

I. CO-ORDINATE FORMATIONS OF GRANITE, GNEISS, AND MICA-SLATE.—There are countries (in France, the vicinity of Lyons; in Germany, Freiberg, Naundorf) where the formations of granite and gneiss are extremely distinct; there are others, on the contrary, where the geologic limits between those formations are slightly marked, and where granite, gneiss, and mica-slate appear to alternate by layers, or pass often from one to the other. These alternations and transitions appeared to me less common in the littoral Cordillera of Venezuela than in the Sierra Parime. We recognise successively, in the former of these two systems of mountains, above all in the chain nearest the coast, as predominating rocks from west to east, granite (long. 70° — 71°), gneiss (long. $68\frac{1}{2}^{\circ}$ — 70°), and mica-slate (long. $65\frac{3}{4}^{\circ}$ — $66\frac{1}{2}^{\circ}$); but considering altogether the geologic consti-

porphyries issue (like the trachytes of the Andes), in domes from the bosom of intermediary rocks. Porphyritic breccias, which envelope the quartzose porphyries. (*b*) Zechstein or Alpine limestone, with marly, bituminous slate, fetid limestone, and variegated gypsum (*Productus aculeatus*). (*c*) Variegated sandstone (bunter sandstein) with frequent beds of limestone; false oolites; the upper beds are of variegated marl, often muriatiferous (red marl, salzthon), with hydrated gypsum and fetid limestone. The gem-salt oscillates from zechstein to muschelkalk. (*d*) Limestone of Göttingen or muschelkalk, alternating towards the top with white sandstone or brittle sandstein. (*Ammonitis nodosus*, *encrinites*, *Mytilus socialis*): clayey marl is found at the two extremities of muschelkalk. (*e*) White sandstone, brittle sandstein, alternating with lias, or limestone with graphites; a quantity of dicotyledonous mixed with monocotyledonous plants. (*f*) Jura limestone of complex formation; a quantity of sandy intercalated marl. We most frequently observe, counting from below upwards; lias (marly limestone with gryphites), oolites, limestone with polypi, slaty limestone with fish, crustacea, and globules of oxide of iron (*Amonites planulatus*, *Gryphæa arcuata*). (*g*) Secondary sandstone with lignites; iron sand; Wealden clay; greensand, or green sandstone; (*h*) Chlorite; tufted and white chalk; (planerkalk, limestone of Verona.)

IV. Tertiary strata, showing a much smaller number of dicotyledonous plants. (*a*) Clay and tertiary sandstone with lignites; plastic clay; molasse, and nagelfühe, sometimes alternating, where chalk is wanting, with the last beds of Jura limestone; amber. (*b*) Limestone of Paris or coarse limestone, limestone with circles, limestone of Bolca, limestone of London, sandy limestone of Bognor; lignites. (*c*) Silicious limestone, and gypsum with fossil bones alternating with marl. (*d*) Sandstone of Fontainebleau. (*e*) Lacustrine soil with porous millstone grit. (*e*) Alluvial deposits.