CHAPTER VIII.

INDUSTRIES.

The main occupation of the people of Hazaribagh is cultivation but industries in the district are growing in importance and absorb a large number of the people. There are rich mineral deposits in the district. Mica and coal are the two most important minerals found in abundance. The Damodar Valley Corporation, a multi-purpose project, has made power available in certain areas at a cheap rate. This will ultimately lead to the rapid industrialisation of the district. Besides working in the mining areas some of the other main occupations of the people are in connexion with timber, firewood and *biri* leaves. The population of the district depending on agriculture is 1,70,076 out of the total population of the district of 19,37, 210 souls according to 1951 Census. A fair percentage of this population depends on mica, coal, timber and other industries.

Among the other important industries mention could be made of limestone, lac and shellac, saw mills and glass factory at Bhurkunda and another small glass factory near Ramgarh. There is no big engineering works of importance except a few repair shops owned by mica and coal mines' owners. A thermal power station has been opened at Bokaro and a dam and power station have been constructed at Tilaiya in the district. Further, on the proposal of Messrs. Imperial Chemical Industries, Ltd., the Government of India and the State Government of Bihar have come to an agreement with the former to construct an explosives factory at Gomia. The construction of the factory building has been taken in hand. The hilly area of Gomia which is of little importance now is soon going to be an important factory town.

Mica.

The most important industries in the Hazaribagh district are mica mining and mica splitting. India is the biggest producer that supplies about 80 per cent of the world requirement of mica, the other producing countries being Brazil, Canada, Madagaskar, Argentina, Ceylon, Africa, Russia and China. Of all the production in India the contribution from Bihar is about 60 per cent and almost the entire quantity of it comes from Hazaribagh.

Bihar mica used to be shipped as " Bengal mica " which had an enviable reputation for its beautiful ruby and green colours. Previously the chief use of mica was for domestic purposes and mica sheets were used in place of glass panes for the purpose of decorating and cooling the houses.

With the commencement of the first World War (1914—1918) its importance as a strategic material was realised and the scientific world made a heavy demand on Indian resources. During the Second World War commencing from 1939 the United States of America and the United Kingdom sent a Joint Mica Mission to purchase mica from India for stock piling, which gave a great impetus to this industry.

Its remarkable insulating property makes mica invaluable to the electrical industry. It is used for commutator insulation, armature insulation, transformers, electric heaters, condensers, radio tubes, fuse boxes, lamp sockets, sparking plugs, washers, etc. Mica is also used in making components of aeroplanes, pyrometers, lamp chimneys, stoves, ovens, window and door screens. Mica powder is used in the manufacture of points in lagging boilers, iron safes, house roofs, and axle greases. Small thin films or splittings cemented together are built up into sheets and sold as micanite. Ground mica made from waste is used in the manufacture of patent roofings, wall paper, automobile tyres, moulder and insulators and as a filler in rubber goods. As most of these are not manufactured in India mica is hardly consumed in India.

Bihar, Rajasthan, Madras and Travancore-Cochin are the main suppliers of mica in India. The Bihar mica belt extends over an area of about 1,500 square miles from Gaya district in the west across Hazaribagh and Monghyr districts into Bhagalpur district in the east. Mica has also been located in the past in some other areas.

The mica mined in the Hazaribagh district is of various colours such as green, brown, white, silver and ruby. The most valuable is that known as ruby and the mica belt of the district mostly contains this type of mica. After the crude mica from the mines has been cut and flaws removed, it is known as block mica, the thickness of which may come down to 0.008 inch.

Block mica is sorted according to size and quality. Defects consist of cracks, stains, and other inclusions. At times such defects are eliminated by further splitting and cutting and thus improving the quality of the final block. But there is obviously an economic limit beyond which it is not advisable to follow this process. For use in condenser plates the mica must be very level and free from warping and stains. Various qualities are described as superfine, clear, slightly stained, fairly stained, good stained, heavy stained, badly stained, densely stained, and black spotted. Unfortunately these qualities are not standardised. Different sorters and firms have their own interpretation of the qualities. Competition in selling also gives rise to variation in quality. On the whole, however, there is approximately an average local standard which might be referred to as "Bazar Standard".

If on this " Bazar Standard ", fair stained and better mica is regarded as high quality and the rest as low quality, the proportion of high and low qualities of mica produced in Hazaribagh district is approximately 1 :10.

