and methylcyclopentane contents of the reaction products at these and at higher hydrogen pressures could be determined by calculating the composition of the individual fractions from their indices of refraction. The calculated content of cyclopentane in fraction 1 was carried out for mixtures of cyclopentane and pentanes (assuming n_D^{20} of pentanes to be 1.3560 and considering n_D to be additive); for fraction 2 for mixtures of cyclopentane and n-pentane; for fractions 3 and 4 for mixtures of cyclopentane and isohexanes (av n_D^{20} 1.3750); for fraction 5 for mixtures of methylcyclopentans and isohexanes; and for fraction 7 for mixtures of methylcyclopentane and cyclohexane. Fraction 6 appeared to be pure methylcyclopentane. Fraction 3 had aniline points of 16.4-18.5° (literature value for aniline point of cyclopentane is 15.8°). The values for the yields of cyclopentane and of unchanged methylcyclopentane were reduced by 2% (relative) as an approximate correction for the presence of unsaturated hydrocarbons.

Fig. 1 shows a typical distillation curve for the reaction products and indicates the properties of the fractions recovered.

Fig. 1. Distillation curve for the products of Expt. No. 16, at 753.5 mm(0°). Fraction 1 (below 45.0°) n_D^{20} 1.3860, 3.3% unsaturated; fraction 2 (45.0-47.6°) n_D^{20} 1.3997, 1.8% unsaturated; fraction 3 (47.6-51.3°) n_D^{20} 1.4046, 0.7% unsaturated; fraction 4 (51.3-60.5°) n_D^{20} 1.4034, 0.7% unsaturated; fraction 5 (60.5-70.2°) n_D^{20} 1.4066, 0.7% unsaturated; fraction 6 (60.2-72.3°) n_D^{20} 1.4097, 1.0% unsaturated; fraction 7 (70.3-80.0°) n_D^{20} 1.4158, 0.8% unsaturated.
