

maceration, such as the conifers. However, in places, less resistant dicotyledons have been preserved, as is shown by their occurrence in a good condition of preservation on Cape Fear River at Court House Landing. The remains of marine invertebrates are common in the upper or transitional portion of the formation, and, in the same beds, bones, coprolites, and sharks' teeth have been observed at a few places.

(For the distribution and range of the invertebrate species of the Black Creek formation, see the table opposite page 147.)

Detailed Sections.—The most complete series of exposures of the Black Creek formation are those afforded by the Cape Fear River bluffs from a point about 101 miles above Wilmington in southern Cumberland County to Jessups Landing, 56 miles above Wilmington, or possibly as far as Donohue Creek Landing, $50\frac{1}{3}$ miles above Wilmington, Bladen County. (See sketch map of Cape Fear River, Plate I, opposite p. 88.) In addition to the immediate river-bluff localities, there are a number of occurrences in Cumberland County which should be included in this series. The escarpment running north and south through Fayetteville just to the west of the Atlantic Coast Line Railroad depot furnishes a few poor exposures of Black Creek strata. The estimated thickness at this place is 30 feet. They consist of stratified or, in places, laminated sands and clays. In position they rest unconformably upon the strata of the Patuxent formation and are overlain by Pleistocene gravels and sands. The same beds are well exposed in cuts of the Atlantic Coast Line Railroad $1\frac{1}{4}$ to $2\frac{1}{4}$ miles southwest of the depot at Fayetteville. The materials at the latter place consist of irregularly bedded, white to yellow sand and light drab to black clay, with numerous thin sheets and thicker layers of ferruginous sandstone. There is one lens of black, sticky, lignitic clay several feet in thickness. They rest upon typical sands of the Patuxent formation, the exact contact, however, being somewhat obscured by talus material.

The feather edge of the formation has been observed at several places near Hope Mills in Cumberland County. Two of these occurrences have been described elsewhere. (See diagram and description of section 1 mile northeast of Hope Mills, p. 110, and description of section 1 mile south of Hope Mills, p. 111.)

A fossil plant locality in the Black Creek formation occurs on the left bank of Little Rockfish Creek about 100 yards above the Hope Mills-Fayetteville road bridge. The section is as follows: