dans l'herbe'. Dans ce livre comme dans ses ouvrages précédents, les chapitres n'ont pas de titre ni leurs subdivisions de sous-titre. Les figures sont sans légende. Il n'existe pas de table synoptique des matières, mais à la fin du volume les chapitres sont résumés, chacun en quelques lignes, en un style dépouillé. L'index alphabétique est suffisamment détaillé; sous la rubrique *snake*, il renvoie même au serpent dans l'herbe! Un second index donne, en notation Schoenflies, la liste des groupes spatiaux dont il est fait mention. La typographie est soignée, malgré une douzaine de coquilles, et les figures sont claires. La première lettre de chaque chapitre est enluminée. La copie en couleurs d'une amusante affiche commerciale illustre l'effet kaléidoscopique du groupe ponctuel $3m$. Le frontispice, une pure merveille, est la reproduction d'une des études d'Escher sur l'utilisation des 17 groupes plans. Chevauchant à travers des droites d'antisymétrie avec glissement, des cavaliers blancs et des cavaliers noirs couvrent le plan sans laisser d'interstices. Cette image seule vaut le prix du volume.

Crystallographic Laboratory J. D. H. DONNAY
The Johns Hopkins University
Baltimore 18, *Md., U.S.A.*

Geophysical Laboratory G. DONNAY
Carnegie Institution of Washington
Washington 8, *D.C., U.S.A.*

Références

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Action des Rayonnements de Grand Énergie sur les Solides.

By Y. CAUCHOIS and others. Pp. iv + 142 with 53 figs. Paris: Gauthier-Villars. 1956. Price 1,800 fr.; $5·37; bound 2,100 fr.; $6·24.

This is the first in a new series of monographs in physical chemistry edited by Mlle Y. Cauchois. It is based on the papers presented at a conference on the effect of high-energy radiations on the properties of solids, held in Paris in the spring of 1955. Following the editor's general introduction these are interesting papers by eleven contributors, mainly in the nature of review articles, on various aspects of the subject. Both theoretical and experimental investigations are discussed.

The titles of the papers are:

'Defects in crystals' by J. Friedel.
'Remarks on point defects in solids' by N. F. Mott.
'Production of defects by radiation' by A. Herpin.
'Effect of radiations on metals' by J. Blin.
'Effect of radiations on semi-conductors' by P. Aigrain.
'Thermal conductivity of dielectric crystals' by H. Curien.
'Effect of fast neutrons on graphite and quartz' by G. Mayer.
'Some effects of irradiation on the structure of solids' by P. Perio, M. Tournarie & M. Gance.
'Study of irradiated lithium fluoride by X-ray scattering' by M. Lambert & A. Guinier.
'Action of high energy radiations on solid polymers' by A. Chapiro.
'Electronic paramagnetic resonance and lattice defects in solids' by J. Uebersfeld.

The broad aim of all the work described (the literature of which has now been increased greatly by the 1955 Geneva Conference) is to study the solid state, and particularly the imperfections of the solid state, by observing the effects of radiation which, in principle, acts as a source of further imperfections. For the most part, materials are subjected to irradiation in nuclear piles. Pile irradiation may be essential in order to produce changes which are large enough to merit detailed study but it is unfortunate that the radiation is so heterogeneous and that the conditions are so little under the experimenter's control.

The X-ray crystallographer who reads these papers may be struck by the fact that there is so little of direct interest to him in such a wealth of detailed work on the solid state. There are mentions of changes in unit-cell dimensions of a number of materials after irradiation, but it is clear that changes in other physical properties, such as electrical conductivity, are much more sensitive measures. It is no easy step from the observation of changes in physical properties to a detailed picture of the underlying changes in atomic position and environment, and one feels that diffraction and scattering techniques have not yet made their mark in interpreting radiation damage. In this light the short paper by Lambert & Guinier, reporting preliminary measurements of the small-angle scattering by irradiated lithium fluoride and observations of abnormal diffuse streaks at larger angles, seems a most promising contribution to the determination of the precise nature and distribution of radiation-produced defects.

G. E. BACON
Atomic Energy Research Establishment
Harwell, England