CAMBRIAN SANDSTONES

The band of sandstones and quartzites along the sides of the South Mountain has been prospected for water in few places, mainly on account of the narrowness of its outcrop. The quantity of water encountered in the operation of the limonite iron mines in this belt of rocks south of Easton and in the narrow valley one and one-half miles southeast of Hellertown proves that these sandstones and quartzites contain much water. The water passes along joints and bedding planes or through the rocks themselves and is seldom concentrated in definite streams, except in places where the rocks have been broken and displaced by earth movements. The best place to procure water is at the contact between these rocks and the underlying gneisses.

Wells in these rocks should be sunk a short distance away from where they disappear beneath the limestones. As the rocks near the mountain almost invariably dip steeply, the sandstones or quartzites are within a short distance carried beyond the depth at which they are available as sources of water. Springs are not numerous in these rocks, but there are some in places where the rocks have been shattered.

The water from the Cambrian quartzites and sandstones is low in mineral content because of the insoluble character of the rocks with which it comes into contact, and it is uncontaminated because the slopes of the mountain are sparsely settled.

PRE-CAMBRIAN GNEISSES

Pre-Cambrian gneisses form the mountains in the southern half of the county. These regions are thinly settled on account of the steep slopes and the stony character of the soils, which are only locally suitable for cultivation. The rocks near the surface are greatly jointed and permit the entrance of water. As the depth increases the joint spaces become narrower and consequently the water moves more slowly. Lines of seeps or springs furnish most of the residents of the region with ample supplies of water. Wells ten to twenty-five feet deep yield fair supplies.

Half of the deep wells that have been bored have been failures. If water is not obtained within 200 feet it is generally regarded as useless to continue to lower levels. A few excellent wells have been obtained in the gneisses but most of them yield only small quantities.

The water in the gneiss contains little dissolved mineral matter, and when it is protected from local pollution it is very desirable. In a few places where pyrite is an abundant constituent of the gneisses the water may contain iron.