

# ASIATIC PAPERS

## PART II

PAPERS READ BEFORE THE  
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BY

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## *Maçoudi on Volcanoes.*

(Read 26th April 1906.)

While studying for my lecture on "Mount Vesuvius and my visit to that mountain in 1889" delivered before the Introduction. Dnyán Prasârak Society on Tuesday, the 17th instant, I looked into some of the Eastern authors, to see if they gave any description of volcanoes. In Firdousi we find no regular description of volcanoes. It is in Maçoudi that we find a description of some of the volcanoes of the world. Modern European scientific writers on the subject of volcanoes have given references to the writings of the classical authors who have alluded to the subject ; but, as far as I know, they have not referred to Maçoudi. The object of this short paper is to collect Maçoudi's references to some of the volcanoes of the world, as it may be of some interest and importance to vulcanologists to know what an Arab writer of the 10th century said of this grand phenomenon of nature.

Abou'l Hasan Ali, surnamed Maçoudi from one of his ancestors, flourished in the first half of the 10th century after Maçoudi's age. Christ. He was born in Bagdâd and travelled through Persia and India and went even to the Malay Peninsula and to the Chinese seas. He travelled also in Egypt. So, what he says of the volcanoes, especially of the Asiatic volcanoes, seems to be the result of his own observations. The book, in which he has embodied his observations and the result of his studies, is known as Maruj ul Zahab va Ma'din ul Johar (ومعادن الجواهر و مروج الذهب), *i.e.*, the Meadows of Gold and the Mines of Jewels. Maçoudi has written in Arabic and I give his description of the volcanoes from the translation of the work in French by C. Barbier de Meynard and Pavet de Courteille.

I. The first reference to volcanoes by Maçoudi is in the 16th chapter which treats of seas and their peculiarities.<sup>1</sup> He Java volcanoes. gives the following description of a mountain in the most distant parts of the islands situated in the sea of China :—

" From these mountains emanates a continuous fire, of which the flames, which are red during the day and blackish at night, rise

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<sup>1</sup> Vol. I., p. 542.

so high that they reach the clouds. These eruptions are accompanied with sounds of the most terrible thunder. Often there emanates from it a strange and frightful voice announcing the death of a king or simply of a chief according as it is more or less resonant. There are those who can distinguish this perfectly, being instructed in this matter by a long experience which never makes mistakes. These mountains form part of the large volcanoes of the earth. Not far from these is an island, in which one hears continuously the echo of the sound of drums, flutes, lutes and of every kind of instrument, of sweet and agreeable voices, and also of harmonious steps and clapping of hands. On lending an attentive ear, one distinguishes clearly all the sounds without confounding them. The mariners who have voyaged on these sea-coasts say that it is there that the Dajâl (دجال), *i.e.*, the Antichrist, has fixed his abode."

Now, which are the volcanoes that Maçoudi here refers to as being situated in the sea of China? It appears that they form the volcanoes of Java and Sumatra. Of the great volcanic lines described by Prof. Anstead in his *Physical Geography*, "the most active is," as he says, "that of Java and Sumatra, separating the China Sea from the Indian Ocean."<sup>1</sup> He adds further on, that "the islands near the Malay Peninsula, commencing with the Andaman group and the Nicobar Islands, and extending through Sumatra, into Java are all volcanic, and the volcanic force attains there the condition of intense energy. Along the whole length of Java, the volcanic mountains are so close that it is difficult to distinguish between the various groups. This is the case for at least 700 miles. In this Island, the volcanoes range from 5,000 to 13,000 feet in height above the sea."<sup>2</sup>

So, when Maçoudi speaks of the mountains in plural (جبال) and of their flames as "a continuous fire, rising so high that they reach the clouds," it seems clear that he refers to this volcanic belt of great activity in Java. He refers to this belt of volcanoes once more, as we shall see later on, in the 17th chapter,<sup>3</sup> where he speaks of the volcanic belts of the Caucasus and of the Mediterranean. There he remarks that "of all the volcanoes of the world, the most remarkable for its terrible sounds, for its whirlwinds of black smoke and for its frequent eruptions is that which lies in the kingdom of the Mahârâjâ." This is a reference to the group of volcanoes at Java and Sumatra which were then ruled over by a Mahârâjâ.

