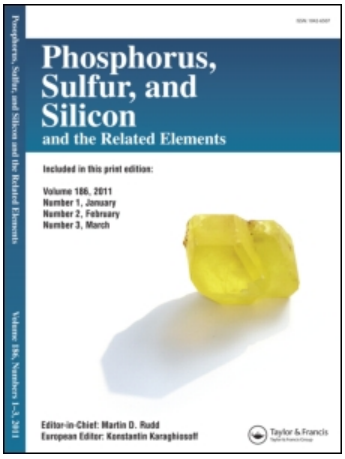

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SYNTHESIS OF SPIRO [1,3-BENZODIOXOLE-2,4'-(3'H) QUINAZOLINES]

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SYNTHESIS OF SPIRO[1,3-BENZODIOXOLE-2,4'-(3'H)QUINAZOLINES]

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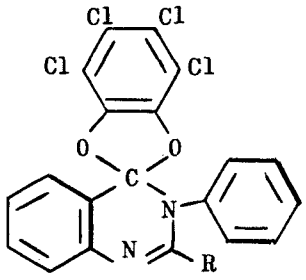
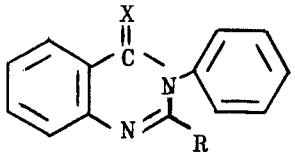
In the present investigation, the authors could obtain a new series of spiranes (1) through the reaction of the high potential quinone tetrachloro-o-benzoquinone with 2-aryl-3-phenyl-3H-quinazoline-4-thiones. Thus, 2,3-diphenyl- (2a), 2-p-tolyl-3-phenyl- (2b) and 2-p-anisyl-3-phenyl- (2c)-3H-quinazoline-4-thiones react readily with tetrachloro-o-benzoquinone, in boiling toluene, to give the corresponding spiro-1,3-benzodioxole-2,4'-(3'H)-quinazolines (1a-c), respectively.



1

a, R = phenyl
b, R = p-tolyl
c, R = p-anisyl



2

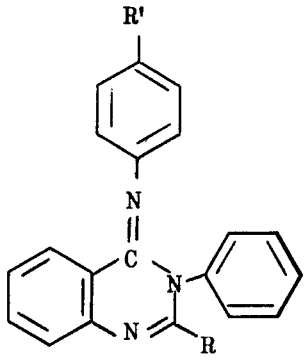
a, R = phenyl ; X = S
b, R = p-tolyl ; X = S
c, R = p-anisyl ; X = S
d, R = phenyl ; X = O
e, R = p-tolyl ; X = O
f, R = p-anisyl ; X = O

The structure of the spiranes (1a-c) is inferred from analytical data and lack of colour, contrary to the thiones and the quinone which are highly coloured. The infrared and ultraviolet spectra of the products are in accordance with the proposed structure.

The spiranes (1a-c) are readily cleaved by hydrochloric acid in dioxane to give the corresponding quinazolinones (2d-f), respectively, together with

tetrachlorocatechol. Cleavage proceeds presumably through the formation of a resonance stabilised carbonium ion leading to an intermediate which affords tetrachlorocatechol and the corresponding quinazolinone.

It has been found also that the spiranes (1a-c) are cleaved with aniline, p-toluidine and p-anisidine to give the hitherto unknown series of quinazolone-anils (3) along with tetrachlorocatechol. Structure of the anils is inferred, beside analytical data, from their synthesis by condensing the quinazoline thiones with the amines in presence of yellow mercuric oxide as desulphurising agent.



(3)

a, R = phenyl ; R' = H
b, R = phenyl ; R' = CH_3
c, R = phenyl ; R' = OCH_3
d, R = p-tolyl ; R' = H
e, R = p-tolyl ; R' = CH_3
f, R = p-tolyl ; R' = OCH_3
g, R = p-anisyl ; R' = H
h, R = p-anisyl ; R' = CH_3
i, R = p-anisyl ; R' = OCH_3