were thanked for making it such a useful and happy conference.

(v) Honorary Members

It was proposed and accepted, that the following should be invited to become honorary members of GIREP in recognition of their past services to Physics education in general and GIREP in particular:

Nahum Joel, UNESCO

John Lewis, Malvern College, U.K.

Mark Zemansky Formerly City University, New York, U.S.A.

(vi) Any other Business

(a) Statement of Concern.

It was proposed that the following statement of concern should be endorsed by the conference;

"The GIREP Conference on Nuclear Physics and Nuclear Power in Physics Education, Hungary 6-13.9.1981, is deeply concerned with the ongoing developments in the nuclear arms race both as to the increasing production and proliferation of the nuclear weapons and to the lowering of the threshold of a nuclear war.

Therefore the conference strongly underlines the ever increasing responsibility of the physics educators all over the world to inform the young generation of the consequences of nuclear war as the greatest threat to the future of mankind and human culture. No exaggeration is needed to portray the final act which ended the second world war in Japan. No other group of educators is so closely morally involved and in a better position for this task than the community of physicists working within physics education".

However, while members were in sympathy with the sentiment expressed in the Statement, it was felt not to be an appropriate action for GIREP, an informal group of physics educators, to make such public statements. Individual members were encouraged to make such statements personally in their local contexts as appropriate.

(b) School teacher participants

Attention of the conference was drawn to the fact that very few participants were practising school teachers. This was regretted, and the committee was urged to consider ways that more school teachers might be enabled to attend GIREP conferences in future.

3. GIREP Financial Statement, as of 31.7.1981

A.	<u>CREDIT</u>	<u>DEBIT</u>
<u>Credit Suisse (SFr)</u>		
1. Assets brought forward from previous treasurer.	4587. 71	
2. Fees received	3127. 90	
3. UNESCO contribution to Rehovot Conference GIREP '79	6102. 00	
4. Rehovot Conference expenses		6099. 00
5. Credit to secretary for newsletter expenses		1932. 00
6. UNESCO contribution to Balatonfured Conf. GIREP '81	11453. 75	
7. Bank charges		159. 51
	<hr/>	<hr/>
	25,271.36	8190. 51
Carried forward	<u>17,080. 85 S.Pr</u>	
 B.		
<u>Banca Popolare di Modena (Lire)</u>		
1. Assets brought forward	461,432	
2. Fees received	1,457,973	
3. Expenses Rehovot conference		210,300
4. Committee meeting expenses Trieste		68,800
5. Postage, stationery, secretarial expenses		584,430
6. Bank and exchange charges		23,500
7. Interest	33,250	
	<hr/>	<hr/>
	1,952,655	887,030
Carried forward	<u>1,065,625 Lire</u>	
 C.		
<u>Barclays Bank (Oxford U.K.) £ Stirling</u>		
1. Transferred from Credit Suisse.	500. 00	
2. Fees received	127. 50	
3. From Oxford Conf. Fund for report	100. 00	
4. Postage for Oxf. Conf. Report		251. 76
5. From sale of Oxf. Conf. Report	76. 00	
6. Secretarial expenses		128. 50
7. Printing postage, Newsletter 8		175. 99
	<hr/>	<hr/>
	£803. 50	£556. 25
Carried forward	<u>£247. 25</u>	

4. The 8th GIREP Conference Balatonfured, Hungary 6-12 September '81.

NUCLEAR STRUCTURE - NUCLEAR POWER

The energy economy, the use of nuclear energy, the problem of nuclear armament are burning issues of the society to-day. This is why GIREP decided to devote its 1981 conference to the teaching about atomic nucleus in the school - taking the full spectrum of scientific, technological, pedagogical, economical, social, psychological aspects into account. The conference, held on the side of the Lake Balaton, in the lovely resort town of Balatonfured, rather succeeded in achieving these goals. The GIREP conference was attended by 150 teachers, professors and experts of physics ( the number pre-determined by GIREP), coming from 30 countries of the 5 continents.

The conference started with the opening words of Arturo Loria, president of GIREP. The welcome address of Lenard Pal, the Secretary General of the Hungarian Academy of Sciences emphasized the social importance of the nuclear issue.

Ferenc Ratkai the Deputy Minister of Education stressed the moral responsibility of physics teachers in educating the society in this respect. The secretary of the International Commission of Physics Education announced, that the 1981 ICPE medal is given to Pjotr Kapitza, Nobel Laureate, one of the pioneers of the controlled thermonuclear fusion, for his distinguished achievements in educating young people in physics.

