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## PHENOLIC CONSTITUENTS OF *LYONIA OVALIFOLIA*

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**Key Word Index**—*Lyonia ovalifolia* var. *elliptica*; Ericaceae; apigenin, (–)-epicatechin, quercetin 3-galactoside, luteolin, quercetin.

*Plant.* *Lyonia ovalifolia* var. *elliptica* was supplied from Kagoshima Prefecture (leaves), and Aichi Prefecture (young shoots), Japan. Voucher specimen is held in the Faculty.

*Previous work.* On leaves,<sup>1</sup> wood,<sup>2,3</sup> and young shoots.<sup>4</sup>

*Present work.* Hyperoside from the leaves which supplied from Kagoshima Prefecture (identified by micro-elemental analysis, IR, PPC,  $R_f$ s 0.30 (HOAc–H<sub>2</sub>O, 3:17); 0.57 (HOAc–H<sub>2</sub>O, 6:4); 0.73 (phenol saturated with H<sub>2</sub>O); 0.41 (*m*-cresol saturated with H<sub>2</sub>O); 0.62 (BAW, 4:1:5), and by hydrolysis).

The epidermis of the young shoots which grew in spring has assumed red color in autumn and winter. Young shoots having red epidermis were collected in winter. After the benzene soluble fraction<sup>4</sup> was removed off from the methanol extracts of the young shoots, phenolic constituents were separated from the aqueous layer by use of lead subacetate and then fractionated on polyamide column. From the eluates, were found quercetin 3-galactoside (hyperoside) (identified by m.p. 244–246°, m.m.p., U.V., IR,  $[\alpha]_D^{21} -71.9^\circ$  (1.065, Py); PPC, as above, (–)-epicatechin (identified by m.p. 236–237°, m.m.p., IR, NMR ( $\delta$ ) p.p.m. (acetone-*d*<sub>6</sub>), 2.81 (*t*, 2H) (4-H), 4.22 (*m*, 1H) (3-H), 4.89 (*s*, 1H) (2-H), 5.94 (*d*, 1H) (6-H), 6.04 (*d*, 1H) (8-H), 6.75–6.93 (2H) (5'-H and 2'-H), 7.07 (*d*, 1H) (6'-H); MW 300.8;  $[\alpha]_D^{23} -59.3^\circ$  (2.005, 95% EtOH);  $[\alpha]_{578}^{23} -60.0^\circ$  (2.005, 95% EtOH)), and quercetin (identified by IR, and PPC,  $R_f$ s 0.02 (HOAc–H<sub>2</sub>O, 3:17); 0.36 (HOAc–H<sub>2</sub>O, 6:4). Apigenin (identified by PPC,  $R_f$ s 0.10 (HOAc–H<sub>2</sub>O, 3:17); 0.68 (HOAc–H<sub>2</sub>O, 6:4)) and luteolin (identified by PPC,  $R_f$ s 0.06 (HOAc–H<sub>2</sub>O, 3:17); 0.55 (HOAc–H<sub>2</sub>O, 3:2) were detected as minor constituents.

(–)-Epicatechin was detected in the wood extractives of *Lyonia ovalifolia* var. *elliptica* which was supplied from any places in Japan (identified by PPC,  $R_f$ s 0.30 (2% HOAc); 0.34 (6% HOAc); 0.42 (HOAc–H<sub>2</sub>O, 3:17); 0.59 (BAW, 4:1:5)).

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