

# News and views

## A Report from Les Houches

### 3rd Theoretical Physics Summer Session

For the past summer, I have had the pleasure and privilege of being on the staff of the "Ecole d'Eté de Physique Théorique" at Les Houches, France. This school (see *Physics Today*, December 1951, p. 22) was founded two years ago as an Institute of the University of Grenoble. It is almost entirely supported by the French "Direction Générale de l'Enseignement Supérieur", although various countries help to some extent in its financing through contributions or scholarships. It seems to me that some people may be interested in the progress of this unique experiment.

As in the previous year, strong emphasis was placed on modern physics. The principal courses were on statistical mechanics (L. Rosenfeld, Manchester), theoretical nuclear physics (M. Verde, Turin), and quantum mechanics (J. M. Luttinger). There is no doubt at all that the Summer School is taking a long step in bringing the teaching of theoretical physics to modern and high standards. It is hoped that the school will be an incentive to foster university centers which can operate the whole academic year around as, of course, no summer school could take the place of intimate daily contact with research over a period of years.

In addition to the main courses there were several excellent shorter ones (lasting a week or two) on special subjects. Invariance properties in nuclear collisions (Wolfenstein) and superconductivity (Schafroth), for example, aimed at giving the students a brief introduction into fields where considerable research is currently being done.

Finally there were an unusual number of fine seminars by visitors. The charm of the location plus the energy and enthusiasm of the entire Direction and staff draws to the Summer School practically every eminent physicist who passes anywhere nearby, in line of duty or pleasure. Particularly outstanding were the seminars of Pauli, Heitler, M. Deutsch, Koefed-Hansen, Gell-Mann, Wightman, and Villars. In spite of this already heavily loaded schedule, study groups were organized by students according to their interests.

There is no doubt whatsoever that the Summer School is filling a very widely felt need. The number of applications continues to exceed by far the capacity of the school. The excellence of the seminars, the possibility of contacts with physicists, the extremely pleasant and peaceful atmosphere of the school draw many people who are beyond the classroom stage. In my opinion,

the school has struck an extremely happy medium in choosing its students. Although the level is very heterogeneous, the contact of the less advanced with the more is one of the most stimulating aspects of the school. It seems to me that there is nothing so fruitful for a talented but isolated student's development as being put with other students who have had more experience, or the advantages of better training: the ego then does more than any instructor can do. Also very valuable for the future is the international character of the school; about fifty percent of the students come from countries other than France. So much of theoretical physics at the present time depends on personal contact between physicists that those who wait for the *Physical Review* in order to get the news are usually consigned to the "also ran" column.

The Ecole d'Eté seems, in fact, to be so successful in these latter aspects that I think it could be emulated with great profit in the United States. Though there are many centers where modern theoretical physics is well taught, we lack almost entirely a place where our young physicists can freely meet and get to know all their colleagues.

J. M. Luttinger

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## A Letter to the Editor

### High-Altitude Research Facilities

A number of new facilities and improvements in the high-altitude laboratories in Europe have been instituted recently, the most significant of which we shall recapitulate, since they may be of interest to colleagues from other countries desirous of making use of them.

An Italian cosmic-ray laboratory now exists at Marmolada. This station is located at an altitude of 2006 meters, in the Italian Dolomites. The nearest large town, Cortina d'Ampezzo, is about two hours away from the laboratory by automobile. The last portion of the road is private, about 17 km from Caprile, and was built by an Italian electric power company, the S.A.D.E., in connection with work on a large water power development. The latter part of the surface is rather rough. The laboratory building consists of a single room roughly 15 x 25 feet. It is chiefly of importance because there is ample running water. A supply of some 30 kw of electric power is also available, and a large magnet developing some 7 kilogauss over a 25<sup>2</sup> x 6 cm cloud chamber is presently in operation. Ample housing is provided at a refuge nearby operated by the Italian Alpine Club and capable of accommodating several dozen people. An aerial tramway or cablecar (teleferique) runs up to around 2650 meters, at which altitude a shelter also exists and electric power is to be had; however, the magnet was not located there because of insufficient water. According to present plans, when the hydroelectric power station is completed it will be necessary to move the laboratory, and several sites in the vicinity are under study. A teleferique from Cortina to Faloria and Tondi, the latter at 2340 meters, is presently operative, and electric power is now avail-



able at the upper end. The laboratory is under the direction of Professor A. Rostagni of the University of Padua. The station is open the year around.

