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PERFUMES RELATED TO AMBERGRIS

A Thesis presented
to the University of Auckland
for the degree of
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by

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TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	i
INTRODUCTION	1
DISCUSSION	8
Synthesis of Perfumes from 2-Oxomanoyl Oxide	8
Synthesis of Perfumes from Manoyl Oxide	30
Approaches to the Synthesis of New Perfumes	37
Oxide Cleavages of Manoyl Oxide and its Derivatives	46
The Mass Spectra of Some Epimeric Ambreinolides	54
Mass Spectra 1 and 2	56
Mass Spectra 3 and 4	59
Mass Spectra 5 and 6	60
Mass Spectra 7 and 8	69
EXPERIMENTAL	71
REFERENCES	131
DIAGRAMS	142
REACTION SCHEMES	151
FRAGMENTATION SCHEMES	156
ACKNOWLEDGEMENTS	158

ABSTRACT

2-Oxomanoyl oxide (27) has been converted to the 2-hydroxy ether (65) and the 2-oxo ether (66) both of which possess ambergris-type odours similar to that of the odiferous compound (1). The route which affords the highest yield is via the intermediates (64), (75), (43) and (36), and this gives 23% of the 2-oxo ether (66) and 17% of the hydroxy ether (65) from 2-oxomanoyl oxide. A two-step transformation of manoyl oxide (26) into the perfume (1) has been achieved by oxidising manoyl oxide with chromium trioxide in acetic acid, and then reducing the resulting lactone (55) directly to its cyclic ether (1).

Attempts were made to synthesise new ambergris-type perfumes, and successful preparation of the internal ketal (108) showed that contrary to expectations this ketal is odourless.

Comparison of the mass spectra of the lactones (54), (55), (56), and (145), with those of their C8 epimers (57), (58), (59), and (146) respectively, showed that the trans-fused lactones lose carbon dioxide upon electron-impact while the cis-fused isomers do not.