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FLOOD OF JUNE 9, 1957, AT PERRY, FLORIDA

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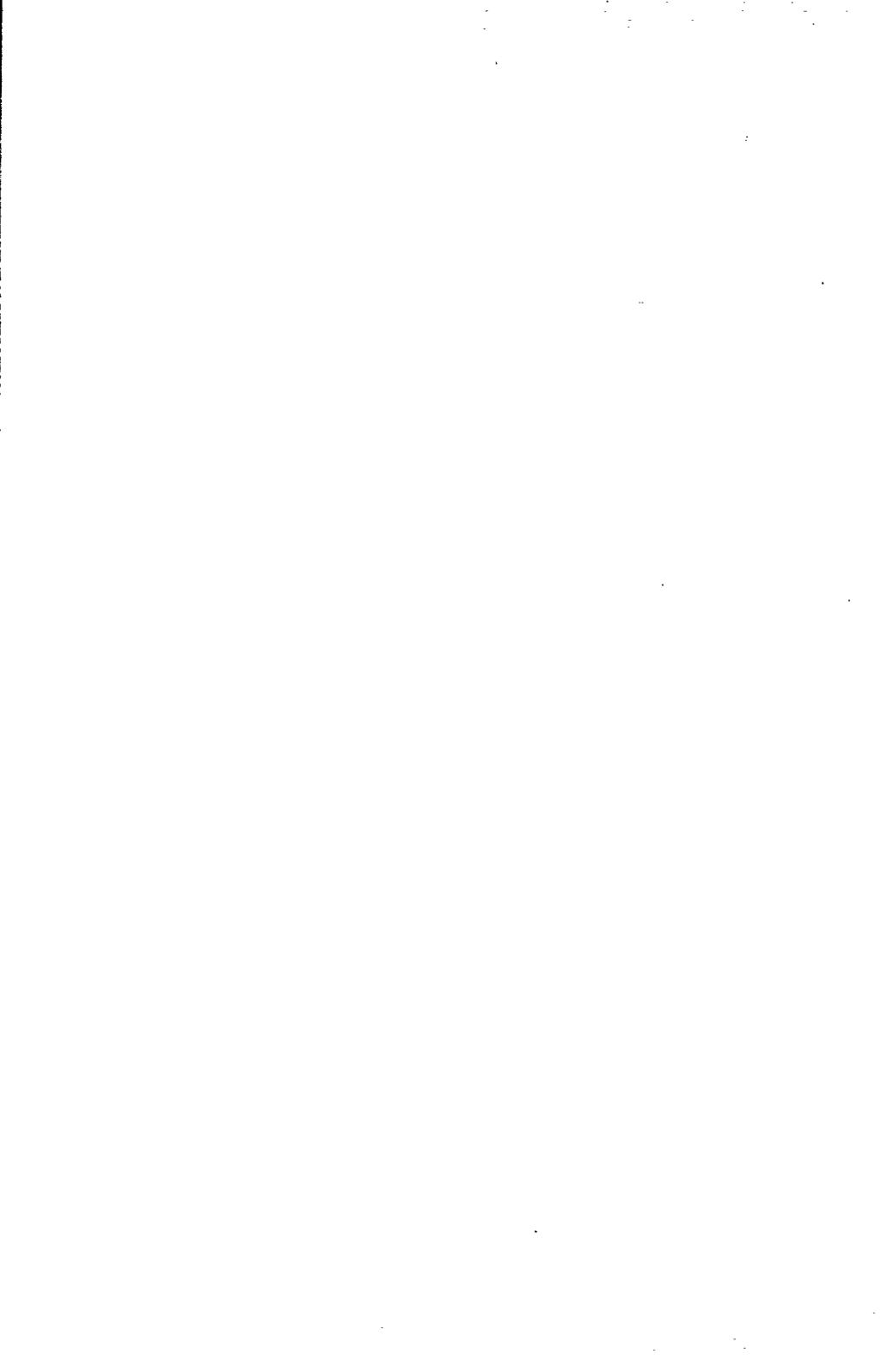


