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THREE SCENES.

The wild, bright hair of the morning streamed,
From under the dusky hood of night;
On the gleaming sand a young man stood,
By the glittering sea waves flashing bright.
The tide came steadily creeping in—
Came steadily tramping over the sand;
And over the glimmering, purple sea,
A ship sailed from the land.

It was golden noon and an older man,
By the glistening sea waves stood alone,
And the turn of the tide; 'twas ebbing out,
With a restless, angry shuddering moan.
He looked away o'er the wrinkled waves,
For a beautiful ship, with wings of white;
The sea went up, the sky came down,
And never a ship in sight.

The new moon launched her pearly boat,
From the edge of the twilight's silver shore,
And the dusky banners of night blew out
O'er the glow of the sunset's crimson door.
An old man lay, with streaming hair,
When the tide forever had left the strand;
The wreck of a ship came drifting in,
And lay on the shining sand.

—Exchange.

GEOLOGY IN NORTH CAROLINA.

Even the casual observer who travels across the State of North Carolina from its eastern shores to its western boundary will see that when he has gone about half way he passes from a region which is very level or gently undulating, and the surface of which is covered with sand and loam soils from which hard rocks are entirely absent, to another, the surface of which becomes more and more hilly until it culminates in mountains in the western portion of the State, and the soil of which is more or less mingled with the hard granite and slaty rocks from which they have been formed.

A little more traveling in this region will be sufficient to indicate that the geologic formations of the eastern half of the State, which has been designated as the Coastal Plain region, are radically different and much younger than that of the western half, embracing the Piedmont Plateau and Mountain regions. The boundary line which separates these two great geologic divisions extends from near Weidon on the north by way of Raleigh to near Wadesboro on the southwest.

In age instead of being contiguous the areas are widely separated; the formation covering the Coastal Plain being one of the most recent, while those of the Piedmont Plateau (excepting the limited red sandstone or Trias areas) being among the oldest.

The Coastal Plain region, along its eastern borders contains the sounds, bays, the sand dunes and ridges, the swamps and marshes and other characteristics of a seashore region. Further inland it is generally level, and has more of upland and less of marsh. Toward its western boundary the swamps nearly quite disappear, the upland predominates, the surface becomes undulating and even hilly in places, and soils which further eastward were composed of fine sand and silt, along the western border

of this region contains a larger proportion of coarse sand or gravel mingled with clay.

Along the banks of such rivers as the Cape Fear and Roanoke where these streams have cut down through the surface and left the high steep bluffs the material composing half a dozen geologic formations are exposed to view, the oldest the Potomac gravel, sands and clays, lying at the bottom on the irregular surface of granite and slates; cretaceous sands and clays; tertiary (eocene and miocene) marls and clays; the Lafayette yellowish and brownish sands and loams; and the Columbia sands, gravels and clays, lying one successively above the other—the last of these, the youngest of all, being on top. Along the western border of these Coastal Plain formations occasional outcrops of hard granites and

number of years, and can be worked with the equal success on the adjoining Hermitage property. Other phosphate deposits have been found in Duplin, Pender, Onslow and Brunswick counties.

In the Piedmont Plateau region, the geology is much more complex. There are, however, two narrow belts of comparatively recent rocks; triassic or red sandstone. The more eastern of these two belts extending from Oxford, in Granville county, across the State through portions of Wake, Durham, Chatham, Moore, Montgomery, Richmond and Anson counties, has a maximum width of about 15 miles. In this formation are found the coal deposits of Moore and Chatham counties and the valuable beds of red, gray and brown sandstone which are described more fully under head of coal and of building stone.

them ores of silver, lead, zinc and copper. The region is one of hills and valleys and rapid streams, along which have been developed numerous excellent water powers. Just west of this slate belt lies a belt of granite and other kindred rocks; extending across the State; having a width varying from ten to twenty miles. These rocks are also penetrated by numerous veins which carry gold bearing ores; and in some cases, especially in Guilford county, these are also highly impregnated with copper ores, and in some places this granite belt, as well as the slate belt, contains valuable deposits of iron ore. Lying west of this granite belt and extending from it to the foot hills of the Blue Ridge, is a large area, the rocks of which are of gneisses and granites, with here and there more limited belts of slate. The rocks are very old, belonging probably to the Archaean age. There are often deeply decayed, forming fertile loam soils. In some places valuable and extensive beds of granite are to be found. At intervals throughout the entire region the rocks are penetrated by quartz veins which contain in many places gold bearing ores, the more noted gold bearing areas of this region being those in eastern Catawba, about the South Mountains in Burke, McDowell and Rutherford counties, and in the west part of Caldwell county. There are also in this region valuable deposits of iron; notably those in Stokes, Gaston, Macon and Catawba counties. This region is exceedingly hilly, being penetrated by the Brushy Mountains, south of the Yadkin, and the South Mountains, south of the Catawba river.

The geology of the mountain region is perhaps fully as complicated as that of the Piedmont Plateau. Over the larger part of the region are to be found the older crystalline rocks, greatly folded and turned on their edges; and they contain at intervals valuable deposits of iron ore; notably magnetic iron ores in the region about Cranberry in Mitchell county; in Ashe and Madison counties, and in a number of places these rocks are also penetrated by veins carrying gold, silver and copper bearing ores. Along the line of the Blue Ridge and again along the line of the great Smoky Mountains are narrower belts of rocks, belonging to what has been designated the Ocoee period. The age of these is not known, though it is certain that these rocks are much younger than the slates and gneisses which have just been described. These rocks of the Ocoee formation contain also in places deposits of minerals, especially the marbles and brown iron ores of Cherokee county. In this region, as in the Piedmont Plateau, the rocks are decayed to a considerable depth, thus producing deep soils which vary in character from sandy and gravelly loam of those containing a large proportion of clay in regions where the rock itself contains large proportion of



VIEW IN PINEHURST, LOOKING TOWARD THE CAROLINA.

slates are exposed along the beds of streams where the once overlying sands and clays have been washed away, but besides these no large masses of hard rock are to be found in this region other than the limited beds of limestone which are exposed along the banks of the streams in a number of eastern counties, especially in the southern portion of the State.

In these southeastern counties, the limestone is exposed at the surface along the banks of the streams in a large number of localities, and this rock may be used for the making of lime, macadamizing roads, and in some cases it will do for building purposes. In a few places, as in the neighborhood of Castle Haynes, New Hanover county, this limestone contains numerous phosphate pebbles and over considerable areas the limestone has dissolved away and left the phosphate pebble in form of phosphate gravel, which has been worked for a

The more western of these two belts is much more limited in area, extending from the Virginia line across portions of Rockingham and Stokes counties, and having a maximum width of four or five miles.

The older crystalline rocks, (granites, gneisses and slates), extend in belts of varying width and length obliquely across the State, having a general northeast and southwest course. The most marked of these is the great slate belt which extends across from Virginia, through Person, Orange, Chatham, Randolph, Stanley, Union and adjoining counties. It has a maximum width of some forty miles; the rocks are everywhere folded or broken, and tilted; and are penetrated by numerous dikes and veins; many of the latter being impregnated with gold bearing ores. And in the western part of this slate belt, especially in Davidson and Cabarrus counties, the gold ores have associated with