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of flint projecting several feet. Like them, also, it exhibits a white powdery surface, and consists entirely of horizontal chalk with flints. It is 40 miles inland, its height, in some parts, exceeds 200 feet, and its base is only a few feet above the level of the Seine. It is broken, in one place, by a pyramidal mass or needle, 200 feet high, called the Roche de Pignon, which stands out about 25 feet in front of the upper portion of the main cliffs, with which it is united by a narrow ridge about 40 feet lower than its summit (see fig. 318). Like the detached



View of the Roche de Pignon, seen from the south.

rocks before mentioned at Senneville, Vatteville, and Andelys, it may be compared to those needles of chalk which occur on the coast of Normandy* (see fig. 319), as well as in the Isle of Wight and in Purbeck.



Needle and Arch of Etretat, in the chalk cliffs of Normandy. Height of Arch 100 feet. (Passy.)†

The foregoing description and drawings will show, that the evidence of certain escarpments of the chalk having been originally sea-cliffs, is far more full and satisfactory in France than in England. If it be asked why, in the interior of our own country, we meet with no ranges of precipices equally vertical and overhanging, and no isolated pillars or needles, we may reply that the greater hardness of the chalk in Normandy may, no doubt, be the chief cause of this difference. But the

* An account of these cliffs was read by the author to the British Assoc. at Glasgow, Sept. 1840.

+ Seine-Inférieure, p. 142, and pl. 6, fig. 1.

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