filtrate. The solvent was removed *in vacuo* and the residue was purified by crystallization.

$NaBH_4$ reduction of 1-[3-(*p*-tolyl)-3-oxopropylamino]adamantane and subsequent treatment with HCl yielded the corresponding alcohol hydrochloride, mp 262–263°, which did not give the correct elemental analysis even after repeated recrystallizations and whose ir spectrum, however, left no doubt about its identity [ν_{max} (Nujol) 3375 (OH), 2700–2450 (NH_2^+), and 1590 cm^{-1} (aromatic)]. Condensation of this intermediate with toluene under Friedel–Crafts conditions produced readily the expected 3,3-ditolyl derivative.

Friedel–Crafts Reaction.—To a suspension of the amino alcohol hydrochloride (1.0 mol) in about ten times its weight of the appropriate aromatic hydrocarbon, anhydrous $AlCl_3$ (1.5 mol) was added in small portions and the reaction mixture was heated to 80–90°, where it was kept for 30 min. After cooling to room temperature it was poured into a mixture of equal amounts of ice, H_2O, and concentrated HCl. The product, which separated in crystalline form, was filtered off and purified by crystallization.

Acknowledgment.—Adamantane and 1-aminoadamantane were prepared by Dr. M. C. Bankiewicz.

6H-Indeno[2,1-*g*]quinolines

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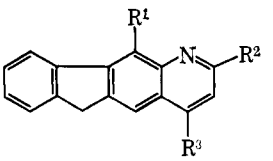
Received January 8, 1968

Interest in the antitumour activity of ellipticine has prompted studies on isomeric systems.[1] Linear indenoquinolines are simple analogs of the corresponding pyridocarbazoles and we report here the synthesis for evaluation of the hitherto unknown 6H-indeno[2,1-*g*]quinoline (I, $R^1 = R^2 = R^3 = H$) and some methyl homologs by the Skraup and Doebner procedures.



I

Experimental Section

Melting points were measured using an Electrothermal electrically heated block and are uncorrected. Uv spectra were measured in EtOH using Unicam SP500 and SP800B spectrophotometers.

6H-Indeno[2,1-*g*]quinoline (I, $R^1 = R^2 = R^3 = H$).—A Skraup reaction on 3-fluorenamine[2] with glycerol, I_2, and polyphosphoric acid at 180°[3] gave the parent indenoquinoline,[4] mp 142–143° (C_6H_6–petroleum ether (bp 60–80°)). *Anal.* ($C_{16}H_{11}N$) C, H. The **picrate** had mp 254–255° dec (from 2-methoxyethanol). *Anal.* ($C_{22}H_{14}N_4O_7$) C, H.

11-Methyl-6H-indeno[2,1-*g*]quinoline (I, R^1 = Me; $R^2 = R^3$ = H), prepared similarly from 4-methyl-3-fluorenamine,[2] formed needles, mp 120–121° (from EtOH). *Anal.* ($C_{17}H_{13}N$) C, H. The **picrate** formed needles, mp 237° dec (from 2-methoxyethanol). *Anal.* ($C_{23}H_{16}N_4O_7$) C, H, N.

2-Methyl-6H-indeno[2,1-*g*]quinoline (I, R^2 = Me; $R^1 = R^3$ = H).—3-Fluorenamine was refluxed with pyruvic acid in EtOH and the precipitated acid (I, R^1 = H, R^2 = Me, R^3 = CO_2H), mp *ca.* 350°, was decarboxylated by heating with soda lime. The distillate gave I[5] as needles, mp 147–148° from EtOH. *Anal.* ($C_{17}H_{13}N$) C, H.

(1) A. N. Fujiwara, E. M. Acton, and L. Goodman, *J. Med. Chem.*, **10**, 126 (1967).

(2) J. Davey, B. R. T. Keene, and G. C. Mannering, *J. Chem. Soc., C*, 120 (1967).

(3) Other conditions (*e.g.*, the sulfomix procedure) offered no advantage.

(4) Cyclization at C-2 rather than C-4 is to be expected; the nature of the product is confirmed by the close similarity of its uv spectrum [λ_{max} 213, 262, 311, 327, and 342 mμ (log 4.62, 4.68, 4.00, 4.12, and 4.26)] to that of the product of the following reaction, which can only be 11-methyl-6H-indeno[2,1-*g*]quinoline [λ_{max} 214, 266, 313, 325, and 341 (log 4.60, 4.71, 4.08, 4.11, and 4.11)].

(5) Uv spectrum closely similar to that of the 11-methyl isomer.

Substituted Quinazolone Hydrazides as Possible Antituberculous Agents

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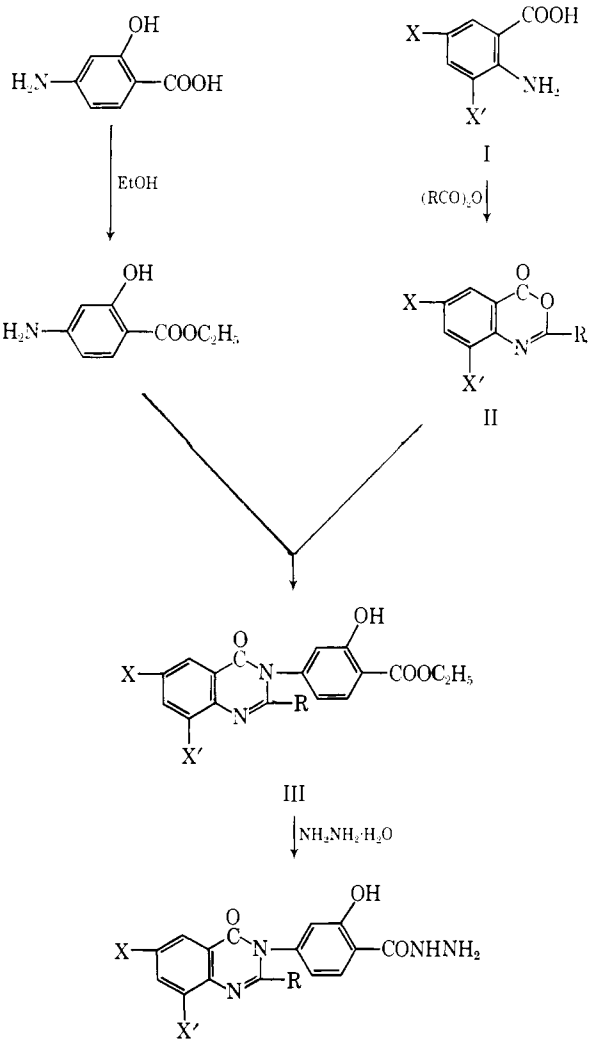
Received July 10, 1967

The therapeutic use of isonicotinic acid hydrazide (isoniazid) and *p*-aminosalicylic acid (PAS) as antituberculous agents is well documented. A search for newer antituberculous compounds led us to synthesize some substituted quinazolone hydrazides having structural similarity to PAS. Similar quinazolone hydrazides have also been shown to inhibit rat liver mitochondrial monoamine oxidase.[1,2] Substituted quinazolone hydrazides were synthesized by the route outlined in Scheme I.

SCHEME I



(1) S. S. Parmar and R. C. Arora, *Can. J. Chem.*, **44**, 2100 (1966).

(2) S. S. Parmar and R. C. Arora, *J. Med. Chem.*, **10**, 1182 (1967).