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INTRODUCTION

Floods occurred on streams in the vicinity of Perry, Taylor County, Florida, on June 9, 1957, as a result of heavy rains from a tropical disturbance. Serious flooding occurred in Perry along Spring and Pimple creeks as outlined by the shaded area in figure 1, requiring the evacuation of about 200 families from the lowland area. No loss of life was reported. The damages to residential and commercial properties were estimated at several million dollars. Most of the damage was confined to residential areas (fig. 2); however, several stores in the area were damaged by flood waters (fig. 3).

This report presents data pertaining to the rainfall accompanying this storm and peak flows of Spring and Pimple creeks in Perry. It contains flood elevations at several points, and peak discharges of the two creeks flowing through Perry. The report also contains a discussion of the rainfall associated with the flood and a description of the general features of the flood.

The rainfall records were collected by the U. S. Weather Bureau and the Florida Forest Service. The Buckeye Cellulose Corporation furnished a map of the area showing the location of rainfall stations operated by the Florida Forest Service. Photographs of the flood were received from Dick Bryant, Perry, Florida.

This report was prepared in the Ocala office of the U. S. Geological Survey, Surface Water Branch, under the direct supervision of A. O. Patterson, District Engineer.

DESCRIPTION OF THE AREA

Perry is the county seat of Taylor County and is located in the Big Bend area of Florida in the coastal lowlands. This

