

divisions of the group of air-breathing snails (*Pulmonifera*), the Operculate, or those with a movable plate to close the mouth of the shell, and the Inoperculate, or those that are destitute of any such shelly lid or operculum to close the shell, the first has been traced no farther back than the Eocene. The second or inoperculate division, includes some genera that are aquatic and some that are terrestrial. Of the aquatic genera no representatives are known in formations older than the Wealden and Purbeck, and these only in Europe. The terrestrial group, or the family of the *Helicidæ*, which, singularly enough, is that which diverges farthest from the ordinary gill-bearing Gasteropods, is the one which has been traced farthest back, and includes the Palæozoic species. It is further remarkable that a very great gap exists in the geological history of this family. No species are known between the Carboniferous and the early Tertiary, though in the intervening formations there are many fresh-water and estuarine deposits in which such remains might be expected to occur. There is perhaps no reason to doubt the continuance of the *Helicidæ* through this long portion of geological time, though it is probable that during the interval the family did not increase much in the numbers of its species, more especially as it seems certain that it has its culmination in the modern period, where it is represented by very many and large species, which are dispersed over nearly all parts of our continents.

The mode of occurrence of the Palæozoic *Pulmonifera* in the few localities where they have been found is characteristic. The earliest known species, *Pupa vetusta*, was found, as already stated, in the material filling the once hollow stem of a *Sigillaria* at the South Joggins in Nova Scotia, and many additional specimens have subsequently been obtained from similar repositories in the same locality, where they are associated with bones of *Batrachians* and remains of *Millipedes*. Other specimens, and also the species *Zonites priscus*, have