at about 35°. Procedures for the phase-partition of carotenoids between hexane and aq. 90% (v/v) MeOH and the separation and identification of carotenoids by column chromatography and TLC were as described.[5,6]

Concentrations of individual carotenoids were estimated[7] and results were calculated on a per g dry-wt basis. The dry wt of the spore material was 1·5 g.

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CHRYSOPHANOL AND EMODIN FROM *DRECHSLERA CATENARIA*

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Key Word Index—*Drechslera catenaria*; Moniliales; Fungi; anthraquinones; chryophanol; emodin.

Plant. Drechslera catenaria (Drechsler) S. Ito CBS 191·29 = *Helminthosporium catenarium. Previous work.* Isolation and characterization of catenarin and helminthosporin from *D. catenaria*:[1,2] chrysophanol and emodin from different organisms, including fungi.[3]

Present work. D. catenaria was grown at 24° on Czapek–Dox medium for 10 weeks. The dried mycelium (12·5 g) was finely ground and extracted successively with petrol and EtOAc. The residue (2·7 g) after the evaporation of EtOAc extract yielded 0·6 g helminthosporin and 1·7 g catenarin by means of fractional crystallization from EtOH. The mother liquor was concentrated *in vacuo* and the residue taken up in EtOAc. Neutral and acidic EtOAc fractions were prepared by means of the conventional method of 5% NA_2CO_3 separation. The neutral fraction (150 mg) was submitted to chromatography on silica gel G layers. The minor band was extracted with $CHCl_3$ leaving yellow leaflets (5 mg) m.p. 197–199° after concentration. (MS Found: 254·059235. Calc. for $C_{15}H_{10}O_4$: 254·057902). This led to a tentative identification of the compound as chrysophanol. Comparison with an authentic sample (m.m.p., UV, IR, MS, TLC) established its identity. The acidic fraction (270 mg) yielded a further small amount of catenarin (220 mg) after concentration. TLC of the residue revealed a yellow spot with nearly the same R_f value as catenarin. Good separation on thin layer plates only succeeded via the acetates. Hydrolysis of the individual acetates gave catenarin and a small amount of orange needles (1 mg) m.p. 259–261°. (MS Found: 270·053650. Calc. for $C_{15}H_{10}O_5$: 270·052817). The compound proved to be emodin by direct comparison with a commercial sample (Fluka) (m.m.p., UV, IR, TLC).

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