<sup>1</sup> *Physical Geography* by Prof. David T. Anstead (Fifth Edition, 1871), p. 326.

<sup>2</sup> *Ibid*, pp. 332-33.

<sup>3</sup> Maçoudi, Vol. II, p. 26.

There is one other casual reference to this group in Maçoudi which shows, that it is the volcanoes of Java to which he refers. In the 35th chapter of his book<sup>1</sup>, while speaking of the Franks (*i.e.*, the Firangis or the Europeans) he refers to the Island of Sicily and to its volcanoes, and then says, that he has elsewhere referred to the volcano of Zâbej in the China Sea (اطمه بلاد الزابجء من بحر الصين) *i.e.*, the volcano of the city of Zâbej in the sea of Sin, *i.e.*, Chin or China). Barbier de Meynard takes this Zâbej to be the same as modern Java.

Strange noises from volcanoes. There are several other points in Maçoudi's description which require observation.

1. Maçoudi speaks of the eruption of these mountains as "accompanied with sounds of the most terrible thunder." The last eruption of one of these mountains, the most terrible eruption that we have ever had in our times, was that of Krakatoa in 1883, which caused the death of about 36,000 people. The sound of that eruption was heard at a distance of about 3,000 miles.

2. Maçoudi then refers to "a strange and frightful voice announcing the death of a king or simply of a chief, according as it is more or less resonant." Superstitious effects of this kind on minds terrified to the extreme are not rare even in our times, whether in the East or in the West.

3. Maçoudi refers to "the sound of drums, flutes, lutes and of every kind of instrument, of sweet and agreeable voices and also of harmonious steps and clapping of hands." Now, all this is due to what are called "rhythmical puffs and bursts" which occur at regular intervals of a few seconds, and which are observed even in the case of the eruptions of Vesuvius as referred to by Dr. Phillips in his work on Vesuvius.<sup>2</sup> Dion Cassius, who wrote about 230 A.D., while describing the eruption of Vesuvius in 79 A.D., notes the tradition that he was acquainted with, and says "a blast, as if of trumpets, was heard."<sup>3</sup>

4. The last observation of Maçoudi, in his description of this extreme-east volcano which requires attention is the statement of the mariners, that "it is there that the Dajâl (دجال) has fixed his abode."

Volcano and Hell.

Now, who is this Dajâl? Dajâl generally means "an impostor, a liar." Barbier De Meynard translates the word as "Antichrist." So, if we assume that the mariners referred to a particular class of *dajâls* or liars, *viz.*, those who did not acknowledge Christ as Messiah, it follows that the mariners referred to were Christian seamen, who took these volcanoes to be the seat of Hell itself and thus

<sup>1</sup> Maçoudi par B. de Meynard, &c., Vol. III, p. 68.

<sup>2</sup> Vesuvius, by John Phillips, p. 145.

<sup>3</sup> *Ibid*, p. 27.

the seat of those who did not believe in the mission of Christ. This allusion then indirectly shows that in the 10th century trade flourished between the Christian countries of Europe and the sea-coast towns of China.

Now, the allusion to these volcanoes as the seat of Hell, or as the seat of the punishment of the sinful, is natural. The first impression upon my mind, when I stood at the edge of the crater of Vesuvius on 28th July 1889, and when I heard the terrible and frightful sounds from within, with the occasional showers of stone that rose from it, was that of Hell. I have noted the first impression in my note-book there and then, thus “अरे ! अवाजो, दैतयनी !” *i.e.*, “ Oh ! the sounds ! They are of Hell.”

