(1·7%), caryophyllene (1·6%), β-pinene (1·5%), α-pinene (1·2%), *trans*-carveol (1·2%), sabinene (1·0%) and myrcene (1·0%).

Plant. Mentha × *gentilis* L. *Source.* Lake Mississqui, Quebec. *Uses.* Leaves are used as a condiment. *Previous work.* The presence of menthol.[4] and linalool[5] has been reported.

Terpenoid composition. Carvone (49·3%), limonene (23·4%), caryophyllene (5·4%), *cis*-carveol (2·6%), *cis*-carvyl acetate (1·6%), α-pinene (0·7%), β-pinene (0·6%), myrcene (0·5%), camphene (0·5%), sabinene (0·2%) and *trans*-carveol (0·2%).

Plant. Mentha × *gracilis* Sole. *Source.* Cape Breton Island, Nova Scotia. *Uses.* Not known. *Previous work.* None.

Terpenoid composition. Piperitenone oxide (31·2%), pulegone (28·0%), piperitone oxide (13·1%), methone (10·6%), limonene (3·7%), germacrene D (1·7%), isomenthone (1·5%), *trans*-isopulegone (1·3%), 1,2-epoxymenthyl acetate (1·2%), myrcene (0·8%) and 3-octanol (0·8%).

Plant. Mentha × *muelleriana* F.W. Schultz. *Source.* Belle River, Ontario. *Uses.* Not known. *Previous work.* None.

Terpenoid composition. Carvone (52·3%), limonene (13·3%), myrcene (5·2%), β-pinene (5·0%), 1,8-cineol (3·5%), caryophyllene (3·3%), γ-terpinene (1·7%), *p*-cymene (1·6%), sabinene (1·2%), 3-octanol (0·9%) and α-terpineol (0·9%).

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[4] S. SHIMIZU, N. IKEDA, H. UEDA and K. HOSHIMO, *Koryo* (67), 17 (1962).
[5] J. KATSUHARA, *Koryo* (83), 51 (1966).

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3-DODECANONE IN *MENTHA* × *GENTILIS*

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Key Word Index—*Mentha* × *gentilis*; Labiatae; 3-dodecanone; mono- and sesquiterpenes.

As part of a chemical and cytological investigation of the genus *Mentha*, a strain of *Mentha* × *gentilis*, a hybrid complex involving *M. arvensis* and *M. spicata*,[1] was obtained from Corbridge, Northumberland, U.K. (Morton 5184). Most such hybrids have a characteristic spearmint-like aroma, but this strain had a somewhat floral aroma. Although not much work had been published on the chemical composition of the oil of *M.* × *gentilis*,

[1] J. K. MORTON, *Watsonia* 3, 244 (1956).

the presence of menthol,[2] linalool,[3] carvone,[4] limonene,[4] caryophyllene,[4] *cis*-caveol,[4] *cis*-carvyl acetate,[4] α-pinene,[4] β-pinene,[4] myrcene,[4] camphene,[4] sabinene[4] and trans-carveol,[4] has been reported.

The plants were collected in full bloom so that their correct taxonomic identification could be made. Voucher specimens are deposited in the herbarium of the University of Waterloo (J.K.M.).

After drying, the plant material was steam distilled to give 0·3% essential oil which was then chromatographed on neutral alumina (Activity 2) and the fractions subjected to preparative GLC for IR determination.

All percentages were calculated from the recorder trace of a pressure and temperature programmed capillary gas chromatographic analysis on a column of Carbowax 6000. Each compound was identified spectroscopically and confirmed by comparing its retention time with that of the authentic compound. As the IR spectra of alkyl-3-ones are all similar, confirmation of 3-dodecanone was made from its retention time. This is the first time that 3-dodecanone has been found in an essential oil of any species of *Mentha* and therefore it is of some biochemical significance. The only other alkyl-3-one that has been isolated in an essential oil of the *Mentha* genus is 3-octanone.[5–7]

TABLE 1. CHEMICAL COMPOSITION OF THE OIL OF *Mentha* × *Gentilis*

Compound	% Area	Compound	% Area
α-Pinene	0·1	*trans*-Ocimene*	0·8
β-Pinene	1·3	*p*-Cymene	2·9
Sabinene	0·2	Terpinolene	6·9
Myrcene	0·3	3-Octanol	10·3
α-Terpinene	0·1	Linalool	48·0
Limonene	0·4	3-Dodecanone	13·0
1,8-Cineol	1·2	Carvone	1·6
cis-Ocimene*	0·7	*p*-Cymen-8-ol	1·1
γ-Terpinene	0·6	Carvacrol	0·8

* Refers to tentative identification.

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[3] J. KATSUHARA, *Koryo* (83), 51 (1966).
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[7] B. M. LAWRENCE, J. W. HOGG and S. J. TERHUNE, *Flavour Ind.* (1972) in press.