

## CHAPTER V

### INDUSTRIES

The Chikmagalur district has bountiful natural resources. There are thick semi-evergreen and other forests in the *malnad* areas and rich black-soil tracts in the *maidan* parts. The hilly slopes of the *malnad* are profusely dotted with numerous coffee estates for which the district has been enjoying a wide reputation. Coffee is an excellent foreign-exchange earner. The foremost among the economic minerals is iron ore which is available here in stupendous quantities. The iron ore deposits have been worked by the Visvesvaraya Iron and Steel Ltd., Bhadravati, a notable pioneer industry of the State, for the past few decades. The mining of iron ore on a gigantic scale for export under the Kudremukh Iron Ore Project, which is a recent public undertaking of the Central Government, has put the district on the world map in this domain. This has provided employment to thousands, apart from securing considerable foreign exchange. It has opened up also new channels for several auxiliary industries.

#### **Traditional industries**

Among the traditional industries of the district are weaving, oil-ghanis, bee-keeping, pottery, leather craft, carpentry, black-smithy, lime-making, basket-making, weaving of woollen *kamblis*, making of glass bangles, catechu making, copper wire works, shoe making, repairing of guns, etc. These are mostly individual units which have been carrying on their trade, on their own, for ages. The village Barabaluthis, viz. Gauda, Shanubhogue, panchenga, thalavar, thoti, nirganti, agasa, nayinda, kumbara, lohar, badagi and akkasale formed the ancient village service. They took up agriculture also as their secondary occupation. Many of them migrated to urban centres seeking employment opportunities. They were languishing for a long time. In recent years, co-operative societies have been organised to help them. The Khadi and Village Industries Board and Commission and also commercial banks are assisting these artisans to improve their crafts and to earn more.

**Industrial development**

In 1916-17, there were 28 coffee pulpers, five roasting and grinding units, three rice hullers, one sugarcane crushing unit, an oil processing unit, a tile factory. In addition to these there were a tannery unit and four coffee pulpers, all worked by manual labour. Organised industrial activities on modern lines began late in this interior district. There was a weaving factory at Chikmagalur in about 1922. In 1928-29, training classes in carpentry, smithy and rattan crafts were opened at the same place. Two saw mills and four rice mills were functioning in the district during 1930. A Khadi centre was started at Ajjampura in 1931-32. The 1931 census disclosed that 744 persons were engaged in cotton-weaving, 32 in silk-weaving, 397 in wool-weaving, 119 in oilseed-presses, 870 in pottery, 536 in basket-making, 209 in goldsmithy, 321 in blacksmithy, 210 in carpentry, 68 in mat-weaving and also 79 in leather industry. A unit, producing Ayurvedic medicines was started at Chikmagalur in 1946. In 1951, there were 13,971 persons working in plantation industries, 1,877 in forestry and wood products, 440 in mining and quarrying, 1,725 in manufacturing of foodstuffs, 165 in cotton textiles, 153 in leather products, 45 in engineering and 17 in printing. As in 1961, there were about 1,000 handlooms, roughly half of them being in the co-operative sector and 40 industrial co-operatives. As per the Industrial Directory published in the year 1970, the district had 36 food beverages and tobacco units, 34 wood products units, 23 general engineering units, eight printing units, seven each for chemical and ferrous and non-ferrous, five leather and rubber units and five miscellaneous units. These 125 units employed 3,589 persons.

In 1975, there were 29 wood industrial units dealing with wood crafts, making furniture, crafts, etc., 53 engineering works, most of which were preparing and also repairing implements relating to the coffee industry and 12 establishments dealing with coffee-curing and the like. In 1976, an oil mill was started near Kadur, for producing refined oil from groundnut oil. A large industrial establishment of the district is the Vignyan Industries Ltd., at Tarikere (presently taken over by Bharath Heavy Electricals Limited, Bangalore), a public limited company which is engaged in the production of steel and alloy steel casting and ingots. There is one Khandasari factory producing khandasari sugar. Among other small-scale industries of the district are printing presses, a tile factory, confectionaries, garment units and match-manufacturing works. There are Industrial Estates at Chikmagalur and Kadur which are helping the entrepreneurs. The Government and the financial agencies are providing several facilities for starting and developing industrial units. The power supply is increasing. There is a growing awareness of the need for enterprising spirit to promote industrial development. Co-operative and private ventures are being liberally encouraged in various ways. As a result of these steps, new industrial units have come up and languishing crafts have been rejuvenated.

**Power supply**

Supply of electric power makes significant contribution to the development of industries and agriculture. Hydro-electric power was introduced in this district in 1936. During the next year, service was provided to power installations also. A section office having a Senior Operator as its head was functioning at that time at Chikmagalur. Later, parts of the district were attached to three divisions, namely, Hassan, Bhadravati and Shimoga. A bold venture to generate electricity was stated to have been made by an agriculturist, resident of Addagadde village of Sringeri taluk, as early as 1940, and finally succeeded in generating 1 Kw. electricity, which was sufficient for his domestic consumption. It was however abandoned in 1960. In 1971, a separate Electrical Division was formed for the district, with three subdivisions at Chikmagalur, Birur and Balehonnur. Power supply is being fed from the Bhadra Generating Station through 66 Kv. transmission line. Provisions have also been made to back-feed from Hootagalli Receiving Station, Mysore, for ensuring power supply round the clock in case of any interruption. There are four sub-stations, one each at Chikmagalur, Birur, Lingadahalli and Tarikere, from where electricity is supplied to the various parts of the district. All the existing 4.6 Kv. feeders are proposed to be converted to the 11 Kv. system.

**Rural electrification**

The Rural Electrification Corporation, a Government of India undertaking, extends financial assistance in a phased manner to the State Electricity Board for extending power supply to villages and energisation of pumpsets. In this district, upto end of March 1978, it has given financial help to the tune of Rs. 43.14 lakhs to cover energisation of irrigation pumpsets and electrification of villages, including Harijan bastis in Tarikere taluk. A master plan, which would cost about Rs. two crores, has been prepared to electrify all the unelectrified villages in the district, and to energise all irrigation pumpsets which will give a fillip to agriculture.

**Mining**

There are several economic minerals in the district (see Chapter I). The most important and extensive of them is iron ore of various grades. They are found to occur mainly in Kudremukh and Baba-Budan ranges. The deposits of iron ore occurring in Kemmannugundi and Kallahattagiri are being worked by the Visvesvaraya Iron & Steel Ltd., Bhadravati. The total iron ore reserve at the Kemmannugundi mines area is estimated at 15.3 million tons. The mining operations at this area was started in 1924. In the initial stages the annual output of iron ore was approximately 2 lakh tons. Further efforts were also made to step up the output. The ore mined there is transported to loading stations of bicable rope way on Tram lines and from there it is roped down to Tanigebyle at the foot of the hill by gravity, where it is crushed and screened and further carried to the factory by tramways maintained by them for the purpose. Investi-

gations by the National Mineral Development Corporation showed (in 1978) that over 3,000 million tonnes of iron-ore deposits were found to occur in Baba-Budan range itself, and that the grade of ore-concentrate there is of about 60 per cent; the ore found in Attigundi block accounts for incidence of 69.95 per cent of fresh ore, which is the highest.

#### **Kudremukh iron ore deposit**

The Kudremukh iron ore deposits are located in the Kudremukh-Aroli-Gangamoola range of the western ghats, about 25 km from Kalasa Village of Mudigere taluk and 64 km from the coastal city of Mangalore. The deposits here were first discovered by the late P. Sampath Iyengar, in 1913 who was a geologist of the erstwhile Mysore State. Till recently, it had not attracted the attention of the Government on account of its low grade magnetic deposit with only 39 per cent of iron content. The find attracted national and international attention, as a result of detailed investigations conducted by the National Mineral Development Corporation of India, a Government of India undertaking which has its registered office at Hyderabad. It started detailed investigation in 1965, and after three years of investigation at a cost of over Rs 50 lakhs, it was proved that the deposits were extensive and that with adoption of latest technology, the magnetic ore could be beneficiated into concentrate having ready acceptance in the market. It was established that the Kudremukh ore body is a sedimentary pre-cambrian iron ore formation, composed of thin laminated layers of magnetite and quartzite. The ore reserves of this area are estimated to be 610 million tonnes and underlying primary magnetite ore to the extent of 520 million tonnes.

The Government of Japan evinced keen interest in the project in the beginning and finally gave up the idea. The Government of Iran agreed to give financial assistance in order to synchronise with the Iranian Plan to expand the steel industry at Ahwaz and Bandar Abbas. The National Iranian Steel Industries Company agreed to purchase 150 million tonnes of ore concentrates produced at this project spread over a period of 20 years. The test results also proved worthwhile.

#### **Kudremukh Iron Ore Co.**

The Kudremukh Iron Ore Company Ltd., a Government of India enterprise, administered by the Union Ministry of Steel and Mines, was established in April 1976 and was entrusted with the tasks of mining, beneficiation and transportation of the ore as slurry to Mangalore and thereon shipping it abroad. The head office of the Company is at Bangalore and its two other activity centres are located at Kudremukh and Mangalore. Land measuring 4,605 hectares has been leased to the Company by the Government of Karnataka.

#### **Beneficiation**

The novel feature of the project is beneficiation of low-grade magnetic ore of Kudremukh, which contains 38 per cent of iron to enrich it to a

concentrate of guaranteed specifications of 66.5 per cent of iron content on the average and four per cent average-content of silica and aluminium.

The Company has arranged to mine and move 20.6 million tonnes of ore a year which would yield only 7.5 million tonnes of concentrates, the rest being disposed of as tailings with water. The company, the first largest commercial exploitation of low-grade iron ore in the country, followed the latest and tested Technology for concentrating the ore and for slurry transport through a 67 km pipeline. The mining equipments used in the process included production truck of 120-tonne capacity, 12/14 cubic yards of mining shovels, 12 cubic yards front-end-loader, etc. After mining, which involved drilling, blasting and crushing to small lumps, the product is fed to the concentrator plant where it is fed with water to 36 feet diameter autogenous mills. The autogenous mills are fitted with large rotating drums where hard ore and weathered soft ore are ground to small particles. The material is then concentrated by magnetic separators first and then by gravity spirals. The process is repeated to achieve a product at 67 per cent iron content. The concentrates produced consisting of 60 per cent solid and 40 per cent water called slurry are stored in two concentrate tanks. From these tanks, the slurry is drawn into a pump-house and transported through pipeline to Mangalore.

Hydraulic transport of solids is comparatively a new technology. The pipeline passes through thick Bhagawathi forest and through 1.7 km long tunnel specially built for the purpose, to a total distance of 67 km. About 10,000 tonnes of seamless pipes of 16 to 18 inches diameters are laid buried in the trench varying from 1.3 to 2.5 metres deep.

The slurry is collected at a slurry pond and later on taken to filter plants where it is de-watered by using vacuum pipes and converted into filter cakes. The entire operation is computerised.