It is possible, that many a religious writer has conceived a part of his picture of Hell from what he himself saw and heard at a volcano or from what he heard of it from others.

Mount Vesuvius, the recent eruption of which has suggested to me the subject of this paper, is even now spoken of by some as a Hell. The city of Naples, the natural beauty of which has given rise to the saying “*Vedi Napoli e poi mori,*” *i.e.*, “ See Naples and then die,” is said to be “ a paradise as seen from hell,” because we see Naples at its best from the top of Vesuvius, which in itself is, as it were, a hell.

That part of Sicily in which Mount Etna is situated is called Valle Demone, because popular tradition believed that the inside of the volcano was a region of demons.

Maçoudi says that these islands were ruled over by a Mahârâjâ. This points to the fact of the spread of Hinduism from India into the East, and of the influence of India.

II. The second important reference by Maçoudi to a set of volcanoes is in his 17th Chapter.<sup>1</sup> Here, he at first refers to the mountains of the Caucasus. Then he refers to Baku as the principal place of naphtha, especially of black naphtha, which, he says, is only found there. He then proceeds to say : “ In the land occupied by the sources of the naphtha there is a volcano or a source of fire, the eruptions of which never cease and which emits at all times jets of flames high into air. In front of this portion of the coast are situated several islands. One of them, about 3 days’ voyage from the mainland, contains a great volcano. At certain times of the year its sides roar and emit flames which rise in the air to the height of steep mountains and throw in the sea a vivid light which is seen from the mainland, from a distance of about 100 farsangs. This volcano can be compared to that of Jabel al-Bourkân ( جبل البركان ) situated

<sup>1</sup> Maçoudi par B. de Meynard, &c., II, pp. 25—27.

in Sicily which forms a part of the country of the Franks and is situated near Africa in the west. Of all the volcanoes of the world, the most remarkable for its terrible sounds, for its whirlwinds of black smoke and for its frequent eruptions is that which lies in the kingdom of the Mahârâjâ. It is necessary to place in the second rank the volcano of the valley of Barhout (برهوت) which rises not far from the country of Asfâr (اسفار) and of Hadramaut (حضر موت) in the territory of Assheher (الشحر) between Yemen and Oman. One hears it grumbling like thunder at the distance of several miles. It ejects embers as large as mountains and pieces of black rock, which, after being thrown into the air where they are seen from a great distance, fall back immediately into the crater or round about it. The embers which the volcano throws out are only the stones which have been melted into lava under the pungent action of heat."

In this long passage he refers to two belts of volcanic activity.

1. The Caucasus group. While referring to this belt, he casually refers (*a*) to the Java group already referred to, and to the volcano of Sicily, which he calls Jabal at Barkan.

2. The Arabian group, which is spoken of as the volcanoes of the Valley of Barhout near Hadramaut (Hazramaut), a province in Arabia referred to in the Genesis (Chap. X, 26).

Now, of the first group in this passage, *viz.*, the Caucasus group, Professor Ansted says: "Many of the high peaks in the Taurus chain and Mount Elburz itself, the giant of the Caucasus, are volcanic in their origin; but they certainly cannot fairly be ranked as among existing volcanoes, active in the modern period."<sup>1</sup>

Of Mount Demavend, a lofty peak of the Elbourz, Dr. Edward Hull<sup>2</sup> says: "Mount Demavend, in Persia, which rises to an elevation of 18,464 feet near the southern shore of the Caspian Sea, a volcanic mountain of the first magnitude, is now extinct or dormant."<sup>3</sup>

We said above, that it is from the volcanoes that many religious writers seem to have got their conceptions of Hell. Zoroastrian idea of Hell from a Caucasian volcano. It seems that later Zoroastrian writers seem to have taken their conception of Hell from a volcano of this Caucasus group. In the Bundesh<sup>4</sup> we read "Albourz kuf Arzur grivak chekâti pavan babâ-i-duzakhu munash hamvâr shaêdaân dvârashniya temman

<sup>1</sup> Ansted's Physical Geography, p. 330.