The main processes in mica factories may be broadly classified as follows :—

(1) rifting of crude mica for sickle cutters,
(2) cutting of rifted mica by sickle cutters,
(3) knife dressing,
(4) sortage of mica into different sizes,
(5) finishing of sized mica according to qualities,
(6) splitting into condenser films,
(7) making book form splittings,
(8) making loose splitting, and
(9) packing.

It is remarkable that all the above processes are done by hand only and the instruments used are ordinary sickles, knives and scissors.

The following figures will show the comparative position of mica trade of India from 1948 to 1953 :—

Year.	Quantity of mica shipped from all ports in cwt.	Value.
		Rs.
1948 ..	2,95,818 ..	5,15,78,594
1949 ..	2,83,035 ..	6,75,08,475
1950 ..	4,16,866 ..	10,28,80,255
1951 ..	5,02,354 ..	13,52,67,701
1952 ..	3,26,556 ..	9,22,72,880
1953 ..	3,27,000 ..	8,98,82,375

Bihar mica is mainly exported from Calcutta port. But some block mica from Rajputana also comes to Bihar factories which is exported from Calcutta. The export figures of Calcutta port during 1953 was 1,92,059 cwt. valued at Rs. 6,88,04,891 as against 2,05,241 cwt. valued at Rs. 7,28,75,881 during 1952.

Marketing of Indian mica entirely depends on the demand from foreign countries. If for any reason the foreigners recede from buying, India has to wait patiently for fresh demands. Mica market in India

may therefore be called a " Buyers' Market ". The supply and demand of mica is closely linked with the international political situation of the world and with the apprehension of war or some far-reaching policy or programme for stock-piling and conservation. When stock-piling is completed the demand decreases. The mica industry is facing a crisis in 1956. There is increasingly more pressure of competition from other countries. Another threat to this industry is the manufacture of " samica " mica in commercial scale out of scrap mica. The Mica Advisory Committee has, therefore, recommended ban on the export of waste and scrap mica. Ultimately India has to develop mica consuming industries within the country if the mica industry has to be stabilised.

Mica industry in Hazaribagh has certain remarkable features. In spite of the large number of people engaged in this industry and the large output, the industry could still be called a cottage industry so far splitting of mica is concerned. After the mica is extracted from mines crude crystals or books of mica are brought to the owner's factory godowns in sealed bags under Mica Pass, as required by the Bihar Mica Act and then processed in the factory by hand power only. No mechanical process has yet been introduced for this work. The processing of mica is very simple and depends entirely on the workers' individual skill and visual test and no physical strength is required. No mechanical test is done and the quality of the output may naturally differ from one worker to another.

The reputation of Bihar mica has had a considerable set back. In the rush for supply to assure the stock-piling abroad in the recent years there was not much check on the quality of the product. The dealers did not keep the contract for supplying good quality product and this " Mica Piracy " as it is locally called coupled with the fact that other countries are now in the market has heavily affected the mica industry. The foreign industrialists could not be much blamed for their shyness to consume Indian mica or substituting it for synthetic mica. To check this tendency the State Government had passed the Bihar Mica Act which provides for licensing every miner and dealer of mica.

There are now about 123 registered mica factories at Giridih and 57 at Jhumri Tilaiya. Most of the mica factories are situated at Jhumri Tilaiya, Domchanch, Pachamba and Giridih. Many of the factory owners are also shippers. About 40,000 persons are engaged in this industry. There were 195 mining license and 1,403 dealers' license-holders in Hazaribagh district during 1953-54. The chart indicating the trend of mica trade of India from 1948-53 quoted before will show that the price of mica is not always dependent on the quality exported. The figures show that the ratio between the quantity and the value kept

rising from year to year upto 1951 but was not constant in the later years. The difference in value may be attributed partly to the devaluation of currency since the latter half of 1949 and partly to the rise in prices. Correspondingly the cost of production became higher due to soaring prices of consumer goods and rise in wages.

Coal.

Coal-mining is also one of the major industries of the district of Hazaribagh. The important coal-fields in the district are Bokaro, Ramgarh, South Karanpura, North Karanpura (partly in the Palamau district), Itkhori, Chope and Giridih.

Bokaro coal-fields form a long narrow strip of Gondwanas mainly along the valley of Bokaro river between longitudes 85° 25′ and 86° 65′. The eastern edge of the fields is only two miles west of Talchers extending west from the Chandanpura coal-fields. This field is divided into two parts: East Bokaro and West Bokaro. Mining has been concentrated on East Bokaro and almost entirely restricted to the Kargali seams. Other seams occur also in East Bokaro the most important being the Kargali seam, Bermo seam, and Karo seam. The West Bokaro seams appear to be more distributed and unattractive.

