

NEWSLETTER

girep

Groupe international de recherche sur l'enseignement de la physique
International Group for the Advancement of Physics Teaching
Internationaler Arbeitskreis zur Förderung des Physikunterrichts

Number 1,

December 1974

INFORMATION THROUGH NEWSLETTERS

In an effort to give all members up-to-date information on the various GIREP - activities and to encourage more contact between GIREP - members the committee has decided to prepare newsletters containing not only messages from the president on behalf of the committee, but also news of various kinds contributed by individual members. The next newsletter will be issued when a reasonable amount of news has been collected at the GIREP - office in Copenhagen.

THE MEETING OF THE COMMITTEE ON 27TH AND 28TH OF AUGUST 1974 IN KARLSRUHE.

Attending: The president professor Poul Thomsen Denmark
The treasurer professor K.A.Thernøe Denmark
The Vice-president Dr.Baurmann Germany
The secretary Dr.Maria Ferretti Italy
Invited: Professor Loria Italy

Apologies for absence from Dr. John Lewis
(Vice-president, England).

As one of the important aspects of the meeting was to help professor Loria, organizer of the GIREP - seminar in Venice, to get the proceedings of the seminar published, professor Loria was invited to join the committee.

The following items were discussed:

- 1) Publication of the proceedings of the GIREP - conference in Venice in accordance with the contract with UNESCO
- 2) Distribution of the collected information on the teaching of physics in different countries

- 3) Organisation of the new GIREP - activity concerning the education of physics teachers
- 4) Plans for the next GIREP - seminar
- 5) Preparation of a "Who is Who in GIREP"
- 6) Suggestion from members for new GIREP - activities
- 7) Preparation of a newspaper giving information about the activities of GIREP
- 8) Report on the work on the publication from the Kiel - Semi
- 9) Report from the treasurer

Re item 1

It was decided to publish the proceedings as a book similar to the one published after the Copenhagen seminar in 1969. The title of this book was:

"Seminar on the Teaching of Physics in Schools"

and it was mainly concerned with the teaching of energy, relativity and quantum physics.

The committee found it might be a good idea to publish a series of books under the common full title of: "Seminar on the Teaching of Physics in Schools", specifying the contents by a subtitle. Consequently the title of the book from the Venice meeting should be:

" . Seminar on the Teaching of Physics in Schools 2:
Electricity, Magnetism, and Quantum Physics."
(Venice 14th October to 20th October, 1973).

The committee would have liked to include the proceedings from the joined UNESCO - GIREP meeting in Kiel in 1972 in the series of books on GIREP - seminars. However these proceedings have already been included in a UNESCO - publication (see below).

As it seemed possible to obtain a better contract with the Danish Publisher Gyldendal, who published the proceedings from the Copenhagen seminar, than with an Italian publisher the committee decided that the president should contact Gyldendal and sign a contract if sufficiently favourable conditions could be obtained.

Re item 2

The secretary, Maria Ferretti, offered to prepare an up-to-date introduction including the additional reports from Belgium, Israel, and New Zealand. This introduction together with the three new reports will be distributed to all members.

Re item 3

Brian Davis and Ted Wenham are preparing a report from England to serve as a model for similar reports from other countries. They hope to have this report ready soon after Christmas.

Re item 4

The committee suggests the following topics for the next GIREP -seminar:

- 1) New approaches to the introductory teaching of physics
- 2) Probability in physics.

It was decided to arrange this seminar in 1976 to avoid collision with the UNESCO - meeting in Edinburgh in 1975 (see below). It was agreed that professor Delacote should be officially asked if he would be willing to organize the seminar in France.

Re item 5

Therndø reported that the answers to the questionnaires for the "Who is who in GIREP" arrive rather slowly. It was decided to send a new questionnaire to the members, who had not yet answered before the end of the year (enclosed in this letter).

Re item 6.

It was decided to publish newsletters. It was suggested that these should also contain information about the important new books and fundamental publications on the teaching of physics.

Re item 7

It was decided to bring the leaflet " GIREP - An Active. International Association for the Improvement of Physics Teaching in Schools," up to date, including information on the last GIREP seminar in Venice.

Re item 8

Baurmann reports that the proceedings from the Kiel seminar will soon be published. (see below).