<sup>2</sup> Volcanoes Past and Present, by Edward Hull, (1892), p. 24.

<sup>3</sup> "This mountain was ascended in 1837 by Mr. Taylor Thomson, who found the summit covered with sulphur, and from a cone, fumes, at a high temperature, issued forth, but there was no eruption." Journal, Royal Geographical Society, Vol. VIII, p. 109. (Volcanoes Past and Present, by E. Hall, p. 24, n. 1.)

<sup>4</sup> Vide S. B. E., Vol. V., Chap. XII, 8. Vide my Bundesh, p. 38.

vādunend," *i.e.*, "The narrow summit of Arzur of the Elbourz Mountain is a summit on the gate of Hell where the demons always meet."

Now, this passage shows, that Arzura (Arezura), one of the Elbourz mountains, is considered to be the gate of Hell, the seat of the demons, *i.e.*, of the sinful. It appears, then, that one of the volcanic mountains of the Caucasus group suggested to the Zoroastrian writer his conception of Hell.

In the Vendidad,<sup>1</sup> there is a question,

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*i.e.*, which is the first place on this earth which is the most grieved? The reply is

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*i.e.*, it is the summit of Arezura. The demons and the devil run out of the pit.

Now, from what we know of volcanoes, we can clearly understand why Mount Arezura is considered to be the worst place on the surface of the earth. The suffocating stink and smoke render it so. Again, the allusion to its being the seat of demons and of the devil is clear. We shall see, later on, that Italian tradition, as noted by Dion Cassius, has pointed out Vesuvius also as a mountain from which rush forth giants and extraordinary forms.

Again, in another part of the Vendidad<sup>2</sup>, the demons are spoken of as rushing out of the Arezur with shouts. They think of carrying away Zoroaster to that place. The reference to the shouts indicates that the mountain is a volcano.

The second group in the above passage of Maçoudi, *viz.*, the Arabian group, is also referred to by Prof. Anstead as a volcanic group. He says: "Syria, the Holy Land, and Arabia, all exhibit volcanic phenomena of a very direct nature."<sup>3</sup>

III. The third long reference to volcanoes by Maçoudi is in the 35th Chapter<sup>4</sup>, entitled "The Franks and the Galiciens." The passage runs as follows :—

"The Franks possessed also the countries of Africa and Sicily. We have already spoken of these islands and in particular of the island which is known under the name of Al Borkan. It is a source of fire from which come out enflamed figures resembling bodies of men, but without

<sup>1</sup> Chapter III, 7.

<sup>2</sup> Chapter XIX, 44-45.

<sup>3</sup> Anstead's Physical Geography, p. 330.

<sup>4</sup> Maçoudi par B. de Meynard, III, pp. 67-69.

heads which rise high in the air during the night to fall back afterwards into the sea. These are stones with which they lustre and polish the paper of account books. They are light, white and assume the form of a honey-comb or the models of dinars of small diameter. This volcano is known under the name of the Volcano of Sicily. . . . . We have spoken also of all the volcanoes of the earth such as the volcano of Wadi-Berhout in Hadramaut and the country of Al Sheher ; the Volcano of Zabej of ( زابج ) (*i. e.*, Java) in the Chinese Sea ; the Volcano of Esk (Eskibun) between Fars and Ahwaz in the dependency of the city of Arrajan ( ارزجان ) which forms a part of Fars. The fires of this last volcano are seen at night from a distance of about 20 farsangs and they are well-known in all the Musalman countries. The word *atimah* ( اطمة ) means properly a source of fire which bursts out of the earth. We will not speak in this volume of hot springs of sulphur and vitriol nor of the springs of hot water from which burst out flames arising from *atimah* (volcano) in the country of Mâçabadan ( ماسبدان ) in the dependency of Arrajân and Sîrwân and known under the name of Naumân. It is an extraordinary volcano which water cannot extinguish nor fight against in any manner. So powerful is its incandescence and such vivacity have its flames that it passes for one of the wonders of the world.”