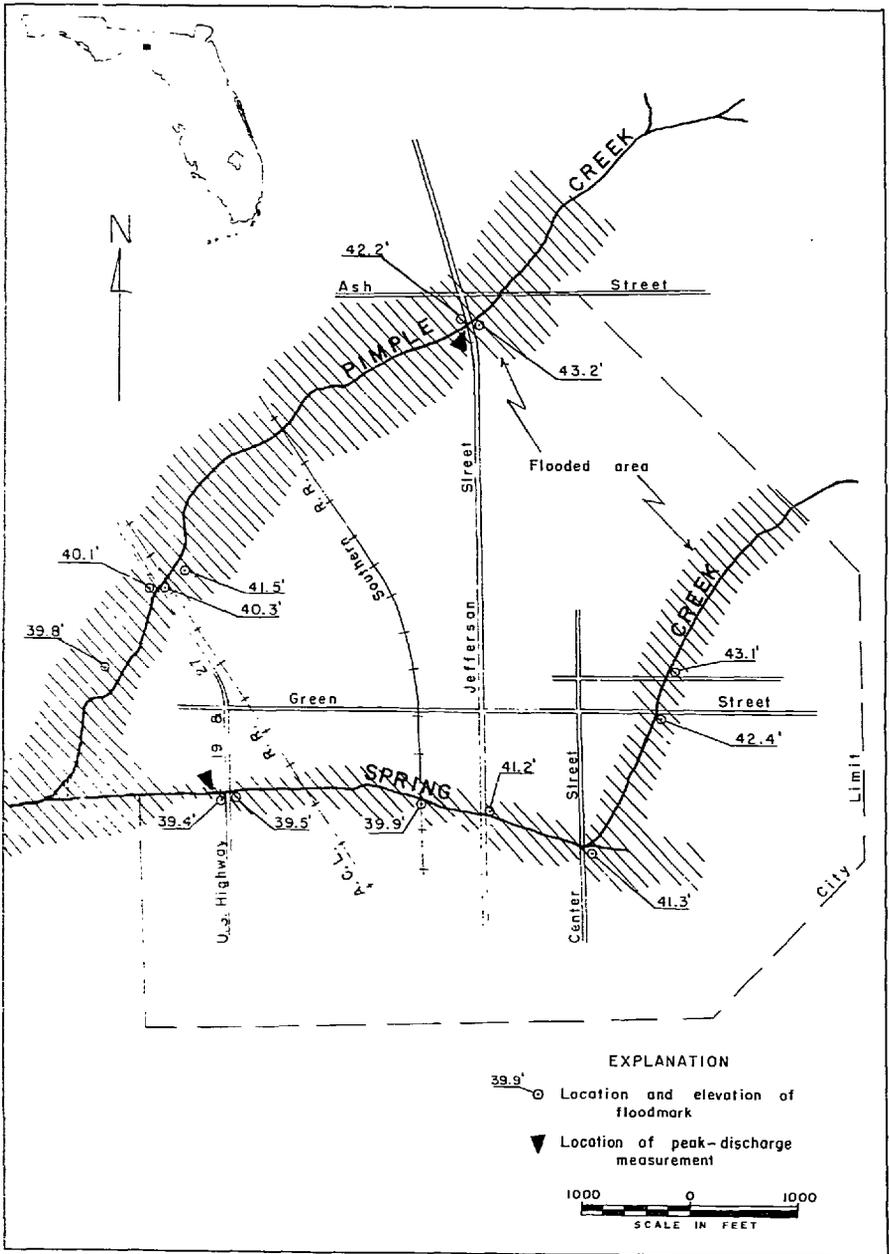


Figure 1. Map of the Spring and Pimple creeks in Perry, Florida, showing flooded area, points of peak-discharge measurement, and high-water elevations, in feet above mean sea level, for flood of June 9, 1957.

