the Altai Mountains, and at Las Trincheras, on the slope of the littoral chain of Caraccas,* I have seen granite divided into ledges, owing probably to a similar contraction, although the divisions appeared to penetrate far into the interior. Further to the south of Lake Kolivan, toward the boundaries of the Chinese province Ili (between Buchtarminsk and the River Narym), the formation of the erupted rock, in which there is no gneiss, is more remarkable than I ever observed in any other part of the earth. The granite, which is always covered with scales and characterized by tabular divisions, rises in the steppes, either in small hemispherical eminences, scarcely six or eight feet in height, or like basalt, in mounds, terminating on either side of their bases in narrow streams.† At the cataracts of the Orinoco, as well as in the district of the Fichtelgebirge (Seissen), in Galicia, and between the Pacific and the highlands of Mexico (on the Papagallo), I have seen granite in large, flattened spherical masses, which could be divided, like basalt, into concentric layers. In the valley of Irtysch, between Buchtarminsk and Ustkamenogorsk, granite covers transition slate for a space of four miles,‡ penetrating into it from above in narrow, variously ramified, wedge-like veins. I have only instanced these peculiarities in order to designate the individual character of one of the most generally diffused erupted rocks. As granite is superposed on slate in Siberia and in the Département de Finisterre (Isle de Mihau), so it covers the Jura limestone in the mountains of Oisons (Fermonts), and syenite, and indirectly also chalk, in Saxony, near Weinböhla.§ Near Mursinsk, in the Uralian district, granite is of a drusous character, and here the pores, like the fissures and cavities of recent volcanic products, inclose many kinds of magnificent crystals, especially beryls and topazes.

2. *Quartzose porphyry* is often found in the relation of veins to other rocks. The base is generally a finely granular mixture of the same elements which occur in the larger im-

* Humboldt, *Relation Historique*, t. ii., p. 99.

† See the sketch of Biri-tau, which I took from the south side, where the Kirghis tents stood, and which is given in Rose's *Reise*, bd. i., s. 584. On spheres of granite scaling off concentrically, see my *Relat. Hist.*, t. ii., p. 497, and *Essai Géogn. sur les Gisement des Roches*, p. 78.

‡ Humboldt, *Asie Centrale*, t. i., p. 299–311, and the drawings in Rose's *Reise*, bd. i., s. 611, in which we see the curvature in the layers of granite which Leop. von Buch has pointed out as characteristic.

§ This remarkable superposition was first described by Weiss in Karsten's *Archiv für Bergbau und Hüttenwesen*, bd. xvi., 1827, s. 5.