

## SHORT COMMUNICATIONS

*trans*- and *cis*-Yabunikkeol, New Monoterpene Alcohols Isolated from the Essential Oils of *Cinnamomum japonicum* Sieb.

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We have examined the essential oils of *Cinnamomum japonicum* Sieb. (Japanese name, "Yabunikkei"); we could isolate two new monoterpene alcohols, named *trans*-yabunikkeol (I) and *cis*-yabunikkeol (II).

The essential oil was obtained by the steam distillation of twigs (yield: 0.75% of the fresh material as a case). The monoterpene alcohols were separated by activated-alumina-column chromatography using the fraction with a bp of 129–132°C/20 mmHg which resulted from the fractional distillation of the oil; they were purified finally by preparative GLC. (Yields: I, 1.0%, and II, 1.5% of the original oil).

These alcohols all have the same molecular formula,  $C_{10}H_{16}O$  (mol. wt 152 by MS spectra). The IR and UV spectra show the presence of a secondary hydroxy group, terminal methylene linkage, an isopropyl group, and conjugated double bonds. The UV spectra show a close resemblance to that of  $\beta$ -phellandrene.<sup>1)</sup>

On dehydrogenation with selenium, both alcohols gave small amounts of carvacrol. Furthermore, by isomerization with sulfuric acid in an ethanol solution, they were converted to carvotanacetone easily. The IR spectrum of the carvotanacetone obtained was quite identical with that of an authentic sample<sup>2)</sup> prepared from carvone.

These evidences show that both alcohols are *p*-mentha-1(7),5-dien-2-ol. The *cis*-*trans* assignments were made chiefly by means of comparing the retention times of the GLC and IR spectra with those of *cis*- and *trans*-*p*-mentha-1(7)-en-2-ol.<sup>3,4)</sup>

*trans*-Yabunikkeol (I) (*trans*-*p*-mentha-1(7),5-dien-2-ol) is a colorless oil; bp 226°C/760 mmHg,  $d_4^{20}$

0.9335,  $n_D^{20}$  1.4988,  $\alpha_D^{22}$   $-17.80^\circ$ . UV spectrum:  $\lambda_{\max}^{EtOH}$  232 m $\mu$  ( $\epsilon=15700$ ), 239 m $\mu$  ( $\epsilon=11200$ ). The IR spectrum is shown in Fig. 1.

*cis*-Yabunikkeol (II) (*cis*-*p*-mentha-1(7),5-dien-2-ol) has the following properties: mp 34°C, bp 228°C/760 mmHg,  $d_4^{20}$  0.9503,  $n_D^{20}$  1.5036,  $\alpha_D^{22}$   $+41.20^\circ$ . UV spectrum:  $\lambda_{\max}^{EtOH}$  230 m $\mu$  ( $\epsilon=16400$ ), 238 m $\mu$  ( $\epsilon=11000$ ). The IR spectrum is shown in Fig. 2.

The specific retention times of GLC against  $\alpha$ -terpineol (PEG 6000, 175°C) are 1.53 for I and 2.10 for II.

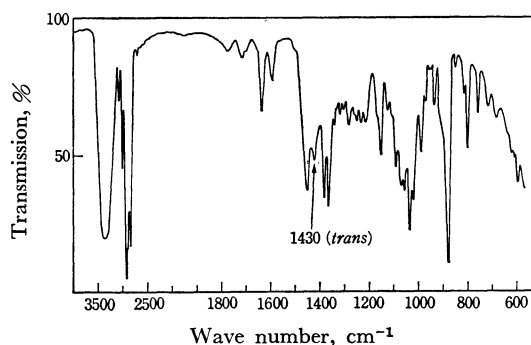


Fig. 1 IR spectrum of I.

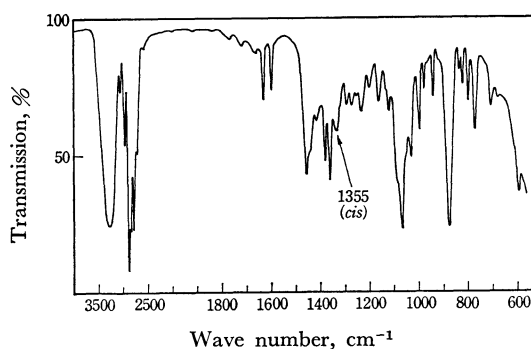


Fig. 2 IR spectrum of II.

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