It may perhaps be urged that this argument is fallacious, in that the increase of the relative amount of hydroxyl in the above cases is larger than the relative change in radicals of the types $-CH_3$, $=CH_2$, $\equiv CH$, and $\equiv\!\equiv C$. But, in the first place, it is evident that the latter four radicals are actually different, and *a priori* there is no reason to suppose that they should not greatly differ in their effect upon the properties of a molecule, for instance, to render dissimilar the compounds normal pentane $CH_3 \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH_3$ and tetramethyl methane,

$$\begin{matrix} CH_3 \\ CH_3 \end{matrix} \!> C < \begin{matrix} CH_3 \\ CH_3, \end{matrix}$$

which is not the case. In the second place, the change from methane, CH_4, to ethane, $CH_3 \cdot CH_3$, is a larger proportional change in the molecule than the change from alcohol, $CH_3 \cdot CH_2OH$, to glycol, $CH_2OH \cdot CH_2OH$, or aldehyde, $CH_3 \cdot CHO$, both of which produce far greater changes in the properties.

In fact, the union of carbon with hydrogen in organic compounds is a unique and peculiar chemical relationship, upon which the properties of the carbon compounds, their number, variety, and complexity largely depend. It seems to make no important difference whether