

BOOK REVIEWS

Constitution and Biosynthesis of Lignin: K. FREUDENBERG and A. C. NEISH. Springer-Verlag, Berlin, 1968. 129 pp. 7.00\$.

LIGNIN is one of the most important of natural polymers, since it provides vascular plants with the means of standing upright and it is appropriate that the second volume in a new series of monographs on "Molecular biology, biochemistry and biophysics" should be devoted to this topic. Lignin is of course a most intractable subject for research and work on its structure has broken the heart of more than one organic chemist in its time. The complete structure of lignin will probably always be an enigma since it is now known to be a complex three-dimensional lattice of hydroxylated and methoxylated aromatic rings joined by carbon and oxygen links. Its general formulation as a phenylpropanoid polymer has only been fully established in recent years, mainly due to the efforts of the two authors of this book. It is therefore especially pleasing to have their own accounts of these discoveries in this very difficult field recorded for us in this monograph.

In the first part of the book, A. C. Neish outlines in a masterly and beautifully concise fashion our present knowledge of lignin biosynthesis. A valuable feature of his chapter is a complete listing of all the monomeric intermediates that have been used in ^{14}C feeding experiments, according to their degree of incorporation into lignin. In the second half, Freudenberg provides a fascinating account of how knowledge of lignin constitution has been built up, painfully slowly and piece by piece, over the last 60 years. Historical aspects are not neglected here; it is well to be reminded how many of the famous names of the past—Emil Fischer, R. Willstätter and others—have contributed either directly or indirectly to our knowledge of lignin chemistry. Pride of place goes in this section to the experiments of Freudenberg's own group on coniferyl alcohol dehydrogenation, the results of which have given such valuable insights into the types of linkages involved in natural lignins.

The publishers are to be warmly congratulated for bringing together these two leading authorities, whose researches have so nicely complemented each other's, to produce this valuable monograph. It provides the best introduction to lignin biochemistry as yet available. Finally, a special word of thanks to J. M. Harkin who translated Freudenberg's original manuscript for this book into easy, flowing English.

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