There are abundant possibilities for such experimentation, but most of them do not appear to be economical. We have found that in nuclear explosions some hydrogen is produced. But no estimate has yet shown that the price of this hydrogen could be made sufficiently low. If a nuclear explosion takes place in limestone, great amounts of carbon dioxide will be liberated. But the price of the carbon dioxide is so low that again no economic advantage can be gained. One specific suggestion of Dr. Grebe is to explode the nuclear device in limestone carrying oil shale. In this combination it is likely that some calcium carbide will be formed. Of course, the formation of calcium carbide needs exceedingly high temperatures, but if the material is appropriately loosened up before the explosion takes place the change in volume under high pressure will produce the high temperatures needed in a rather extensive manner. Once calcium carbide is formed one can let this react with water and produce acetylene, which in turn can be used in a host of most important chemical reactions. The main difficulty with this proposal is that the acetylene is quite likely either to polymerize or explode before it can be brought to the surface or before it can be made otherwise to react profitably with appropriate materials.

Another possibility that might be more feasible is to perform the explosion in an iron silicate which carries oil shale. Under these conditions the hydrocarbon will reduce the iron silicate into metallic iron at temperatures in the neighborhood of 800°C. In this way we may produce iron granules which could be brought to the surface and separated from the rest of the substances by either gravity or magnetic action. Thus, iron deposits could be exploited which are otherwise not usable. In addition, one would save the transportation of the useless silicon and oxygen and one actually would start at the mine head at a more advanced stage of the metallurgical process.