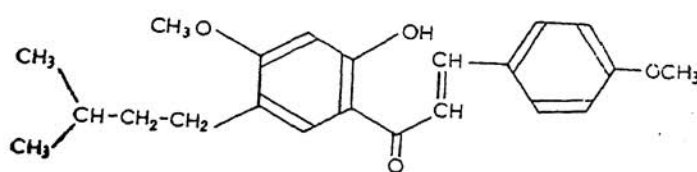


A Clemmensen reduction of the above ketone afforded 4-isoamylresorcinol<sup>4</sup>. A second Nencki reaction on the latter with acetic acid and anhydrous zinc chloride yielded 2,4-dihydroxy-5-isoamylacetophenone as an oil (2,4-DNP, m.p. 200°) which was partially methylated with methyl iodide in acetone solution to give 2-hydroxy-5-isoamyl-4-methoxyacetophenone as a colourless oil (2,4-DNP, m.p. 206°). The latter when condensed with *p*-anisaldehyde gave orange-red plates of the methyl ether of dihydrobavachalcone (I) crystallised from dilute alcohol, m.p. 88–89° (Calcd. for C<sub>22</sub>H<sub>26</sub>O<sub>4</sub>: C, 71.5; H, 7.3; Found: C, 71.1; H, 6.9%).



(I)

$$\nu_{\text{max}}^{\text{CH}_2\text{Cl}_2}: \quad 1630(-\text{CO}-\text{CH}=\text{CH}-), \\ 2850(-\text{OCH}_3) \text{ cm}^{-1}.$$

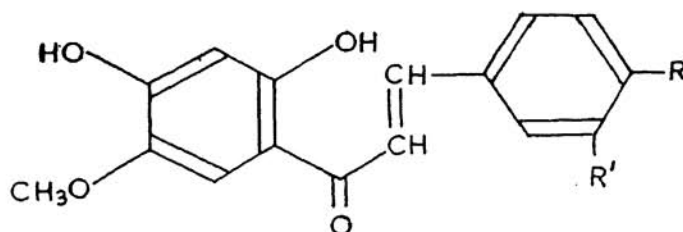
The synthetic route employed for the synthesis of chalcones allied to Flemichapparin is similar to that described by the earlier workers<sup>2</sup>. It however differs in the method of methylation and debenylation of the methylated product.

Resacetophenone-4-benzylether<sup>5</sup> on oxidation with potassium persulphate gave 4-benzyloxy-2,5-dihydroxyacetophenone, m.p. 158–61° (2,4-DNP, m.p. 240–42°). Methylation of the latter with dimethyl sulphate in acetone solution was attempted but working out as usual and crystallization from ligroin afforded only 4-benzyloxy-2,5-dimethoxyacetophenone, m.p. 110–11° (2,4-DNP, m.p. 176°). However, methylation with dimethylsulphate and NaOH yielded the 5-methyl ether, m.p. 128–29° (2,4-DNP, m.p. 236–38°). The latter on debenylation with hydrochloric acid in acetic acid produced 2,4-dihydroxy-5-methoxyacetophenone, m.p. 169–71° (2,4 DNP, m.p. 288–9°). The debenzylated compound on condensation with different aldehydes gave Flemichapparin II *a* (identified by m.m.p. and superimposable IR) and the chalcones related to it having the formulae II *b*–II *d*.

#### SYNTHESIS OF DERIVATIVES OF SOME NATURALLY OCCURRING CHALCONES

THE synthesis of the methyl ether of dihydro 'Bavachalcone', a naturally occurring chalcone isolated from the seeds of *Psoralea corylifolia* Linn.<sup>1</sup> and some chalcones allied to the chalcone 'Flemichapparin' isolated from *Flemingia chappar* Ham<sup>2</sup> have been described here.

4-Isoamylresorcinol<sup>3</sup> was synthesised by the Nencki reaction by heating resorcinol with isovaleric acid in presence of anhydrous zinc chloride.



(II)

II a : R = H, R' = H; m.p. 158-60°.

(Calcd. for C<sub>16</sub>H<sub>11</sub>O<sub>4</sub>: C, 71.11; H, 5.18.

Found: C, 70.9; H, 5.0%).

$\lambda_{\max}^{\text{MeOH}}$  225 (log  $\epsilon$  4.07), 313 nm (log  $\epsilon$  4.32).

$\nu_{\max}^{\text{KBr}}$  1640 (conjugated CO),  
3448 (phenolic OH) cm<sup>-1</sup>

II b : R = OCH<sub>3</sub>, R' = H; m.p. 164-5°.

(Calcd. for C<sub>17</sub>H<sub>16</sub>O<sub>5</sub>: C, 68.00; H, 5.33.

Found: C, 68.4; H, 5.7%).

$\lambda_{\max}^{\text{MeOH}}$  235 (log  $\epsilon$  4.09), 380 nm (log  $\epsilon$  4.32).

$\nu_{\max}^{\text{KBr}}$  1640 (-CO-CH=CH-),  
3390 (phenolic OH), 2857 (OCH<sub>3</sub>) cm<sup>-1</sup>.

II c : R = OCH<sub>3</sub>, R' = OCH<sub>3</sub>; m.p. 150-1°.

(Calcd. for C<sub>18</sub>H<sub>18</sub>O<sub>6</sub>: C, 65.45; H, 5.45.

Found: C, 65.8; H, 5.2%).

$\lambda_{\max}^{\text{MeOH}}$  261 (log  $\epsilon$  4.02), 385 nm (log  $\epsilon$  4.36).

$\nu_{\max}^{\text{KBr}}$  1640 (-CO-CH=CH-),  
3333 (phenolic OH),  
2857, 1250 (OCH<sub>3</sub>) cm<sup>-1</sup>.

II d : R, R' = -O-CH<sub>2</sub>-O- (Methylenedioxy), m.p.  
162-3°.

(Calcd. for C<sub>17</sub>H<sub>14</sub>O<sub>6</sub>: C, 64.96; H, 4.45.

Found: C, 64.7; H, 4.6%).

$\lambda_{\max}^{\text{MeOH}}$  265 (log  $\epsilon$  4.01), 385 nm (log  $\epsilon$  4.32).

$\nu_{\max}^{\text{KBr}}$  1640 (-CO-CH=CH-),  
3425 (phenolic OH),  
930 (-O-CH<sub>2</sub>-O-) cm<sup>-1</sup>.

We are grateful to Dr. Adityachaudhury for an authentic sample of Flemichapparin and to Mrs. J. A. Patankar and Shri D. S. More for microanalyses.

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