A STUDY ON CHROMONES

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For
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Faculty of Science
Ain Shams University
Cairo, A.R.E.

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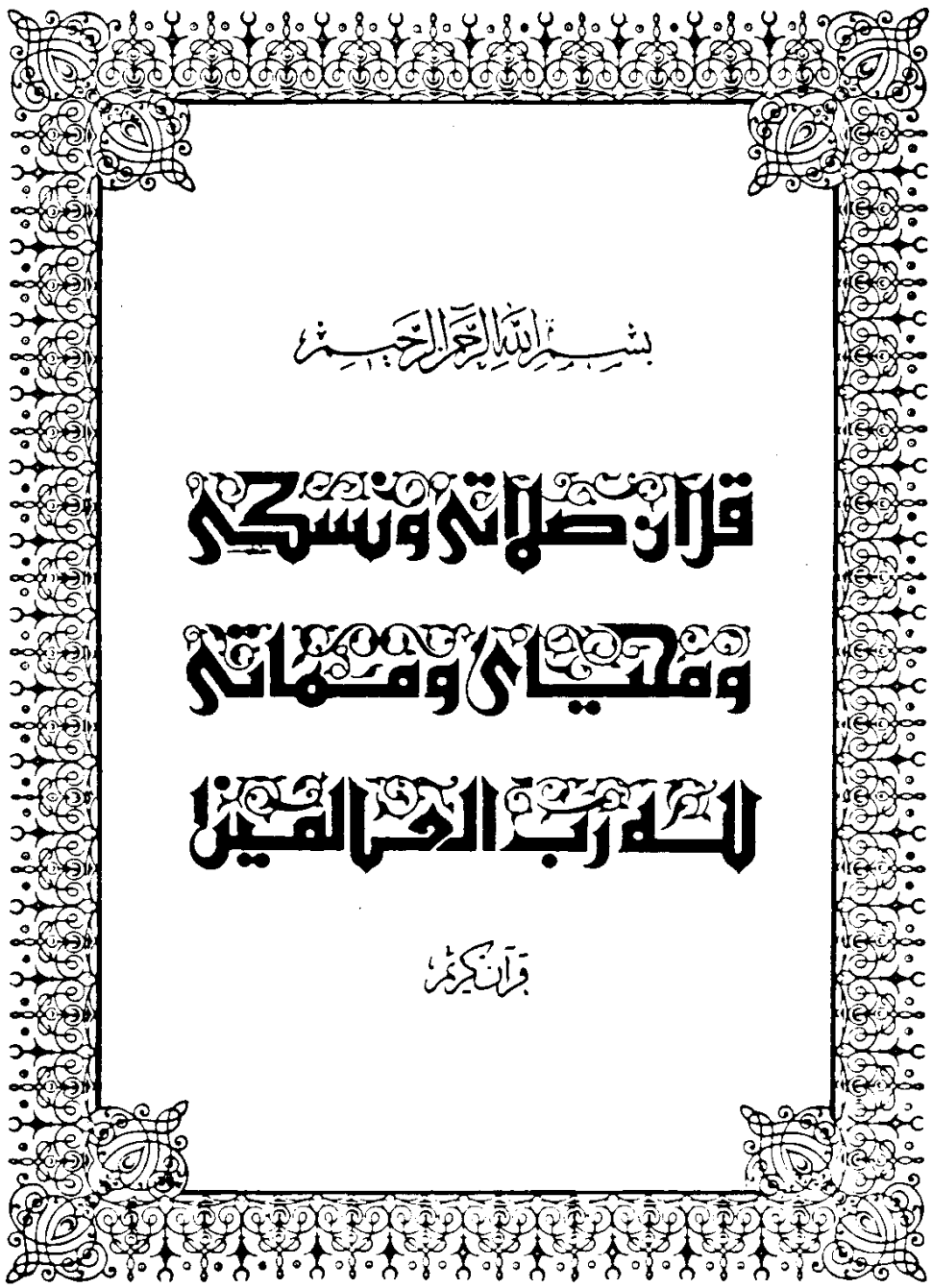

