THE MANURIAL VALUE OF A MODIFICATION OF ORTHOCLASE-BEARING ROCK WHERE ONLY POTASSIUM WAS DEFICIENT.¹

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In July, 1912, the Institute of Industrial Research, Washington, D.C., after being in touch for a number of months with operations conducted on a mill scale by the Cushman-Coggeshall process, which had involved nearly 400 tons of raw material, stated that the treatment of feldspathic rock had been made economically and commercially possible; but that it was desired to have agricultural tests conducted before proceeding much further with the development of the technical and commercial possibilities involved in the production of the form of “rock potash fertilizer” under consideration. The purpose of this paper is to report the results of an inextensive field trial conducted with this material at the Rhode Island station during six years, now that this test has been terminated.

The following information concerning the manufacture of the material has been furnished by the Institute of Industrial Research. The proper proportion of lime and feldspathic rock was ground together, and as the mixture was conveyed over a moving drum, a strong solution of calcium chlorid was sprinkled over it. This enabled the formation of the material into clumps, from which the fine particles were sifted for subsequent treatment. The clumped material, about the size of peas, travelled continuously thru the rotary kiln where it was subjected to special heat treatment, after which it was rough ground in preparation for use. The finished product was said to consist mainly of silicates of aluminum, free lime, and potassium chlorid, a typical analysis being given as follows: Water-soluble potassium oxid, 4.3 percent; total potassium oxid, 5.7 percent; total calcium oxid, 16.0 percent.

The orthoclase feldspar which was used was quarried principally in Maryland and contained about 10 percent of potassium oxid. Arguments which have been advanced against the commercial adoption of the method were that it would be impossible to get feldspar

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