III.—REMARKABLE EXAMPLES OF ATMOSPHERIC EROSION OF ROCKS IN CORSICA.

By F. F. TUCKETT, F.R.G.S.

(PLATE II.)

IN the course of repeated visits to Corsica I have been much struck by the extraordinary erosion, not only of cliffs, but even more so of detached masses or boulders, from near sea-level to heights of 5,000 to 6,000 feet; and, having taken some photographs last January of specimens of the kind last referred to, I sent them to my friend Professor Bonney, who informed me that he had never met with any instances of erosion of such a peculiar and unusual character, and asked whether I could furnish him with a fragment of the rock.

Unfortunately, owing to the inaccessibility of two of the objects photographed, and my hesitation to break away any of the third ("Tête de Chien"), I was only able to send him a piece obtained from a cliff by the roadside at some distance, which had been scooped out by erosion into overhanging eaves and other curious forms; and his report on this, after having a microscopic section prepared from it, was as follows:—

"The specimen is about $4\frac{1}{2}$ in. long, 2 in. wide, and 1 in. in maximum thickness, weathered on both sides and on the blunter edge, apparently having been broken from a thin, flake-like projection such as would form the edge of one of the peculiar cavities in the photograph. The weathered surface is irregular, lumpy, and inclining to be flaky, of a dull dark-brown colour in the less prominent parts, elsewhere a pale brownish-green. The rock itself, quite close to the exterior, is a rather pale greenish-grey colour, somewhat mottled with small whiter and one or two darker patches, showing elsewhere a fibrous structure.

"Microscopic examination of a slice cut from one end, transverse to the length of the flake, proves the rock to consist largely of microlithic minerals, and to have been greatly affected by pressure—probably almost crushed. It exhibits two or three small grains of rhombic pyroxene, probably bastite; a number of small grains of augite, probably residual; a large quantity of rather minute actinolite, and perhaps a few flakes of a greenish to white mica. Some small grains, however, of a colourless, slightly flaky mineral, like bastite, but with oblique extinction, are certainly secondary, occurring somewhat after the manner of albite in certain crushed Alpine schists. Brown iron oxide is present only as an occasional staining or in granules, and sphene (possibly) in the latter condition. The rock has undergone so much secondary change that its original condition has been obliterated. I think it most probably has been a pyroxenite, with a little enstatite and possibly a few grains of olivine, allied to, but hardly to be classified with, the peridotites. It reminds me a little of some of the augite-serpentines of the Valais Alps, but in it actinolite practically takes the place of the mineral serpentine."

1. Hollow eroded dome, "Tête de Chien" (8-10 feet long).

2. Hollow eroded dome, in stream near Porto.

"Le Calanche," near Piana, west coast of Corsica.

I may add that the first specimen I saw during an ascent of Monte Rotondo was a huge boulder, or *bloc perché*, perhaps 12 to 15 feet in diameter, at a height of 5,000 to 6,000 feet on a narrow spur of the peak, the interior of which reminded me of an ant's nest in an old oak beam, and so completely was it honeycombed that I was able to penetrate into the heart of the mass, where I was practically invisible to my companion.

Can any geologist suggest a cause for this extraordinary and, both in altitude and area, widely distributed erosion? It can hardly be decomposition, for, in the specimen described above, the rock seems in good condition just beneath the outer surface, and, at any rate in some instances, the situation appears to make the action of sand very improbable. Neither Professor Bonney nor I have seen anything in the Alps at all comparable to it, nor remember to have read a description of its occurrence in other places.

NOTE.—Since writing the foregoing my attention has been drawn, through the kindness of the Editor and of Dr. C. I. Forsyth Major, F.Z.S., to a passage at pp. 127–128 of “*La Corse*,” by M. Ardouin-Dumazet, forming the 14th series of a “*Voyage en France*.” This writer very accurately and pictorially describes the extraordinary weathering or erosion of the ‘Red Granite,’ or granitoid rocks of the Calanche, but only briefly alludes to the hollowed out, bomb-like forms specially referred to by me, if indeed they may be recognized in the phrase “*La forme la plus générale de ces bizarreries est un évidemment en forme de niches*.” He also speaks of “*Des silhouettes d’animaux fantastiques*.”

As already stated, the rock from which my specimen was taken, instead of on the spot as it ought to have been, was at some distance to the south-west of the limited region of the Calanche, and, though much eroded or undercut, was probably of a different geological character from the sometimes almost spherical, bomb-like blocks such as that in the stream near Porto. I am inclined to think that the Calanche themselves are a rose or brick-coloured granite, as the writer just quoted and Joanne’s “*Guide en Corse*” state them to be.

EXPLANATION OF PLATE II.

FIG. 1.—Eroded dome, “*Tête de Chien*” (8 to 10 feet long), “*Le Calanche*,” near Piana, west coast of Corsica.

FIG. 2.—Eroded boulder in stream near Porto, west coast of Corsica.

IV. — NOTE ON THE KERATOPHYRES OF THE BREIDDEN AND BERWYN HILLS.

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IT may be of interest to note the occurrence of a somewhat rare and interesting rock, named *keratophyre*, at two easily accessible localities in a district where it has been hitherto unknown—at Moel-y-Golfa, in the Breidden Hills, and in the Berwyn Hills.

THE BREIDDEN HILLS.

Moel-y-Golfa was visited by me in 1899, and I collected a few specimens, which, however, remained unexamined until a few days