added 4.0 g. (0.1 mole) of sodium borohydride in portions, with continuous stirring, over a 15-minute period. After stirring for 2 hours after the addition was complete, the mixture was poured into 800 ml. of ice and water, and the product was isolated by extraction with several portions of chloroform. The combined chloroform extracts were dried over anhydrous magnesium sulfate. Removal of solvent gave an oil which, upon vacuum distillation, afforded 39 g. (81 per cent yield) of pure diethyl 2,5-cyclopentanoldi-propionate (64), b.p. 175-176°C./0.55 mm., nD20 1.4686. Infrared analysis revealed the following absorption bands: 3500 cm.-1 (O-H), 1740 cm.-1 (C=O), 1125-1300 cm.-1 (ester). This material (64) could not be isolated sufficiently pure for analysis by distillation, and attempts to make solid derivatives were unsuccessful.

1,3-Cyclopent-1-enecarboxylic acid (66).—Crude alcohol-diester 64 (10.0 g., 0.035 mole) was dissolved in 50 ml. of dry benzene. One gram of p-toluenesulfonic acid was added, and the mixture was refluxed overnight under a Dean-Stark water separator until no more water was formed. The resulting benzene solution was washed with dilute sodium bicarbonate solution and dried over anhydrous magnesium sulfate. The residual oil obtained by evaporation of solvent was eluted from a column of florex with pentane. Evaporation of the pentane eluate afforded