The nature, quantity, and isotopic composition of carbon in an Apollo 14 sample (14259) were determined by the techniques of pyrolysis, hydrolysis, and crushing. Aliquots of approximately 1 gm, 2 gm, and 3 gm, were used in our experiments.

The total carbon in the sample was determined by complete combustion and had a value of 128 micrograms per gram with a carbon isotopic abundance $\delta^{13}C$ (relative to the Pee Dee Belemnite standard) of +11 per mil. In comparison the Apollo 12 sample 12023 had a value of 110 micrograms per gram with a $\delta^{13}C$ figure of +12.

In three sets of experiments, the pyrolysis temperature was varied in a stepwise manner up to 1100°C. Variations of the $\delta^{13}C$ value indicated the presence of carbon with more than one range of isotopic values from -5.7 to +11.9. In one determination the condensable material on pyrolysis at 400°-600° gave a $\delta^{13}C$ value of +31.8. The solar wind "hydrogen stripping" mechanism discussed previously may be one of the factors causing this wide variation in the $\delta^{13}C$ value of the assemblage of carbon atoms in the mineral matrix.

The results of the crushing and hydrolysis experiments were, in general, similar to those we reported for the Apollo 12 fines.