

Behavior of Metals under Impulsive Loads.

By J. S. RINEHART and J. PEARSON. Pp. 256.
Cleveland: American Society for Metals. 1954. Price
\$5.50.

The reactions of solids under impulsive loads is a fascinating subject on which intensive research was done by various teams during World War II for obvious reasons. To the physicist the study of impulsive stress-strain relations presents many points of interest, since it is closely connected to the problems of plasticity, creep, mechanical hysteresis, brittleness and failure. As far as these properties are determined by slip and the movement of dislocations, impulsive stresses of too short a duration to allow the diffusion of dislocations to the grain boundary will produce a mechanical behavior of the solid differing considerably from that under static or slowly variable stresses.

The 14 chapters of the book deal with the subject mainly from an engineering point of view. They form a good introduction to the experimental procedures and

they give the theory in its simplest form. More stress on the inertia effects which are characteristic of impulsive testing in contrast to static would have been preferable, in the reviewer's opinion, to the tendency of describing the phenomena in terms of static concepts familiar to the engineer; and a more mathematical treatment, if only in the form of an Appendix, would be welcome. Possibly because of the limitation to metals, the important work of E. Volterra on the impulsive stress-strain relation in polyethylene is not mentioned, although this showed for the first time the nature of the 'memory function' which accounts for the plastic hysteresis and the shock absorption.

Very little work has been done on stress-strain relations and plasticity in single metal crystals under impulsive loading, and some revealing results on the behavior of dislocations might be expected from it. The book forms a useful first reader for anyone interested in the methods.

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Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. Copy should be sent direct to the British Co-editor (R. C. Evans, Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England).

Re-investigation of the crystal structure of CsI₃: correction

In the paper by H. A. Tasman and K. H. Boswijk (*Acta*

Cryst. (1955), 8, 59) the following correction should be made:

In Table 1, last column, first line, the figure 2.82₅ (0.01₈) should be replaced by 2.85₅ (0.01₈).

Acta Cryst. (1955). 8, 857

International Union of Crystallography**Report of Executive Committee for 1954****Introduction**

The Third General Assembly and International Congress, held in Paris in July under the patronage of the President of the French Republic, was the most important event during the year under review. The Congress was attended by about 630 crystallographers, from almost thirty countries, constituting the largest gathering of crystallographers ever assembled together. In addition to a number of invited review lectures some 370 papers were presented covering the most diverse branches of crystallography. The Congress was followed by two Symposia, respectively on 'The Location and Function of Hydrogen' and 'The Mechanism of Phase Transition in Crystals'; some 50 papers were contributed to these Symposia. A more detailed report of the meeting and of the associated Symposia has already been published, together with abstracts of the papers presented (*Acta Cryst.* (1954), 7, 609).

In accordance with the Statutes and By-Laws, the

General Assembly elected the Executive Committee, the Commissions etc.; a complete list, including members co-opted afterwards, is given at the end of this Report. The Executive Committee thanks all those who retired for their help to the Union, and especially Dr R. C. Evans for his invaluable work as one of the organizers of the Union and as its first General Secretary.

In addition to the meetings of the Executive Committee during the Third General Assembly the Executive Committee met in London in October 1954, primarily to determine its policy for the period up to the Fourth General Assembly to be held in Canada in 1957, and to make arrangements in pursuance of the decisions taken at the Third General Assembly. It was decided to accept the invitation from Spain to hold the Symposium proposed for 1956 in Madrid, and Prof. A. Guinier was appointed Chairman of the Programme Committee. It was further decided to invite Dr W. N. Lipscomb to be Chairman of the Programme Committee for the Fourth International Congress, and Dr A. L. Patterson to head a committee