Ramgarh coal-fields extend along the valley of the Damodar river covering an area of about 40 square miles. It is generally estimated that five million tons of workable coal is available over an area of one square mile.

South Karanpura fields cover an area of about 75 square miles between longitudes 85° 09′ and 85° 30′. Since the opening of Barkakana-Daltonganj Section of the East Indian Railway (now Eastern Railway) the production from this field has increased enormously. The seams of this field can be favourably compared with the seams of the Jharia coal-fields. Reserves of coal in this field is at least 780 million tons. Most of the coal is being mined from large open quarries.

North Karanpura fields occupy an area of about 550 square miles between longitudes, 84° 41′ and 85° 28′. This field has not been surveyed in detail but large number of seams are known to occur, some over 72 feet thick of first class quality. It is estimated roughly to contain about 8,750 million tons of coal of which 5,000 million tons are of good quality.

Itkhori and Chope coal-fields form small areas.

Giridih coal-fields are more important fields consisting of three seams. It is generally worked by the Railway.

Approximately 33,857 persons were on an average engaged daily in coal-mining in 1954 in some shape or other. This number includes both local inhabitants within the district as well as imported labour. Most of the imported labour is from the adjoining districts excepting the skilled workers.

The following figures supplied by the Chief Inspector of Mines in India, Dhanbad, will show the comparative position of coal trade within the district of Hazaribagh from 1949 to 1954 :—

Year.	Quantity of coal extracted.	Value.
	Tons.	Rs.
1948 ..	33,53,219 ..	4,90,31,534
1949 ..	34,93,772 ..	5,10,13,157
1950 ..	30,77,207 ..	4,26,97,219
1951 ..	35,68,378 ..	5,01,97,505
1952 ..	39,40,147 ..	5,56,88,747
1953 ..	39,89,389 ..	5,67,87,048
1954 ..	38,97,269 ..	5,51,40,541

Limestone.

Another important industry of the district is limestone mining. A large quantity of limestone is burnt annually for use in the building trade as lime for mortar and plaster. Limestone is required also by the iron and steel industry and in the manufacture of glass and chemicals. It forms the main ingredient of cement. There are three main areas where limestone is found in the Hazaribagh district, viz., Bundu-Basaria, Kurkuta-Religara and Laping Bhurkunda-Kursa.

Approximately the following quantities of limestone have been mined from 1948 to 1954 from Bundu mine which is the most important mine of limestone in the district :—

Year.	Quantity.	Value.
	Tons.	Rs.
1948 ..	3,635	22,686
1949 ..	7,590	46,501
1950 ..	4,551	32,710
1951 ..	7,442	52,094
1952 ..	2,799	19,593
1953 ..	1,601	11,207
1954 ..	4,039	28,273

Lac and Shellac.

Another important industry is the cultivation of lac. Lac is extensively grown in the Chatra subdivision and Gola area of Sadar subdivision. Small shellac manufacturers are working in the Chatra subdivision and Gola police-station of the Sadar subdivision.

Hazaribagh district had a much more flourishing lac business some years before. Chatra was the main centre for lac business. The old records going more than a century back speak of the thriving lac business in Chatra. The reasons for the decline of the lac business are not peculiar to this district only but are common to the other lac growing districts of Manbhum, Ranchi and Palamau. Mainly there is no large market for the consumption of lac within India and the industry depends on the trends in the world market. Here also other competitors and chemicals had a considerable effect on the decline of the industry.

Forest Products.

Hazaribagh district is rich in forests. Valuable timber and other forest raw materials are available from these jungles. A large number of saw mills are running at Ramgarh, Hazaribagh and other places in the district. With the availability of cheaper power from Damodar Valley Corporation this industry along with a number of such other industries are likely to thrive. *Khair* (catechu) trees are abundantly found in the Chatra Forest Division. The manufacture of catechu is carried on during the winter season. The catechu (locally known as *katha*) is generally manufactured in the jungles and finished products are brought down to Chatra market for disposal. This industry has, however, declined to some extent in recent years. Catechu is required for tanning. A small quantity is used with betel leaves (*pan*). *Biri* leaves are also abundantly found in the Hazaribagh jungles. *Biri* leaves are collected and the bulk of it is sent to Chakradharpur in Singhbhum district and other places for preparation of *biris*. Quite a good number of people could be said to be engaged in *biri* industry. *Biri* provides cheap smoke for the poorer classes. The tobacco for *biris* is imported from other parts of India.