At the port, facilities to handle upto six lakh D.W.T. ships by deepening the approach channel to increase the draft and extending the back waters and other navigational aids is provided. Then the concentrate in the form of cakes is transported abroad.

#### **Ore rejects and tailing dam**

During the process of concentration, it is expected that about 13 million tonnes of ore rejects called tailings are let out annually. To avoid pollution in the area, a massive tailing dam across the Lakhya stream is built. The 65-metre high and 313-metre wide dam which is designed by the Central Water Commission will retain the tailings. The level of the river-bed at dam-site is 790 metres (MSL), and the full reservoir level is 850 metres (MSL). A spillway of approximately 70 metres in length and 35 metres in width is being provided. The catchment area is 20 Sq. Km and the water-spread area is 1.70 Sq Km. The dam has a storage capacity of 91 M.Cmt. and can hold tailings (ore rejects) for ten years. The

function of the tailing dam is two fold. It stores the tailings and supplies the make-up water to the concentrator plant water system, by collecting the rain-water from the local water-sheds.

As this type of mining and slurry transporting is new to this country, the Company engaged Canadian Met-Chem consultants, a subsidiary of the U.S. Steel Corporation as Mining Associates and Engineer Constructors. The Indian expertise and agencies both in the public and private sectors were made use of. The Hindusthan Steel Works Construction Ltd. took up civil and structural works and built a part of the township. Assistance of the Military Engineering Service was also taken in the construction of the township, while the Central P.W.D. were in charge of constructing a colony at Mangalore. The Karnataka P.W.D., the Border Roads Organisation and the Indian Railway Construction Company laid out a highway of the National Highway standard between Kudremukh and Mangalore. This reduced the distance from 171 km. to 104 km. Engineering expertise of Metallurgical and Engineering Consultants, Engineers India limited and Howe (India) limited were also made use of.

#### **Power for the project**

The average requirement of power is estimated at 90 megawatts. The Mysore Power Corporation Ltd., has initiated specific schemes for diverting water to the Sharavathy Hydro-Electric Station by building two dams across the rivers Chakra and Savehaklu. One 5,000 KVA 33/11 kv. transformer was commissioned on 1st January 1978 by the Karnataka Electricity Board to meet temporary power supply to the Project.

#### **Ecological problems**

Pollution of air due to dust while mining, soil wash-off from the ore body into Bhadra river and its tributaries, escape of tailings through tailing reservoir, heat radiation and noise pollution are some of the major problems. As part of the broad-based plan, to preserve Kudremukh's ecology and as an anti-pollution measure, a master plan of Rs. 17 million was worked out. It includes massive and intensive afforestation programme in steep slopes of mining areas, in the leased area of the project and all along the catchment area of Lakhya dam above 850 metres. The disposal of mine waste is controlled by digging large trenches, by allowing strips of grass and rows of agave and tree belts in between them and around the ore body. Establishment of a forest and horticultural nursery, raising of eucalyptus, silver oak, *accacia duriculiiformis* and bamboos and agave, planting flower trees, lawns and gardens in front of offices and institutions, helping bee keeping, starting of a small animal park, snake and crocodile parks, a flight cage for birds, salt-lick and conservation towers for attracting and viewing big games outside township, etc., are included in the plan.

#### **Ancillary Industries**

There is considerable scope for development of ancillary industries in this area. A detailed report has been prepared indicating the possibilities

of starting ancillary industries, which mainly relate to casting and rolled steel items, forgings, rubber-lining and other repair and maintenance works. The Karnataka State Finance Corporation has plans to encourage the development of auxiliary industries in the area.

### **Manpower**

A total manpower of about 2,000 persons is expected to be required at the operational stage of the Kudremukh Project. It is estimated that when the work of transportation will actually begin the different contract agencies would need to engage thousands of persons. Employment opportunities are provided also to the Scheduled Castes, Scheduled Tribes, ex-servicemen and physically handicapped persons.

### **Welfare facilities**

The company has created civilized conditions of living at Kudremukh, converting an isolated tract in the inaccessible *malnad* in a humming modern town; a full-fledged central school, well-laid out flower beds, the smiling nurseries, the rows of houses with all amenities, a 50-bed hospital, foreign expatriates hostel, a community centre, an ideal shopping complex, a town centre, etc. are some of the modern amenities. A colony of about 200 houses will also be constructed at Mangalore for the employees. Other welfare measures introduced include reimbursement of school fees, supply of uniforms to the wards of the Company's non-executive employees drawing a basic pay upto Rs. 750, provision of monthly scholarships to deserving students and mid-day meals, benevolent fund to help families of deceased employees, Group Personal Accident Scheme for executives, etc. The Company has also made provision for grant of advances for purchase/construction of houses for the employees at places where the Company has its offices. Non-executive employees are paid a sum of Rs. 15 per month as a canteen subsidy. Advance increments are given to those who acquire higher additional qualifications.

The completion of the 110 km. Kudremukh-Mangalore highway, the steady and satisfactory development of terminal facilities at the Mangalore Port, the arrival of plant and machinery required for the purpose, and such other factors have contributed for completing the project as per the target. The plant was commissioned on 22nd August 1980 with slurry flowing down the pipe-line.

The total expenditure incurred on the Kudremukh project since inception to 1977-78 was Rs. 126.17 crores and budgeted expenditure for 1978-79 was Rs. 200 crores. The development of Mangalore as a major port and construction of the Kudremukh-Mangalore Highway will help the development of the area.

### **Mining leases**

In respect of several economic minerals, the Department of Mines and Geology has given mining leases ranging from ten and twenty years to

private persons and companies. Such leases pertain to iron ore, quartz, yellow ochre, kyanite, black clay, manganese, asbestos, soapstone (stealite), etc. The amounts of royalty paid during some recent years are shown in the table appended at the end of the chapter.

### **Categories of industries**

All industrial undertakings with a capital investment of over Rs. 10 lakhs and upto Rs. 5 crores, under certain conditions, come under medium and large scale industries. There is no official demarcation of investment-limits in respect of them. An industry with a capital exceeding Rs. five crores is treated as a heavy industry. Those industrial units, which have an investment not exceeding Rs. 10 lakhs in fixed assets in plant and machinery, are termed as small-scale industries. Ancillary units are defined as those undertakings which have an investment of not exceeding Rs. 15 lakhs in fixed assets in plant and machinery and are engaged in the manufacture of parts, components, sub-assemblies, tools or intermediates or in rendering services and supplying or rendering or proposing to supply or supply 50 per cent of their production or the total services, as the case may be, to other units for production of other articles. This is subject to the condition that no such undertaking shall be a subsidiary of or owned or controlled by any other undertaking. All such units are eligible to get financial assistance on the same conditions as the small-scale industries.

### **SMALL-SCALE INDUSTRIES**

The district had 373 registered small-scale industrial units in 1980 (having a total production value of over three crores of rupees). Small-scale industrial establishments play a vital role in the modern economy by providing considerable employment and income opportunities and acting as an important stabilising force. They contribute to a faster rate of industrial development by serving as feeder and ancillary units. A small-scale industrial unit registered with the State Department of Industries and Commerce gets several facilities. It is given financial assistance and is helped in obtaining scarce and imported raw materials. It is provided with identification for its products for the purpose of sales.

The machineries required by such unit are arranged to be supplied under a hire-purchase scheme of the National Small-Scale Industries Corporation and the Karnataka State Industries Corporation which pay 80 per cent of the cost which has to be repaid by instalments in eight years. New units are given further incentives such as exemption from octroi and sales-tax, concession in electricity charges, etc., for a certain period. Loans are also advanced to such units by the State Department of Industries and Commerce.

In 1980, the number of registered small-scale industries in each taluk of the district was 190 in Chikmagalur, 74 in Kadur, 38 in Tarikere, 31 in



Mudigere, 17 in Koppa, 13 in Sringeri and 10 in Narasimharajapura, in all 373 units. The taluk-wise and category-wise number of these units during the same year were as detailed below :

**The talukwise number of registered Small-Scale Industrial  
Units as on March 1980.**

<i>Taluk</i>	<i>No. of Units</i>
Chikmagalur	190
Kadur	74
Koppa	17
Mudigere	31
Narasimharajapura	10
Sringeri	13
Tarikere	38
<b>Total</b>	<b>373</b>

**Categorywise number of registered Small-Scale Industrial Units as on March 1980.**

<i>Category</i>	<i>No. of Units</i>
Printing and Paper	32
Engineering	78
Wood Products	45
Tiles, Bricks and Cement	25
Food-Processing	18
Leather Products	09
Ready made dresses	12
Coffee and Tea	22
Khandasari Sugar	01
Match Works	02
Chemicals and Pharmaceuticals	01
Rice, Flour and Oil Mills	128
<b>Total</b>	<b>373</b>

**The Vignyan Industries Ltd.**

Apart from the Kudremukh project, the Vignyan Industries Limited is the largest industrial unit in the district. It is located at Haliyur, near Tarikere town, on the Bangalore-Honavar Road. Its incorporation was done in January 1966 and the operation commenced in December 1970. It manufactures steel and alloy steel castings and ingots all the year round. It is a public limited company managed by a Board of Directors. The capital invested is Rs 35,46,950 in equity shares and Rs 10 lakhs in preference shares subscribed by State and Central financial institutions and the general public. It became a "Deemed Government Company" from February 1975, as State and Central financial institutions hold more than 51 per cent of the share capital of the concern.

The plant and machinery of this factory consist of an electric arc furnace, annealing furnace, shot blast unit, sand-conditioning plant, cranes, drilling machines, moulding machine and so forth. Iron scraps and ferrous alloys of which are the raw materials required, are purchased indigenously after testing them. They are charged to the arc furnace where an arc of current is struck between graphite electrodes, as a result of which they melt. Then various refining operations are carried out. Then, they are poured into moulds, and castings are obtained after furnishing processes. The installed capacity of this factory is 2,000 tonnes of steel and alloy-steel castings, and 3,200 tonnes of ingots. The output in 1974 was about 42 tonnes of steel and alloy-steel castings and 2,770 tonnes of ingots. There were 180 male employees in the year 1976 and the total wages paid per month was about Rs. 65,000. The workers are provided with facilities such as provident fund, medical aid and canteen.

### **Coffee-curing works**

The Chikmagalur district is a major coffee-producing area. The coffee seeds have to be cured before being marketed for use. Coffee-curing work is seasonal, commencing generally in December and lasting till the middle of May. On arrival at the curing works, the raw coffee is first dried in the sun, then mechanically shelled, winnowed, graded and packed, ready for marketing by the Coffee Board which has the sole authority of marketing.

