Interest in rock-dusting American coal mines was stimulated by investigation of rock-dusting methods in England and Europe by G. S. Rice in 1923 and earlier, and meetings in 1924 with coal-mining operators in the various coal-mining States, at which the necessity for rock-dusting was stressed, resulted in the rock-dusting of a number of mines.

INVESTIGATIONS ON ROCK-DUSTING BY THE BUREAU OF MINES

Since its organization in 1910, the Bureau of Mines has advocated rock-dusting as a method of preventing or limiting coal-dust explosions. At first it was suggested as an alternative for watering, but finally in 1924, after many experiments with watering, salt solutions, and rock dust, the latter was declared to be the most reliable method known for successfully combatting the hazard of coal-dust explosions.

Research work on rock-dusting as a means of preventing coal-dust explosions has been conducted by the Bureau nearly 30 years, and during that time many valuable data have been obtained and published. The explosibility of various sizes of coal dust from many coal beds has been determined, as well as the quantity of rock dust necessary to prevent ignition of coal dust and the propagation of an explosion.

Research work relative to rock-dusting has been carried on by the Bureau in cooperation with the Carnegie Institute of Technology and the Advisory Board of Operators and Engineers of Western Pennsylvania. Results of this work were published in 1925 in a bulletin on "Method and Costs of Rock-Dusting Bituminous Coal Mines."

STATE-LAW REQUIREMENTS FOR ROCK-DUSTING

In addition to the laws enacted by various coal-mining States requiring rock-dusting, one of the most helpful features in the advancement of rock-dusting has been the reduction by accident-liability insurance companies of the premium paid by coal companies on mines using rock dust.

Eleven of the 25 coal-mining States have enacted laws requiring rock-dusting in some form or other. In general, however, these laws are inadequate and in some States they are indefinite and leave the question of rock-dusting to the discretion of the mine inspector. Only three States (New Mexico, Utah, and Wyoming) have enacted laws that adequately define and require rock-dusting. In 10 of the States water may be used for sprinkling roadways and workings in lieu of rock-dusting, Utah being the only State that requires rock-dusting in both nongassy and gassy mines regardless of moisture.