β form corresponds to the simple formula $Te(CH_3)_3I_2$. The demonstration of our supposition could explain the anomaly observed in the determination of the number of molecules per unit cell.

Further investigations are being carried out.

References

DREW, H. D. K. (1929). *J. Chem. Soc.*, p. 560.
VERNON, R. H. (1920*a*). *J. Chem. Soc.*, p. 86.
VERNON, R. H. (1920*b*). *J. Chem. Soc.*, p. 889.
VERNON, R. H. (1921). *J. Chem. Soc.*, p. 687.

Acta Cryst. (1950). **3**, 320

A note on the rhombohedral modification of graphite.

By G. E. BACON, *Atomic Energy Research Establishment, Harwell, Berks, England*

(*Received* 6 *March* 1950)

Jagodzinski (1949), from an examination of single crystals of graphite of rather coarse mosaic structure, has found that the proportion of rhombohedral structure is much less than the 14:80 ratio found by Lipson & Stokes (1942) from powder photographs. He finds, however, that the difference is less marked for the most disoriented blocks of the crystal mosaic and suggests that the *ABC* structure is more stable at low temperatures.

Further information, of interest in connexion with the above, has been obtained by the writer from powder photographs. Photographs were examined of two varieties of well-crystallized graphite, one natural and the other artificial, using cylindrical specimens prepared by grinding, sieving and extrusion in the usual way. The integrated intensity of the $10\bar{1}\frac{8}{3}$ line varied between 17 and 22 % of that of the $10\bar{1}1$ line, in fair agreement with Lipson & Stokes's result, which corresponds to $17\frac{1}{2}$ %. The artificial graphite occurred in the form of a soft flaky block, shown by transmission photographs to be practically randomly oriented, and it was possible to cut a small approximately cylindrical fragment from this for direct mounting, without powdering, in the X-ray camera. The intensity of the $10\bar{1}\frac{8}{3}$ reflexion was then only 4 % of the $10\bar{1}1$. The fragment was next lightly crushed and reassembled by extrusion through a capillary tube, giving an increase to 9 %. Further specimens were made after light and heavy grinding in an agate mortar giving, respectively, values of 11 and 17 %. In the case of a massive natural graphite specimen an increase from 8 to 24 % was obtained when the block was reduced to powder by sawing. Corresponding increases of intensity of the $10\bar{1}\frac{4}{3}$ line were observed through the series o specimens. Inspection of the photographs also showed a small but definite broadening of the *hkl* reflexions on powdering which may be accounted for by a reduction in the thickness t of the crystallite subblocks (Bacon, 1950) or, equally, may be due to distortion.

A number of subsidiary measurements were made to confirm that no appreciable proportion of the variations described was due to orientation effects of the type described by Nelson & Riley (1945). Cylindrical fragments cut respectively parallel to and across the grain of the soft flaky block gave values of 4 and 5 % for the $10\bar{1}\frac{8}{3}$ intensity relative to $10\bar{1}1$. Specimens cut parallel and perpendicular to the extrusion direction of an extruded block made from powdered natural graphite gave values of 12 and 14 % respectively, although the preferred orientation in this block was so high that the 0004 and 0006 reflexions showed a fourfold increase of intensity in the parallel specimen.

These results would seem to support the conclusion that the proportion of *ABC* structure in well-crystallized graphites as formed is only a few per cent, but that it may be considerably increased by powdering.

The above note is published by permission of the Director of the Atomic Energy Research Establishment.

References

BACON, G. E. (1950). *Acta Cryst.* **3**, 137.
JAGODZINSKI, H. (1949). *Acta Cryst.* **2**, 298.
LIPSON, H. & STOKES, A. R. (1942). *Proc. Roy. Soc.* A, **181**, 101.
NELSON, J. B. & RILEY, D. P. (1945). *Phil. Mag.* **36**, 711.

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).

Year-Book of International Organizations

The 1950 Edition of the *Year-Book of International Organizations* will appear shortly. This work, in French and English, includes the following: (1) Structure of the Organization for European Economic Co-operation. (2) The Council of Europe. (3) The Brussels Treaty Organization of 'Western Union'. (4) The Organization of American States. (5) The United Nations. (6) The Specialized Agencies. (7) Governmental and Non-Governmental Organizations. The *Year-Book* contains also a chronological list of events during 1949, a list of Embassies and Chambers of Commerce, and a calendar of the principal commercial manifestations.

