at a retention time of 6.5 minutes and was identified as the \textit{cis}-diketone 75 by collection of a small sample and comparison of its infrared spectrum and 2,4-dinitrophenyl-hydrazone derivative with those of an authentic sample of 75. Component B, appearing at a retention time of 5.5 minutes, was present in too small an amount to be isolated and identified. The total yield of the \textit{cis}-diketone 75 from all of the fractions was 110 mg., and the total yield of the \textit{trans}-dipropanol 79 was 275 mg. Volatile minor components accounted for 1.7 g. of the acyloin product, and the remaining material was unreacted 70.

X. Acyloin reaction of dimethyl trans-1,3-cyclopentane-dibutyrate (86)

\textbf{Apparatus and experimental procedure.} In order to minimize the possibility of contamination by the \textit{cis} isomer, the \textit{trans}-dibutyric ester 86 used in this reaction was obtained by expansion of \textit{trans}-dipropionic ester 70 which had been recovered from previous condensation attempts. Pure 86 (4.4 g., 0.016 mole) in 70 ml. of dioxane was reacted with 1.5 g. (0.065 g. at.) of sodium metal dispersed in 150 ml. of dioxane according to the procedure described for acyloin reaction V. The ester addition was completed in 20 hours, and after an additional 24 hours of stirring, the reaction mixture was