In this long passage Maçoudi refers to the following volcanoes :—

1. Etna, the volcano of Sicily.
2. The volcano of Wadi Berhout in Hadramaut and the country of Alshahar, *i. e.*, the volcanoes of the Arabian group.
3. The volcano of Java.
4. The volcano of Esk (Eskibun) between Fars and Ahwaz in the country of Pars.

We have already referred to the second and the third in the list.

Etna. The first volcanic mountain referred to here is the well-known mountain of Etna in Sicily.

The following statement in the description of this volcano attracts one's special attention. Maçoudi says : “ It is a source of fire from which come out enflamed bodies ( اجسام من النار ) resembling bodies of men but without head which rise high in the air during the night to fall back afterwards to the sea.” Maçoudi also refers to this casually in Chapter XII<sup>1</sup> where he says that this volcano throws out “ fires accompanied by bodies ” ( النار و فيها اجسام ). Compare with this the following version of the Vesuvius eruption of A.D. 79 by Dion Cassius, who wrote in about 230 A.D. He says : “ Many

<sup>1</sup> Vol. I, p. 259.



huge men, surpassing human stature, such as the giants are described to have been, appeared wandering in the air and upon the earth at one time frequenting the mountain, at another the fields and cities in its neighbourhood. . . . Some thought the giants were rising again (for many phantoms of them were seen in the smoke, and a blast as if of trumpets, was heard)."<sup>1</sup>

Thus it appears both from an Arab author and a Roman author that people thought that they saw figures of men rising from the volcanoes high into the air. Don Cassius says that they appeared to hover over cities and fields. Of course, this was due to all the fantastic shapes which the vapours emanating from the craters assumed. But these statements suggest the idea that perhaps it is from the appearance of such phantoms or fantastical shapes of vapours, added to the terrible sound from within, that the ancients thought that the volcanoes were the localities of Hells where the bodies of the sinful were burnt in suffocating flames and smoke.

Other Arab writers speak of Etna as Jabl-al-nār (جبل النار), *i.e.*, "the mountain of fire." Modern Sicilians call it 'Mongibello,' a word said to have been made up of *mon* (Italian *monte*, *i.e.*, mountain) and *gibello* (Arabic *jebal* (جبل) *i.e.*, a mountain). Thus this word, both parts of which mean a mountain, is made up partly of an Italian and partly of an Arabic word.

I do not understand why Maçoudi calls the island of Sicily and the volcano El-Borkān (البركان). At first sight, we may think that it means the mountain of 'bark,' *i.e.*, lightning. (برق). But then the word is spelt with *kaf-i-kaliman* and not *quarashat*.

The next volcano referred to in the above passage is that of Esk Volcano of Esk. (Eskibun). We do not find any special reference to this volcano in any of our books on physical geography or vulcanology. But we know that there is a band of mountains in Persia which may be called, both for its volcanic and seismic energy, an energetic band. This is a volcano of that band between Pars and Ahwaz at Ask, which is a place near Arrajan.

Lastly, Maçoudi refers to the hot springs of sulphur, vitriol and hot water in the province of Arrajan and Sirwan. Professor Anstead thus refers to this region of seismic activity. "From the Gulf of Scanderoon, by Aleppo and Mosul, to Lake Van, and the south of Ararat to Shirvan and Baku, on the Caspian, there is another wide and energetic band, probably joining the Caucasus, and connected with the occasionally disturbed districts of the Oural."<sup>2</sup>

<sup>1</sup> Vesuvius, by Dr. John Phillips (1869), pp. 26-27.

<sup>2</sup> Physical Geography, p. 350.