

of development: 1. The early larval stage—non-agnostiform—when it possessed about 1–3 somites; 2. The later larval stage—agnostiform—when it had about 4–5 somites; 3. The adult condition, when it had about 6–7 somites, and the three main lobes of the rachis were developed with 4–5 somites in the posterior of the three.

The above remarks are based wholly upon the three types of Agnosti that appeared in Europe and America simultaneously in the first sub-fauna of Paradoxides. To us the special features of the other two sections of the genus are of less moment, as they appear to be simply a progressive effacement of those that are found in the earlier types; and it is in accordance with this that they appeared later in time, the Parvifrontes in the third sub-fauna of Paradoxides, the Lævigati scarcely before the fourth, while these latter culminated in the sixth, seeing that the beds are called the zone of *Agnostus lævigatus*.

In these later types of the Paradoxides beds both the glabella and the rachis are effaced, so that scarcely any means remain of distinguishing the heads from the tails in these smooth tests. Nevertheless it is not such aberrant types that carry on the genus Agnostus to a later time, but modifications, more direct, of the primitive types; for though the Regii disappeared from the stage of life in the early Cambrian time, Fallaces and Longifrontes survived in the Ordovician seas, and the former lived on to its close. Thus this type which was the most abundant when the Agnosti appeared in the seas of Sweden, Wales and eastern Canada was the last to disappear when the genus was finally extinguished at the close of Ordovician time.

Tullberg, in his classical memoir on the genus Agnostus,* divides it into four groups, distinguished by well marked and easily recognized characters.† The arrangement is such as to greatly aid in determining the species of this large genus, so characteristic of all parts of the Cambrian from the Olenellus zone upward. The greatest development of the genus is in the Paradoxides zone, and especially the upper part.

The following are Tullberg's sections:

Longifrontes. "Distinguished by a manifest extension of the glabella and rachis, which commonly is rather long. Test sometimes smooth, sometimes the cheeks are furrowed, sometimes the test both on the cheeks and pygidium is studded with elevated points. The marginal fold is generally narrow. The cheeks in

*Om Agnostus arterna i de Cambriska aflagringarne vid Andrarum. S. A. Tullberg, Stockholm, 1880.

†It may also with propriety be divided into five sections as the Limbat contains two very distinct types.