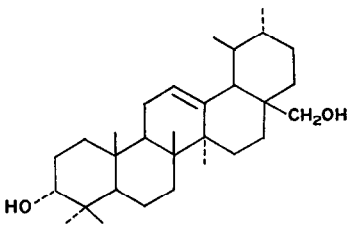
naturally occurring epimer was found to be different (TLC of the corresponding acetate on $AgNO_3$ impregnated silica gel).



(I)

Benzene–ether (1:1) eluate afforded oleanolic acid, $C_{30}H_{48}O_3$ (m.p., m.m.p., $[\alpha]_D$, IR; m.p., m. m.p., $[\alpha]_D$ and IR of its methyl ester).

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Key Word Index—Diospyros montana; Ebenaceae; sterols; epi-uvaol; oleanolic acid.

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LAURACEAE

TERPENES FROM *ACTINODAPHNE, MACHILUS* AND *NEOLITSEA* SPECIES

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Plant. Actinodaphne lancifolia (Sieb. et Zucc.) Meisn. *Date.* Collected in July 1971. *Source.* Kochi Prefecture, Japan. *Uses.* None known. *Previous work.* None.

Leaves. The essential oil (458 mg, n_D^{25} 1·4877, 0·0015% yield) was obtained by steam distillation from fresh leaves (3·0 kg). The individual constituents were isolated by preparative GLC (Carbowax 20 M at 160°) and identified by IR and NMR spectra: *cis*-ocimene (8·2%), *trans*-ocimene (2·5%), caryophyllene (10·0%, α,β-selinene (28·9%), unidentified (50·4%).

Plant. Actinodaphne longifolia (Blume). *Date.* Collected in August 1971. *Source.* Kagoshima Prefecture, Japan. *Uses.* None known. *Previous work.* None.

Leaves. The essential oil (6·52 g, n_D^{25} 1·5032, 0·065% yield) was obtained from fresh leaves (5·5 kg) by steam distillation. The individual constituents were isolated by preparative GLC (Carbowax 20 M–20% at 170°) and identified by IR and NMR spectra: *cis*-ocimene (0·73%), *trans*-ocimene (3·4%), caryophyllene (8·3%), β-elemene (7·5%), unidentified (80·1%).

Plant. Neolitsea aciculata (Blume) Koidz. *Date.* Collected in August in 1971. *Source.* Hiroshima Prefecture, Japan. *Uses.* None known. *Previous work.* Nine sesquiterpenoids identified.[1]

Leaves. The essential oil (1·02 g, 0·034% yield, n_D^{25} 1·4995) was isolated from fresh leaves (3 kg) by steam distillation. The individual constituents were isolated by preparative GLC (Carbowax 20 M–20% at 170°) and identified by IR and NMR spectra: *cis*-ocimene (2·9%), *trans*-ocimene (9·5%), β-elemene (5·3%), caryophyllene (13·4%), α,β-selinene (22·9%), unidentified (46·0%).

Plant. Machilus thunbergii Sieb. et Zucc. *Date.* Collected in August 1971. *Source* Hiroshima Prefecture, Japan. *Uses.* None known. *Previous work.* Sesquiterpene constituents.[2]

Leaves. The essential oil (1·38 g, 0·014% yield, n_D^{25} 1·4987) was obtained from the fresh leaves (10 kg) by steam distillation. The individual constituents were isolated by preparative GLC (Carbowax 20 M–20% at 170°) and identified by IR and NMR spectra: α-pinene (13·5%), β-pinene (3·8%), camphene (1·3%), limonene (0·6%), *cis*-ocimene (11·3%), *trans*-ocimene (5·3%), β-elemene (10·8%), caryophyllene (21·3%), α,β-selinene (7·8%), unidentified (24·3%).

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Key Word Index—Actinodaphne; Machilus; Neolitsea; Lauracea; terpenes; ocimene; caryophyllene; α,β-sclinene.

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PHYTOSTEROLS OF THE TRUNKS OF *LINDERA OBTUSILOBA*

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Plant. Lindera obtusiloba Blume. *Source.* Common in mountains, Hiroshima prefecture, Japan. *Uses.* Not known. *Previous work.* None.

Trunks. Chipped pieces (10 kg) were digested with Et_2O at room temp. When the solution was concentrated to 100 ml, a white crystalline substance (380 mg) precipitated. The substance was recrystallized from EtOH to give white leaflets of sitosterol (mixed m.p., IR;[1] NMR,[2] GLC, MS). Campesterol (GLC), stigmasterol (GLC) were also shown to be present- Total amount of phytosterols was estimated to be 0·0038% of the trunks. The ratio of sterols was 1·4 (campesterol): 10·3 (stigmasterol): 88·3 (sitosterol).

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Key Word Index—Lindera obtusiloba; Lauraceae; sitosterol; stigmasterol; campesterol.