

SHORT COMMUNICATION

STUDIES IN TERPENOIDS—XIX.¹ CONVERSION OF 7-HYDROXY-CALAMENENE AND CADALENE TO MANSONONE C

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ABSTRACT

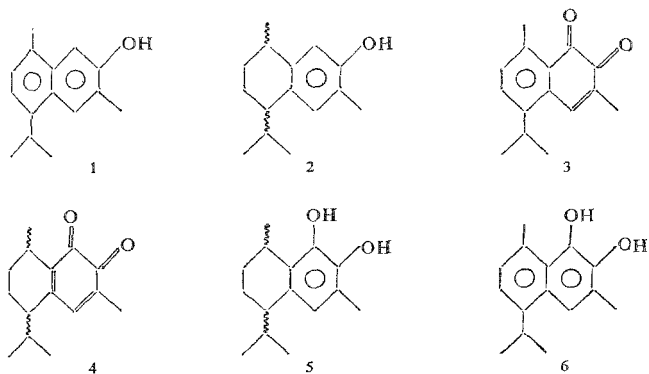
A one step synthesis of mansonone C (3) by oxidation of 7-hydroxy-cadalene (1) and calamenene (2) is reported.

1. INTRODUCTION

In recent years a number of cadalenic orthoquinones (mansonones) have been isolated from *Mansonia altissima* Chev.² Besides demonstrating fungitoxicity of two of these members, Overeem and Elgersma³ drew attention to the striking structural similarity between some of these mansonones and 7-hydroxy-cadalene (1) and related naphthols⁴ isolated from the heartwood of some species of elms. Very recently the present authors reported the synthesis⁵ of 7-hydroxycadalene (1), 7-hydroxy-calamenene (2) and the related naturally occurring phenolic aldehydes and indicated the possibility of converting these compounds to the skeletally related mansonones. This communication reports the facile transformation of 1 and 2 to mansonone C (3).

2. PRESENT WORK

Fremy's salt⁶ oxidation of 7-hydroxycadalene furnished readily mansonone C^{7,8} (3) in excellent purity, m.p. 135° (Rep.^{2,9} m.p. 134-135°). Similar Fremy's salt treatment of 7-hydroxycalamenene (2) was expected to give mansonone A (4). However, the quinone isolated was mansonone C (3), along with recovered starting material and another phenolic body of greater polarity, presumed to be hydromansonone A (5), based on a consideration of the ease of disproportionation to which mansonone A (4), the primary product of reaction is prone by oxidation-reduction sequence^{2*} (2 → 4 → 3 + 5). The concurrent dehydrogenative hydroxylation propensity of Fremy's salt¹⁰ also explains the formation of mansonone C (3) (2 → 1 → 6 → 3).



Using this approach it is proposed to synthesize other related mansone² and such a programme is in progress in our laboratories.

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7. Spectral data and analysis support the structure. The infrared spectrum of our specimen is identical in all respects with the one kindly furnished by Dr. M. Yasue to whom we are grateful.
8. Prof. Thomson also reported preparation of mansonone C (3) from 7-hydroxycadalene (V. Krishnamoorthy and R. H. Thomson, *Phytochem.*, In press, personal communication).
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