Wolff-Kishner reduction of \(58\), was dissolved in 1500 ml. of boiling water. Decolorizing carbon was added, and the solution was boiled for a few minutes and rapidly vacuum filtered with the aid of Celite. The resulting oily filtrate was reheated, and 200 ml. of glacial acetic acid was added to afford a clear solution. The crystals obtained upon cooling the solution were filtered, washed with water, and dried to give \(53\) of m.p. 96-97°C. Repeated recrystallization by the same technique did not alter the melting point. Careful examination of the infrared spectrum of \(53\), purified in this manner, revealed the presence of contaminating cis-dipropionic acid \(52\), as evidenced by a small peak at 1240 cm.\(^{-1}\). This absorption band is of medium intensity in the infrared spectrum of \(52\), but it is absent in the spectrum of the pure \(53\) obtained from the Arndt-Eistert homologation. The thoroughly dried \(53\) was dissolved in a minimum amount of tetrahydrofuran at room temperature. This solution was heated to boiling, and sufficient hexane was added to cloud the hot solution. Enough glacial acetic acid was then added to restore clarity, and the solution was filtered rapidly and allowed to cool slowly to room temperature. The crystals which formed were separated and recrystallized two more times in the same manner. This procedure afforded 19.0 g. of the pure trans-1,3-cyclopentanedicarboxylic acid (53), m.p.