

August, 1911, gave altitudes of 8.37, 7.71, 8.81, 8.97, 9.77, and 10.63 feet above high tide mark. In the hollows, well within the vertical range of storm waves, gravels are common. The ridges themselves, however, so far as they exceed the altitude reached by the present storm waves (5.65 feet above the high tide mark) appear to be of æolian origin. Passing inland across this zone of dune ridges, which on the old trail to Lake Frye consists of twelve distinct members, one finds behind them a large number of flatter ridges, formerly well clothed with forest, now to a large extent laid bare by the lumberman. As Professor Ganong has pointed out,<sup>1</sup> the crests of these inner ridges are somewhat lower than those near the shore. Herein lies what appears to be evidence of coastal subsidence. That the inner beaches are at least a few centuries old is inferred from the presence on them of bones of walrus, which were hunted here in great numbers by the early French settlers, and exterminated shortly before the close of the eighteenth century.<sup>2</sup> Professor Ganong's walrus bone locality is about half a mile in from the sea, on the outer members of the inner group of beaches. From the published descriptions one would be led to suspect that enough subsidence of the coast had taken place, in the century and a half since the slaying of the walrus, to give the crests of these old beaches a perceptibly lower altitude than the crest of the present beach.

In considering first the testimony of these walrus bones with reference to the age of the beach on which they occur, we may accept without hesitation the view that the inner beach ridges were formed prior to the close of the eighteenth century. Furthermore, the absence of such bones from the outer ridges seems to show that these have been built since the days of walrus hunting, or since the beginning of the nineteenth century. However, it is possible that the ridges which have furnished the bones are of much earlier date than the walrus hunting period, since, as Dr. John M. Clarke has pointed out to me, con-

<sup>1</sup> W. F. Ganong: On the physical geography of Miscou. Bulletin of the Natural History Society of New Brunswick, vol. 5, 1905, p. 459.

<sup>2</sup> W. F. Ganong: The walrus in New Brunswick. Bulletin of the Natural History Society of New Brunswick, vol. 5, 1903, pp. 240-241. Also, R. M. Chalmers: Geological Survey of Canada, Annual Report, 1887, Part N, p. 27.