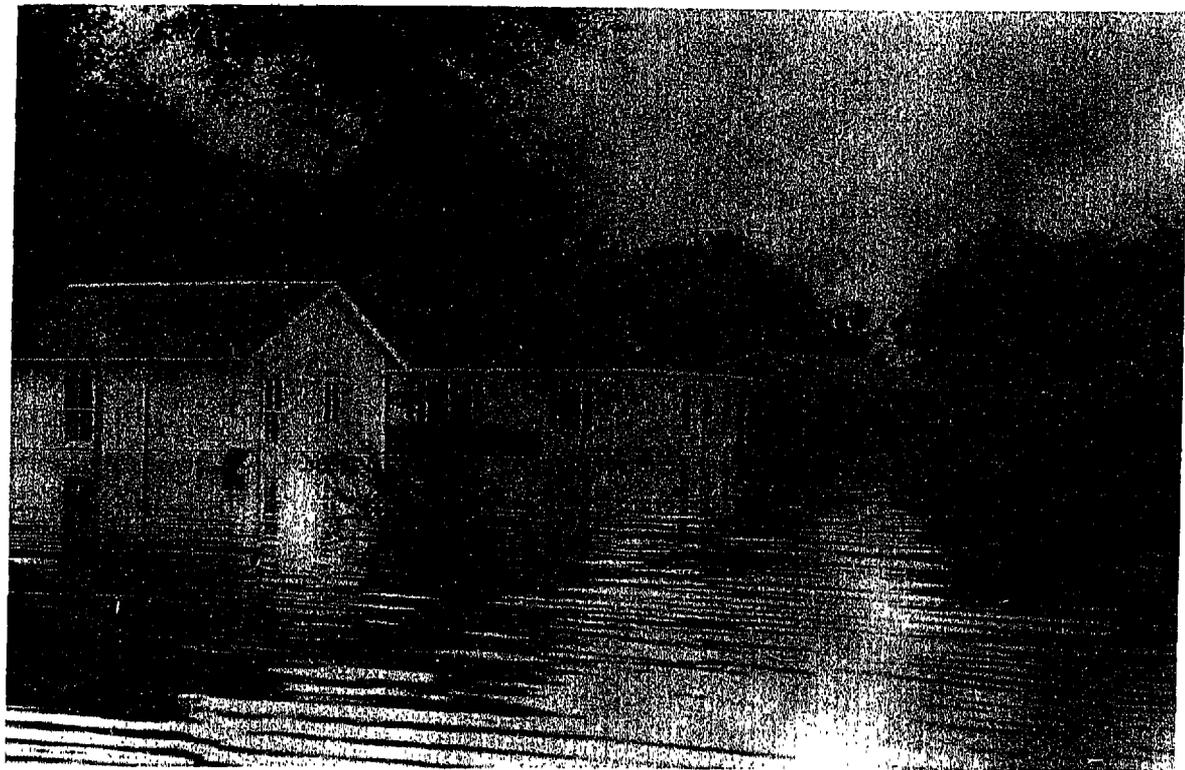


Figure 2. Flooded area in residential section in Perry, Florida, June 9, 1957. (Photo courtesy of R. M. Bryant)

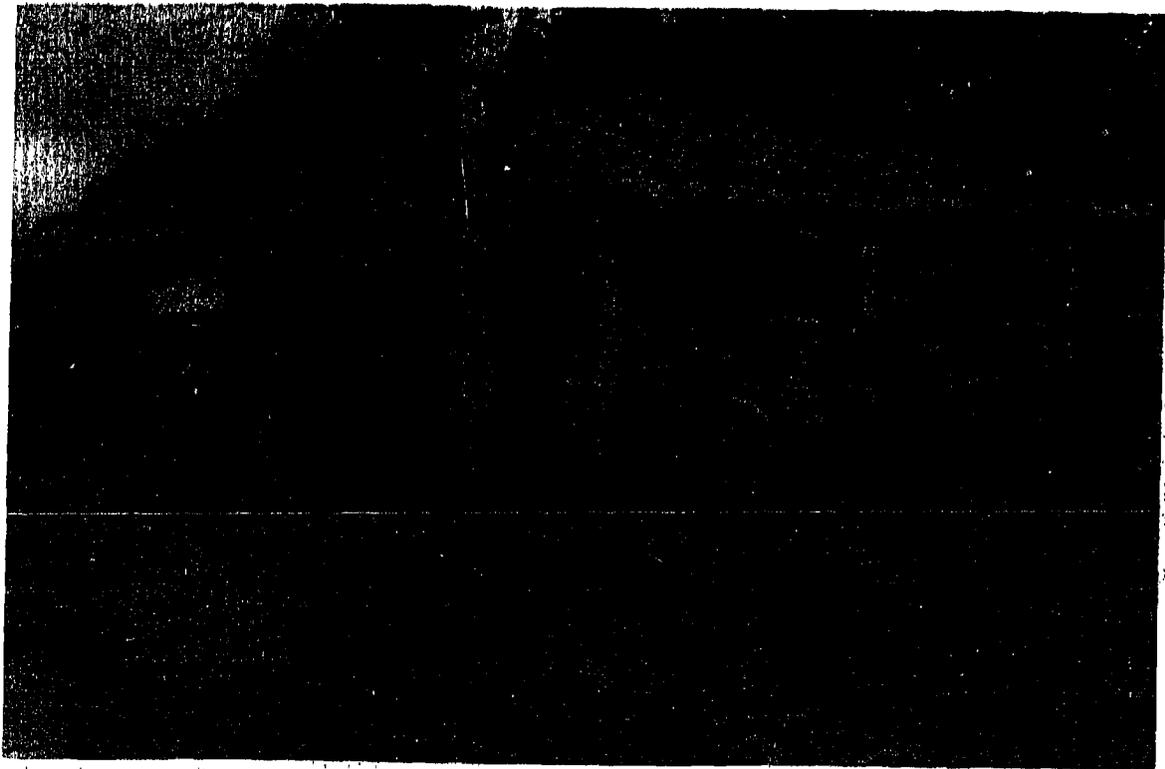


Figure 3. Flooded area along Pimple Creek in Perry, Florida, June 9, 1957. (Photo courtesy of R. M. Bryant)

area consists for the most part of nearly level plains, generally less than 100 feet above mean sea level.

