is no difficulty of determination. The larger size and angular cardinal extremities of \textit{S. murchisoni} are readily distinguished from the smaller size and usually rounded cardinal extremities of \textit{S. cyclopterus}.

\textit{S. murchisoni} is abundantly represented in the Port Ewen,\textsuperscript{1} Lower and Upper Oriskany.

\textbf{Summary of the preceding discussion of the Spirifers}

\textit{S. vanuxemi} may possibly, as far as external characteristics are concerned, have been derived indirectly from the western species of \textit{S. crispus} (or both from \textit{S. petilus}) and has probably given rise to \textit{S. cyclopterus}.

The young of \textit{S. cyclopterus} could hardly have become modified into \textit{S. concinnus} though they are exceedingly similar, for the finer plications of \textit{S. concinnus} are present even on the youngest shell examined.

\textit{S. cyclopterus} may probably have given rise to \textit{S. murchisoni} for though the young of all the latter examined have a less incurring of the pedicle valve than the former, yet there is an indication of a slightly increased incurring in the younger shells over the older ones. In all other respects the young are apparently similar. Hall and Clarke indicate a close relationship between the above species.\textsuperscript{2} They place them all under the \textit{S. crispus} type.

\textbf{S. arenosus} (Conrad)

One specimen from the Upper Oriskany, a mere fragment of a pedicle valve, is doubtfully referred to this species.

\textbf{S. macropleura} (Conrad)

Exceedingly abundant in the Lower New Scotland and also in the lower part of the Upper New Scotland. It is found more usually

\textsuperscript{1}The Port Ewen specimens are more or less transitional. They are like \textit{S. murchisoni} in having angular plications and a subangular sinus. They are similar to \textit{S. cyclopterus} in being usually small and having rounded cardinal extremities. The convexity of the pedicle valve is intermediate between the two species.

\textsuperscript{2}Pal. N. Y. v.8, pt2, p.19, 36.