Since the bromophenols **1** and **2** are known to possess fungicidal, antimicrobial, ascaricidal and molluscicidal activities[7,8], it is suggested that **1** and **2** may serve a role in the survival of *Phoronopsis viridis* under adverse living conditions.

Although nothing is known about the biosynthesis of these bromophenols, it is likely that the naturally occurring phenols **1**, **2**, **5–9**, are derived from *p*-hydroxy benzoic acid by peroxidase catalyzed bromination and subsequent standard chemical transformations. It should be noted that bromination of *p*-hydroxy benzoic acid in sulfuric acid furnishes **10** and **2** (small amount). Subsequent base- or acid-catalyzed decarboxylation of **10** yields **1**. This chemical transformation may bear some resemblance to the actual enzymic process.

Résumé. On décrit l'isolement de deux métabolites antiseptiques secondaires, 2,6-dibromophénol et 2,4,6-tribromophénol, de *Phoronopsis viridis* Hilton 1930.

Y.M. SHEIKH[10] and C. DJERASSI

Department of Chemistry, Stanford University, Standford (California 94305, USA), 23 October 1974.

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Preparation of a New Synthetic Dehydrorotenoid

In connection with a study towards the synthesis of rotenoids, we wish to report the preparation of a synthetic dehydrorotenoid by cyclization of deoxybenzoin derivatives[1], via two pathways.

Acylation of 2,3-dihyro-4-hydroxy-2-methylbenzofuran (**2**)[2] with 2-hydroxyphenylacetic acid (**1a**)[3] in PPA, at 80° for 30′ gave **3a**, which without further purification was converted into the dehydrorotenoid 1,2-dihydro-2-methyl-12H-[1]benzopyrano [3,4-b] furo [2,3-h] [1] benzopyran-6-one (**4**) by reaction with ethyl bromoacetate in an ethanolic sodium ethoxide solution (overall yield 14%); m.p. > 300° (decomposition; ν_{max} (KBr) 1635 (CO); 1605, 1560 (aromatic, C=C); δ ($CDCl_3$): 1.29 (3H, d, J 7.0, CH_3); 2.75 (1H, dxd, J 16.0, J 7.0, $C\langle^{H}_{H}$); 3. 21 (1H, dxd, J 16.0, J 7.0, $C\langle^{H}_{H}$); 4.82 (1H, m, CH); 4.83 (2H, s, OCH_2); 6.61–7.01 (4H, m, Ar-H); 7.97 (1H, dxd, J 7.6, J 2.0, Ar-H); 8.55 (1H, m, Ar-H); *m/e*: 306 (M^+, 91).

The second approach involved the condensation of 2-carboxymethoxyphenylacetic acid (**1b**)[3] with the phenol **2** in PPA at 90° for 30′, to afford the deoxybenzoin **3b** which on treatment with diazomethane gave **3c** ν_{max} (KBr) 3300–2600 (OH), 1745 (COOEt); 1620 (CO); δ ($CDCl_3$): 1.46 (3H, d, J 7.1, CH_3); 2.70 (1H, dxd, J 14.0, J 7.6, $C\langle^{H}_{H}$); 3.25 (1H, dxd, J 14.0, J 7.6, $C\langle^{H}_{H}$); 4.27 (2H, s, CH_2); 4.71 (2H, s, OCH_2); 4.88 (1H, m, CH); 6.12–7. 88 (7H, m, Ar-H, OH).

Cyclization of the deoxybenzoin **3c** with sodium ethoxide in boiling ethanol gave the dehydrorotenoid **4** in 55% yield.

Zusammenfassung. Eine einfache Synthese eines Dehydrorotenoids 1,2-Dihydro-2-methyl-12H-[1]benzopyrano [3,4-b] furo [2,3-h] [1] benzopyran-6-on aus Desoxybenzoin Derivat wird beschrieben.

R. VERHÉ, N. SCHAMP and M. SADONES

State University of Ghent, Faculty of Agricultural Sciences, Laboratory of Organic Chemistry, B–9000 Ghent (Belgium), 31 October 1974.

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Effect of Acetylcholine, Dopamine, Noradrenaline and 5-Hydroxytryptamine on the Incorporation of ^{32}P into Phospholipids of the Snail Brain

Acetylcholine, dopamine and 5-hydroxytryptamine (5-HT) can all be considered as possible transmitter substances in the molluscs[1–3], though the evidence in favour of noradrenaline playing such a role is not impressive[1,3,4]. Although in vitro experiments have clearly demonstrated that neurotransmitter substances affect the incorporation rate of ^{32}P into phospholipids of vertebrate nervous tissue[5–8], no such study has been carried out on the invertebrates. Since previous studies have demonstrated the snail brain to incorporate ^{32}P into phospholipids[9], it was decided to take advantage of this convenient preparation and see whether neurotransmitters

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