

ON A METHOD OF OBTAINING THE NON-ASTRONOMICAL SEA-LEVEL

A COMMON method for obtaining the residual sea-level from the observed tide data after eliminating the astronomical influences is to use the mean of 24 observations taken at mean solar hour intervals or alternatively to use 25 hourly observations. The former eliminates the contribution from the solar constituents and the lunar constituents considerably affect the results. The 25-hour method filters out practically the lunar constituents but it has an appreciable solar error.

Doodson¹ suggested a method using a 39-hour weighted average instead of that of 24 or 25-hour average. This method of averaging is developed by a combination of a number of filters each of which greatly weakens the contribution of one or more of the principal tidal constituents. Groves² while working on numerical filters for eliminating the tidal constituents arrived at several filters, the 39-hour compound filter suggested by Doodson being one of them.

While working with the tide data of Indian Ports the authors devised a simple method of eliminating the astronomical influences by obtaining the 25-hour average first and then subjecting the residual curve of sea-level to a 24-hour average. The original tide curve as well as the residual sea-level curve (after successive 25 and 24-hour averaging) are shown in Fig. 1. It has been found that the

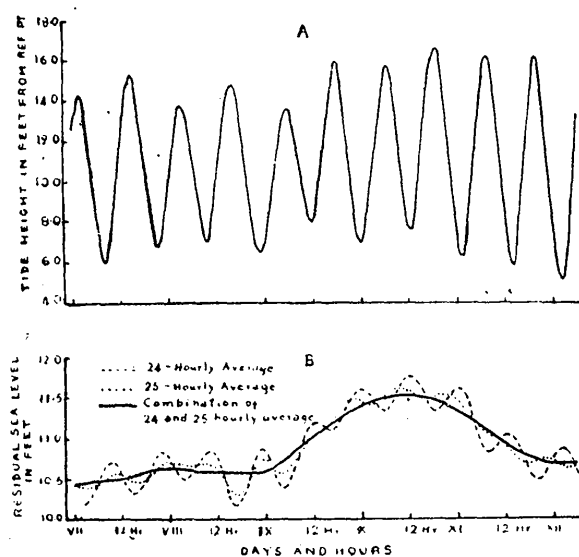


FIG. 1

residual curve is free from the small period oscillations caused by astronomical influences.

The meteorological or non-periodical effects on sea-level may be conveniently studied with the help of such a residual sea-level curve.

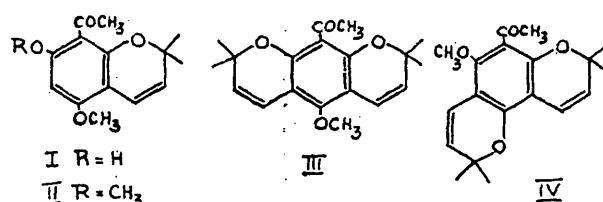
The authors wish to express their thanks to the Director, Indian Ocean Expedition, New Delhi, for providing research facilities and to the Deputy Director, Geodetic and Research Branch, Survey of India, Dehra Dun, for supplying the tide data. One of the authors (G. Subba Raju) wishes to express his thanks to the Council of Scientific and Industrial Research for the award of a Junior Research Fellowship.

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Ernakulam-1, June 10, 1965.

1. Doodson, A. T. and Warburg, H. D., *Admiralty Manual of Tides*, Her Majesty's Stationery Office, London, 1941.
2. Groves, G., *Transactions of American Geophysical Union*, 1955, **36**, 1073.

A NEW SYNTHESIS OF DIHYDRO ALLOEVODIONOL AND ITS METHYL ETHER

ALLOEVODIONOL (I),¹ its methyl ether (II)^{2,3} and franklinone (III)⁴ are related compounds occurring in Australian plants. The constitutions of the first two are well established. They are obviously derived from phloracetophenone by condensation with an isoprene unit. The constitution of franklinone has been unsettled till recently as to whether it had a linear structure (III) or the angular structure (IV). But the former was preferred as it will arise by the condensation of a second isoprene unit with alloevodionol.



It was the purpose of our investigation to settle the final structure of franklinone by synthesis. As intermediate stages the preparation of dihydro-*o*-methyl alloevodionol (VII) and dihydro alloevodionol (VIII) has been attempted. The condensation of phloracetophenone dimethyl ether (V) with γ, γ -dimethylallyl bromide (VI) proceeded smoothly in the presence of zinc chloride to give a fairly