ance for lime between the North Mountain and Savage Mountain.

Some of the strata consist of very pure limestone, and others are highly siliceous, whilst the slaty varieties contain large proportions of silica, alumina, and oxide of iron. It contains less magnesia than the older limestones already noticed.

The limestone bed in Formation No. 18*b* is shown on the map as underlying the three coal fields of the State, and cropping out around them. Some of its strata furnish pure lime, whilst others are very siliceous.

Within the coal regions there are several thin beds of limestone which are co-extensive with the strata adjacent to them. There is but one of these of sufficient thickness to be available for agricultural purposes to any extent. In thickness it varies from six to ten feet, and small portions of it are slaty, yet it produces good agricultural as well as building lime.

Numerous analyses have been made of the several limestones above noticed, many of which have been published in the reports of Professor Ducatel, and those of my predecessor. The results of a number analyzed in my laboratory were communicated to parties interested, and need not be repeated here, as they possess no interest to the public.

The great importance of these formations of limestone to the agricultural interests of our State makes it necessary that they should be investigated in a most minute and detailed manner—a duty which I have not yet an opportunity to execute.

All of them, except the metamorphic, are pretty regularly stratified, and the characters of each stratum are continuous to considerable distances, whilst the strata vary considerably from one another in chemical composition, and in their value to the farmer.

The proper course to pursue is to make a minute survey of them in such manner as will permit the construction of such a number of geological sections as will permit us to place the out-crops upon the large map, and then to determine by analysis the exact chemical constitution and agricultural value of each kind. There is no other means in my opinion by which the advantages of these valuable mineral treasures can be made fully available to the agricultural interests of our State. An analysis of a sample from one stratum will often give a result differing materially from those adjacent. Every farmer should be put into possession of such information as will indicate to him with certainty the exact composition of the limestone, or the lime, he may desire to purchase or use.

The importance of this will be made manifest by a few illustrations.

Pure carbonate of lime or limestone consists of—