OFFICERS AND COUNCIL

President : Dr. W. Idris Jones, C.B.E.

Vice-Presidents : Sir John Charrington
Mr. H. Christopher, J.P.

COUNCIL

Chairman : Dr. W. Idris Jones, C.B.E.

Elected

Dr. A. T. Bowden
Mr. J. Barrett
Sir John Charrington (*Vice-Chairman*)
Mr. H. Christopher, J.P.
Mr. E. D. Copley
Dr. H. E. Crossley
Mr. J. E. Davis, O.B.E.
Mr. J. N. Deas
Mr. F. A. Gray
Mr. R. H. Gummer
Mr. P. Hawksfield
Mr. G. U. Hopton
Mr. A. T. Horsfield
Sir Kenneth Hutchison, C.B.E.
Mr. C. C. Inglis
Mr. H. R. King
Mr. John Lea
Mr. E. C. Leader
Mr. H. L. Lowe
Mr. W. G. Marskell
Mr. W. J. S. McKinnell
Mr. B. L. Metcalf
Dr. R. J. Morley
Mr. G. Nonhebel
Dr. T. J. P. Pearce
Mr. H. E. Pearsall
Dr. L. H. A. Pilkington, J.P.
Dr. L. Rotherham
Mr. E. F. Schumacher
Mr. H. V. Shelton
Mr. W. F. Simonson
Mr. D. A. Tanfield
Dr. A. Alan Taylor
Mr. J. Walker
Mr. A. M. Wandless
Mr. F. Wilkinson
Mr. J. S. Williams, O.B.E.
Mr. A. H. A. Wynn

Co-opted

Mrs. D. M. Charlton, O.B.E.
Mr. S. W. G. Ford, M.B.E.
Sir Leslie Hollinghurst, G.B.E., K.C.B., D.F.C.
Mr. Lionel G. Locket
Brigadier J. V. Topham

Appointed by Department of Scientific and Industrial Research

Dr. C. M. Cawley, C.B.E. (Voting)
Dr. B. K. Blount, C.B. (Non-voting)
Mr. P. D. Greenall (Non-voting)

This Bulletin is issued by the Association as a service to its Members. Under the Articles of Association, Membership is restricted to the U.K. and Commonwealth. Authority has been given, however, to enrol as Postal Subscribers such persons, institutions and commercial undertakings outside these areas as are deemed to have a bona fide interest in coal utilisation research. On payment of five guineas per annum Postal Subscribers will receive regularly the Monthly Bulletin and the Quarterly Gazette. Applications for this service should be addressed to : The Liaison and Publications Officer, B.C.U.R.A., Randalls Road, Leatherhead, Surrey.

The British Coal Utilisation Research Association

MONTHLY BULLETIN

Vol. XXVI No. 12

NOVEMBER-DECEMBER, 1962—Part II

CONTENTS

The Distribution and Origin of Minor Elements in Coal (Review No. 217) **401**

REVIEW No. 217

THE DISTRIBUTION AND ORIGIN OF MINOR ELEMENTS IN COAL

F. V. Bethell

CONTENTS

(1) **Introduction** **402**
(2) **Distribution by Elements** **403**
(2·1) Li ; Cs ; Rb **403**
(2·2) Cu ; Ag ; Au **404**
(2·3) Be **405**
(2·4) Sr ; Ba ; Ra **406**
(2·5) Zn ; Cd ; Hg **408**
(2·6) B **409**
(2·7) Sc ; Y and Rare Earths **410**
(2·8) Ga ; In ; Tl **410**
(2·9) Ge ; Sn ; Pb **411**
(2·10) Ti ; Zr ; Th and Trans U Elements **415**
(2·11) As ; Sb ; Bi **415**
(2·12) V ; Nb ; Ta **416**
(2·13) Se ; Te **417**
(2·14) Cr ; Mo ; W ; U **417**
(2·15) F ; Cl ; Br ; I **419**
(2·16) Re **421**
(2·17) Co ; Ni **421**
(2·18) Pt Metals **422**
(3) **Origin of the Observed Distribution** **422**
(3·1) Observations on the Literature **422**
(3·2) Deductions from the Literature **423**
(3·3) Discussion **423**
(3·3·1) Association with the coal substance **423**
(3·3·2) Enrichment in the coal substance **424**
(3·3·3) Marginal concentration **424**
(3·3·4) Decrease in concentration with increasing rank **425**
(3·3·5) Effect of chemical character **426**
(3·4) The Future Trend of Investigation **426**
Acknowledgments **426**
Bibliography **427**