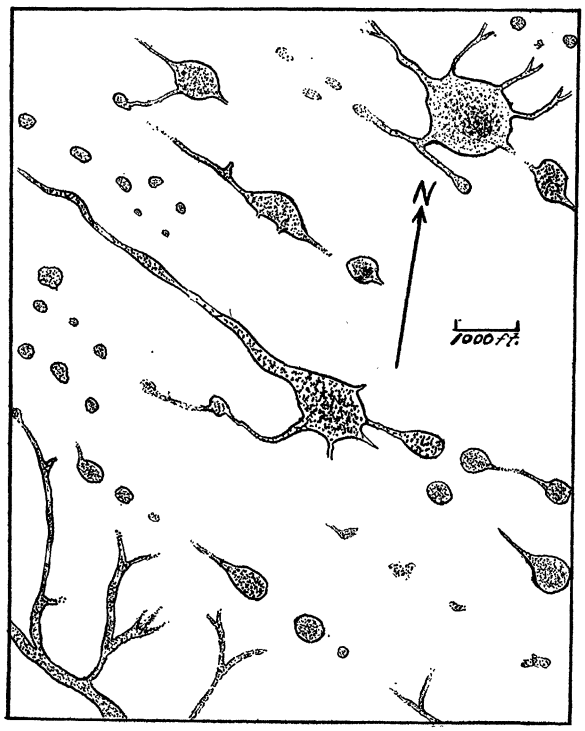

FIG. 1. Sketch made from an aerial photograph illustrating the alinement of sink-holes in southeastern New Mexico. The shaded areas represent surfaces of dark soil.

products formed by the evaporation of marine waters. There follows a list of formations near the southeastern corner of the state:

Tertiary and Quaternary:	
"Caliche," sand and gravel	200 feet ±
Triassic and Permian:	
Red shale and sandstone	1,200 to 2,000 feet
Permian:	
Salt and anhydrite	1,000 to 1,500 feet
Limestone and anhydrite	500 to 1,500 feet

The large basins doubtless owe their alinement directly to a system of parallel fractures in the underlying bed-rock. Faults and joints with somewhat similar trend are prominent features in the Yates oil district and at other localities to the southeastward. Some of the smaller sink-holes likewise may be due to the presence of joints in the bed-rock, though in this case there is probably only an indirect connection. For example, straight ravines may have been eroded along these fractures in the Triassic strata before their burial by the Tertiary caliche deposits. Removal of limestone by underground drainage through the hypothetical valleys may thus have formed many small depressions as well as the elongate "trenches" in the present surface. Since the caliche is seldom found to be jointed with an intensity similar to that of the underlying terrane it does not seem probable that planes of fracture in this superficial formation could have been responsible for such an alinement.

In addition to this linear arrangement, a branching pattern is manifested in some places by groups of connected basins having an average diameter of less than 200 feet. This pattern has doubtless developed through the work of ground-water within the caliche, either as it integrated separate drainage channels into

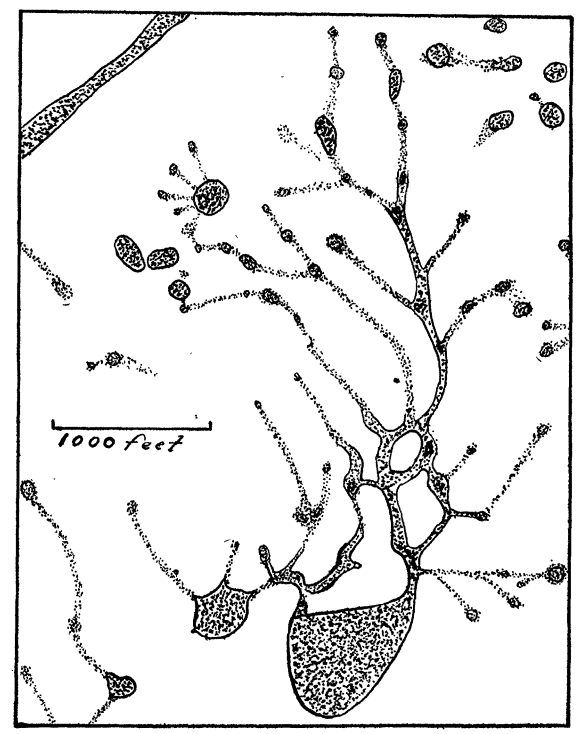

FIG. 2. Sketch made from an aerial photograph illustrating a branching arrangement of sink-holes in southeastern New Mexico. The shaded areas represent surfaces of dark soil.

a connected system, or as it flowed along branching valleys buried beneath the porous Tertiary beds. The available facts are inadequate to test these two alternatives. The writer has seen similar branching patterns in Florida; linear patterns formed by a series of parallel lines, however, are rare in that state as well as in the Mammoth Cave district of Kentucky.

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