Chapter 3
MINES, MINERALS AND MANUFACTURES

The main region where minerals were located in the Delhi sūba were Kumāūn and the area containing the spurs of the Aravallis.

Abūl Faţl says that gold was found in 'abundance' in the Northern mountains. Both he and Jahāngīr mention the gold mines in Kumāūn. Gold was also collected from the sands of Ganga river. The tributaries of Ramganga along the north of Moradābād district, specially between Koh and Dhelā, Alaknandā, Benī-Gangā and Sona rivers contain 'auriferous' sands. But the extraction of gold from the river sands was a very expensive process and the margin of profit was apparently very meagre.

Silver mines were reported from Kumāūn sarkār. A small amount of silver was extracted from the Sirmūr-hills as well.

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1. Ain, I, 32.
2. Ibid, 514; Tuzuk, 107.
3. Ain, I, 32.
5. Ain, I, 32.
6. Ibid, 514.
Fitch, Salbancke and Manrique say that diamonds were found in Delhi. But there is no other evidence for this, and it seems most unlikely. Tavernier who was far better informed does not refer to any diamond mines in the Delhi province.

Copper was mined in Kumāūn. But the major copper-mining region lay amidst the spurs of the Aravallis. During the reign of Shāhjahān the sarkār of Nārnaul (of suba Agra) was transferred to the suba Delhi. In sarkār Nārnaul copper-mines were located in Singhana, Udaipur, Kotputli (in the village of Bhandarah) Babai and Raipur. Abūl Faţl says that a stream near Raipur carried copper sands.

Iron was mined in Kumāūn. Father Monserrate says that iron was found in the "neighbouring spurs of the Himalayas". Iron workings survived in later times.

2. Ain, I, 514.
3. Ibid, 442, 454.
4. Ibid, 454.
5. Ibid, 514.
6. Monserrate, 98.
according to British reports, in Ramgarh (in Kumāūn) at Pahli, Loshgrani, Natna Khān and Parwara and in the beds of Siwalik-hills.¹

The best quality of orpiment (zarnīkh) was obtained from Kumāūn, though the amount was reported to be very small in quantity.²

The Ain records borax mines in sarkār Kumāūn.³ But this is not corroborated by any later account. Modern accounts, too, do not support Abūl Fazl's statement. Borax seems really to have come from Tibet, where it is still extracted in fairly large quantities.⁴

Kumāūn also produced lead.⁵ Modern accounts refer to lead deposits and mines in Sirmūr and Simla districts.⁶

Sal Ammoniac (nausādar) was extracted at Thanesar.⁷ Pelsaert writes, "it is a sort of scum

1. Watt, IV, 511.
3. Ain, I, 514.
5. Ain, I, 514.
7. Finch, Purchas, IV, 49; E.F.I., 1637-41, p.134; Pelsaert, 46; Manrique, II, 182.
which forms on the site of very old brick kilns; it is
dug and purified by evaporation, like salt-patre". ¹

Sulphur was also found in the gūba. Abūl Fażl
and Badaūnī mention a sulphur-spring in Sohna.² The
latter also refers to the existence of sulphur mines
in the pargana.³ The Sohna sulphur spring still exist.⁴

The neighbourhood of Delhi was rich in lime
and stone.⁵ Thevenot mentions greyish stone quarried
at Delhi. He compared it with 'Theban stone or garnet'.
He says it was generally used for building construction.⁶

The most prominent non-agricultural products
of gūba Delhi seems to have been cotton goods. Good
quality chintz, fine muslin, silk and brocade were
manufactured at various places in the province. Delhi
itself was an important centre. The English Factors
report "the commodity that invites them [ the Armenian

¹. Peisaert, 46.
². Ain. I, 514; Badaūnī, III, 110.
⁴. Punjab State Gazetteers, (Gurgaon District) vol. IVA,
p.145.
⁵. Monserrate, 97.
⁶. Thevenot, 66.
and Persian merchants] thither being only chintz, which are here made in good quantities, well coloured, in appearance little inferior to those of Mesulapatam; different sorts and goodness and so diversely prized. Manrique also mentions chintz among the important merchandise of Delhi.  

Chintz was also produced at Sirhind and the English Factors found the place much frequented by the merchants who came to buy these. Manrique praises Sirhind cloth for its good quality and cheapness. In 1612 Steel and Crowther found large quantities of cloth ('linen') woven there.

