Fig. 2. A diagrammatic east-west cross-section of the Middle and Upper Devonian of southern New York, showing the relations of *Tropidoleptus carinatus* to the western faunas during Portage and Chemung time. Total thickness of the section is about 2,700 feet.

The presence of a recurrent Hamilton species like *Tropidoleptus carinatus* in the Chemung fauna of southern New York involves its withdrawal from at least the major part of the New York area at the end of Hamilton sedimentation to some part of the sea furnishing a more congenial environment than that which accompanied Genesee and Portage sedimentation. In the newly adopted habitat, or in a small portion of the old one, it found a haven where those conditions of the Hamilton sea which were essential to its life were maintained throughout Genesee and Portage time. With the initiation of Chemung sedimentation *T. carinatus* extended its habitat back again over a part of the area which it had previously occupied, as shown in fig. 2.

These recurrent faunas furnish convincing evidence of the existence during the Palaeozoic of distinct faunal provinces. It seems safe to conclude that the recurrence of a fauna has been due to the oscillation or migration of the factors which conditioned its geographic distribution.

Palaeogeography is a field of knowledge to the extension of which the collection of fossils contributes most important data Collections which will contribute most to this subject are those concerning which the collector has supplied, in addition to the data already mentioned under methods of collecting, complete data regarding the physical features of the rocks in which they are found. This physical data should indicate very fully the nature of the sediments associated with individual faunules, as to composition, texture, hardness and colour. The collector should note the character of the lamination, whether in thin or thick sheets or variable, and whether uniform or alternating composition characterizes the beds. The presence or absence of cross bedding, ripple marks, current marks and