The authentic report of Sakae Shimizu, member of the team exploring the effect of the bomb in Hiroshima in 1945 and the peace message of the Mayor of the City of Hiroshima to the conference called the attention of the participants to the dangers of nuclear armaments. The report of H. Laue from the International Atomic Energy Agency about the situation of the use of the Nuclear Energy worldwide, that of John McDermott about the Harrisburg reactor accident, that of Friedrich Niehause of IAEA Vienna about the public acceptance of nuclear power, exposed different aspects of the nuclear energy debate before the discussion of the educational problems. The visits to a nuclear power station, to a TOKAMAK thermo-nuclear installation, the films and posters for and against nuclear power increased the feeling of reality.

The talks about nuclear education (Eric Rogers from Princeton, Poul Thomsen from Copenhagen, Helmut Mikelskis and Roland Lauterbach from Kiel, George Marx from Budapest) presented different approaches. They were followed by a panel discussion, led by Uri Ganiel from Rehovot, offering a review of the worldwide situation of nuclear physics in the school.

The talks about energy education (Jon Ogborn from London and John Lewis from Malvern U.K.) emphasized that this old school topic has got new aspects in the new energy situation. The concluding panel discussion, organized by Paul Black from London presented the worldwide trends.

The exhibition of school books, teaching aids, live experiments from all over the world illustrated the lectures. The participants did show an exceptional interest in the workshops about risk analysis, pupils' opinion on nuclear power, decision making games, simulation games, computer simulations, nuclear school experimentation. Among others Erno Rubik described how his efforts to educate to multi-dimensionality led him to the creation of the magic cube.

Beside the social events (parties, excursions, and country dinner) the school and class visits attracted most participants. The Hungarian teachers, who participated and organized the conference and school visits, gave presents to the other school teachers participating from, Finland, Italy, the Netherland, USSR.

The conclusion, given by Arturo Loria, re-emphasized the importance of the education of the public to nuclear literacy. GIREP is particularly grateful to Professor George Marx, and his splendid team of helpers, who worked so hard to make the conference so enjoyable and so worthwhile.

#### 5. The 9th GIREP Conference

The next GIREP Conference, one of the themes of which will be the many faces of mechanics teaching, will be held in Holland in the Summer of 1984, and not 1983 as originally planned. It has been moved on a year to avoid clashing with the ICPE Summer School which has been moved to June/July 1983. Full details of this GIREP conference will be notified to members later.

#### 6. Other forthcoming conferences

- (a) May 1982. 'Physics and Mental Development' Gothenburg, Sweden (contact Dr. N. Svantesson, Lapap Hogskolan, Box 1010, 431 26 Moludal, Sweden)
- (b) 1982. 'Physics Education for Middle East Countries' Cairo, Egypt (contact Prof. M. Mokhtar, Dept. of Physics, University of Cairo, Egypt)
- (c) August 23-Sept. 4 1982 'Physik und Didaktik, Klagenfurt Austria. This informal conference will consist of a one week school (language: German) followed by one weeks workshop (language: international). It will consider how to use real data in physics education and what software is available. It will also consider how to set up a small research programme in physics education. It is intended to repeat this annually. (contact Prof. Sexl, Institute for Theoretical Physics, University of Vienna, Austria).
- (d) September 1982. 'History of Physics in Secondary School Science' Pavia, Italy (contact Dr. F. Bevilacqua, Centro di Studi per la Didattica, Facolta di Scienza, Universita di Pavia, Via A Bussi, 97106, Pavia, Italy).

(e) January 3-13 1983. 'Pre-service and In-service education of science Teachers' Jerusalem/Rehovot Israel (contact Prof.P.Tamir, Israel Science Teaching Center, Hebrew University, Jerusalem, Israel. As soon as possible)

(f) Summer 1983, probably late June-early July; ICPE Summer School 'Research in Physics Education' France (contact Prof G.Delacote, ICPE Summer School, Mission du Musee, Department Conception 211 ave Jean Jaures 75019, Paris, France).

## 7.Recent Publications

(a) Physics Teaching, Oscillations and Waves, & Current Problems. Edited by Uri Ganiel. The proceedings of the 7th GIREP Conference held at the Weizmann Institute of Science, Rehovot, Israel 1979. Cost \$35. Available from Balaban, International Services, St.Pomerantz. 2242 Mt.Carmel Ave, Glenside, Pa 19038.

The book has two main themes, the one aimed at improving and updating the physics curriculum at secondary school level, and the other addressed to social aspects of Science in general, and of physics in particular.

In the first, oscillations and waves it was clearly seen that the teaching of this subject, which is of general interest to those engaged in physics teaching at all levels, must be deeply reconsidered, and many effective new approaches were illustrated.

In the second, current problems in physics teaching, three main strands emerged concerning teaching about science and society, teaching of disadvantaged children, higher education and teacher training.

(b) Proceedings of the International Conference on Postgraduate Education of Physicists (Prague August 1980) edited, for ICPE, P.J.Kennedy and K.Vacek.

The book contains chapters on Methods of postgraduate training; Postgraduate training for industrial societies; What do physicists do? Employment prospects; Postgraduate training and the needs of society; Postgraduate training and general physics education. With 310 pages, in soft cover, it costs £7, including post and packaging. Available from the Education Officer, Institute of Physics, 47 Belgrave Square, London.

