mmoles based on 111) was refluxed with 756 mg. (4.5 mmoles) of Girard's T reagent in 25 ml. of 10 per cent acetic acid in absolute ethanol for 1.5 hours. The reaction product was poured into 150 ml. of ice water containing 1.44 g. of sodium carbonate. Workup in the usual manner gave 270 mg. of ketonic material. GLC analysis of the ketonic fraction at a column temperature of 235°C. showed it to contain about 85 per cent of the cis-ketone 111, which had a retention time of 6 minutes, and 15 per cent of the cis-diketone 25, which had a retention time of 6.5 minutes. The yield of cis-ketone 111 was 28 per cent based on the starting cis-acyloin 23. The mixture of 111 and 25 was separated by chromatography on florex. The mixture was placed on a 1.5 x 15 cm. column of florex and eluted with 1:1 petroleum ether:benzene. Removal of the solvent from the first few fractions afforded 110 mg. of the cis-ketone 111 which was essentially free from contaminating 25. Continued elution with the same solvent gave eluates containing increasing amounts of the cis-diketone 25. An analytical sample of cis-bicyclo[5.2.1]undecan-4-one 111, m.p. 34-36.5°C., was prepared by distillation of the initial chromatography residue at 60-70°C./0.4 mm. in a micro-Hickman still. Infrared analysis of the analytical sample of 111 revealed the following absorption bands: 1700 cm.⁻¹ (C=O),