

## Chemical Constituents of the Essential Oils of Aroliaceae and Lauraceae Families

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(Z. Naturforsch. **30 c**, 421 [1975]; received February 24, 1975)

Aroliaceae, Leaf Oil, Mono- and Sesquiterpenes, Aromatic Compounds, Lauraceae

In the course of the chemosystematic study of Aroliaceae and Lauraceae families, the leaf oils of some plants were investigated. The leaf oils were obtained by steam distillation of the fresh leaves. The individual constituents were isolated by column chromatography followed by preparative gas chromatography, and identified by gas chromatography and by infrared spectra.

*Acanthopanax innovans* Franch. et Sav. (Aroliaceae). Source. Hiroshima Prefecture, Japan. Leaf Oil. Steam distillation of the fresh leaves gave a yield of 0.03% oil which possess the following physical properties:  $n_D^{25}$  1.4895,  $\alpha_D^{25}$   $-25.15^\circ$ . Constituents. Individual constituents were isolated by the preparative gas chromatography (GLC) and identified by infrared spectra:  $\alpha$ -pinene (0.6%), camphene (0.3%), *cis*-ocimene (0.4%), *trans*-ocimene (5.2%), myrcene (3.9%), caryophyllene (14.5%),  $\beta$ -farnesene (50.5%).

*Acanthopanax sciadophylloides* Franch. et Sav. (Aroliaceae). Source. Hiroshima Prefecture. Leaf Oil. The leaf oil of this plant was obtained in 0.025% yield. The physical properties determined

as follows:  $n_D^{25}$  1.4872,  $\alpha_D^{25}$   $+7.55^\circ$ . Constituents.  $\alpha$ -pinene (2.0%),  $\beta$ -pinene (3.0%), myrcene (21.4%), caryophyllene (31.6%),  $\beta$ -farnesene (24.0%),  $\alpha$ -humulene (5.0%), ethylbenzene (trace), *m*-xylene (trace), *o*-xylene (trace) were isolated by preparative GLC and identified by IR spectra.

*Lindera communis* var. *Okinaensis* (Kamik) Hatusima (Lauraceae). Source. Hyakuna in Okinawa Prefecture. Leaf Oil. Steam distillation of the fresh leaves gave a yield 0.19% leaf oil which possess the following properties:  $d_4^{25}$  0.8913,  $n_D^{25}$  1.4951,  $\alpha_D^{25}$   $+12.3^\circ$ . Constituents:  $\alpha$ -pinene (9.8%), camphene (4.9%),  $\beta$ -pinene (12.5%), *cis*-ocimene (17.5%), *trans*-ocimene (5.5%), caryophyllene (17.2%).

*Cassytha filiformis* Linn. (Lauraceae). Source. Hyakuna in Okinawa Prefecture. Stem Oil. The essential oil of the stems of this plant was obtained by the steam distillation in 0.075% yield. The physical properties determined as follows:  $d_4^{25}$  0.9080,  $n_D^{25}$  1.4860,  $\alpha_D^{25}$   $+2.7^\circ$ . Constituents. A sesquiterpene hydrocarbon, caryophyllene, was isolated by preparative GLC and identified by IR spectrum.

*Lindera sericea* var. *glabrata* Blume. (Lauraceae). Source. Yuki in Hiroshima Prefecture. Leaf Oil. The essential oil from the leaves of the plant by steam distillation has been obtained in 0.32% yield and has the following physical properties:  $d_4^{25}$  0.9736,  $n_D^{25}$  1.4955,  $\alpha_D^{25}$   $+34.1^\circ$ . Constituents:  $\alpha$ -corocalene,  $\beta$ -eudesmol, cadalene, curcumene and shyobunone were isolated by preparative GLC and identified by IR spectra in addition to the previous paper<sup>1</sup>.

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<sup>1</sup> Nanao Hayashi and Hisashi Komae, Z. Naturforsch. **28 c**, 227 [1973].