This book, which completes the *Monthly Review* published by the Union of International Associations, is produced jointly by the Éditions de l'Annuaire des Organisations Internationales (2 Avenue Bellefontaine, Lausanne, Switzerland) and the Union of International Associations (Palais d'Egmont, Brussels, Belgium). Requests for further information or for subscription forms may be sent to either of these addresses.

International Union of Crystallography

Further notification of adhesion has been given as follows:

On 28 October 1949 by Switzerland.

On 6 January 1950 by South Africa through the South African Council for Scientific and Industrial Research.

On 10 February 1950 by Japan through the Science Council of Japan.

On 21 February 1950 by Denmark through the Danish Academy of the Technical Sciences.

The Adhering Bodies are now:

Australia	Group I
Belgium	Group III
Canada	Group IV
Czechoslovakia	Group I
Denmark	Group I
France	Group VII
India	Group I
Japan	Group I
Netherlands	Group IV
Norway	Group I
South Africa	Group I
Spain	Group IV
Switzerland	Group I
United Kingdom	Group VIII
United States of America	Group VIII

British Journal of Applied Physics

The British Institute of Physics has launched, as from January 1950, a new monthly periodical, the *British Journal of Applied Physics*. The primary object of this journal is to announce new applications of physics and developments of those already known, and this will be achieved by publishing original papers and survey articles. There will also be book reviews, correspondence and technical notes.

The first issue consists of 32 pages and includes two special articles, on Scientific Education and on Chemical and Physical Properties of Rubber, and five original contributions. The journal is printed in Times Roman on coated paper in a format similar to that of *Acta Crystallographica*. The price is 6*s*. per part or £3 (U.S.A. $8.50) per volume of twelve parts.

American Crystallographic Association

On 1 January 1950 the activities of the American Society for X-ray and Electron Diffraction and of the Crystallographic Society of America officially ended, and a new society, the American Crystallographic Association, came into existence. Thus the activities and energies of two bodies whose interests have greatly overlapped in recent years have been combined into one common effort.

Officers of the Association for the first year have been elected as follows:

President: I. Fankuchen
Vice President: R. W. G. Wyckoff
Treasurer: J. Karle
Secretary: H. T. Evans Jr., Philips Laboratories Inc., Irvington-on-Hudson, N.Y., U.S.A.

Further information about the Association may be obtained from its Secretary.

Book Reviews

Works intended for notice in this column should be sent direct to the Editor (P. P. Ewald, Polytechnic Institute of Brooklyn, 99 Livingston Street, Brooklyn 2, N.Y., U.S.A.). As far as practicable books will be reviewed in a country different from that of publication.

Gmelin Handbuch der anorganischen Chemie. Antimon *B*2. Edited by E. Pietsch. Pp. 368 + xiv. Clausthal-Zellerfeld: Gmelin-Verlag. 8th ed. 1949. Price DM. 83·60.

The Gmelin Institute in Berlin was disrupted towards the end of the war, and much of its library facilities was lost or destroyed. Since the first edition of Gmelin's *Handbuch der Chemie* (in three volumes) was published in 1817–19, 'Gmelin' has remained the most important reference work on inorganic chemistry, and its value now is as great as ever. Soon after the end of the war, many of the staff of the Institute were re-assembled under the Director, Dr Pietsch, at Clausthal-Zellerfeld in the British Zone; and work on the production of new volumes is being carried on there in an increasingly successful manner. The problem of the supply of literature has been overcome by the use of the local library of the *Bergakademie*, by the loan of books from other German libraries still in existence, and also by the free supply of current literature from a large number of publishing bodies scattered throughout the world.

The present volume is the second to be issued from Clausthal-Zellerfeld and reflects very great credit on the editor and his staff. Production has been carried out under great difficulties, and it is a pleasure to note that the high standard established in pre-war years has been fully maintained. This volume deals with the properties of antimony (in part), its detection and estimation, and its compounds with hydrogen and oxygen, its oxyacids, and its halides. The literature has been searched to the middle of 1948. Some idea of the fulness of the treatment may be conveyed by the fact that the section on the analytical chemistry of antimony alone occupies fifty-six pages. A glance through the present section quickly reveals, however, how far the systematization of inorganic chemistry has yet to go. In particular, the structures of hundreds of compounds still require elucidation, and knowledge of complexes formed by the antimony halides, for example, is still fragmentary. The nature of the binding forces in substances such as SbF_5Br and SbF_5I is completely unknown. Not the least noteworthy feature of this latest volume of 'Gmelin' is its value as a treasure house of suggestions for future investigations.

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