Re item 9

Thernøe informs that the financial situation is quite satisfactory.

Publication of the proceedings from the
UNESCO - GIREP seminar in Kiel in 1972.

The proceedings from the UNESCO -GIREP seminar in Kiel have now been published by the German UNESCO - Committee. The content is the following:

Implementation of Curricula in Science Education

Report of an International Seminar on
"The Implementation of Curricula in Science
Education with Special Regard to the Teaching
of Physics", organized by the German
Commission for UNESCO and the Institute for
Science Education at the University of Kiel,
Kiel, March 16-18, 1972

Deutsche UNESCO-Kommission, Köln
Verlag Dokumentation, Pullach/München

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It is published by Deutsche UNESCO - Kommission,
Köln Verlag Dokumentation, Pullach/München.
Price: DM 19,80 (about \$ 9).

Publication of the proceedings from the GIREP -
seminar in Venice 1973.

The proceedings from the GIREP seminar in Venice in 1973 on the teaching of electricity, magnetism, and quantum physics will be published as a book (about 400 pages and many illustrations) by the Danish publisher Gyldendal. The price of the book will be about \$20, and all present GIREP - members will receive a free copy provided they have paid their membership fee for 1975 at the time of publication (probably the autumn of 1975). New members will be considered according to their seniority as long as we have copies left.

The editor of the book is professor Arturo Loria, organizer of the GIREP - seminar in Venice, and the book will contain the following papers (+ discussions):

- A. Ziggelar: Electromagnetism and light. A significant case in the 19th century's convergence of physical disciplines.
- A. Ziggelar: The balance in the teaching of Electromagnetism. Sketch of a sequence
- John.L.Lewis: Science and society
- Poul Thomsen: A new course in electricity and magnetism for education of physics teachers.
- J.L.Lewis and G.E. Foxcroft: Recent developments in the U.K. on experimental work in the teaching of electricity and magnetic fields.
- Richard R.Duffy and Uri Haber-Schaim: Basic experiments for the study of time-dependent voltages and currents.
- Kenneth E.Davis: Teaching electricity and magnetism in the U.S. secondary school today.
- Eduardo Nagore Gomez: The teaching of electricity and magnetism at secondary school level in Spain.

- Erwin Baurmann: The reform of the upper level of the German Secondary School.
- Wilfried Kuhn: The treatment of quantum physics in the secondary school grade two (upper grades of the high school).
- G.Bergmann: Superconductivity, a macroscopic quantum phenomenon.
- Walter Kranzer: Relativity and quantum-Mechanics in the reform plans regarding Austrian Secondary Schools.
- Karl Hecht: Concepts for the scientific-technological information of uninterested pre-university students.
- P.J.Black: The teaching of quantum physics.
- R.N.Little: An inquiry laboratory introduction to electricity for the average individual of secondary school age.
- Guilo Cortini: An experiment on the teaching of special relativity in the Italian Secondary Schools.
- G.Toraldo di Francia: Teaching formal quantum mechanics.
- S.Mannino,
M.B. Palma-Vittorelli, and
R.M. Sperandeo-Mineo: An investigation on the understanding of concepts related to electric interactions, at high school level⁺
- O.E.Foxcroft: The teaching of electronics and its place in a school physics course.
- Eric M.Rogers: Axioms and myths.
- Uri Haber-Sohaim: On the teaching of quantum physics in the senior high school.
- Bruno Touschek: Quantum theory in high schools?
- E.J.Wenham: Quantum phenomena: a review of the experiments which may be offered at the level of the secondary school.
- A.Loria, G. Partesotti: An approach to the teaching of quantum physics.
- A.P.French: Experimental Bases for quantum ideas.
- M.G.Ebison: Introducing the uncertainty principle.

**THE PROCEEDINGS FROM THE GIREP - SEMINAR IN COPENHAGEN
STILL AVAILABLE.**

Members, who have not got the proceedings from the GIREP - meeting in Copenhagen in 1969, might want to buy this book, the first one in the GIREP series "Seminar on the teaching of physics in school".

To make it easy to order it we have arranged with the Danish publisher that you can order it through the GIREP office here in Copenhagen by filling out the enclosed order form and mail it to us. The price is Danish Crowns, 75.00 (about \$12), incl. posting and handling. You will then receive the book by mail.

