ruary, 1785. There is an article by R. E. Schofield on Josiah Wedgwood as an industrial chemist and one by R. Siegfried on the chemical philosophy of Humphry Davy. American chemistry is represented by two papers, one on the Columbian Chemical Society by W. D. Miles and one by S. M. Edelstein on the chemical revolution in the United States as shown by the pages of the *Medical Repository*, a periodical initiated by Samuel Latham Mitchill in 1797. This paper is of interest in relation to Priestley, who published in Mitchill's journal.

One can always have too much of a good thing, when interest tends to decline. With such a relatively small publication as "Chymia", appearing once a year (as we hope it will), it follows that only material of the highest standard can find a place. It can be read, and since its field is restricted to chemistry it is not swamped by publications towards which chemists, with their generally practical and objective outlook, feel little drawn. Chemists can read and enjoy it, and even those who have little sympathy with historical studies as such cannot fail to find something in the pages of "Chymia" which will interest them. We all know who proposed the name "aldehyde". Who first used the name "acetone" ? A search of all the standard literature does not answer this question, but it is answered in this volume of "Chymia". Every chemist who up to now has not seen this fascinating publication is strongly advised to repair his loss.

J. R. Partington

PROPERTIES OF LIQUIDS

Liquids and Liquid Mixtures

By Dr. J. S. Rowlinson. (Modern Aspects Series of Chemistry.) Pp. ix + 360. (London : Butterworths Scientific Publications ; New York : Academic Press, Inc., 1959.) 75*s.* ; 12.80 dollars.

DR. ROWLINSON'S book is admirable in many ways. In it is gathered together an impressive amount of quantitative information about the measured properties of liquids and liquid mixtures, and also a multitude of thermodynamics and statistical formulæ, including all those that are ever likely to be required for the correlation of purely thermodynamic properties. No reader could possibly complain that the author has paid inadequate attention to the experimental literature, or has failed to take seriously the difficulties which arise in the most advanced statistical theories.

The book, however, suffers from the defects of its qualities. It is a commonplace that nothing but trivialities can ever emerge from a purely thermodynamic discussion of homogeneous phases, and yet the statistical theory of liquids does not appear until two-thirds of the way through the book. One of the most valuable generalizations in the theory of liquids is the principle of corresponding states, and one would have thought that this principle, and its statistical basis, should have been introduced early on, as an invaluable first approximation from which real liquids, of course, deviate to varying degrees and for various reasons. Again, the thermodynamic properties of mixtures cannot be understood at all without reference to the intermolecular potentials, and surely the most satisfactory way of dealing with them is to interpret the data in terms of statistical models as one goes along. In this connexion it is a pity that nothing is said about the theory of Prigogine and his colleagues of 'ideal associated' solutions, or about the link-up between the spectroscopic and thermodynamic data on alcohol solutions. Further, though this is a fault of the title rather than of the book, there is virtually no mention of transport properties, or of other non-thermodynamic measurements which have thrown so much light on the liquid state.

The best chapters in the book are probably those on the critical state of pure liquids and liquid mixtures, and the final chapter on the statistical thermodynamics of mixtures of spherical molecules, which is based mainly on the work of W. B. Brown.

Finally, it is certain that the purely descriptive chapters on the phase diagrams of mixtures will be of educational value to the chemical engineer, for whom the moral of the book is "Anything can happen and it probably will".

H. C. Longuet-Higgins

SOILS OF TANGANYIKA

A Survey of Soils in the Kongwa and Nachingwea Districts of Tanganyika

By B. Anderson. Pp. ix + 120 (36 figures). (Reading : Department of Agricultural Chemistry, The University ; Dar-es-Salaam : Tanganyika Agricultural Corporation, 1957.) n.p.

EVERYONE knows the dismal sequel to the ambitious scheme for the mechanized production of ground-nuts in East Africa, which was characterized by the failure to employ pedological methods on pedological problems. After the horse had departed, some effort was made to shut the stable door and a very competent soil surveyor was set to work to make a proper study of the soils of the Kongwa and Nachingwea districts. The publication under review presents his results and shows what can be achieved by one trained pedologist working 'on the cheap' with limited facilities, but with specialized technical assistance from various institutions. The moral for would-be planners of land-use is obvious.

The first two chapters contain descriptions of the topography, geology, climate, vegetation and soils of the two areas. In each case the soils are described in detail and the soil patterns are shown on maps at 1/25,000. The latter are clear and pleasing to the eye, but the keys should have specified the parent material and topographic situation of each soil series, thus saving constant reference to the text.

At Kongwa the main catena consists of red earths developed on a sandy loam from granitic gneiss and brown and grey calcareous valley-soils on colluvium and alluvium. Some of the red earths are capable of cropping usefully in good years but the main limitation is the unreliability of the rainfall.

In the Nachingwea area, the major areas are occupied by a 'textural catena' developed by differential washing of a deep mantle weathered from more basic gneiss. The rainfall is nearly twice as high as at Kongwa and the wet season is somewhat longer.

The next chapter describes the soil maps in detail and clarifies the topographic relationships with cross-sections. In the last, there is a useful summary of ideas on the genesis of the soils and their relations to other tropical soils.

The book is well illustrated with photographs and diagrams and is a valuable addition to our knowledge of East African soils.

R. M. S. Perrin