Norwegian rocks, and to determine which are of pre-Cambrian and which of Palæozoic age. Dr. Reusch, summing up what is known regarding the distribution of fossils among these strata, believes that a more or less continuous belt of Cambrian and Silurian rocks, usually in an extremely metamorphosed condition, can be traced along the axis of the Scandinavian peninsula from near Stavanger to the North Cape.⁴⁹ That in this region there were gigantic terrestrial movements with concomitant faults, over-thrusts and metamorphism after Lower Silurian times, is abundantly evident. In southern Norway and in Sweden enormous masses of crystalline schists actually overlie the oldest fossiliferous rocks, as will be described in later pages.

In the east and south of Norway a thick mass of reddish and grayish felspathic sandstone, known there as Sparagmite, intervenes between the oldest gneisses (Urberget) and the base of the Cambrian series. It is associated with quartzite and shales, and sometimes becomes strongly conglomeratic. It recalls the Torridon sandstone of Scotland. Probably a large mass of strata, belonging to distinct geographical periods, has been grouped together under the common name of sparagmite. The older sparagmite which underlies the Olenellus-zone is probably pre-Cambrian. In western and northern Norway, where the crushing and metamorphism have been so intense, the sparagmite is not recognizable, though it may in an altered condition extend through these regions.

In southern and central Sweden three or four groups of stratified formations, attaining a united thickness of many thousand feet, have been recognized as intermediate between the old gneiss and the lowest portions of the Cambrian system. Their relations to each other have not been very satisfactorily determined, some of them having only a local development. They are distinguished by the following names:

Visingsö group.—Sandstones, red and green shales, limestone and conglomerates. 300 metres. Visingsö on Lake Wettern.

Almesakra group (near Lake Wettern) and Dala Sandstone.—Red and white sandstones and quartzites, sparagmite, red shales and rarely limestone. The Dala Sandstone is believed by Törnebohm to spread over an area of 7150 square kilometres. It attains a thickness of sometimes nearly 900 metres, and contains in the south two well-marked sheets of diabase.

⁴⁹ See his sketch-map of Norway and Finland (Geologisk Kart over de Skandinaviske Lande og Finland). Christiania, 1890.