

tersburg,\* by our eminent associate Ehrenberg. He has described and figured † four genera and ten species of microscopic Pteropods, one of which he names *Panderella Silurica*, the generic name being in honour of the distinguished Russian palæontologist Pander, who collected them. It is well to remark, that as the very grains of the Lower Silurian green sand seem to be in great part to be made up of these minute organisms, so we recognize, in one of the oldest strata in which animal life has been detected, organisms of the same nature as, and not less abundant than those which constitute the deep sea bottoms of the existing Mediterranean and other seas.

"Before I quit the consideration of the older palæozoic rocks I must remind you that it is through the discovery, by Mr. C. Peach of certain fossils of Lower Silurian age in the limestones of Sutherland, combined with the order of the strata observed in the year 1827 by Professor Sedgwick and myself, that the true age of the largest and overlying masses of crystalline rocks of the Highlands have been fixed. The fossils of the Sutherland limestone are not, indeed, strictly those of the Lower Silurian of England and Wales, but are analogous to those of the Calcareous sand-rock of North-America. The *Maclurea* is indeed known in the Silurian limestone of the south of Scotland; but the *Ophileta* and other forms are not found until we reach the horizon of North America. Now, these fossils refer the zone of the Highland limestone and associated quartz rocks to that portion of the lower Silurian which forms the natural base of the Trenton series of North America, or the lower part of the Llandeilo formation of Britain. The intermediate formation—the '*Lingula flags*' or *zone primordiale* of Bohemia—having no representative in the North-western Highlands, there is necessarily a complete unconformity between the fossil-bearing crystalline limestones and quartz rocks with the *Maclurea*, *Murchisonia*, *Ophileta*, *Orthis*, *Orthoceratites*, &c., and those Cambrian rocks on which they rest.

"A great revolution in the ideas of many an old geologist, including myself, has thus been effected. Strengthened and confirmed as my view has been by the concordant testimony of Ramsay, Harkness, Geikie, James and others, I have had no hesitation in considering a very large portion of the crystalline strata of

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\* See "Russia and the Ural Mountains."

† Monats-Bericht der Königl. der Wiss. Berlin, April 18, 1861.