2-(o-AMMONIOPHENYLAMINO)-4-OXO-4-PHENYL-2-BUTENOATE — INTERMEDIATE IN THE SYNTHESIS OF 3-PHENACYLIDENE-1,2,3,4-TETRAHYDRO-2-QUINOXALONE

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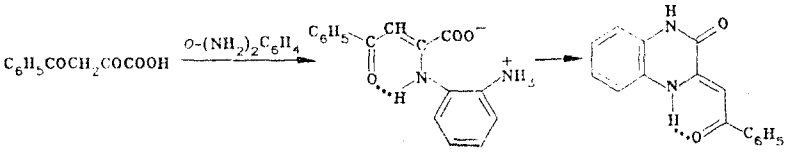
It is known that benzoylpyruvic acids and their esters react with o-phenylenediamine to give the corresponding quinoxalones. In carrying out the reaction of benzoylpyruvic acid with o-phenylenediamine in isopropyl alcohol at room temperature we have isolated an intermediate in this reaction, viz., dark-green 2-(o-ammoniophenylamino)-4-oxo-4-phenyl-2-butenoate (I), with mp 266-267°C, in 75% yield. IR spectrum (mineral oil), cm^{-1}: 3150 br (NH), 2720 br (NH_3^+), 1670 (COO^-), 1600 br [$C_{(4)}=O$]. Because of its insolubility in organic solvents and water, as well as the ease with which it splits out water, we were unable to record its PMR and UV spectra. Compound I readily splits out water when attempts are made to recrystallize it or when it is heated (at 192°C, judging from the thermogram) to give the known [1] bright-yellow 3-phenacylidene-1,2,3,4-tetrahydro-2-quinoxalone.



The deepening of the color of the intermediate betaine as compared with similarly constructed compounds and the quinoxalone evidently occurs as a consequence of participation of the charged groupings in conjugation.

LITERATURE CITED

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