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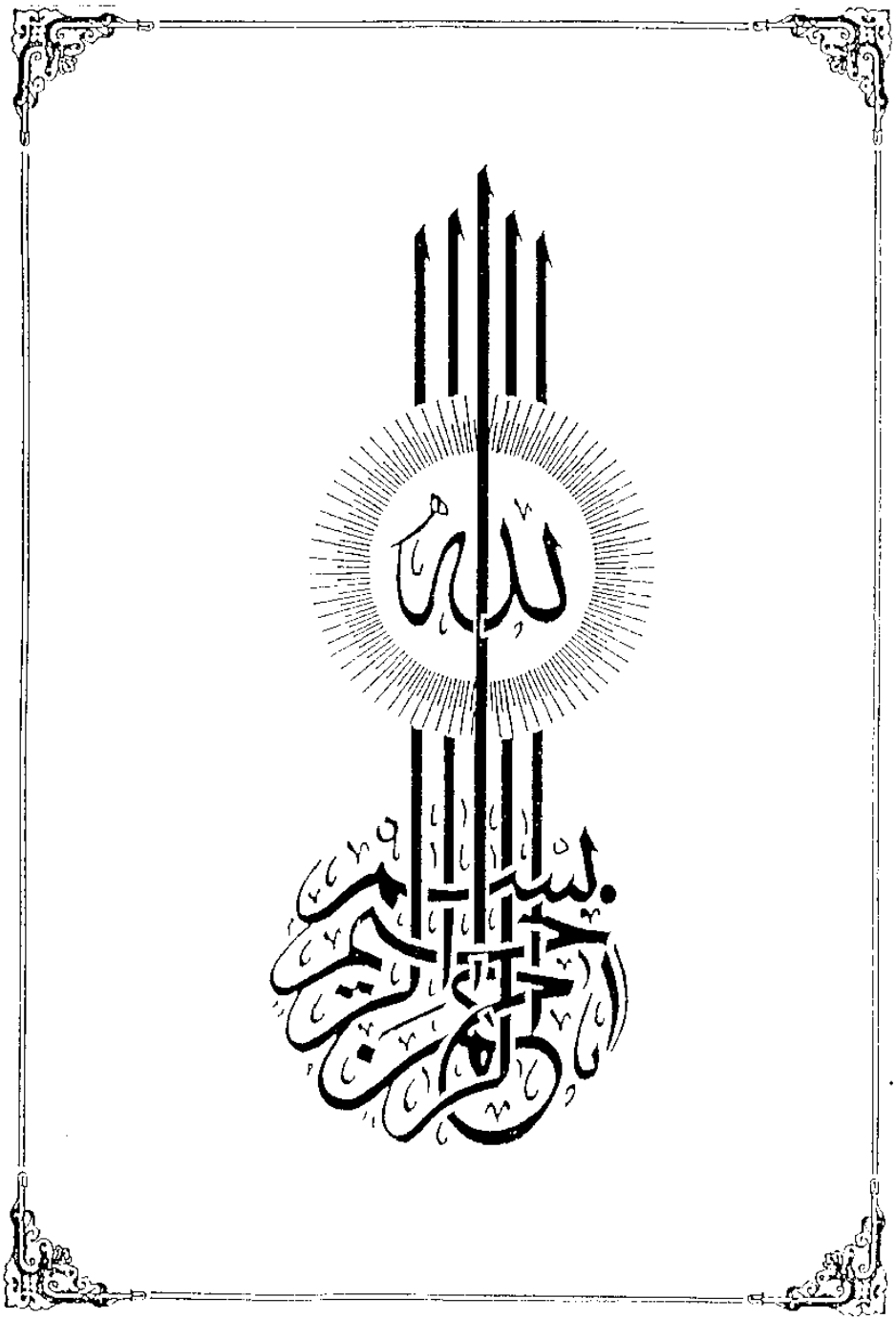