The book contains 215 pages and 80 illustrations. The content is the following:

G. I. R. E. P.

Groupes international de recherche sur l'enseignement de la physique
International research group on physics teaching

**Seminar
on the Teaching of Physics
in Schools**

**At the Royal Danish School of Educational Studies
Copenhagen, July 30 to August 5, 1969**

Edited by Søren Sikjær

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INTERNATIONAL CONFERENCE ON PHYSICS
EDUCATION IN EDINBURGH 29th JULY TO
6TH AUGUST 1975.

This conference is organised by IUPAP in association with UNESCO. The chairman is professor A.P. French, U.S.A., and the secretary is John L. Lewis, England. Both are wellknown GIREP - members (John Lewis is vicepresident), and both were very active participants in the GIREP - seminar in Venice.

Any GIREP members wanting details on the meeting should write to the local secretary:

Mr. R.M. Sillitto
University of Edinburgh
Department of Physics
Mayfiels Road
Edinburgh EH9

John Lewis tells that there will be occasions during the programme to bring the GIREP members together at a special meeting. If a large number of GIREP - members will be present the committee will take steps to arrange such a meeting. The committee has also planned a committee meeting in connection with the conference.

70 - YEARS BIRTHDAY

GIREP's president of honour, professor Søren Sikjær, Denmark, celebrated his 70 years birthday on September 25th. The present president, professor Poul Thomsen, congratulated him in his home on the day and offered him as a gift from GIREP a bottle of Whisky and the proceedings from the GIREP - UNESCO seminar in Kiel with the following dedication:

Dear Professor Sikjær,
GIREP wants to congratulate you, our president of honour, on your 70th birthday by presenting you with the proceedings from the GIREP-UNESCO seminar in Kiel 1972, which was arranged during your period of presidency.
We still remember and appreciate the valuable work, you did for GIREP during this time and in the years before when you arranged the excellent GIREP - seminar in Copenhagen.

On behalf of GIREP

Poul Thomsen
president

TREASURER'S REPORT

I am pleased to announce that the major part of GIREP's members readily complied with a suggestion put forward earlier, that membership fees should preferably be paid at some early date in the current year. One of the reasons for this is that according to article 17 of the statutes we should strictly speaking consider members, who have not settled their duty with GIREP within the current year, as having resigned from membership. Therefore those of you, who have not so far paid your fee for 1974 are kindly requested to fill in the form that is enclosed together with all practical information as to the payment.

Furthermore, I would like to suggest that the financial report for any year in question should regularly be given at some very early date of the subsequent year. The articles of GIREP do not set any definite date for the financial report to appear. In 1973 the report was given at the date , November 19th 1973, but it seems more appropriate to await the end of the current year. The arguments are that:

1. the financial year of GIREP is the calendar year, cf. article 16.
2. members are supposed to pay their fees within the current year , cf. article 17. Hence a report awaiting the end of the year is likely to give a more realistic picture of our financial situation. Also, , it would eliminate the need (and costs) of ordering from our Swiss bank extracts of the balance sheets at undue times.

Consequently the financial report for 1974 will appear at some early date in 1975.

Do GIREP live up to Art. 2 of the Statutes?

Article 2 reads:

The principal aims and purposes of GIREP are:

- 1 - to use every possible means to promote and encourage from the secondary level on, every effort made with a view to adapting physics teaching to the present knowledge;
- 2 - to collaborate as closely as possible with any international organization whose field of activity is connected with that of the group;

- 3 - to foster friendly contacts between physics teachers and professors above national barriers more particularly at secondary school level;
- 4 - to stimulate the exchange of information and team work between its members and to keep them informed of the work of the International Organizations in the field of its activities.

Re item 1:

Yes, for example by organizing seminars in different countries and invite physics teachers to participate in the meetings. A good example is the last seminar in Venice, as can be seen from the letter below:

A. I. F.

ASSOCIAZIONE PER L'INSEGNAMENTO DELLA FISICA

41100 MODENA December 7th, 1973
ISTITUTO DI FISICA DELL'UNIVERSITA' - TEL. 0542.07

Prof.

POUL THOMSEN - President of GIREP

Prof. M.

Prof.

