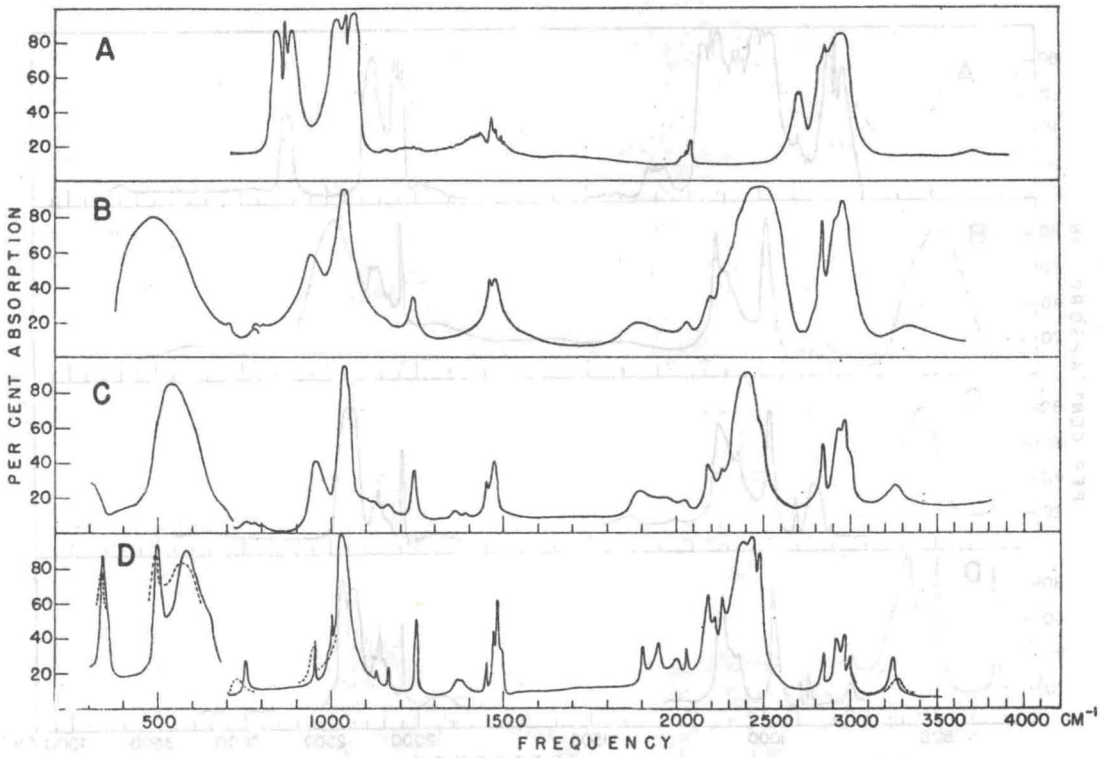

FIG. 2. Infrared absorption spectrum of CH_3OD. A—Vapor, 10-cm path-length, 80 mm Hg pressure, room temperature. B—Liquid, room temperature. C—Vitreous solid, −180°C. D—Crystalline solid, −180°C (full line) and −108°C (broken line, shown only where the spectrum differs appreciably from that at −180°C).