The San Pedro Bay, to the northeast of Perry, is the headwaters of several streams, including Spring and Pimple creeks. This bay is heavily wooded and exceedingly flat, and is 90 to 95 feet above mean sea level. Spring and Pimple creeks both flow through Perry and join just west of town.

RAINFALL

A tropical disturbance on June 7 and 8 brought heavy rains to this area from the Gulf of Mexico. This disturbance was weak in terms of its general wind circulation but was a major storm in terms of rainfall. The recording rain gages in the area showed that the heaviest rainfall began about 6 p. m. on June 7 and lasted for a 36-hour period. Reports indicate scattered showers occurred in the area prior to June 7. The greatest amount of rain reported was at a Florida Forest Service fire tower 20 miles northeast of Perry, where 18.9 inches was measured for the 2-day period. The heaviest rainfall (over 18 inches) occurred northeast of Perry and covered an area of about 15 square miles. A total storm rainfall of 12 inches or more, covering an area of 1000 square miles, was computed from the isohyetal map (fig. 4). A total rainfall of 16.31 inches was recorded during June 1957 at the Perry station. This was the second highest monthly total of record for that station, exceeded only by 16.86 inches in June 1934. A rainfall of 11.7 inches was recorded for the 2-day period, June 7-8, 1957, at the Perry station.

Rainfall records for the storm were collected at three recording and eight daily stations operated by the U. S. Weather Bureau, and at 14 daily stations operated by the Florida Forest Service. No record from a recording gage was available for the area of heaviest rainfall. Isohyetal lines shown on the map (fig. 4) were based on all available records.

GENERAL FEATURES OF THE FLOOD

Though there are no records on file of previous floods in Perry, this flood is vividly remembered by some long-time residents as being the most outstanding. Residents of