There are three coffee-curing works in the district. The Mysore Coffee Curing Works Ltd., Chikmagalur, began its operation in 1939. It is managed by a Board of nine directors of whom three are nominated by the State Government. The subscribed share capital is about Rs 10 lakhs. The works provides employment to some 270 persons during the season. It processes about 15 tonnes of coffee seeds per day. The Chamundi Curing Works at Chikmagalur is managed by the Coorg and Mysore Coffee Company Ltd., which has its head office at Mysore. This unit was established in 1963. It receives raw coffee from planters for curing. During the season, the company employs about 640 persons. In this curing works, about 5,500 tonnes of coffee seeds are cured annually. The total value of production is estimated at Rs. 8,25,00,000. The Malenadu Planters Coffee-Curing Works (Private) Ltd., Chikmagalur, was founded in 1971. The capital invested in it is about Rs. 15 lakhs. The concern engages about 450 workers during the season, and cures about 5.00 tonnes of coffee in a year. Coffee powder is prepared and supplied on a considerable scale to outside places on order. In 1976, there were in all 12 processing establishments engaged in coffee and tea industry.

### **Tea factories**

The Balanoor Tea and Rubber Company Ltd., of Balanoor and Kotordie Estates in the Chikmagalur district, commenced functioning in 1937. It is a public limited company. The capital invested is about Rs. 25 lakhs.

The factory engages about 500 persons and works all the year round. The annual output during 1975-76 was about five lakh kg of tea. The Mavinkere Estate of Kalasa, which started production in 1964, is a partnership concern engaged in the production of tea and also coffee. The capital invested is about Rs. 10 lakhs. The number of workers employed was 188 in 1976. The production of tea during 1974-75 was 64,478 kg. The Kelagur Tea Factory started in 1934 is also run on partnership basis. It is located at Magur village of Balur hobli. The capital invested is Rs. 5,50,000 and the factory provides employment to twenty persons. It produced 2,53,198 kg of tea in 1975.

#### **Khandasari sugar**

There is a *khandasari* sugar mill being run by Messrs. Giri Sugar and Industries (Regd.), located at Mugulavalli of Amble *hobli*. It was started during 1974-75 on a partnership-basis and works seasonally. The raw material (sugarcane) needed is supplied by the sugarcane-growers of the surrounding area. The capital invested is about Rs 11 lakhs and the mill provides employment to about 100 persons during the season. The production of *khandasari* is about 35 bags per day, and during 1974-75, the output was about 2,000 bags.

A co-operative society called the Pragati Gramodyoga Khandasari Sakkare Kaigarika Sahakara Sangha Ltd., located at Tarikere, started with a share capital of Rs 47,770 received a loan of Rs three lakhs from the Khadi and Village Industries Board during 1976-77.

#### **Oil mill**

There is a large oil mill maintained near Kadur town by Sree Mahaveer Oil Industries (P) Ltd. It began functioning in 1976 and is perennial, producing refined oil from raw groundnut oil. The capital invested is about Rs 40 lakhs and the output is roughly 10.5 tonnes of refined oil per day. As in 1981, the industry is not working.

#### **Wood industry**

In 1980 about 45 units, having about 400 workers, were engaged in wood-crafts. The saw mills cut wood to various sizes and also do their planing if required. Relatively, a bigger unit at Chikmagalur, which has a capital investment of about Rs four lakhs, has the capacity to cut 150 cft. of wood per day. Several small-size wood-craft units at Chikmagalur, Birur and other places manufacture furniture. At Tarikere, Ajjampura and Antaraghatta, there are units engaged in the production of carts. A few other small units are also making wooden packing cases, slate frames, electrical capping and casing, doors, windows, beams and the like.

#### **Manufacture of medicines**

There is a medicine-manufacturing unit called The Taranath Rasoushadhi Works (Private) Ltd., at Chikmagalur. It prepares Ayurvedic

medicines, generally with the help of various medicinal plants and herbs grown in the nearby areas. It was started in 1946 and is named after the late Pandit Taranath who was a renowned scholar and Ayurvedic Physician. Its authorised capital is Rs one lakh divided into 2,000 equity shares of Rs. 50 each and a paid up capital of Rs 58,400 and employs 16 workers. The medicines produced are marketed to chemists, druggists and physicians as per orders. The employees are provided with facilities such as bonus and gratuity. The production-value of medicines during 1979-80 was about Rs three lakhs.

### **Engineering works**

The number of engineering works, which was 20 in 1970 had gone upto 78 by 1980. They are in the small-scale sector, engaged in general jobbing works such as repairs of pumpsets, oil engines, flour mills, agricultural implements, servicing of automobiles, rewinding etc. The Raja Industrial Works, Sringeri, is engaged in sales and service of power-tillers, agricultural implements, etc. The capital invested including the loans is about Rs 5,94,000, the number of works being 33 and value of annual output about Rs. Seven lakhs. The Webbs Agricultural and Automobile Industries, located at Gavanahalli village in Chikmagalur taluk, is engaged in sales and service of agricultural tractors, implements and accessories. It has employed twenty persons. Messrs. Acharya Industries of Birur, manufactures agricultural implements, gates, grills, gohar-gas fabrication etc. The Hathwar Industries, Birur, makes stainless steel articles, hospital equipment, etc. The Green View Industries, B.M. Engineering Works, and several other engineering works are engaged in the manufacture of implements required in coffee estates, coffee-curing works and other engineering accessories. There are also Vishwakarma Industrial Co-operative Societies at Chikmagalur and Birur which were started to provide employment to displaced gold-smiths, with the help of finance provided by the Government. They also do various small engineering jobs.