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TO THE MEMORY OF
MY FATHER

AND

TO MY FAMILY

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A STUDY ON CHROMONES

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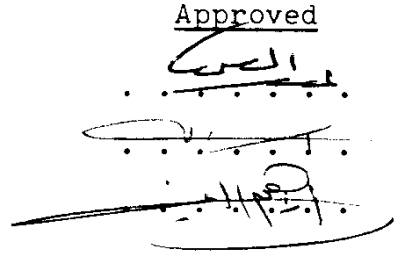

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A C K N O W L E D G E M E N T

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SUMMARY OF THE ORIGINAL WORK

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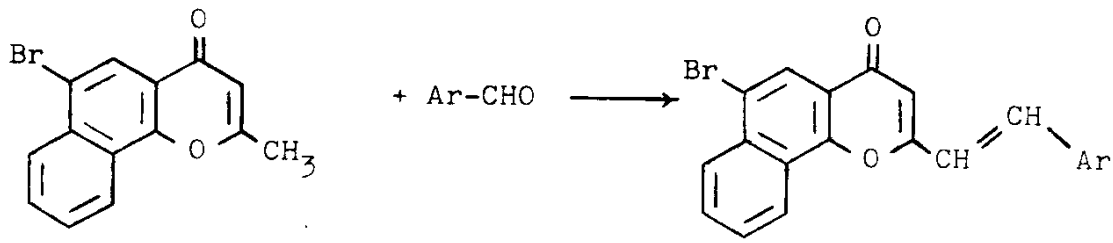
SUMMARY OF THE ORIGINAL WORK

It has well been known that 4H-1-benzopyran-4-one derivatives (chromones) have been of pronounced biological activity.

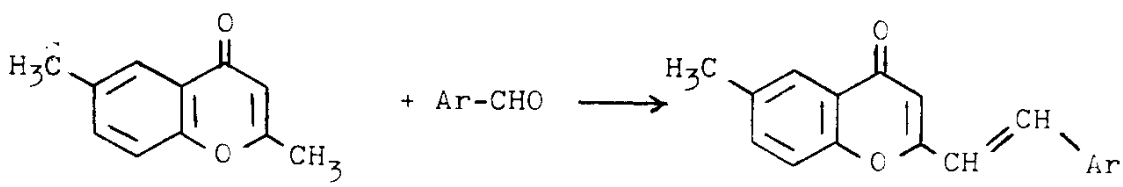
In our present work we aim to synthesise some new chromones in the hope of obtaining some biological activity for these synthesised new compounds.

Condensation of 6-bromo-2-methyl-7,8-benzochromone (I) with aromatic aldehydes afforded the formation of 2-styryl derivatives (II<u>a</u>-<u>d</u>).



(I) (II)

Also 2,6-dimethylchromone (III) condensed with aromatic aldehydes to yield the 2-styryl derivatives (IV<u>a</u>-<u>e</u>).



(III) (IV)

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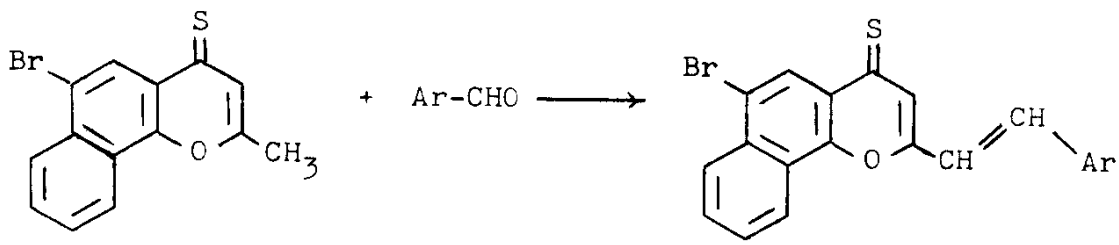
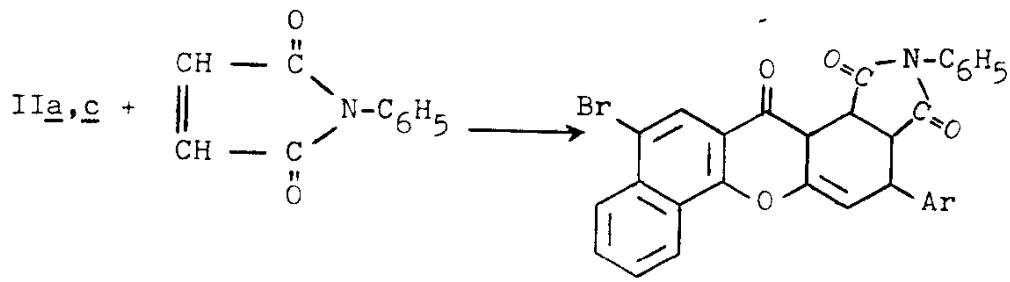
Condensation of 6-bromo-7,8-benzo-2-methyl-4-thiochromone (V) with aromatic aldehydes gave the 2-styryl derivatives (VIa-d).



