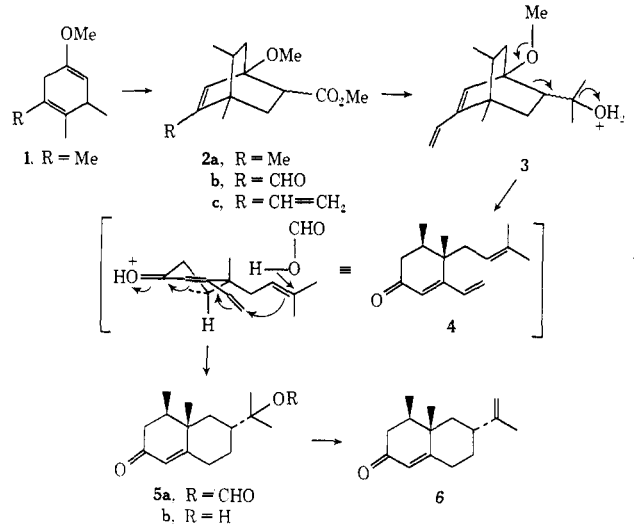
Scheme I[a]



[a] All compounds have satisfactory spectral data.

allylic position. Dropwise addition of ethereal methylenetriphenylphosphorane[10] to **2b** gave the diene **2c** (50%) which was converted to the carbinol **3** by the action of ethereal methyllithium at room temperature (96%).

Stirring of **3** with excess formic acid for 1 hr at room temperature gave rise to **5a** (50% after purification). Saponification (aqueous NaOH, *t*-BuOH, 20°) of **5a** produced **5b** (90%). The spectral properties of **5b** were identical with those reported for 11-hydroxy-11,12-dihydronootkatone.[4] Refluxing of **5a** in pure collidine for 15 hr in the presence of 30% by weight of neutral alumina (with respect to **5a**) gave a mixture of elimination products (70% after purification). A sample of the major component (75% by nmr and glc) obtained by preparative glc was found to be spectrally identical and superimposable on glc with an authentic sample of nootkatone.[11] The remaining 25% of the elimination product consisted mainly of α-vetivone (nmr analysis[12]). No 7-*epi*-nootkatone could be detected by careful pmr analysis,[13] showing that the final ring closure step (Scheme I) is stereospecific. The functionalized isopropyl side chain of **5a** therefore exists in the thermodynamically preferred equatorial configuration, as in natural nootkatone. Furthermore, since no trans (*C*)-4,5-dimethyl compound could be detected[14] the Diels–Alder reaction to give **2a** is stereoselective as previously discussed.

A full paper bearing experimental details will appear at a later date.

Acknowledgments. The author is indebted to Professor A. J. Birch for the suggestion that the Diels–Alder reaction should give the correct configuration of the methyl groups. The award of a Research Scholarship from the Australian National University is gratefully acknowledged.

(10) G. Wittig and U. Schoellkopf, *Org. Syn.*, **40**, 66 (1960).

(11) The author is indebted to Dr. M. Pesaro, Givaudan-Esrolko, Zurich, for a gift sample of nootkatone.

(12) K. Endo and P. de Mayo, *Chem. Pharm. Bull.*, **17**, 1324 (1969).

(13) The pmr signal of the C(5)-methyl group is shifted 3 Hz downfield going from nootkatone to 7-*epi*-nootkatone. No signal corresponding to the latter compound could be detected at optimum resolution on a JEOL 100 MHz nmr spectrometer. Similar analysis has been employed previously.[4]

(14) In *trans*-4,5-dimethyleremophilanes the pmr signal of the C(5)-methyl group is shifted up to 30 Hz upfield with respect to the corresponding cis isomers.[4] No such signal is observed for **5b** and **6**.

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Additions and Corrections

A Bell-Shaped pH–Rate Profile for an Oxidation. The Reaction of Permanganate with Hydroxycyclohexanecarboxylic Acids [*J. Amer. Chem. Soc.*, **93**, 4271 (1971)]. By ROSS STEWART* and J. ANTHONY MACPHEE, Department of Chemistry, University of British Columbia, Vancouver 8, Canada.

The value of k_1 for compound **3** in Table I should be 731 ± 25. The units on the y axes of Figures 2 and 3 should be l. mol^{-1} min^{-1}.

The Mechanism of Reactions Involving Schiff Base Intermediates. Thiazolidine Formation from L-Cysteine and Formaldehyde [*J. Amer. Chem. Soc.*, **93**, 6236 (1971)]. By ROLAND G. KALLEN, Department of Biochemistry, School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania 19104.

Equations 9 and 10 should read as shown below.

$$k_{obsd} = \frac{(k_{1a}\alpha_3 + k_{1b}\alpha_{13})[F]\alpha_{RNH_2T}/(\alpha_3 + \alpha_{13})}{\left\{\frac{k_{1a}\alpha_3/K_1 + k_{1b}\alpha_{13}/K_1}{(\alpha_3 + \alpha_{13})(k_2 + k_2'a_{H^+})}\right\} + 1} \quad (9)$$

$$k_{obsd} = \frac{(k_{1a}\alpha_3 + k_{1b}\alpha_{13})[F]\alpha_{RNH_2T}/(\alpha_3 + \alpha_{13})}{\left\{\frac{k_{1a}\alpha_3/K_1 + k_{1b}\alpha_{13}/K_1}{(\alpha_3 + \alpha_{13})(k_2 + k_2'a_{H^+} + k_2''[HA])}\right\} + 1} \quad (10)$$

Determination of the Tautomeric Form of the Imidazole Ring of L-Histidine in Basic Solution by Carbon-13 Magnetic Resonance Spectroscopy [*J. Amer. Chem. Soc.*, **95**, 328 (1973)]. By W. F. REYNOLDS,* I. R. PEAT, M. H. FREEDMAN, and J. R. LYERLA, JR., Department of Chemistry and the Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada, M5S 1A1.

In Table II, the entries listed for 3-methylhistidine are