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Editor's note:

This first-hand communication from Giuseppe d'Amato appears to have been written originally in Italian. It was translated for publication in the *Journal of the Asiatic Society of Bengal* in 1833, although the translator's name is not provided. However short this account, it provides valuable detailed information mining in royal Burma as well as a few hints concerning Chinese traders in Upper Burma.

M.W.C.

Short Description of the Mines of Precious Stones, in the District of Kyat-pyen, in the Kingdom of Ava

Père Giuseppe D'Amato

The territory of *Kyat-pyen*¹ (written *Chia-ppièn* by d'Amato) is situated to the east, and a little to the south of the town of *Mon-lhá*, (which latter place is by observation in latitude 22° 16' North,) distant 30 or 40 Buman leagues, each league being 1000 *taa*, of seven cubits the *taa*²; say 70 miles. It is surrounded by nine mountains. The soil is uneven and full of marshes, which form seventeen small lakes, each having a particular name. It is this soil which is so rich in mineral treasures. It should be noticed, however, that the ground which remains dry is that alone which is mined, or perforated with the wells, whence the precious stones are extracted. The mineral district is divided into 50 or 60 parts, which, beside the general name of "mine," have each a distinct appellation.

The miners, who work at the spot, dig square wells, to the depth of 15 or 20 cubits, and to prevent the wells from falling in, they prop them with perpendicular piles, four or three on each side of the square, according to the dimensions of the shaft, supported by cross pieces between the opposite piles.

When the whole is secure, the miner descends, and with his hands extracts the loose soil, digging in a horizontal direction. The gravelly ore is brought to the surface in a *ratán* basket raised by a cord, as water from a well. From this mass all the precious stones and any other minerals possessing value are picked out, and washed in the brooks descending from the neighbouring hills.

Besides the regular duty which the miners pay to the Prince, in kind, they are obliged to give up to him gratuitously all jewels of more than a certain size or of extraordinary value. Of this sort was the *tornallina* (tourmaline?) presented by the *Burman* monarch to Colonel *Symes*. It was originally purchased clandestinely by the Chinese on the spot; the Burmese court, being apprized of the circumstance,

¹ The *Kyat-pyen* mountains are doubtless the *Capelan* mountains mentioned as the locality of the ruby, in *Phillip's Mineralogy*—"60 miles from *Pegue*, a city in *Ceylon*." Though it might well have puzzled a geographer to identify them without the clue of their mineral riches.

² Estimating the cubit at 1½ feet, the league will be 10,500 feet, or nearly two miles;—about an Indian *kos*.

instituted a strict search for the jewel, and the sellers, to hush up the affair, were obliged to buy it back at double price, and present it to the king. You³ may ask me, to what distance the miners carry their excavations? I reply, that ordinarily they continue perforating laterally, until the workmen from different mines meet one another. I asked the man who gave me this information, whether this did not endanger the falling in of the vaults, and consequent destruction of the workmen? but he replied, that there were very few instances of such accidents. Sometimes the miners are forced to abandon a level before working to day-light, by the oozing in of water, which floods the lower parts of the works.

The precious stones found in the mines of *Kyat-pyen*, generally speaking, are rubies, sapphires, topazes, and other crystals of the same family, (the *precious corundum*.) Emeralds are very rare, and of an inferior sort and value. They sometimes find, I am told, a species of diamond, but of bad quality.⁴

The Chinese and Tartar merchants come yearly to *Kyat-pyen*, to purchase precious stones and other minerals. They generally barter for them carpets, coloured cloths, cloves, nutmegs and other drugs. The natives of the country also pay yearly visits to the royal city of *Ava*, to sell the rough stones. I have avoided repeating any of the fabulous stories told by the *Burmans* of the origin of the jewels at *Kyat-pyen*.

There is another locality, a little to the north of this place, called *Mookop*, in which also abundant mines of the same precious gems occur.

Note.—While I am writing this brief notice, an anecdote is related to me by a person of the highest credit, regarding the discovery of two stones, or, to express myself better, of two masses (*amas*) of rubies of an extraordinary size, at *Kyat-pyen*. One weighed 80 *biches*,⁵ Burmese weight, equivalent to more than 80 lbs.! the second was of the same size as that given to Colonel *Symes*. When the people were about to convey them to the capital to present them to the king, a party of bandits attacked *Kyat-pyen* for the second time, and set the whole town on fire. Of the two jewels, the brigands only succeeded in carrying off the smaller one; but the larger one was injured by the flames: the centre of the stone, still in good order, was brought to the king. I learned this from a Christian soldier of my village of *Mon-Ihá*, who was on guard, at the palace when the bearer of the gem arrived there.

³ The letter seems to have been intended for some scientific friend in Italy.

⁴ Probably the *turмали* or transparent zircon, which is sold as an inferior diamond in Ceylon. [Vide vol. i. page 357.]

⁵ The *Père d'Amato's biche* is the *bisse* of *Mendez Pinto*, and the old travellers, and the *biswa* or *vis* of Natives of India. The Burmese word is *Peik-tha*, which is equivalent to 3 ½ lbs., and to a weight on the Coast of *Coromandel* called *vis. B.*