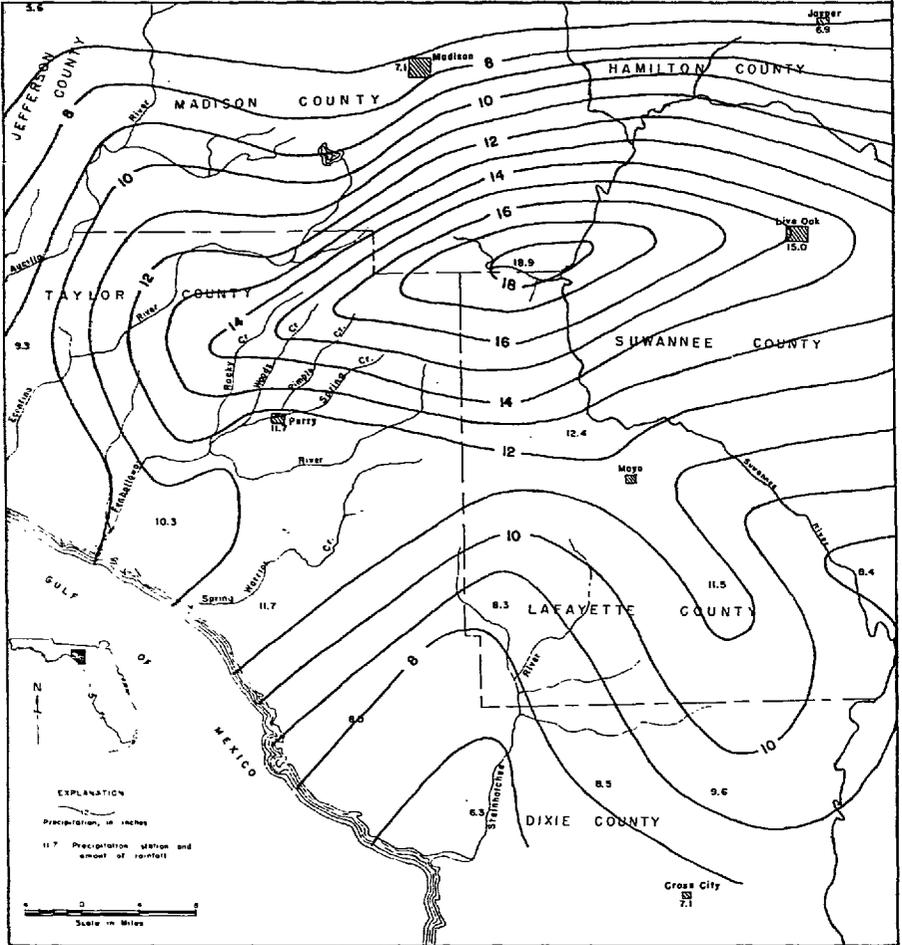


Figure 4. Isohyetal map showing total rainfall June 7-8, 1957, in the vicinity of Perry, Florida.

the area remember two previous floods of noteworthy magnitude, one in 1948, and the other, probably in 1934. The flood of June 9, 1957, is by far the most outstanding in the history of the community, in terms of damage. This area has greatly increased in population during the past few years with a consequent increase in development. Much of the recent development has been adjacent to the channels of Spring and Pimple creeks in Perry.

Spring Creek, flowing in a westerly direction through Perry, overflowed its banks, inundated several streets, and caused considerable damage to homes and business property. The flood water rose to a depth of one foot inside the supermarket and laundry just east of Center Street (fig. 5). Homes were flooded all along the creek from the northeast edge of town down through the Brooklyn area. Spring Creek reached a peak stage during the night of June 9.

Flood waters from Pimple Creek damaged homes and stores in the northern section and in the Tidewater Cypress Company area before joining Spring Creek just west of town. Several streets were flooded along Pimple Creek, and a section of the Atlantic Coast Line Railroad bridge was torn out to help relieve flooding upstream (fig. 6). Local residents at the scene reported that the flood on Pimple Creek crested about noon on June 9.

PEAK FLOWS

An indirect measurement of peak discharge was made on Spring Creek at a point downstream from U. S. Highway 19 and U. S. Highway 27 (fig. 1) where the entire flow was confined by high banks. The peak discharge of 1,360 cubic feet per second was computed by Manning's formula from data collected after the flood waters had subsided. A channel roughness (n) of 0.045 was selected for this section and a water-surface slope of 0.0011 foot per foot was measured from high-water marks. A mean velocity of 3.2 feet per second was computed for this section of channel.

Spring Creek drains an area of about 24 square miles above the point of the peak-discharge measurement. The valley slope of this stream is about seven feet per mile from



Figure 5. Flooded area along Spring Creek in Perry, Florida, June 9, 1957. (Photo courtesy of R. M. Bryant)



Figure 6. Pimple Creek at Atlantic Coast Line Railroad,
Perry, Florida, June 9, 1957. (Photo courtesy
of R. M. Bryant)

the point of origin in San Pedro Bay. The normal low-water channel ends in an area of sinkholes about a mile east of town and the creek flows only as an intermittent stream to a point near Center Street.

An indirect measurement of peak discharge was made on Pimple Creek at the North Jefferson Street crossing (fig. 1). Jefferson Street was flooded (fig. 7) to a depth of half a foot for a distance of 500 feet and a fall across the street of 1.0 foot was measured from high-water marks (fig. 8). Flow over the street was computed using U. S. Geological Survey procedures developed from Yarnell and Nagler data. Flow through the bridge opening was computed by two methods, flow-through-culvert and contracted-opening, with comparable results. The peak discharge through the bridge opening was 1,610 cubic feet per second, and over the street, 250 cubic feet per second, giving a total peak discharge of the stream of 1,860 cubic feet per second.

Pimple Creek has a drainage area of about 12 square miles above the Jefferson Street crossing. This creek flows in a more direct route from San Pedro Bay than Spring Creek, and has a valley slope of about 10 feet per mile.

