these are represented by red sandstones sufficiently hard and compact to form good building stone. The value of these lands is materially influenced by the proximity of these shales or sandstones to the surface—where they lie near to it, the soil is unproductive, being liable to injury by droughts, as there is not sufficient depth of soil to retain a supply of water for the use of the crops in dry weather. When this is the case the soil should be ploughed as deeply as possible and manured with lime, containing a small per centage of magnesia—when basins occur they should always be drained, though these drains involve the expense of cutting through ledges of such rocks as occur on these lands, for when the water which falls on them can only escape by evaporation, good crops can never be produced.

Without giving here the various analyses of this class of soils, which were made from specimens taken from near Middleburg, from Dr. Leggett's farm, from Mr. S. Reindollar's, near Taneytown, from Mr. Bassett's, from Col. Piper's, of the Antrem estate, one of the most beautiful and elegant and productive of the estates of Maryland, and from various other places, I will only name the proper manures for their improvement. The necessary quantities and mode of application of these I have already shown under their appropriate heads, to which I refer those interested.

First, they should be manured with a limestone, containing a small quantity of magnesia, and if it contains other substances capable of absorbing, when burnt the food of plants from the atmosphere, so much the better. There is a limestone known in the neighborhood as Rheinhart's, which contains in its natural state about eleven and a half per cent. of carbonate of magnesia, and which contains of sand, talc slate and other similar constituents, about twenty per cent. When this limestone is burnt, these talc slates, sand, &c., form combinations with the lime and become strong absorbants, and retainers of all that which the atmosphere affords to crops, especially of ammonia; it when applied to these soils will not only improve their mechanical texture, making them when stiff, more loamy, light and porous, when too light and loose, more stiff, compact and retentive, but will at the same time afford the means of giving them the quick acting substance, ammonia. It has all the *permanent* effects of pure lime, and to some extent the immediate influence of Peruvian guano. The experience of the best practical farmers of this section of the country have confirmed this opinion.

These soils are uniformily deficient in plaster and salt; these should be applied to the crops in the mode pointed out in the section treating of these articles. Whenever these lands are too wet, and in many places this is the case, they should be thoroughly ditched and drained; without this, no return need be expected from labor, nor remuneration for expenses in manures. Where the rocks and shales lie near to the surface, the first thing to be done is to prevent the loss of soil by the effect of the washing of heavy rains, and to effect this, I know of no better plan than surface drains, made with a plow, and subsequently cleaned out with the hoe, sufficiently near to each other to carry off all the surplus water of the soil; the water by these means being distributed in many channels, can no where collect in sufficient abundance to carry off the soil and make unsightly gullies. These drains should have but a slight fall, and end by conveying the water to a fence, woodland or some stream.

In these locations, soils should be plowed deeply, as the deeper the soil the more room would the surplus water have to diffuse itself and prevent injurious washing.

The benefits resulting from the above recommendations will be two fold, first, the direct saving of a large quantity of land, for when the whole mass of the soil is washed off, some years must elapse before the hard shaly subsoil becomes sufficiently disintegrated and decomposed to furnish a good foundation for crops; secondly, the retention of the finely divided particles of soil, that part which contributes directly to the nourishment of the plant, from being