

surface. With the help of nuclear explosions it will be possible to remove layers as thick as 1000 feet and our wealth of mineral deposits throughout the world can be most significantly increased. This factor alone could become decisive in the spread of industrialization throughout the world. It has been claimed that scarcity of raw materials has furnished an important reason, perhaps the main reason, for wars in the modern world. While this claim may well be exaggerated, a greater abundance of essential raw materials might indeed be the condition which in the long run is best suited for peaceful cooperation throughout the world.

### Dreams

A really novel field like that of nuclear explosions is apt to open completely new avenues of approach. There is in fact no scarcity of ideas. Whether these ideas are feasible or not remains to be seen. Some of them are apt to work out. Others will fall by the wayside. The very discussion of this topic will generate additional ideas which may well be more fruitful than those proposed so far.

One suggestion that appears plausible is to use nuclear explosions underground in order to deposit heat and later to mine this heat by circulating a heat-exchange fluid and using the hot vapor produced underground to drive turbines on the surface. A very small-scale attempt to explore this possibility was performed in the Gnome explosion on December 10, 1961. A 3-kiloton explosion was set off 1200 feet underground in a salt deposit near Carlsbad, New Mexico. The explosion produced a cavity of a million cubic feet (Fig. 5). The surface above the explosion rose several feet and then fell back to a position a little less than two feet above the original level of the ground. Thus an extensive flat dome was formed over the explosion site and