

recent sandstone\*, and lastly, sometimes in a gypsum† posterior to the chalk.

The new salt-works of Araya have five reservoirs, or pits, the largest of which have two thousand three hundred square toises surface. Their mean depth is eight inches. Use is made both of the rain-water, which by filtration collects at the lowest part of the plain, and of the water of the sea, which enters by canals, or *martellières*, when the flood-tide is favoured by the winds. The situation of these new salt-works is less advantageous than that of the lagoon. The waters which fall into the latter pass over steeper slopes, washing a greater extent of ground.

The earth already lixivated is never carried away here, as it is from time to time in the island of Margareta; nor have

\* At Punta Araya.

† Gypsum of the third formation among the secondary gypsums. The first formation contains the gypsum in which are found the brine-springs of Thuringia, and which is placed either in the Alpine limestone or zechstein, to which it essentially belongs (Freiesleben, *Geognost. Arbeiten*, tom. ii. p. 131), or between the zechstein and the limestone of the Jura, or between the zechstein and the new sandstone. It is the ancient gypsum of secondary formation of Werner's school (*älterer flözgyps*), which we almost preferably call muriatiferous gypsum. The second formation is composed of fibrous gypsum, placed either in the molasse or new sandstone, or between this and the upper limestone. It abounds in common clay, which differs essentially from the salzthon or muriatiferous clay. The third formation of gypsum is more recent than chalk. To this belongs the *bony gypsum of Paris*; and, as appears from the researches of Mr. Steffens (*Geogn. Aufsätze*, 1810, p. 142), the gypsum of Segeberg, in Holstein, in which sal-gem is sometimes disseminated in very small nests (*Jenaische Litteratur-Zeitung*, 1813, p. 100). The gypsum of Paris, lying between a cerite limestone, which covers chalk and a sandstone without shells, is distinguished by fossil bones of quadrupeds, while the Segeberg and Lunebourg gypsums, the position of which is more uncertain, are characterized by the boracits which they contain. Two other formations, far anterior to the three we have just mentioned, are the transition gypsum (*übergangsgyps*) of Aigle, and the primitive gypsum (*urgyps*) of the valley of Canaria, near Airolo. I flatter myself that I may render some service to those geologists who prefer the knowledge of positive facts to speculation on the origin of things, by furnishing them with materials from which they may generalize their ideas on the formation of rocks in both hemispheres. The relative antiquity of the formations is the principal object of a science which is to render us acquainted with the structure of the globe; that is to say, the nature of the strata which constitute the crust of our planet.