CHAPTER II

RESULTS AND DISCUSSION

Synthesis of the cis- and trans-1,3-Cyclopentane-
dipropionic Acids

Since the cis- and trans-1,3-cyclopentanedipropionic acids were unreported, it was necessary to characterize the compounds unequivocally with regard to their stereochemistry and to develop convenient stereospecific synthetic routes starting with readily available reagents. cis-1,3-Cyclopentanedicarboxylic acid (44), obtained by the oxidation of norbornylene (43) with potassium permanganate,\(^4\) was epimerized to a mixture of the cis- (44) and trans-dicarboxylic (45) acids by treatment with concentrated hydrochloric acid according to the procedure of Pospischill.\(^4\) The mixture of isomeric acids was then separated by the method of Perkin and Scarborough.\(^4\)

\[ \text{KmnO}_4 \rightarrow \text{cis-1,3-Cyclopentanedicarboxylic acid (44)} \]

\[ \text{trans-dicarboxylic (45)} \]

\[ \text{cis-1,3-Cyclopentanedicarboxylic acid (44)} \]

\[ \text{trans-dicarboxylic (45)} \]

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