

Monograph of a Stalagmitic Cavern

found at Xaghra, Gozo, in December, 1888.

ABOUT the middle of December last, some farmers at "Xaghra," Gozo, whilst sinking a shaft in search of water, pierced through a cavern filled with stalagmitic concretions. On this discovery being reported to me a few days after, I repaired to the spot on the 29th of that month in order to inspect the object of this discovery.

The interesting cavern, just discovered, is situated on the tableland of the calcareous hill "ta Xaghra," which, facing the "Ramla" and "Marsa-el-forn" bays on the North, and the road leading from "Migiar" to "Victoria" or "Rabat" on the South, is bounded on the East by the "Ramla" valley and on the West by that of "Marsa-el-forn." This hill attains a height of very nearly 700 feet above the sea. Its extensive plateau, on which stands one of the most populous villages of Gozo, consists exclusively of the upper limestone crust, which once covered the whole surface of the islands of Malta and Gozo, and the original thickness of which was estimated by Capt. Spratt, R. N., to be over 100 ft., that depth being fully attained at some of the localities in the North and North-West parts of Malta. But in Gozo, whilst the upper limestone deposit has been washed away or weather-worn throughout the rest of the island, it has, owing to accidental or local compactness and hardness, resisted entire denudation only on the summits of eight or nine hills, of which "Xaghra" is one; though the original thickness of this deposit on these hills has been reduced to from 20 to 30 ft.

It is on the eastern cliff of the same "Xaghra" hill, towards the Ramla valley, that the stalagmitic cavern of "Caliebes,"—the vulgar, traditional "Calypso's grotto"—is situated. On its slope, towards the "Migiar" ascent, are also found the Megalithic ruins of the Gigantia.

The cavern I am about to describe, which may henceforward be designated as the "Ta Ninu Cavern," from the vulgar name of the farm where it was discovered, is about 34 yds. to the west of the Parish Church of the village. It is reached through a small country house in the street 'ta-Jannar,' at the sixth or seventh door on the left side. So far it has been found to extend under a large field planted chiefly with pricklypears, and the only access to it is obtained through a narrow steep passage from the yard of the house.

The direction of the cavern is westerly, towards the "ta Bullara" district and in the slope opposite to the hills "ta Culiata" and "ta Har-rax," at a depth of from 12 to 18 ft. below the level of the ground. The

length, measured from the bottom of the shaft and in an easterly direction, in so far as the many intervening obstacles would allow surveying, is about 80 ft. ; its width, say 60 ft. ; and the thickness of the overlying crust of rock about 6 ft. The dimensions just given represent the area to which access could, under the circumstances, and with much difficulty, be gained.

Besides the main cavern, two or three other grottos open side-ways with several lateral embranchments not yet explored. One of these lateral grottos appears to go to a considerable depth. The cavernous conformation of the place and general shape, now expanding widely and now contracting into narrow passages or tunnels, are like those generally observed in limestone rocks ; and the general arrangement of its contents is quite similar to that seen in other caverns of the same nature discovered on the continent and in the islands of the Archipelago.

The roof and the sides are thickly covered with stalactites in the form of long needles and lancets, pendent like icicles, or grouped together like festoons, garlands and boughs. Others, hanging like conical masses and pillars and pyramids of different height, nearly reach the floor of the cavern. The bottom is entirely covered with thick stalagmites mostly of mammillary, conical and pyramidal forms.

A thick pillar, nearly in the middle of the cavern, rises from the bottom to the roof which it seems to support ; rounded and irregular walls and arches of the same productions divide the space in every direction.

The stalactites are mostly of the yellowish cream colour of the overlying rock ; a few are whitish and semitransparent. Other are of fine grain, and show very clearly the rings of their stratification ; whilst others, coarsely grained, do not afford visible evidence of being stratified.

Those of recent formation are tender and friable, and show a break of a vitreous character ; those of earlier formation are very hard and compact, and apparently susceptible of being turned by the lathe and polished. I have been informed by the farmer, on whose land the cavern was discovered, that some of the thick pillars in the innermost lateral grotto ring upon being struck : very probably they are hollow cylinders of stalactite.

After much careful search, no remains of stone implements, or of animal bones, have been met with, but only a few testacea covered and cemented together with stalagmites. The entire absence of any work of art and bones, in this and in the caves hitherto explored in the two islands, may be taken as a proof that the two islands were not inhabited in prehistoric ages.

The cavern does not appear to be connected with any rent in the hill. No stream runs through it ; and there is no evidence that a current of water, at any period, has flowed there, as no alluvial matter, no muddy deposit or sand or pebbles are observable upon the floor. The process of the formation of these concretions, after many ages of undisturbed rest, is still going on with the same slowness and regularity.

In the overlying field planted with pricklypears and on the adjoining lands under cultivation, a quantity of vegetable matter is continually



STALACTITE CAVERN "TA-NINU"

DISCOVERED AT "XAQARA" GOZO -
IN DECEMBER 1888.

VIEW OF ENTRANCE.

H. W. G. 1888

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STALACTITE CAVERN "TAMINU"

DISCOVERED AT "XIGHRA" GOZO -

IN DECEMBER 1888.

VIEW LOOKING EAST.



H. W. H. W. H.

decaying. This humus, according to Liebig, acted on by moisture and air, evolves carbonic acid which is dissolved by rain.

The rain water impregnated with carbonic acid filters through the porous limestone, dissolving a portion of it. On the water dripping into the cavern, the excess of the carbonic acid evaporates and the calcareous matter adhering to the roof and sides forms the stalactite.

The quantity of drops depends on the quantity of rain which has previously fallen in the place. Two or three days before I saw the cavern, a quantity of rain had fallen in the village, so that all the infinite number of stalactites pendent from the roof had a drop attached to each. By means of ten or twelve lighted candles, placed in different parts of the cavern and at different distances, a most picturesque view was obtained, the light of the candles being refracted and exhibiting all the prismatic colours.

The two accompanying rough sketches of the cavern are by Dr. Filippo Vassallo, the Assistant Librarian.

EDUCATION OFFICE,

7th January, 1889.

A. A. CARUANA,
Director of Education.