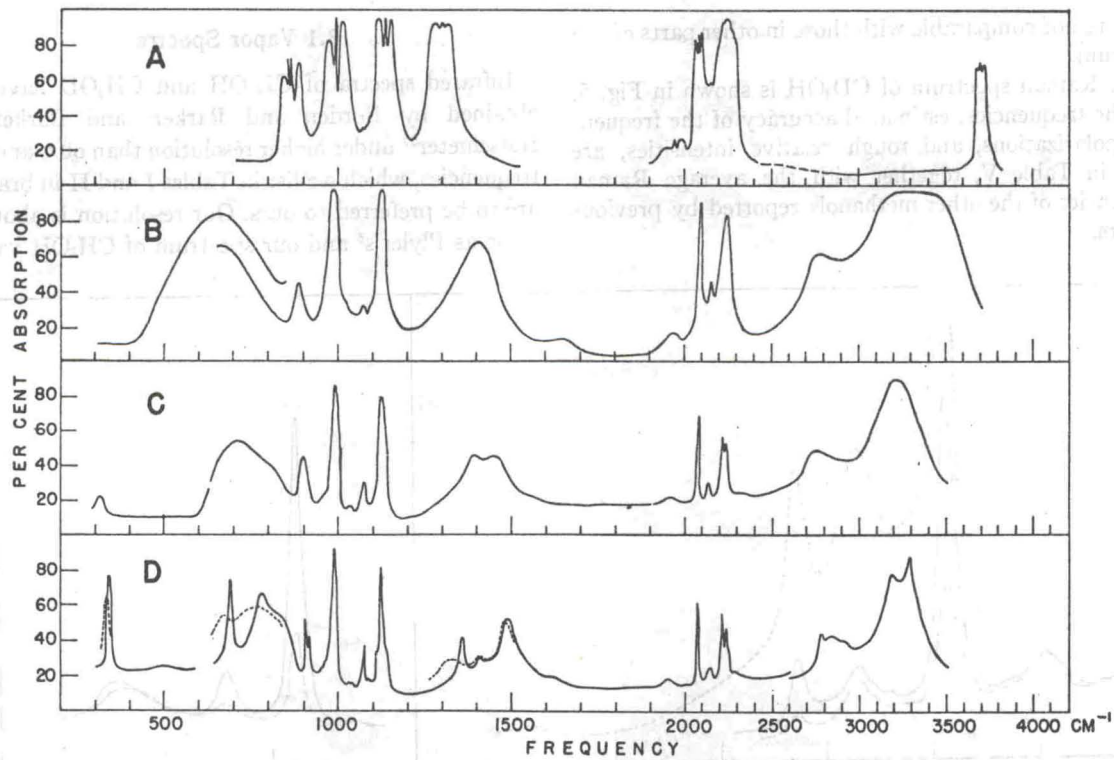

FIG. 3. Infrared absorption spectrum of CD_3OH. A—Vapor, 10-cm path-length, 80 mm Hg pressure, room temperature. B—Liquid, room temperature. C—Vitreous solid, −180°C. D—Crystalline solid, −180°C (full line) and −108°C (broken line, shown only where the spectrum differs appreciably from that at −180°C).

