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VII.—*A Preliminary Study of the Variations of the Plications
of Parastrophia hemiplicata, Hall.*

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Parastrophia hemiplicata Hall¹ is found in great abundance in certain zones of the Trenton limestone. From several of these zones a considerable number of specimens were collected, the adults of which showed a great variation in the number of plications on the valves. A few adult specimens have a simple sinus with no plications, while the majority have from one to five in the sinus with the corresponding number on the fold. A study of them was undertaken to ascertain if possible whether all of the forms really belonged to one highly variable species, and, if so, whether any reason for their great variability could be found. For the purpose of study the shells were provisionally assorted into groups according to the number of plications in the sinus. Each variation has been considered as a group—that is the no-plication group, the one-plication group, etc. These groups so merge into one another that they can hardly be regarded as separate species, and many of the individual shells of several plications in their growth pass through some of the stages of those groups which have fewer plications.

The shells used in this study come from three divisions of the Trenton limestone—the base at Indian Lorette, Quebec, the *Prasopora* beds in the vicinity of Ottawa and Hull, and a higher horizon represented by the specimens from Fifth

¹ Pal. N. Y. vol. I, p. 144, 1847.