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SHORT COMMUNICATION

# ANTHRAQUINONES IN TWO *DIGITALIS* SPECIES

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*Plant. Digitalis purpurea* L. (Scrophulariaceae).

*Previous work.* On leaves[1,2] and on sister species.[3,4]

*Leaves.** Chloroform extract of fresh leaves was separated into sodium carbonate-soluble and neutral fractions. The latter was separated on deactivated silica gel into 1-*methoxy*-2-*methylanthraquinone* and 3-*methoxy*-2-*methylanthraquinone*. Acidic fraction was separated on acid-washed silica gel into *digitolutein*[5] (3-methylalizarin 1-methyl ether) and 3-*methylalizarin*, orange needles, m.p. 250–251° (lit.[5] 246–247°), $\lambda_{max}$ (EtOH) 249, 268, 283sh, 331, 436 nm (log$\epsilon$ 4·74, 4·68, 4·35, 3·58, 3·81), $\nu_{max}$ (KBr) 3378, 1664, 1631, 1593 cm,$^{-1}$ diacetate, m.p. 213–214° (lit.[5] m.p. 214°), dimethyl ether, m.p. 131–132° (lit.[5] m.p. 132–133°).

*Plant. D. lanata* Ehrh.

*Leaves.* Dried leaves extracted and worked up as before: 1-*methoxy*-2-*methylanthraquinone*, 3-*methoxy*-2-*methylanthraquinone*, and *digitolutein*.

The yellow pigment, m.p. 190–191°, found in the leaves of *D. canariensis* L. *var. isabelliana* (Webb) Lindinger is 1-methoxy-3-methylanthraquinone.[4,6]

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* All compounds were identified (u.v., i.r., $R_f$, mixed m.p.) by direct comparison with authentic specimens.

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[2] T. REICHSTEIN, personal communication to K. Meyer, see footnote to Ref. 4.
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[4] S. K. PAVANARAM, P. HOFER, H. LINDE and K. MEYER, *Helv. Chim. Acta* **46**, 1377 (1963).
[5] M.-M. JANOT, J. CHABASSE-MASSONNEAU, P. DE GRAEVE and R. GOUTAREL, *Bull. Soc. Chim. Fr.* 108 (1955); J. C. LOVIE and R. H. THOMSON, *J. Chem. Soc.* 4139 (1959).
[6] K. MEYER, personal communication.