Another change in the lattice modes is observed for the weak doublet originally at 167 and 172 cm^{-1} which have equal intensity at 1 bar. The 172 cm^{-1} component of the doublet shifts with pressure at a slightly higher rate and also becomes stronger in intensity with pressure. The observed wavenumbers are plotted against pressure in fig. 7 and 8 for the modes centred around the ring carbon–carbon stretch (1582 to

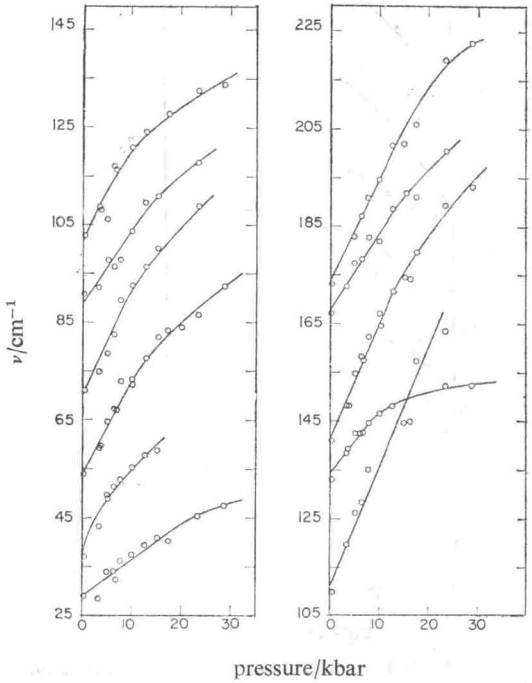

FIG. 6.—The wavenumbers for the lattice librational modes of dianthracene are plotted against pressure at 296 K.

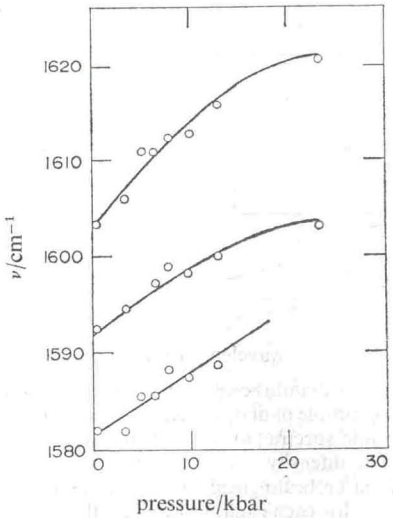

FIG. 7.—The wavenumbers for the internal modes centred around the C═H stretching band are plotted against pressure at 296 K.

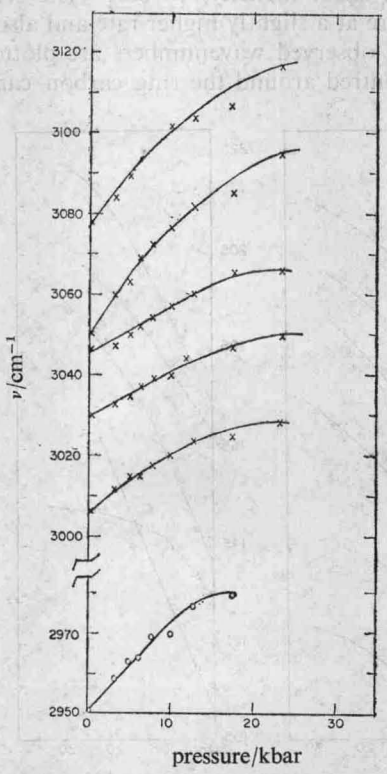

FIG. 8.—A plot of the wavenumber shifts of the C—H stretching band against pressure at 296 K.

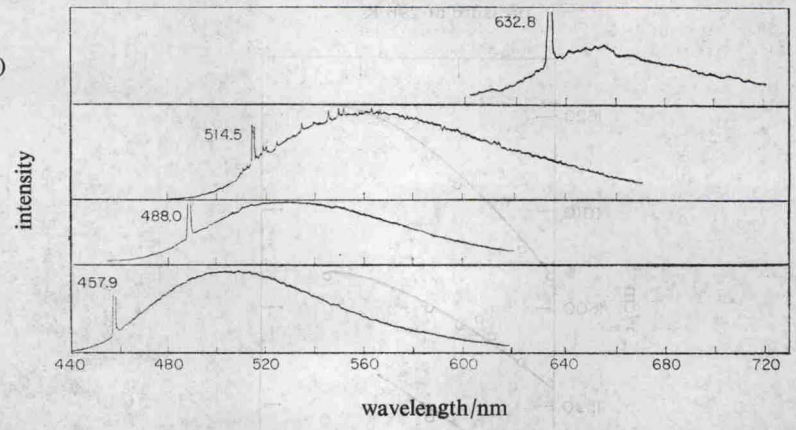

FIG. 9 —The luminescence spectra of dianthracene at 32 kbar and 300 K. The above spectra (*a*)-(*d*) were taken on the same crystalline sample of dianthracene. The spectrum (*a*) was excited at 632.8 nm using ~ 40 mW He–Ne laser, while spectra (*b*) to (*d*) were excited with the various Ar laser lines (514.5, 488.0 and 457.9 nm). The intensity is arbitrary and there is no intensity correlation from spectrum to spectrum since the laser beam incident on the high pressure window was refocused for each exciting wavelength.