

site, occur in beds intimately associated with foliated rocks (Norway), and may be metamorphic products (perhaps altered fine sediments) due to the same series of changes that gave rise to the crystalline schists among which they lie.<sup>224</sup>

**Adinole** (Adinole-schist)—a rock externally resembling the last, but distinguished from it by its greater fusibility. It is an intimate mixture of quartz and albite, containing about ten per cent of soda. It is a product of alteration, being found among the altered Carboniferous shales around the eruptive diabases of the Harz, in the altered Devonian rocks of the Taunus, and in the altered Cambrian rocks of South Wales.<sup>225</sup>

**Porphyroid**—a name bestowed upon certain rocks composed of a felsite-like ground-mass which has assumed a more or less schistose structure from the development of micaceous scales, and which contains porphyritically scattered crystals of felspar and quartz. The felspar is either orthoclase or albite, and may be obtained in tolerably perfect crystals. The quartz occasionally presents doubly terminated pyramids. The micaceous mineral may be paragonite or sericite. Porphyroid occurs in circumstances which suggest considerable mechanical deformation, as among the schistose rocks of Saxony,<sup>226</sup> in the Palæozoic area of the Ardennes,<sup>227</sup> as well as in Westphalia and other parts of Europe.<sup>228</sup> Some porphyroids are probably sheared forms of quartz-porphry, felsite, or some similar rock; others may be more of the nature of tuffs.

11. QUARTZ- AND TOURMALINE-ROCKS.—**Tourmaline-schist** (Schorl-schist, schorl-rock), a blackish, finely granular, quartzose rock with abundant granules and needles of black tourmaline (schorl), which occurs as one of the products of contact-metamorphism in the neighborhood of some granites (Cornwall).

12. QUARTZ- AND MICA-ROCKS.—**Mica-schist** (Mica-slate, Glimmerschiefer), a schistose aggregate of quartz and mica,

<sup>224</sup> For analyses see H. Santesson, "Kemiska Bergsartanalyser," 8vo, Stockholm, 1877.

<sup>225</sup> Lossen, Zeitsch. Deutsch. Geol. Gesel. xix. (1867), p. 573. See also Quart. Journ. Geol. Soc. xxxix. (1883), pp. 302, 320. Rosenbusch, "Mikroskopische Physiographie," ii. p. 235. F. Posepny, Tschermak's Mineral. Mitth. x. 175.

<sup>226</sup> Rothpletz, Geol. Survey Saxony, Explanation of Section Rochlitz.

<sup>227</sup> De la Vallée Poussin and Renard, Mem. Couronnées Acad. Roy. Belg. 1876, p. 85.

<sup>228</sup> Lossen, Sitz. Gesellsch. Naturf. Freunde, 1883, No. 9.