Other Industries.

Among the other industries, the newly started glass factory of Bhurkunda is a branch of the Sodepur Glass Works near Calcutta. This factory is well equipped with up-to-date machineries for the manufacture of sheet glass. The production is expected to start soon. There is another glass factory near Ramgarh named Anand Glass Works. It is engaged in the manufacture of hollow glasses such as tumblers, chimneys, jars, etc., but in small quantities.

Cottage and Village Industries.

Hazaribagh district is ideal for the development of cottage industries. Raw materials are abundantly found. Cheap power is now readily available because of the Damodar Valley Corporation. There is no dearth of labour.

A number of cottage industries based on agricultural and forest raw materials and to a certain extent on mineral resources have been in existence since a long time. Such industries are : oil *ghanies*, rice-husking, village pottery, blacksmithy, carpentry, handloom-weaving, cutlery-making, wood-sawing, furniture-making, toy-making, charcoal-burning, crude tanning and leather goods-making, etc. Cocoon is reared at a few places. *Tasar* is woven in Gomia area.

Weaving.

Cotton weaving according to indigenous handloom methods exists practically in all parts of the district. The products turned out by the weavers include bed covers, bed sheets, *sarees*, curtains, *darees*, *lungis*, etc. The *sarees* made for the use of Adibasi women are of special designs and are very artistically woven in the Gola, Gomia and Peterbar thanas of the district. The market for the products is generally local, but a small percentage of it is also sent outside. Cotton-yarn-dyeing is also carried on by the people with indigenous vegetable colours which are available in plenty in the district.

Brass and Bell Metal.

Brass and bell-metal industries are carried on throughout the district. But the villages of Anchaljam, Bishungarh, Keriatpur, Ichak, Bajubar and Chatra are the main centres. Usually the utensils in popular demand in the average family are manufactured. The present condition of the workers is not satisfactory. Their crafts are lacking in shape, design and finish. The technique of production has to be modernised and new designs and patterns introduced to make the manufacture economical and to increase the marketability of the goods.

Cutlery.

This industry is being carried on at Vendra (in Nawadih police-station), Chitarpur (in Ramgarh police-station), Ichak, Barkagaon and Giridih. Among these places, Vendra is by far the most important centre where a wide range of carpenters' tools, cutlery, tea garden implements, locks, sticks, etc., are manufactured with the help of power. There are more than 300 blacksmiths at Vendra alone engaged in this industry. The quality of goods manufactured is fairly good. The cutlery goods produced at Vendra are mostly sent to Calcutta.

Minor Cottage Industries.

There is a large number of minor cottage and village industries in existence in the district of Hazaribagh. These include sericulture, wool-weaving, spinning, knitting, blacksmithy, goldsmithy, stone-carving, wood-work, toy-making, mat-making, bamboo-basket-making, potteries, tiles and bricks-making, oil *ghanies*, lime-making, charcoal-burning, etc. No particular area of the district is specialised in any of these industries. They are found scattered throughout the district.

There has been no systematic economic survey of the district. But the Damodar Valley Corporation had collected certain data of small industries in some villages. Figures collected by them show that in Nawadih there are over 433 weavers, 277 blacksmiths, 301 oil-pressers, 74 cobblers, 47 carpenters, 39 goldsmiths, 2 rope-makers, 5 brass and bell-metal workers and 513 potters. At Ichak there are 17 oil-pressers, 69 goldsmiths, 26 potters, 10 blacksmiths, 1 lac-worker, 3 stone-workers and 49 bamboo-workers. Near Ichak there is a village Karistpur where there are 63 brass and bell-metal-workers. In Bagodar police-station at the village of Bishungarh there are more than 100 brass and bell-metal-workers, 40 shellac-workers, 68 goldsmiths, 5 blacksmiths, 177 oil-pressers, 42 carpenters, 12 leather-workers and 10 potters. In the same thana at village Anchaljam 78 persons are engaged in carpentry, 13 in leather-work, 13 in blacksmithy, 23 in brass, 14 in goldsmithy, 36 in bamboo-work and 36 in stone-work.

These figures suggest that such industries are well distributed in the villages and that there is a great scope for their progress.