(V) (VI)

Reaction of IIa,c with N-phenylmaleimide gave the xanthone derivatives VIIa,b as Diels-Alder adducts.



(VII)

Reaction of I with primary aliphatic amines gave the 2-(β-aminocrotonyl)-4-bromo-1-naphthol derivatives (VIIIa,b).

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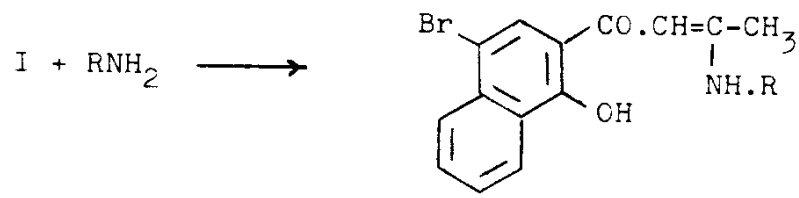
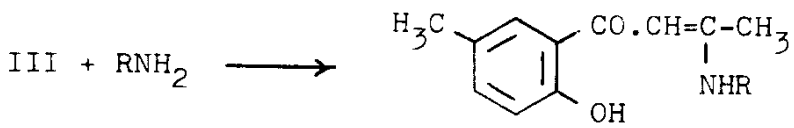


(VIII)

Also reaction of III with aliphatic amines gave the products IX<u>a</u>-<u>c</u>.



(IX)

Reaction of 2-methyl naphthochromone (X) with 3-amino-2-phenyl-4-quinazolone (XII) gave the same compound which was obtained from the reaction of 2-acetoacetyl-1-naphthol (XI) with XII.

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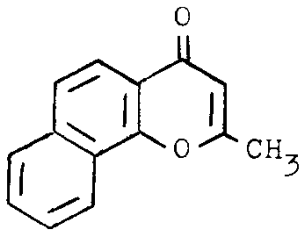
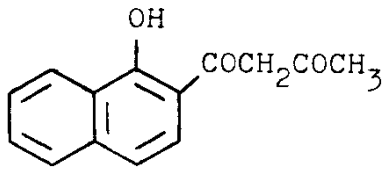


(X)

or



(XI)

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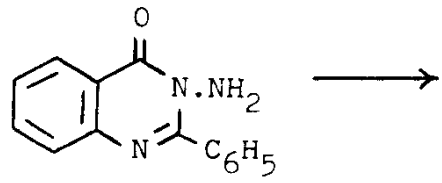

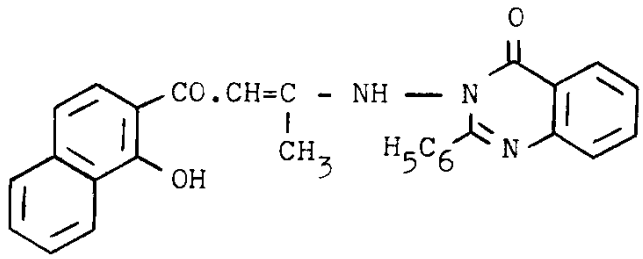

(XIII)

Reaction of III with hydrazines afforded the formation of pyrazole derivatives (XIV<u>a</u>-<u>d</u>).