Besides chintz, white cloth, or calico, was woven at various places. Panipat, Samana and Saharanpur were the main centres in the province. White cloth produced at these places was good enough to be purchased

5. Steel and Crowther, Purchas, IV, 267.
for experts. The English Factors found the white cloth of Panipat and Samana to be of same quality, length and width.\(^1\) However, production at Samana seems to have been limited. When the English Factors advanced money to the weavers they found it difficult to procure cloth "at any reasonable rate".\(^2\)

Abūl Fazl mentions that Saharanpur was famous for the manufacture of muslin khāsa and chautār that was manufactured there in large quantities.\(^3\)

According to the Haft Iqlīm Thanesar, though a small city, was mostly inhabited by weavers of different kinds.\(^4\)

Bafta (a kind of high quality calico, normally white or of single colour), both broad and narrow, was manufactured at Machhiwara. It was of very good quality.\(^5\)

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1. E.F.I., 1637-41, p.134. It was "11 covetts greate in length and 3/4 in breadth".
2. Ibid, 1624-29, p.149; 1642-45, p.204.
3. Aīn, I, 524. Chautār was 'a plain white calico of usually superior quality'. (Cf. Journal of Indian Textile History, Calico Museum of Textiles Ahmedabad, No.VI, 1961, p.29). Prof. Irfab Habib says that it was "probably a kind of muslin" (Atlas, 69); Khāsa was "a fine quality muslin"; it priced highest among the cotton stuffs in the Aīn (Cf. Ibid, 70).
5. E.F.I., 1642-45, p.204.
Silk manufacture does not seem to have been of much importance. Only the Ain records the production of silk in the Kumāūn region. But there is no mention of either the raw-silk or silk-weaving during the first half of the 17th century. Only Bernier lists silk cloth among the manufactures of Delhi.

Panipat was a good centre for the production of knives as well. Besides, different kinds of girdles and shashes were also made here.

Sonepat, though a small town, was famous for its scimitars, poniards, steel-points for spears, pikes and javelins. Monserrate says that all these were very skilfully made. The iron is said to have come from the Himalayas. The place was also one of the important centre for manufacturing swords and daggers.

Kumāūn had some reputation for swords and daggers. Rāja Lakhmī Chand of Kumāūn presented swords (khānda) and daggers (katār) made at Kumāūn to the Emperor Jahāngīr.

1. Ain, I, 514.
2. Bernier, 259.
3. Haft Iglīm, II, 463.
4. Steel and Crowther, Purchas, IV, 267.
5. Monserrate, 98.
6. Ibid.
Excellent muskets and fowling-pieces and other kinds of weapons were made in Delhi.\(^1\)

Sirhind was noted for the manufacture of bows, quivers, shoes, greaves and sandals.\(^2\)

Excellent shields were made at Sambhal out of the skin of rhinoceros, hunted in that territory. The horn was used for finger-guards (zehgîr) for bow-strings and other weapons.\(^3\)

Paper of some repute was manufactured at Moradabad.\(^4\)

Bernier gives a long list of manufactures at Delhi including (besides-textiles) ornamented jewellery, lacquer-work etc.\(^5\) These manufactures are not mentioned by any previous authority. Their growth seems to have been a natural development of the foundation of Shâhjahânâbâd. Bernier is full of praise for the skill of the Delhi artisans but laments at the paucity and inadequacy of their tools as well as the lack of training.\(^6\)

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3. A'în, I, 514.
The lack of progress in technology is marked by the kind of screw that the Delhi artisans made. Thevenot tells us that Indians did not know how to make screws as the European. They simply "fasten to east of the two pieces that are to enter into one another, some iron, copper or silver wire turned screw-wise without any other art than of shouldering the wire to the pieces, and in opening them, they turn the screws from the left hand to the right contrari-wise to ours, which are turned from the right to the left".¹

Never-the-less the craftsmen with their manual skill alone could also produce wonders. Bernier says of the ornaments made by them that, "it may be doubted if the exquisite workmanship of those articles can be exceeded by any European goldsmith".² However, says Bernier, there was no encouragement for the craftsmen. They were "contemned, treated with harshness and inadequately remunerated for their labour".³ The rich exploited them and bought their commodities at cheap rates. Under such circumstances only those artists could raise to eminence who had the patronage of the Emperor or of the 'Omrahs'.⁴

¹. Thevenot, 66.
³. Ibid, 255.
⁴. Ibid, 256.