### **Printing presses**

There were 32 printing presses in this district in 1980, a larger number of them being in Chikmagalur town. Smaller places like Ajjampura and Hariharapura are also having a few printing units. Most of the printing machines are power-operated. The printing establishments, which are all of small-size, undertake generally job work and a few of them do book work and book-binding also. In Chikmagalur town, several local newspapers are also printed. On an average, three to four persons are employed in a printing press.

### **Tile factory**

There is a tile factory at Kadur, called Standard Tile Company, which manufactures Mangalore tiles used in the roofing of buildings. Clay suitable for making tiles is available in the nearby areas. The unit has

provided employment to about 50 persons. The Karnataka State Financial Corporation has extended a loan of Rs 15,000 to it. There are also twenty-four other units in the district engaged in the production of bricks, cement articles, etc.

#### **Bakeries and confectioneries**

There were six units in the district in 1980, engaged in the preparation of bakery products like bread, biscuits and confectioneries (see Chapter VIII).

#### **Ready-made dresses**

There were nine units as in 1976, engaged in making ready-made dresses. Such garments are becoming increasingly popular, because they are sometimes cheaper and can be had without any waiting. Two units in Chikmagalur town are also engaged in preparing hand bags.

#### **Match works**

There is a match works at Uppalli in Chikmagalur taluk, called Dada Match Works engaged in the production of safety matches. It was started in 1975, with a capital investment of about Rs. 50,000. It employs about ten persons. The raw materials needed are obtained through the Department of Industries and Commerce and from private sources. The processes of production are done by hand work.

#### **Soap works**

There were three units in the district, all of them in Chikmagalur town, as in 1976, engaged in the production of washing soaps. Their total capital investment was about Rs. 65,000 and the production value per annum about Rs. 2,40,000. The oldest of the three called the Kadur Soap Works, Chikmagalur, was started in 1942 with a capital investment of Rs. 50,000.

#### **Khadi and village industries**

The Khadi and village industries are of considerable importance in helping to improve the economic conditions of the rural population. Some of them serve as subsidiary to agriculture. Efforts are being made to sustain and make them viable. There is a District Office of the Karnataka State Khadi and Village Industries Board at Chikmagalur, with a District Officer as its head with jurisdiction over the entire district.

The artisans, who are engaged in these industries, have been following age-old methods in manufacturing the articles and are economically very weak. They are in need of modern technical guidance and financial help and these are being extended by the State Khadi and Village Industries Board. Nineteen industrial co-operative societies and another industrial unit of this district, are being financed by the Board. Upto 1976, the Board has given them Rs 7,77,174 in the form of loans and Rs 1,89,383 by way of grants. It is assisting the economically backward artisans through

the nationalised banks under an interest-subsidy scheme of the Central Khadi and Village Industries Commission. By this arrangement, 32 potters and four leather-workers were given loans of about Rs 19,000 upto 1976.

The Khadi and Village Industries Co-operative Society of Ajjampur, which has an additional centre at Shivani, has about 100 workers whose average earning is about Rs. five per day. The value of production done by this Unit was about Rs. 57,000 during 1975-76. The society has appointed trained instructors for imparting training in spinning and weaving. The Khadi and Village Industries Board advanced loans of about Rs four lakhs and grants of about Rs one lakh to this society from 1958-59 to 1972-73.

#### **Gobar gas plants**

Gobar gas plants have been set up in many villages in recent years, and their number is increasing. They are run by using cattle dung. The Central Government has sanctioned 25 per cent subsidy on estimated cost of each plant in order to encourage the rural people to have these plants. Technical guidances and supervision for construction and maintenance of these plants are provided by the Central Khadi and Village Industries Commission and the State Khadi and Village Industries Board. As on 31st August 1980, there were 358 gobar gas plants in the district, the taluk-wise breakup being Chikmagalur-86, Kadur-39, Koppa-57, Mudigere-84, Narasimharajapura-34, Sringeri-22, and Tarikere-36.

#### **Leather industry**

Leather Industry is an age-old one, and persons engaged in this craft prepare footwear, drums, belts and the like from cattle hides and repair them. In 1951, there were 179 leather craft units in the district engaging 195 whole-time and 60 part-time workers.

The Khadi and Village Industries Board is helping them through co-operatives to get them loans from the nationalised banks. There is a leather co-operative society at Chikmagalur, with 82 members and a paid-up share capital of Rs. 2,050. During 1976-77, the Board had extended a loan of Rs. 14,350 and grant of Rs. 2,350 to this society. Another leather co-operative society, which was organised at Birur, is now defunct. The Board has also issued 16 eligibility certificates to leather artisans of different places to enable them to start their industries early. Two of the nationalised banks had given loans totalling Rs 4,500 to eight leather-craftsmen by 1976.

#### **Pottery**

Pottery has been a very ancient industry. There is still demand for earthenwares, particularly in the rural parts. The potters prepare from clay articles such as earthen vessels, pitchers, water jars, garden pots, tiles, etc. The equipment of the potter is very simple, consisting of traditional wheels and frames, but the work requires much skill. The producers sell

their products in the local *shandis* and markets of the towns. There were 321 units in 1951 employing 461 whole-time and 360 part-time workers. The Khadi and Village Industries Board is helping to improve their craft and conditions and encourages them to form co-operative societies. At Menasinamalle-Devarahalli of Chikmagalur taluk, there is a co-operative of the potters, comprising 88 members. The value of production made by this society during 1975-76 was to the tune of Rs. 1,50,000. The Board has issued eligibility certificates to 133 persons of several places, and 86 applicants were given loans of Rs. 37,900 by two nationalised banks upto December 1976.

