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XVI. *Description of the Paliorum Lacus, or Lake Palius, in the Valley of Noto in Sicily.* By M. DOLOMIEU*.

THIS small but very remarkable lake, situated at the distance of two miles west from the town of Palagonia, or of a mile from Mineo, is surrounded by volcanic mountains, and lies in a small plain somewhat hollow towards the middle. This plain is half surrounded by steep rocks, which give it the appearance of a monstrous crater, that has sunk down by some convulsion. The lake is placed in its centre, and, as it were, in the middle of a funnel. Its depth often varies, and consequently its circumference. In the winter time it may be about sixty or seventy fathoms in diameter, and about ten in depth; but in summer, when great drought prevails, it is often entirely dry. At the period when I saw it, which was in the month of May, it formed an oval about thirty fathoms in length and twenty in breadth: its depth was about five or six. It had a strong smell of Jew's pitch, or asphalt, even at a considerable distance. The water in its colour inclined a little to green, and had an exceedingly nauseous and disagreeable taste. I was told that the water was often tepid; but it had, at the time when I examined it, the temperature of the atmosphere. In several parts of it I observed a violent bubbling, and particularly in four places near the middle. This bubbling was stronger at certain intervals, and the water was thrown up sometimes to the height of two or three feet, rising in this manner every five or six minutes. There are periods when this boiling is stronger or weaker; but on these occasions no other noise is heard than that produced by the motion of the water.

When the lake is dry, one may without danger examine its centre, where there are several deep holes. From these holes currents of air, somewhat warm, continually arise, and throw back sand and other bodies if put into them. It is this æriform vapour which, when the basin is full, forces up the water as before described, and makes it to be covered

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with foam. It would, no doubt, be important to examine accurately the nature of this vapour; but though I was provided with the proper apparatus, I could not obtain my object, because I durst not venture to wade into the water in order to reach the places where the bubbling appeared, and which were at a considerable distance from the bank.

The mud at the bottom and on the bank, which has a black colour, is tenacious, and smells like pitch. A little petroleum has also been sometimes found at the surface of the water. The whole soil of the small plain consists of black, tough, resinous, inflammable earth. A few years ago some straw huts in this neighbourhood having been set on fire, the fire was communicated to the ground, which burnt with a whitish dull flame, like that of the inflammable springs in Dauphiny, during several months, and was extinguished with the greatest difficulty, as the fire, when destroyed in one place, broke out in another. Since that period great care is taken not to kindle fire in the neighbourhood. From this phenomenon I am induced to think, that the air which rises through the water of the lake, and which probably finds a passage through the ground, may be of an inflammable nature also; as the air of marshes, which burns without any noise. The fertility of this small plain is so great, that it produces a most abundant crop every year, without requiring much agricultural care. In walking over the ground a hollow noise is heard; which seems a proof of there being beneath the surface subterranean cavities, like those of Solfatara near Puzzuolo. From these circumstances there is reason to think that this place has been formed from the remains of a fallen crater, a part of which is still seen in the surrounding mountains; and between this lake and that of Agnano near Naples, there is no other difference than the greater quantity of water in the one, and the more violent efflux of vapour in the other. Some assert that the vapour of this lake is mortal; and that no bird, or other animal, can be exposed to it without being killed. The vapour also which arises from the ground is considered as of a suffocating nature, so that people who lie down on the earth, or only bend their bodies towards it, are exposed to the greatest danger; though one

may walk over it without the least fear of any pernicious consequences. All these phenomena have a great similarity to those of the Grotto del Cane, near the lake Agnano.

On the banks of the lake Palius there are found a great many small clusters of ashes and flag, exactly like those adhering to the sides of the craters of *Ætna* and *Vesuvius*. The mountains and lava around this lake exhibit the most evident marks of their great antiquity, as in many places they are covered with calcareous stones, from which it may with certainty be inferred that they must have originated at a time when the present continent was not inhabited. In the time of *Diodorus Siculus*, however, the crater, which forms the present basin of the lake, shewed traces of its internal inflammation: as we are informed by this historian, that flames burst forth from this spot; that the water possessed a considerable degree of warmth; and that a horrid thundering noise was heard. Being extremely desirous to know whether a connection actually existed between this volcano and that of *Ætna*, as they are at no great distance from each other, I enquired whether any affinity had ever been observed between the eruptions of *Ætna* and the before-described phenomena of the lake; and whether, during these eruptions, a stronger ebullition had taken place: but I was assured that no person had ever observed any thing of the kind.

The phenomena of this lake have at all times been attended with so many singularities as to give rise to fables without number: at present it is said to be inhabited by a fairy. In ancient times these phenomena were ascribed to the supernatural power and influence of some deity. On this account a very celebrated temple, the remains of which I could not find, notwithstanding all the trouble I took to discover them, was erected here to *Jupiter* and the nymph *Thalia*. People swore also by this lake, with the same respect and solemnity as by the river *Styx*. What astonished the ancients, and what even at present excites the wonder of all those who visit this lake, is the incessant ebullition of the water, though the least increase is not observed in it on the bank.

In the neighbouring mountains I found under the lava a
resinous

refinous strong-smelling substance in horizontal strata, which could be easily divided into laminæ of from one to two inches in thickness; but, in other respects, the lava of this volcano exhibits nothing but what has been seen in the other extinguished volcanoes in the neighbourhood. The Val di Noto is the only part of Sicily where traces of ancient volcanoes are found. Travellers, who imagined that they found some of the like kind in other provinces, were either mistaken, or suffered themselves to be deceived by false marks.

XVII. *Observations on the Nature of the Fog of 1783.* By M. DE LAMANON, *Correspondent of the Academy of Sciences at Paris* *.

WHEN this fog, which may be called an electric fog, began to appear, I was at Sallon de Crau, in Provence. In order to free my neighbours and countrymen from uneasiness as much as possible, I wrote a letter to M. Artaud, editor of the *Courier d'Avignon*, in which, after speaking of the nature of the fog, I said it would be destroyed by the storms that would not fail to ensue. The event fully justified this kind of prediction. Having learned from the public papers that this phenomenon was not local, but almost general throughout Europe, I made new observations, and traversed the highest Alps of Provence, Dauphiny, and Piedmont; and, during the course of my travels, collected information respecting the fog, and the effects of the thunder. But before I offer that explanation of the phenomenon, which appears to me most probable, let me endeavour to give an accurate description of it.

I. *Nature and Effects of the Electric Fog.*

1. In almost all countries the fog was preceded by a storm.
2. It began the same day at places very remote from each other; as Paris, Sallon, Turin, Padua, &c. where it appeared, for the first time, on the 18th of June. M. Senebier

From the *Journal de Physique*.

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