

DEVELOPMENT AND DISTRIBUTION.

The writer does not propose here to discuss the genus *Plethopeltis* but there are one or two points which are of interest regarding the morphological development and migration of the species, *P. saratogensis*. By glancing at the diagrams it will be seen that both 1 and 2 are referred to the same species, although certain morphological features are shown to be more strongly developed in one than in the other. As has been mentioned previously, the "smooth-glabella" forms predominate in the present collection and it is reasonable to suppose that this form is also the more stable, exhibiting more specialized development. Why the type possessing glabellar furrows and ridge should have persisted may be attributed to some inhibitor which is difficult to explain at present. At first the writer was led to believe that the differences of glabellar furrows and circum-glabellar furrow was one mainly of preservation, but a more careful inspection of the material has led to the conclusion that this is not the case and that we have in the specimens collected from the Hoyt Quarries two distinct types, showing stages of gradation from the smooth to the furrowed form. In the development of the species the glabellar furrows and ridges are the first to disappear while the circum-glabellar furrow often persists into the more specialized individual.

Cushing and Rudemann (9) describe the rocks in which the species occur as follows:

"——— the Hoyt is a local phase of the upper Theresa, probably an off-shore phase———. The waters were clearer, less subject to incursions of sand. *Cryptozoon* reefs flourished as they did not in the normal Theresa, and trilobites and gastropods lived on the surface of the reefs, where we find their fossil remains to-day."

When we consider the specimens of *A. saratogensis* described by Weller (6) from New Jersey we notice here that only the "smooth glabella" forms are represented. Weller stated that: "——— glabellar furrows——— are wholly absent from the New Jersey specimens." The pygidia associated with the New Jersey specimens do not entirely agree with the description of that portion of the animal as it occurs at Saratoga, the transverse furrows being much less conspicuous. Notwithstanding these differences the specific identity of the specimens from these two localities can hardly be questioned. Most of the specimens observed are smaller than the one illustrated, some of them being less than 5 m/m. in length. The writer also found a large number of small individuals amongst the specimens from the Hoyt Quarry, but these were not measured for obvious