

$f_1 f_2$, f_1^2 , f_2^2 , and the two mutual inertia coefficients J_{12} , J_{21} then become equal.)

The treatment of the flutter problem is far from satisfactory, since the aerodynamic damping coefficients are completely ignored. The so-called flutter speed found by the method given may bear little relation to the true flutter speed, and will always be higher. The discussion on flutter is limited to flexure-torsion wing flutter, which involves two degrees of freedom only. Although methods for preventing control surface flutter by mass-balancing are reviewed, the determination of control surface flutter speeds is not discussed.

A brief account is given in Chapter 4 of methods of performing resonance tests. The wing is forced to vibrate by means of rotary exciters; it is preferable to use linear-exciters consisting of a pair of out-of-balance masses, to avoid exciting lateral motion. The possibility of anti-symmetrical vibration has not been considered; by exciting at one wing tip only, as is recommended in this book, the resulting vibration will be a mixture of symmetric and anti-symmetric vibration. The piezo-electric detectors which are used have been found unsatisfactory in Britain, since the range of amplitude for which they give a satisfactory response is limited.

ROSIN AND ITS PRODUCTS

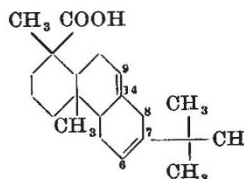
Produits résineux

Gemmes, colophanes et dérivés. Par Dr. René Lombard. (Matériaux de synthèse.) Pp. xv+316. (Paris: Libr. Dunod, 1946.) 385 francs.

ALTHOUGH France is the second largest producer of rosin and turpentine, she has practically no literature on the subject. Dr. R. Lombard, who has studied under Prof. DuPont and Prof. Brus of the Bordeaux Institut du Pin, seeks to remedy the defect, for the benefit of the many technical users of rosin and products from it. He has collected and correlated the available information and deals particularly with the fundamental study of pine rosin acids.

This book comes at a time when chemists are more occupied with synthetic resins than natural resins, and emphasizes the relative simplicity of the former compared with the latter. It also brings to mind Ruzicka's suggestion that known terpenes could be built up from isoprene. The book draws on "Die Harze" of Tschirch and Stock; but, as the author warns us, does not have the botanical background of that classical work. The book gives a good account of the brilliant researches of Ruzicka and other workers, such as Prof. R. D. Haworth, which have done much to elucidate the structure of many of the rosin derivatives.

The chapter on abietic acid is good, and so is the description of the work on the elucidation of the structure of *l*-pimaric acid and *d*-pimaric acid. It is unfortunate that these names are retained, since the two acids are not optical isomers. Dr. Lombard prefers the following formula for abietic acid



because it accounts for the direct transformation of *l*-pimaric acid to abietic acid, while the normally accepted Fieser formula, which has the double bond between the 7 and 8 carbons, necessitates an intermediate step. The generally accepted formula, however, is adopted throughout the book.

Dr. Lombard has given us a very useful volume. Rosin is the cheapest and most abundant source of organic acids, and rosin acids, because of their salt-forming properties, find industrial uses in the soap and paper trades; their ester-forming properties render them valuable in the varnish trade. This book is therefore helpful to many engaged in these industries. The bibliographies at the end of each chapter are very useful, but the reader will find the lack of an index in the book somewhat annoying.

INDIAN FOLK-TALES

Folk-Tales of Mahakoshal

By Dr. Verrier Elwin. (Specimens of the Oral Literature of Middle India: Published for "Man in India".) Pp. xxv+523. (London: Oxford University Press, 1944.) 25s. net.

DR. VERRIER ELWIN has rendered a great service to anthropology in his monographs upon the peoples of the Central Provinces. In this volume he sets out to "preserve for English-speaking readers specimens of their oral literature". The phrase is not very happy. His purpose is scientific, for he censures certain works as being "published purely for entertainment". Yet he admits that he has published this volume without reference to Thompson's "Motif-index of Folk-Literature". It is therefore not surprising that the reader finds his chapter-headings hard to follow. For example, "the boy whose brother was a bull" theme appears both under "The Quest for Love and Treasure" and "The 'Magic Articles' Motif". Moreover, Dr. Elwin does not attempt to distinguish between the basic folk-tales of the several peoples he reports and the ancient and very highly finished wares of India's professional story-tellers. There are several traces of the purely literary and foreign Persian "Sad Hikayat" among these stories.

It would have been helpful if the author had given the name and some details of each of his informants. The usefulness of the book as a crude quarry of material is also diminished by the absence of the dialect terms. On p. 397 the original is quoted but not translated. Elsewhere, no attempt is made to provide a clue to the many obscurities such tales necessarily contain. The "Hare Ram" on p. 383 is quite unintelligible, while on p. 386 the glossary gives correctly *Shorea robusta* for the sarai tree of the story, which in the text is later specifically called a mango. On p. 211 rather abrupt reference is made to a catapult, which must be modern, for the catapult is nowhere else indigenous in India. The glossary might well have been expanded; for example, no reference is made to the well-known caste of pack-carriers, the Lamani (not, surely, Lamana?), or to the interesting examples of Acts of Truth, which occur more than once. The bibliography contains no entries from the Royal Anthropological Institute's journal *Man*. Some of the author's comments upon certain quite unpretentious works would seem to be a little more acid than is called for.

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