3.2 g. (34 per cent yield) of diethyl 1,3-cyclopent-1-enedipropionate (65). The unsaturated ester 65 (3.2 g., 0.012 mole) was added to a solution of 2.5 g. of potassium hydroxide in 25 ml. of methanol, and the mixture was refluxed with stirring for 3 hours. The solvent was then evaporated to dryness, and the residue was dissolved in a small amount of water. The basic, aqueous solution was washed once with ether and acidified with 6 N hydrochloric acid. The product was isolated by extraction of the acidified mixture with several portions of ether. The combined ethereal extracts were washed once with water and dried over anhydrous magnesium sulfate. Removal of the solvent gave 2.0 g. (77 per cent yield) of 1,3-cyclopent-1-enedipropionic acid (66). An analytical sample of 66, m.p. 81-82°C., was obtained by three recrystallizations from water. Infrared analysis of 66 revealed the following absorption bands: 2500-2700 cm. \(^{-1}\) (O-H, broad), 1725 cm. \(^{-1}\) (C=O), 1660 cm. \(^{-1}\) (C=C), 840 cm. \(^{-1}\) (C=C).


cis-1,3-Cyclopentanediipropionic acid (52) via hydrogenation of 66.-The crude unsaturated acid 66 (20.0 g., 0.094 mole) was dissolved in 200 ml. of glacial acetic acid, and 1.5 g. of 5 per cent rhodium on alumina catalyst was added. The hydrogenation was performed using a