

Heretofore there has been recognized at Quaco only two members of the Mesozoic system, viz., the bright red sandstones, so conspicuous on numerous cliffs along the coast, and the overlying pebble beds. A third member of this system, probably as important in volume and thickness as the two lower ones together, was recognized in our excursions along the eastern part of the shore. This member is so like the Lower Carboniferous rocks that it has heretofore been confounded with them. The proofs that it is Mesozoic are the following: 1. Its lowest bed are found to graduate by alternation of measures into the pebbly member of the heretofore recognized New Red Sandstone. 2. Its conglomerates are full of rounded fragments of dark-red shale, which in this district can have no other source than the Lower Carboniferous rocks. 3. The plant remains found in its grey sandstone layers (though poorly preserved), by the flabellate leaves with stout petioles, and the leathery strap-shaped leaves that are found, as well as by the absence of *Sigillaria*, *Lipidodendron*, and *Calamites*, appear to be a Mesozoic assemblage, and certainly are not of the ordinary Carboniferous type.

This upper member of the Red Sandstone series holds the shore from Melvin's Beach to Fown's Beach; it also appears on the shore at Berry's Beach, beyond which in going westward it passes inland; and it has a considerable width behind Quaco Village.

Our party visited the intrusive trap and manganese deposits at Quaco Head. The trap has forced its way through the red sandstones, partially altering it and discharging the red color from the sandstone for some distance from the line of contact; the trap also becomes fine grained and loses its feldspar crystals near the contact with the sandstone.

The shores at Quaco and the surface deposits there abound with pebbles derived from the pre-Cambrian volcanic rocks of the hills inland. There is the greater profusion of these because the great pebble beds of the middle member of the Mesozoic or Red Sandstone system abound with fragments from this source. At Vaughan's Creek (McComber's Beach) the pebbles of the conglomerate are mostly of purple quartzite and felsite, sometimes without any admixture of sand, so that when the calcareous cement which holds them in place weathers away, they fall to the beach in great numbers, and repeat in modern times their accumulation as beach-shingle in the Mesozoic Age.

The point of reference of the undulations. Gauge at St. John's heights of the hollows with that on this minor rising of these mines about forty minutes of level are forty minutes level is called.

The author could be expected of water between vibrations between water when to determine of this same at St. John.

With this relation to the gauge gave to his expectations a somewhat perfect the chart of the of Quaco, where Ledges, and the below Quaco, to the east), of its own, determine its dimensions than those according to the shape of this specially what the

* See American

† See Bulletin