### **Carpentry**

Abundance of wood being available in the *malnad* parts, wood-craft received much impetus in the area. All bigger villages and towns have carpentry units. Crafts, doors, window-frames and the like and some agricultural implements are prepared and repaired by the carpenters. In the urban centres, they manufacture also various items of furniture. They work in groups or individually, as per the needs. There were 239 carpentry units in 1951 engaging 479 workers. The Khadi and Village Industries Board has issued eligibility certificates for financial help to 17 artisans, out of whom five persons received a loan of Rs. 1,500 by 1976 from two nationalised banks.

### **Blacksmithy**

During the period of the Keladi kingdom, the skill of blacksmiths of the region was well-developed and their products including weapons had become well-known. The artisans of this category manufacture and repair in the traditional way various agricultural implements, parts of carts, hardware, cutlery articles, horse-shoes and so forth. A unit is managed by a single skilled craftsman with the help of the members of his family and engaging when necessary one or more labourers depending on the pressure of work, the volume of which depends upon seasonal demands. Many a time, the raw material for the articles needed is supplied by the customers. Every big village has at least one or two families engaged in this craft. In 1951, there were 253 units in the district with 515 workers. There are relatively larger blacksmithy units at Tarikere, Birur, Kadur, Ajjampura, Vastare, Matighatta, Sokke and in some other places.

### **Village oil industry**

The age-old village oil industry can be seen even today in some places of the district. It is a family occupation of the *ganigars*. They extract oil from groundnut, castor etc., by using *ganas* (*ghanis*) driven by a pair of bullocks. In 1951, there were 45 units engaging 91 persons. The Khadi and Village Industries Board extended a loan of about Rs. one lakh and a grant of Rs. 7,600 to this industry in this district upto 1974-75. In order to give a fillip to this industry, oil co-operative societies were organised at

Chikmagalur, Mudigere, Kallahalli of Chikmagalur taluk, Panchanahalli and Yellambalase, but all of them have now become defunct.

### **Handlooms**

There were 184 Handlooms and 7 handloom weavers co-operative societies in the district as in 1979-80. Of these, four societies were under liquidation, two were defunct and the other is functioning as a viable unit.

### **Wool-weaving**

*Kambli*-weaving with the wool of sheep is a subsidiary occupation to some families of eastern parts of this district. There were two woollen co-operatives at Birur with 423 members and a paid-up share capital of about Rs. 6,800, but they are not now functioning. The Khadi and Village Industries Board has given loans totalling Rs. 27,200 and grant of Rs. 720 to help this industry in the district.

### **Lime industry**

Limestone is available in many places in this district. It is burnt in kilns and lime is formed. Three individual units, each consisting of ten members, located at Birur, Chikmagalur and Mudigere were helped by the Khadi and Village Industries Board by extending loans totalling Rs. 22,000 and grant of Rs. 9,000 upto 1976-77. The unit at Chikmagalur is in industrial estate. The Board has also issued eligibility certificates to 25 persons of Lakhya, Birur and Ajjampura to enable them to obtain loans from nationalised banks, and upto 1976, 12 of them received loans of Rs. 4,150.

### **Bee-keeping**

The bountiful vegetation in the district has enabled bee-keeping to become an important cottage industry in the rural areas of the *malnad* parts. Bee-hive boxes are kept in suitable places to obtain honey and wax. There is a Bee-keeping Nursery-cum-Extension Centre at Kalasa of Mudigere taluk which was started in 1977-78. A sum of Rs. 0.50 lakh was spent in 1978-79. The bee-keepers co-operative societies help their members to follow improved methods in bee-keeping and also provide facilities for marketing of honey and wax produced by the members. They distribute bee-hive boxes, honey-extractors, and the like to the members at subsidised rates. Besides, they also provide training in better methods of bee-keeping to interested candidates. These co-operatives have received encouragement from the Khadi and Village Industries Board.

### **Regional Bee Research Centre**

The Khadi and Village Industries Commission, established a Central Bee Research Institute at Poona in 1962 and Regional Bee Research Centres at Mercara, Castle Rock, Kodaikanal (Tamil Nadu) and Kangra (Himachal Pradesh). The Regional Bee Research Centre, an operational unit of the Central Bee Research Institute was started at Mercara in Kodagu



district in 1964 and later on shifted to Chikmagalur in 1975. Jurisdiction of this centre covers the entire State of Karnataka, northern parts of Tamilnadu and whole of Kerala. The functions of the centre include implementation of scientific programmes formulated by Central Bee Research Institute, establishment of field observation stations, conduct of field surveys, organisation of Regional Training Courses, standardisation of management practices for each region, control of diseases and pests and conduct of pollination experiments on local crops. The research programmes of the centre is implemented through field observation stations at Jakkanahalli with about 90 experimental bee colonies in this district and about 100 colonies at Kakkabbe (Kodagu district). Field observation stations consist of experimental apiaries and constitute the basis for providing research material and recommending appropriate seasonal management in actual practice. It has evolved patterns of migration of bee colonies from the hill and forest regions to the agricultural plains like places around Banur (Chikmagalur District), Bettadapura (Mysore District) and to rubber estates in Koyanadu. It has, however, propagated four plant species of proved merit.

The Khadi and Village Industries Commission is assisting 1,387 bee keepers in 278 villages for producing the annual yield of over 45,000 kg of honey. The research programme introduced by the Regional Bee Research Centre aims at improving upon this so as to utilise the potential to the maximum extent.