The drainage system of Spring and Pimple Creeks is rather complex in that they have a common origin, San Pedro Bay. The greater unit peak discharge of Pimple Creek (155 second-feet per square mile) over Spring Creek (57 second-feet per square mile) is accounted for by the greater valley slope and the more direct route it takes from San Pedro Bay. It is also noted that the peak flood on Pimple Creek was reached some 8 to 10 hours prior to the flood on Spring Creek.

The peak discharge of either stream greatly exceeded the discharge that could be carried without danger of flooding. At the time this flood occurred, sections of these streams had a heavy growth of vegetation which reduced, to some extent, their maximum conveyance capacity.

Elevations in feet above mean sea level of high-water marks were measured at several points along the streams and are given in figure 1.



Figure 7. Flooding by Pimple Creek at intersection of Ash and Jefferson streets, Perry, Florida, June 9, 1957. (Photo courtesy of R. M. Bryant)

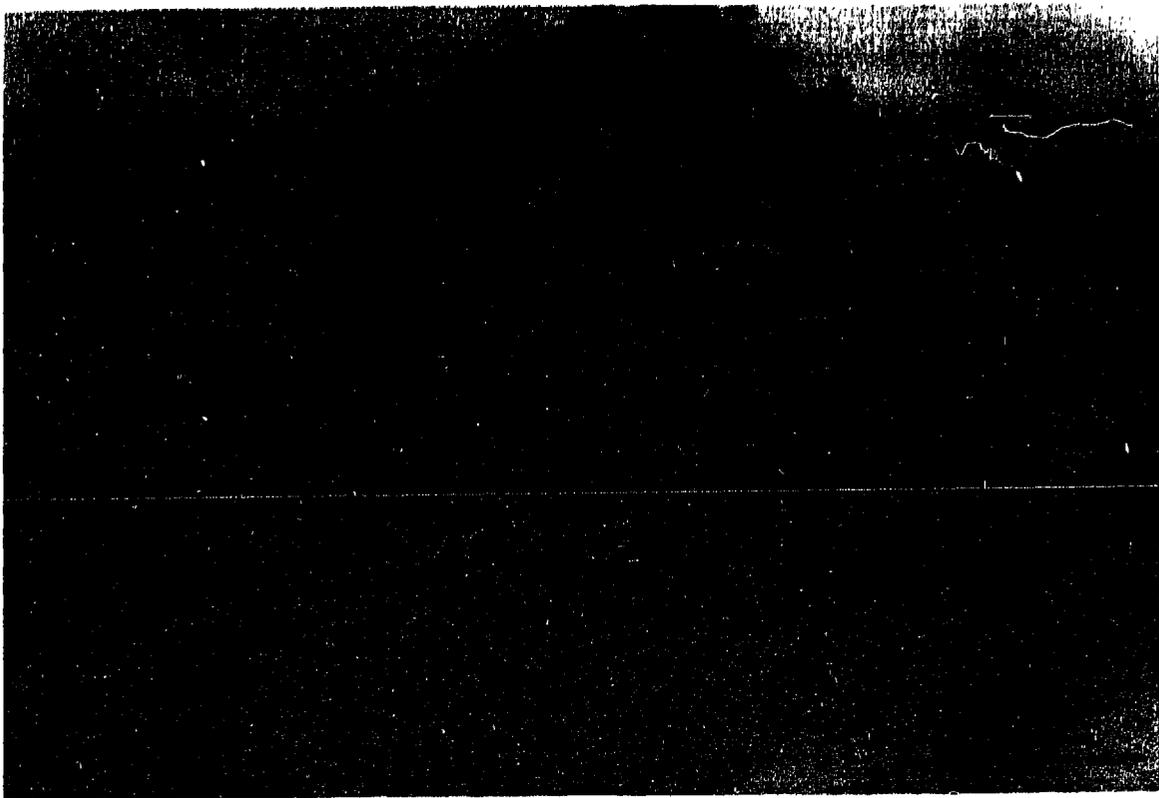


Figure 8. Pimple Creek at Jefferson Street, Perry, Florida,
June 9, 1957. (Photo courtesy of R. M. Bryant)



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