ARTURO LORIA - President of the
Sezione Italiana del GIREP

All those Physics teachers of Italian secondary schools who attended the GIREP Seminar in Venice have expressed their keen admiration for the work of GIREP; they were particularly struck by the wealth of useful research on teaching problems being carried out by teams all over the world.

They were also deeply impressed by the brilliance displayed in the choice of subjects, in the originality, simplicity and clarity of the experiments and in the effectiveness of the proposed teaching aids.

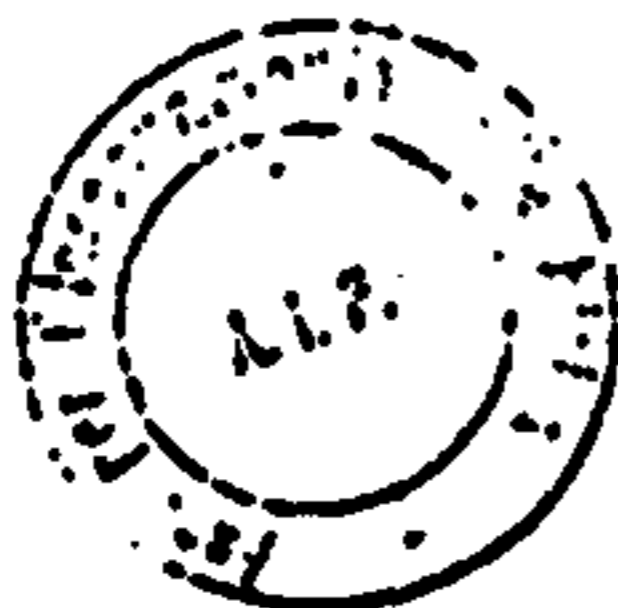
They feel that the seminar has brought them into contact with a world of ideas which will have far-reaching effects on their general culture and professional proficiency.

AIF which aims at improving the teaching of physics in the Italian Secondary School wishes to thank the Committee of GIREP, and you in particular, for enabling a group of Italian teachers to attend, thus ensuring the furtherance of the aims of the Association.

Yours sincerely,

THE PRESIDENT

(Cesare Bonacini)



Re item 2:

GIREP collaborates with UNESCO (cf. the Kiel seminar and the seminar in Venice).

Re item 3:

GIREP - seminars have established valuable contacts between a large number of physics teachers and professors from many different nations. Our efforts to prepare a "Who is who in GIREP" also help to fulfill this aim.

Incidentally: Did you fill out the questionnaire for the "Who is who?" If you forgot to do so you will find the questionnaire enclosed in this letter. Please fill it out and send it to the GIREP office in Copenhagen.

Re item 4:

The preparation of this newsletter is an example of the kind of work that can be done. The collection on information on educational systems and education of physics teachers are other examples.

ACTIVITIES IN 1975

1. A new list of members will be distributed at the beginning of the year. It will be supplied with short notes on the members occupation and main interests (based on the answers to the questionnaire: "Who is who in GIREP!")
 2. New information on the ^{teaching} of physics within the school-systems in different countries will be distributed (see above).
 3. An investigation on the education of physics teachers in different countries will be organized. Hopefully all national groups will take active part in this work.
 4. The GIREP - seminar in 1976 will be prepared.
-

II Activities of national groups and individual members

1.

Before 1st of April 1975 we expect to get a short report from all national groups with information on significant changes in the teaching of physics in their country. We trust that the contact members will feel responsible for this activity.

2.

We encourage all members to contribute to the next newsletter with any kind of information of value for other members. For example we are very interested in information on significant books concerning the teaching of physics, textbooks, and leading papers with exact references.

The purpose is to facilitate the purchase of the quoted items. Therefore the exact name and address of the publisher and the price should be quoted. For the papers the full name and address of the author might be useful. It does not matter that the books are written in your own language. There are members from other countries who can read your language, and valuable inspiration can be achieved by looking at formulas and illustrations.

3.

We also encourage all members to prepare a short description of an experiment they find especially useful in their teaching of physics for the coming newsletter. It does not necessarily have to be a new experiment as a wellknown experiment in one country may be quite unknown in other countries.

ALL CONTRIBUTIONS (but not payment for membership fees) SHOULD BE SENT TO

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DEPARTMENT OF PHYSICS
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DK - 2400 COPENHAGEN NV
DENMARK