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Meetings

Crystals

AN international conference on Dislocations and Mechanical Properties of Crystals was held at Lake Placid, New York, on September 6-8, 1956. The conference, sponsored jointly by the Air Force Office of Scientific Research and the General Electric Research Laboratory, was attended by about 40 of the outstanding men in the field from all parts of the world.

Each conference day was arranged with technical sessions in the morning and evening, and with the afternoon free for informal discussion and recreation. Although no conferees were required to speak, most of them presented work of major significance, and almost all contributed to the discussion. The proceedings were recorded and are being edited for publication. The six technical sessions were: (1) observation of dislocations; (2) dislocation structure, jogs, whiskers; (3) interaction of dislocations and point imperfections; (4) stored energy; (5) crystal plasticity, work hardening; and (6) fatigue, fracture.

Of these sessions the first was perhaps the most stimulating, although it is not easy to decide among them. In this session five reports were given of the direct observation of dislocations in crystals. Amelinckx observed them in the interior of rock salt by precipitation of sodium, Gilman and Johnston observed them at the surfaces of LiF crystals by the etch pit technique, Hirsch observed them in motion in the interior of aluminum foil by electron microscopy (as did the audience to whom he showed a motion picture film), Mitchell observed them in the interior of silver halide crystals by deposition of silver metal, and Dash (reported by Frank) observed them in the interior of silicon crystals by precipitation of copper. The presence of dislocation networks, the operation of Frank-Read sources, slow and rapid dislocation motion, polygonization, and many other theoretically predicted phenomena were observed. In addition, new and yet unexplained phenomena appeared.

One result of the conference was the discovery that the experimental facts relating to dislocations in crystals have proceeded beyond the theoretical understanding, reversing the situation as it has existed for a decade. For the next five or ten years, rapid progress should be expected from the experimental work.

Space does not permit a detailed account of the remainder of the sessions. A brief summary will be published shortly in *Nature* by A. H. Cottrell. The full con-

ference report will be published in book form by John Wiley in mid-1957. In general, the high level of the opening session was maintained for the full three days.

The international nature of the conference is best indicated by the list of conferees, who included: S. Amelinckx (Belgium), C. S. Barrett (US), Lt. F. E. Binns (US, representing Air Force Office of Scientific Research), T. H. Blewitt (US), W. Boas (Australia), B. Chalmers (US), A. H. Cottrell (England), P. H. Egli (US), J. D. Eshelby (England), J. C. Fisher (US, conference chairman), F. C. Frank (England), J. Friedel (France), J. J. Gilman (US), W. R. Gruner (US), E. W. Hart (US), P. B. Hirsch (England), J. H. Hollomon (US), R. W. K. Honeycombe (England), W. G. Johnston (US, conference editor), J. S. Koehler (US), G. Leibfried (West Germany), W. M. Lomer (England), J. R. Low (US), K. Lücke (US), E. S. Machlin (US), J. W. Mitchell (England), N. F. Mott (England), F. R. N. Nabarro (Union of South Africa), E. R. Parker (US), W. T. Read (US), A. Seeger (West Germany), F. Seitz (US), W. Shockley (US), H. Suzuki (Japan), T. Suzuki (Japan), R. Thomson (US, conference editor), T. Vreeland (US, conference editor), N. J. Wadsworth (England), J. Washburn (US), D. S. Wood (US), C. F. Yost (US, representing Air Force Office of Scientific Research).

In addition to its value as a forum for the exchange of technical information among the conferees, and ultimately for its dissemination to a much wider audience through publication of the conference report, the conference stimulated a very wide and valuable interaction of the overseas conferees with other scientists in the US. On the average, each overseas conferee spent about two months here on nonconference funds, visiting colleagues all over the country.

J. C. Fisher
General Electric Research Laboratory

Society of Rheology

THE annual meeting of the Society of Rheology was held in Pittsburgh, Pennsylvania, on November 7-9, 1956. Technical sessions were held at the Mellon Institute. The program was divided into five half-day sessions which began on Wednesday morning, November 7. In addition to papers on adhesives and absorbed polymer layers, descriptions were given of measurements of viscosity and normal stress. Two papers dealt with the effects of entrapped hydrogen on the mechanical properties of metals, and several papers were concerned with the viscoelastic properties of liquids and polymer solutions. The theoretical aspects of the viscoelastic behavior exhibited by polymeric materials were also considered by several of those presenting papers at the meeting.

At the Social Hour Smoker on the evening of November 8th, the Bingham Medal of the Society was presented to Arthur V. Tobolsky of Princeton University. In place of Hugh S. Taylor of Princeton University,



Tabwag . . . a war-gaming experiment by the Combat Operations Research Group, to evaluate performances of armored vehicles, their speed, armor, weapons and other capabilities, by map games utilizing computers and other scientific techniques. Short for "tank battle war game." Typical of work done by CORG scientists to assist in developing new tactics, weapons systems and organizations for the U. S. Army.

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