I is also obtained by treating the diethylacetal of benzimidazolyl-2-mercaptoacetic aldehyde with H_2SO_4 or by heating with $POCl_3$, followed by the action of H_2SO_4 on the 3-ethoxythiazolino [3,2-a] benzimidazole. I forms a picrate, salts with mineral acids, and quaternary salts with alkyl halides.

Thiazolo [3,2-a] benzimidazole (I), colorless needles, mp 141.5–142.5 (ex aqueous EtOH). Found: C 61.83; H 3.27; N 16.28; S 16.28%. Calculated for $C_9H_6N_2S$: C 62.04; H 3.47; N 16.08; S 18.41%.

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SYNTHESIS OF DERIVATIVES OF 3-(δ-BUTOXYCARBONYL) PYRIDAZIN-6-ONE

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It is known that the action of hydrazine hydrate on γ-oxopimelic acid or its ethyl ester gives 3-(β-ethoxycarbonyl) pyridazin-6-one (called in the literature pyridazin-6-one-3-propionic acid), or its derivatives [1].

We have investigated the action of hydrazine hydrate on γ-ketoazelaic acid and its ethyl ester. Reaction of the latter with 1 mole of hydrazine hydrate gives the ethyl ester of 3-δ-(butoxycarbonyl) pyridazin-6-one. The same compound was obtained by prolonged boiling of the ethyl ester of 3-(δ-butoxycarbonyl) pyridazin-6-one with hydrazine hydrate. However the hydrazide could be isolated only as the hydrazone with anisaldehyde. Treatment of γ-ketoazelaic acid with 1 mole of hydrazine hydrate led to the isolation of 3-(δ-butoxycarbonyl) pyridazin-6-one. The diethylamide of 3-(δ-butoxycarbonyl) pyridazin-6-one could not be obtained either by prolonged heating of the ester of this acid under ordinary conditions, or under pressure.

Ethyl ester of 3-(δ-butoxycarbonyl) pyridazin-6-one was prepared by reacting 5 g diethyl γ-ketoazelaate, 1 ml hydrazine hydrate (99.7%), 5 ml dry EtOH, and 2 drops of AcOH, together by refluxing the mixture for 3 hr 30 min. After removing solvent, the residue (4 g, mp 55–58° C) was twice recrystallized from ether, to give colorless needles, mp 61–63° C. Found: C 58.23; H 7.76; N 12.62%. Calculated for $C_{11}H_{18}O_3N_2$: C 58.38; H 8.01; N 12.37%: C 58.38, H 8.01; N 12.37%.

3-(δ-Butoxycarbonyl) pyridazin-6-one was prepared by refluxing together for 1 hr a mixture of 4 g γ-ketoazelaic acid, 1 ml hydrazine hydrate, and 20 ml dry EtOH, yield 2.5 g, mp 123–125° C (ex EtOAc). Found: C 54.15; H 7.19; N 14.37%. Calculated for $C_9H_{14}O_3N_2$: C 54.53; H 7.12; N 14.14%.

Amide of 3-(δ-butoxycarbonyl) pyridazin-6-one. This was prepared from the ethyl ester of 3-(δ-butoxycarbonyl) pyridazin-6-one and concentrated aqueous ammonia, mp 152–154.5° C (ex absolute EtOH). Found: C 54.46; H 7.64; N 21.21%. Calculated for $C_9H_{15}N_3O_2$: C 54.80; H 7.67; N 21.31%.

Anisylhydrazone hydrazide of 3-(δ-butoxycarbonyl) pyridazin-6-one. 1.1 g diethyl γ-ketoazelaate, and 1.2 ml hydrazine hydrate in 5 ml dry EtOH were refluxed together for 4 hr, then left overnight. The material remaining after removing the solvent crystallized, and had mp 78–98° C; it was dissolved in ethanol and treated with 0.6 g anisaldehyde. Yield 0.6 g anisylhydrazone, colorless crystals, mp 176–177° C. Found: C 61.50; H 6.63; N 17.07%. Calculated for $C_{17}H_{22}N_4O_2$: C 61.80; H 6.71; N 16.96%.

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