(c) Education for Physics Teaching Edited by A.Loria and P.Kennedy.  
the proceedings of the ICPE conference held in Trieste 1980. Available from Arturo Loria, Institute di Fisica, 41100 Modena, Italy.

This delightfully produced book of 300 pages, summarises the main papers, discussion, conclusions and workshops of the conference under the appropriate sections. Sections deal with teaching interactions, concepts and misconcepts, evaluation and assessment, constraints and realities, and

training for physics teaching. Each section includes the main talks presented, a collection of the relevant papers tabled, and a concluding summary of the theme under consideration.

- (d) The Teaching of Nuclear Energy edited by G.Marx. The proceedings of the GIREP Conference held in Balaton, Hungary 1981. Available from George Marx, Dept. of Atomic Physics, Eotvos University, Hungary.

This well illustrated book of 600 pages includes all the papers presented to the conference. Authoritative, stimulating and provocative papers were presented concerning atomic and nuclear energy, and ways of teaching both the physics and the wider social implications of these topics. Teaching about energy, energy resources and alternative energy supplies were also covered. Another collection of important, and well informed information which will be of value to all physics teachers and educators.

- (e) The Education and Training of Physics Teachers Worldwide Edited, for GIREP by Brian Davies. Available from John Murray, Publishers, 50 Albemarle Street, London W.L. (from June 17th '81) cost £4.95.

GIREP members from about 30 countries around the world sent in descriptions of their own country's system of education, and of the ways in which future physics teachers are educated in physics and prepared for teaching. These reports were edited with as much information as possible transferred to diagrams, but an attempt was made to keep to the style of writing in the original descriptions to give some variety in the reading of country-by-country accounts. Statistics relating to education and educational institutions were either kindly obtained by the GIREP correspondents themselves or were obtained from embassies or consulates of the countries concerned. Following the recommendations of the 70 GIREP representatives who read the 'preliminary edition' sent out to them in 1979, other kinds of information were put into tabular form, or into sections dealing with a single item.

countries represented in the book include: Argentina, Australia, Austria, Brazil, Cameroon, Denmark, Finland, Germany (East), Germany (West), Ghana, Honduras, Hungary, India, Italy, Japan, Kenya, Malaysia, Mexico, Netherlands, New Zealand, Pakistan, Philippines, Poland, Portugal, Rumania, Senegal, Sweden, Thailand, United Kingdom, USSR, Yugoslavia, Zambia.

The work for this publication, and for the earlier preliminary edition, was generously supported by a grant from UNESCO.

8. The Physics Development Trust- a description and request for information.

The Physics Development Trust is an initiative of the Institute of Physics, London. Through an appeal fund, money is being provided by industrial and commercial sponsors to further the Trusts aims. These are to improve the teaching of physics in schools so that more young people choose to study science, technology or engineering in their higher or further education; to ensure that more physics graduates enter industry; to assist with the retraining and up dating of graduates and technicians so that their potential can be utilised to the maximum benefit of industry and the nation. There may well be programmes with similar objectives in other countries where GIREP has members. Mr. Davies will be pleased to hear from any GIREP member who has knowledge of any other similar initiative. It may prove effective to exchange information or co-operate, with similar minded groups. Please write to Brian Davies, the Institute of Physics, 47 Belgrave Square, London SW1.

9. Treasurers Notes

At the Balatonfured Conference, it was agreed to leave the membership fee unchanged at US\$10, which can be paid as follows:  
To Credit Suisse (1002 Lausanne-Suisse) account No.376089-91 S.Fr.18.00.

To Brian Woolnough (Oxford University Department of Educational Studies, 15 Norham Gardens, Oxford U.K.) £5.30.

To Marisa Micheli (Institute di Fisica dell Universita, Via Campi, 213A, 41100 Modena, Italy. Lit 12,000.

Anyone who has difficulty in paying as above can pay the fee to Prof. George Marx, (Dept. of Atomic Physics 1088 Budapest, Puskin utca 5-7 Hungary) after having established with him the correct procedure.

To reduce bank costs we would advise paying more than one fee at a time (i.e. for more than one year or for more than one person)

New members should send the appropriate fee along with a completed Personal Form to the President, Professor A. Loria.

10. GIREP National Sections

Article 12 of the GIREP statutes speaks of the possibility of National Sections of GIREP being set up, with their own committee and financing, to further the aims of GIREP in different countries. The National Sections would represent GIREP before their national authorities and professional associations. The international committee would be interested to learn of the existence and activities of any such national sections, a brief report of which should be sent to the GIREP president, Prof. A. Loria at Instituto di Fisica, dell Univisita, Via Campia 213/A, 41100 Modena, Italy. Any national representatives or 'contact members' should also notify the President of their existence.