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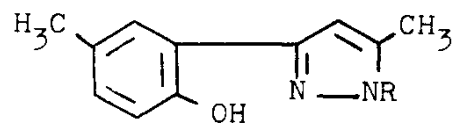
III + $RNHNH_2$ ⟶ 

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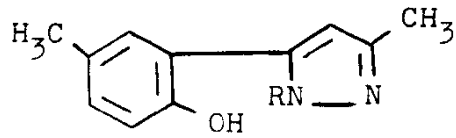
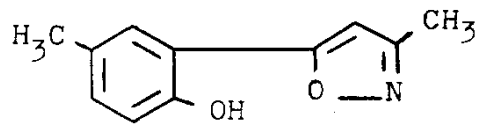


(XIV)

Reaction of III with hydroxylamine hydrochloride gave the isoxazole derivative XV.

III + NH_2OH ⟶ 

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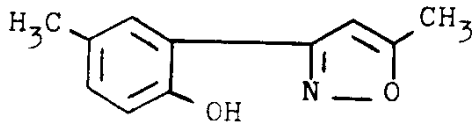

(XV)

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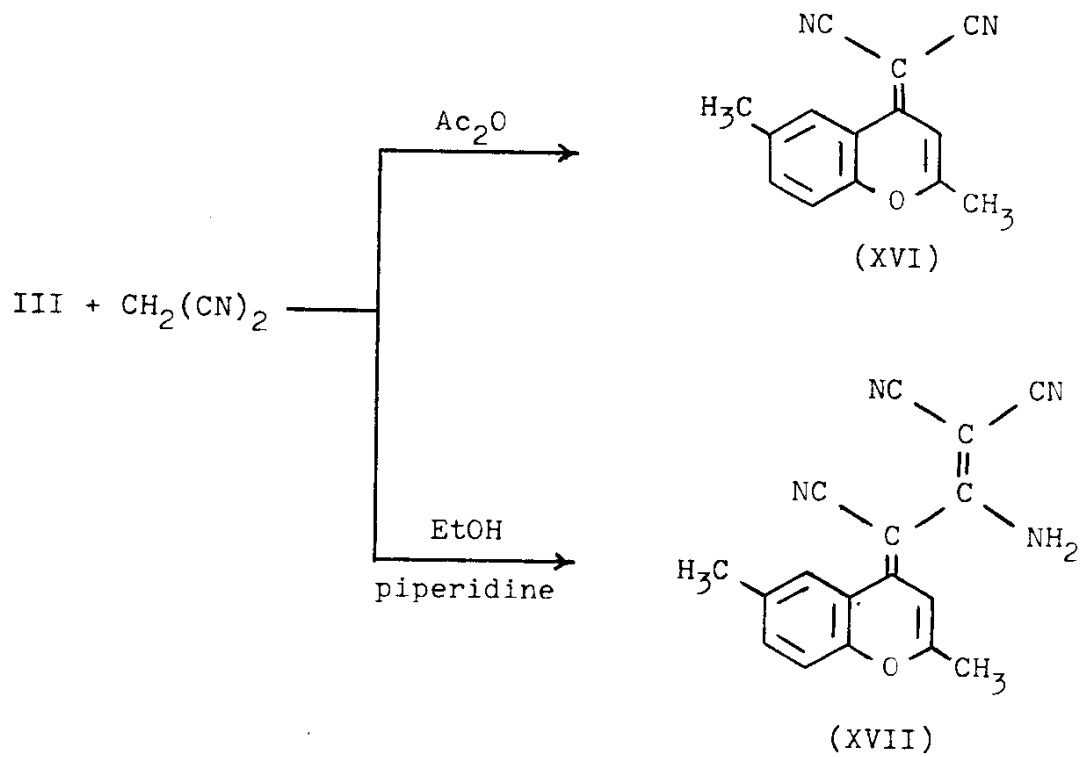
Reaction of (III) with malononitrile gave (XVI) or (XVII) according to reaction conditions.



Also reaction of X with malononitrile yielded XVIII or XIX depending on reaction conditions.

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