

EXTRACTIVE COMPONENTS FROM THE WOOD OF TAIWANIA
CRYPTOMERIOIDES HAYATA: A NEW SESQUITERPENE*
KETO ALCOHOL, CADINANE-3-ENE-9 α -OL-2-ONE

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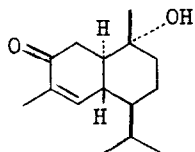
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In continuation of the research on the wood components of *Taiwania cryptomerioides* Hayata¹⁾, we isolated a new sesquiterpene keto alcohol, C₁₅H₂₄O₂ (Found: C, 76.42; H, 10.33; C₁₅H₂₄O₂ requires C, 76.22; H, 10.24%) (M⁺ ion m/e 236). Cadinane-3-ene-9 α -ol-2-one (1) was assigned based on the following evidences.

It was crystallized from n-hexane in colorless plates, m.p. 111-111.5°, (α)_D^{21.5} -123.2° (C 1.16 in CHCl₃), 2,4-dinitrophenylhydrazone: m.p. 220-222°. It shows IR absorption bands at 3530 (hydroxyl group), 1385 and 1375 (isopropyl group), 1680 and 1665, (α,β -unsaturated ketone), 1410 (α -hydrogen of ketone) and 1650 and 842 cm⁻¹ (trisubstituted double bond). The UV absorption, $\lambda_{\max}^{\text{methanol}}$ 239 m μ (log ϵ 3.95), indicates α,β -unsaturated ketone with two alkyl substituents. The NMR spectrum shows the presence of one methyl group on the double bond at 8.42 τ (broad singlet) and one vinyl proton at 3.25 τ (broad singlet) which is the proton at the β position of α,β -unsaturated ketone system. The above evidences and the presence of one methyl group attaching at tertiary C atom which carries hydroxyl group (NMR: 8.86 τ , 3 H, singlet) and isopropyl group (NMR: a pair of doublets at 9.08 and 9.12 τ , 6 H, J=7 cps) suggested the new keto alcohol being closely related to cadinol.

Meantime, the selenium dioxide oxidation of α -cadinol gave the same keto alcohol. α -Cadinol and selenium dioxide in ethanol were boiled under

reflux for ten hours. This mixture was treated as usual manner²⁾ and gave a colorless plates (yield 18%), m.p. 110-111.5°, (α)_D²⁵ -128.4 (C 1.05 in CHCl₃). It gave the same 2,4-dinitrophenylhydrazone, m.p. 220-222°. Both natural and synthetic material were identical by comparison with IR, UV, NMR, MS and mixed fusion. Therefore, the structure of keto alcohol is represented by (1) (2-oxo- α -cadinol).



(1)

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References

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