then remain nearly of the same form and volume they had when they fell on the surface of the glacier; but it is otherwise with blocks and fragments enclosed between the rock and the glacier, whether it be at the bottom or between the glacier and its lateral walls. Some of these, under the powerful and continuous action of this gigantic grinding process, will be reduced to an impalpable mud, others are worn into facets, while others are rounded, presenting a multitude of scratches crossing each other in all directions. These scratched pebbles are of great importance in studying the extent of ancient glaciers; they testify, on the spot, to the existence of pre-existing glaciers which shaped, ground, and striated the pebbles, which water does not; on the contrary, in the latter, they become polished and rounded, and even natural striations are effaced.

Thus, huge blocks transported to great distances from their true geological beds, that is, *erratic blocks*, to use the proper technical term, rounded (*moutonnées*), polished, and scratched surfaces, *moraines;* finally, pebbles, ground, polished, rounded, or worn into smooth surfaces, are all physical effects of glaciers in motion, and their presence alone affords sufficient proof to the naturalist that a glacier formerly existed in the locality where he finds them. The reader will now comprehend how it is possible to recognise, in our days, the existence of ancient glaciers in different parts of the world. Above all, wherever we may find both *erratic blocks* and *moraines*, and observe, at the same time, indications of rocks having been polished and striated in the same direction, we may pronounce with certainty as to the existence of a glacier during geological times. Let us take some instances.

At Pravolta, in the Alps, going towards *Monte Santo-Primo*, upon a calcareous rock, we find the mass of granite represented in Fig. 196. This erratic block exists, with thousands of others, on the slopes of the mountain. It is about fifty feet long, nearly forty feet broad, and five-and-twenty in height; and all its edges and angles are perfect. Some parallel striæ occur along the neighbouring rocks. All this clearly demonstrates that a glacier existed, in former times, in this part of the Alps, where none appear at the present time. It is a glacier, then, which has transported and deposited here this enormous block, weighing nearly 2,000 tons.

In the Jura Mountains, on the hill of Fourvières, a limestone eminence at Lyons, blocks of granite are found, evidently derived from the Alps, and transported there by the Swiss glaciers. The particular mode of transport is represented theoretically in Fig. 197. A represents, for example, the summit of the Alps, B the Jura