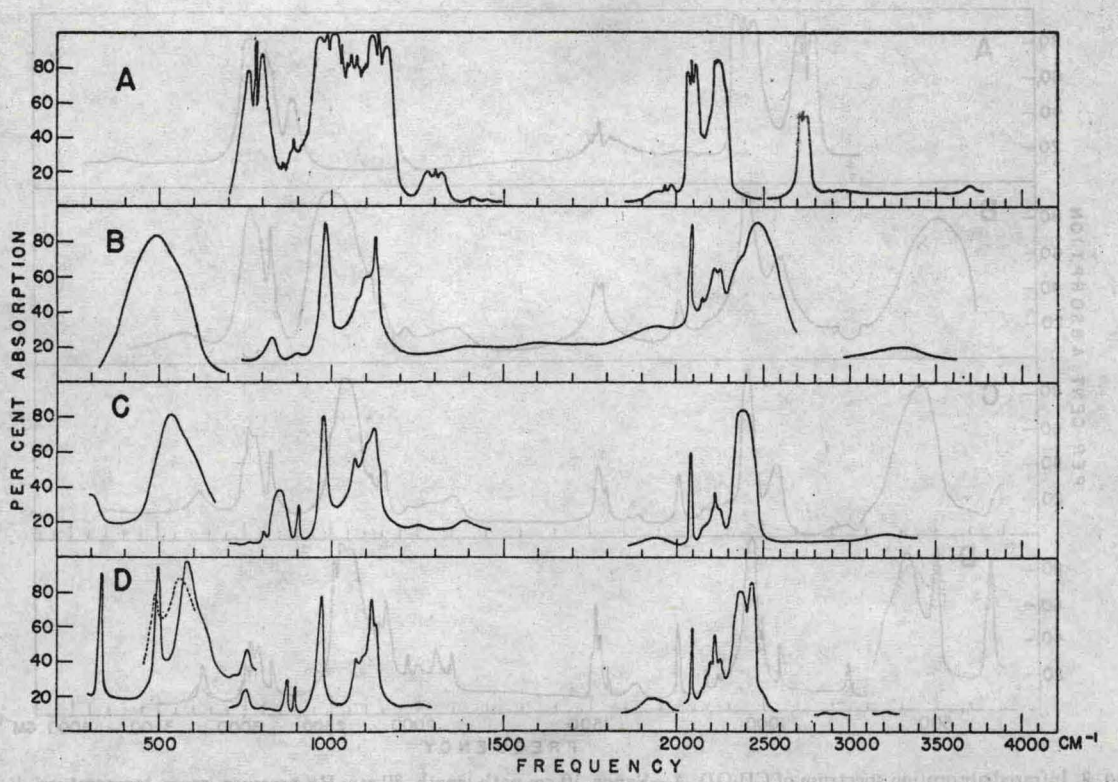

FIG. 4. Infrared absorption spectrum of CD_3OD. A—Vapor, 10-cm path-length, 80 mm Hg pressure, room temperature. B—Liquid, room temperature. C—Vitreous solid, −180°C. D—Crystalline solid, −180°C (full line) and −108°C (broken line, shown only where the spectrum differs appreciably from that at −180°C).

cm^{-1} are not comparable with those in other parts of the spectrum.

The Raman spectrum of CD_3OH is shown in Fig. 5, and the frequencies, estimated accuracy of the frequencies, polarizations, and rough relative intensities, are listed in Table V, together with the average Raman frequencies of the other methanols reported by previous authors.

3.1 Vapor Spectra

Infrared spectra of CH_3OH and CH_3OD have been obtained by Borden and Barker[2] and Barker and Bosschieter[27] under higher resolution than ours and their frequencies, which we list in Tables I and II in brackets, are to be preferred to ours. Our resolution is about the same as Plyler's[5] and our spectrum of CH_3OH vapor is

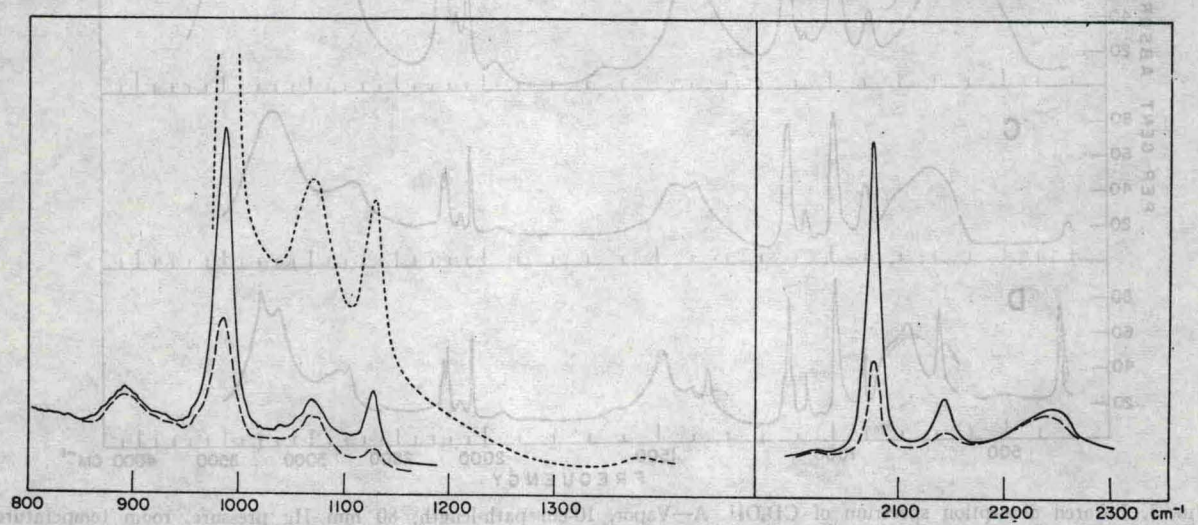

FIG. 5. Raman spectrum of liquid CD_3OH. Full line = exciting light polarized perpendicular to the scattered beam. Broken line = exciting light polarized parallel to the scattered beam. Short-dashed line: exciting light not polarized.