

the one-plication shell has its one plication, and the additional plications, when formed by implantation, are almost always added outwardly towards the side of the sinus.

Third.—Among the Fifth Avenue specimens, which come from a higher horizon, there are none having no plications or one plication in the sinus. There are so few specimens from here, however, that perhaps it is hardly sufficient evidence to have much weight.

Hence, it seems only reasonable to infer that those groups with more plications, as groups, have their origins in the groups with fewer plications. In the stage of development of the *Prasopora* beds, and the *Anticosti* specimens, the groups with two and three plications apparently predominated, though in the former those with none and one still existed, and those with four and five had evidently made good headway.

*Relationship of Horizon and Plication Development.*—The 126 specimens measured and examined were collected at three different horizons. From the lowest, the base of the Trenton at Indian Lorette, there are only two specimens, both considerably worn, one having one plication in the sinus, the other two. From the *Prasopora* beds around Ottawa and Hull there are 96 specimens, and from Fifth avenue, Ottawa, a still higher horizon, there are 28 specimens. The Indian Lorette specimens are too few in number to furnish any grounds for comparison, but there are two interesting features shown by comparing the specimens from the *Prasopora* beds and those from Fifth avenue. The first has already been mentioned—the absence from the higher horizon of any specimens having no plication or one plication. The second is the much greater number of plications on the sides of the shells from Fifth avenue. Comparing similar groups of those from the *Prasopora* beds and those from Fifth avenue it is found that the Fifth Avenue specimens average smaller in length, width, height, etc., though the average ratio of length to height is the same, implying that in size at least they had reached their fullest development. The *Anticosti* species, like the Fifth avenue specimens, shows a greater number of plications upon the sides, but unlike them is in every dimension about double the