continued for an additional hour. Solvent (about 1100 ml.) was removed by distillation at atmospheric pressure, and the residual liquid was then further concentrated by distillation at 80°C./30 mm. The final dark oil was poured into a beaker and allowed to stand in a refrigerator for several days. The crystalline mass which formed during this time was crushed and separated by vacuum filtration. The crystals were triturated thoroughly with two 400-ml. portions of 50 per cent ethanol and refiltered. This technique afforded 376 g. (66 per cent yield based on cyclopentanone) of 2,5-cyclopentanonedipropiononitrile (58), m.p. 63-65°C., which was identical to the sample of 58 prepared and characterized in Procedure A.

2,5-Cyclopentanonedipropionic acid (59).—The keto-dinitrile 58 (47 g., 0.25 mole) was refluxed for 3 hours with 500 ml. of concentrated hydrochloric acid. The reaction mixture was then evaporated to dryness at reduced pressure on a steam bath. The solid residue was triturated with several portions of ethanol, and the insoluble ammonium chloride was removed by filtration. Evaporation of the combined ethanol filtrates afforded crude 59. The residue was recrystallized twice from dioxane-hexane to give 48 g. (85 per cent yield) of pure 2,5-cyclopentanonedipropionic acid (59), m.p. 121-122.5°C.; lit. 49 m.p. 122°C.