Another important improvement is being made at the Pic du Midi laboratory in the Pyrenees. This laboratory, at about 9300 feet, was accessible only on foot with a freight cableway for heavy equipment. At present a new teleferique, the longest in Europe, is under construction. It is anticipated that in a year or so passengers and freight will be able to reach the laboratory much more easily.

At the Aiguille du Midi, above Chamonix on the shoulder of Mt. Blanc, a new teleferique is also under construction. Completion is expected in 1954, at which time access to this laboratory will also be greatly improved.

Serge A. Korff  
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## European Physics Laboratory

### Site in Switzerland is Chosen

The proposed European Nuclear Physics Laboratory is to be located on a plateau near Lake Geneva in Switzerland, it was decided on October 6th by the ten-nation European Council for Nuclear Research (CERN) during a conference held in Amsterdam. CERN, established with the help of the United Nations Educational, Scientific, and Cultural Organization, represents Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Sweden, Switzerland, and Yugoslavia. The decision is reported to have been influenced by arguments that Swiss neutrality would offer some protection for the laboratory in the event of war. Also, as has been noted before, Switzerland possesses ample resources of hydroelectric power and offers a reasonably central location for the member nations of the Council.

Present plans call for equipping the nuclear center with two accelerators—a 600 Mev synchrocyclotron and a proton machine originally expected to provide beams of from six to ten billion electron volts, but which is now apparently visualized as a 30 Bev colossus. The latter figure, it is reported, was proposed following disclosure of a scheme developed at Brookhaven National Laboratory for a revised method of accelerator focusing that is expected to result in far higher than present energies with no corresponding increase in magnet size. Professor O. Dahl of Norway, head of the CERN working group responsible for planning the large accelerator, has estimated that construction will require approximately six years and that the machine will probably cost about five million dollars.

## Northern Lights

### Created in the Laboratory

The origin of the aurora borealis, a subject of much speculation and scholarly debate, may quite plausibly be ascribed to proton and alpha particle bombardment of the upper atmosphere, according to Aden B. Meinel of the University of Chicago's Yerkes Observatory. In

experiments involving the kevatron at the University's Institute for Nuclear Studies, Meinel and C. Y. Fan have managed to produce effects resembling those of the northern lights in air at various pressures less than normal which they bombarded with both alpha particles and protons. Spectroscopic analysis of the visible light produced when these particles collided with atoms in the air indicated a striking similarity to the northern lights. It is surmised that much of the light of the aurora is produced by the movement of air molecules in the upper atmosphere when struck by heavy particles from outer space which have been trapped by the earth's magnetic field and directed toward the polar regions. Part of the effect, it is suggested, is light produced when electrons associated with atmospheric atoms are captured by protons. The experiments were aimed at confirming the theory advanced two years ago by Meinel concerning the origin of the aurora.

## New Journals

### Acta Metallurgica to Appear in January

The first number of an international journal for the science of metals, *Acta Metallurgica*, will be issued in January, 1953. Planned initially to appear every second month, the journal will be edited by Bruce Chalmers, professor of metallurgy at the University of Toronto, and will have the stated aim of providing a medium for the publication of papers describing theoretical and experimental investigations that contribute to the understanding of the properties and behavior of metals in terms of fundamental particles, forces, and energies. Suitable papers will be published in any language, with summaries in French, German, and English.

*Acta Metallurgica* was originally sponsored by the American Society for Metals, and steps preliminary to the initial publication have been taken by an interim board of governors for the ASM under the chairmanship of Cyril S. Smith, director of the University of Chicago's Institute for the Study of Metals. The Institute of Metals in Japan has recently become an additional sponsoring society.

The following societies are cooperating in the publication of *Acta Metallurgica*: Instituto del Hierro y del Acero (Spain); American Institute of Mining and Metallurgical Engineers; American Institute of Physics; Metallografiska Institutet (Sweden); Physical Society of Finland; The Indian Institute of Metals; Associação Brasileira de Metais; Institute of Metals (England); Iron and Steel Institute (England); Société Française de Métallurgie; The Chemical Society (England); Associazione Italiana di Metallurgia; Deutsche Gesellschaft für Metallkunde; and Verein Deutscher Eisenhüttenleute.

The sponsoring societies will support the journal financially and their representatives will have membership on the Board of Governors that establishes the policy for the journal. Cooperating societies assist in the mechanics of obtaining subscriptions for the journal, and from their representatives certain members of