[ELLS] PALÆOZOIC OUTLIERS IN THE OTTAWA RIVER BASIN 141

presence of a considerable percentage of iron (hematite) in its composition. Its observed thickness, on the Ottawa, is no where more than fifty to sixty feet and in places is much less. In the upper stretches of the river it is entirely wanting, the upper formations such as Calciferous, Chazy or Trenton resting upon the Laurentian. In the development of the Potsdam sandstone and the Calciferous formations, as studied at many points, no line of separation is possible, the one passing into the other by insensible gradations through the addition of calcareous matter to the siliceous beds of the lower member.

The typical Potsdam sandstone has not yet been recognized in the Ottawa River basin, much beyond the township of March or about twenty miles west of Ottawa city. At the Chats Falls and further west along the shore of the Chats Lake between Amprior and the mouth of the Bonnechère, the Calciferous forms the lowest member of the series and fills up the inequalities in the Archwan floor. It is succeeded directly by the greenish-gray shales and sandstones of the Chats Falls, properly speaking, marks the western limit of the great lower Ottawa basin, though the sedimentary beds further west, around the lower part of the Chats Lake, were probably at one time continuous. There is, however, a marked break in the levels of the deposition of the Calciferous below and above the falls ; the Chats Lake beds being at a considerably higher level than those below.

The great lower Ottawa basin is affected by several low undulations, though the inclination of the strata is at a low angle throughout the area. The lowest or Potsdam sandstone member is very regularly exposed along the western or Ontario margin, the highest members, viz., the Lorraine shales and the overlying Medina, being found nearer the northwestern angle of the basin but a short distance to the south and east of Ottawa eity.

Between the Calciferous and the Chazy a somewhat well defined change in the character of the strata is visible at various points. Thus the entire series of the former consists of limestones, somewhat siliceous, but generally highly dolomitic, with a well defined fauna. Occasionally somewhat thin arenaceous but dolomitic shales appear in the upper portion. A peculiar feature of the limestone, and one by which the formation can be readily recognized, is the presence of geodes, holding yellowish-white calc-spar, though sometimes with quartz crystals or gypsum. This peculiarity is seen in the dolomites, from the most westerly outcrop on Allumette Island in the Ottawa, as well as in the beds east of the St. Lawrence ; and as a whole the strata composing this formation present a marked uniformity in texture and composition throughout their whole extent.

ssent st to The from level mble from St. real, 10w-

fre-

one, west e of s of rom om sical verable ss is the e at able ness this sell r to awded

the of ara old illy

ing

h

he

wer

tica