#### **Glass bangles**

There are four small units, two at Tarikere and one each at Birur and Lingadahalli, which are engaged in preparing glass bangles. They are run by families which have come from the Soundatti taluk of Belgaum district. There are about ten persons working in each unit. The raw materials such as broken glasses, bottles and bangle-pieces are obtained locally and nearby places. The glass bangles prepared are sent to various places in the region as per orders.

#### **Basket and mat-making**

The Medars are traditionally engaged in the ancient craft of making baskets, mats and such other articles. The craftsman himself is the proprietor in each unit and is assisted by the members of his family. The products manufactured are baskets, plain and coloured mats, cradles, hand-fans and such other household requirements. The main raw materials used are bamboos and reeds which are available in the forests of this district. The products are generally marketed locally and in nearby *shandis*. The demand for baskets reaches the peak during harvest seasons. In 1951, there were 256 units in the district having 523 whole-time and 188 part-time workers.

#### **Industrial co-operatives**

As in 1979, there were 39 industrial co-operative societies, of which nine

were under liquidation. There is a branch of the Karnataka State Industrial Co-operative Bank at Chikmagalur (see Ch. VI).

### **Industrial estates**

An industrial estate has been defined as "a tract of land which is sub-divided and developed according to a comprehensive plan for the use of a community of industrial enterprisers". It seeks to provide also, on a rental basis, other basic common facilities such as technical workshops and repair and other service-shops to groups of small entrepreneurs who would otherwise find it difficult to secure these facilities economically. The Government of Karnataka launched the programme of industrial estates towards the end of the First Five-Year Plan. In this district, there are two industrial estates, one each at Chikmagalur and Kadur. At Chikmagalur, six sheds and 18 plots, and at Kadur, six sheds and 19 plots have been provided. It is proposed to construct an industrial estate at Tarikere at a cost of Rs 4.450 lakhs during 1979-80.

### **Training facilities**

The district has a Polytechnic, an Artisan Training Institute and Model Carpentry and Smithy Centre all of which are located in Chikmagalur town. While the Polytechnic is maintained by the Directorate of Technical Education (see Ch. XV), the other institutions belong to the Department of Industries and Commerce. The Artisan Training Institute provides training in carpentry, smithy, rattan works and leather-stitching, each of these courses being of two years' duration. In 1978-79, there were 35 trainees in these crafts. In the Model Carpentry and Smithy Centre, training is imparted in carpentry for six months and one year, and in blacksmithy for six months. In 1978-79, there were 34 trainees in carpentry and blacksmithy.

A community polytechnic started functioning in Chikmagalur in 1980-81. It has undertaken the work of manufacture of Agricultural implements and wooden furnitures. It also intends to have a mobile service-cum-repair Unit, which could move from village to village rendering small technical services and in setting right the agricultural implements of the farmers including pumpsets, motors, sprayers, etc., A sum of Rupees one lakh as non-recurring expenditure and Rupees fifty thousand as recurring expenditure, has been earmarked for implementing this scheme in the district by the Government of India.

Table showing talukwise details of electrical installations, total energy consumed, etc. in Chikmagalur District in two recent years  
(as on 31st March of each year)

Sl. No.	Taluk	Villages electrified		Irrigation pumpsets energised		Domestic lighting		All electric home		Industrial power		Other viz., commercial lighting		Energy consumed in KW	
		1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980
1	Chikmagalur	153	159	519	658	9,004	10,065	848	1,164	855	739	2,543	2,833		
2	Kadur	122	124	433	444	8,414	10,845	157	199	342	970	1,382	1,476		
3	Koppa	67	67	194	213	1,951	2,482	386	459	120	154	250	799		
4	Mudigere	97	97	357	383	2,810	2,988	314	47	180	205	789	952		
5	Narasimharajapura	56	57	238	242	923	951	141	147	85	91	230	439		
6	Sringeri	33	33	96	102	1,200	1,238	128	435	55	49	120	418		
7	Tarikere	148	152	889	910	8,186	9,799	149	209	224	291	1,158	1,430		
													Total energy consumption 3,83,86,600 Kw.	4,23,93,741	

## Revenue realised as Royalty on Minerals in Chikmagalur District from 1972 to 1979

(in Rupees)

Year	Class of Minerals	Particulars	Opening Balance	Demand	Total
1972	Major Minerals	Royalty	3,92,008.97	3,65,269.27	7,57,278.24
		S.R.	4,737.25	1,585.00	6,322.25
		Cess	617.20	160.00	777.25
	Minor Minerals	Royalty from surrendered blocks	76,183.32	3.00	76,186.32
1973	Major Minerals	Royalty	4,47,157.22	3,71,460.66	8,18,617.88
		SR & Cess	5,328.39	1,774.70	7,103.09
	Minor Minerals	Royalty	2,161.40	3,187.54	5,348.94
		SR & Cess	12.98	82.13	95.11
1974	Major Minerals	Royalty	5,20,407.32	3,43,915.69	8,64,323.01
		SR & Cess	5,341.03	1,818.36	7,159.39
	Minor Minerals	Royalty	4,085.54	4,186.00	8,271.54
		SR & Cess	107.13	107.13	214.26
1975	Major Minerals	Royalty	4,97,651.58	3,06,122.05	8,03,783.63
		SR & Cess	5,340.43	1,891.47	7,231.90
	Minor Minerals	Royalty	5,087.50	5,981.75	11,069.25
		SR & Cess	131.93	106.93	238.86
1976	Major Minerals	Royalty	4,42,195.28	2,92,821.25	7,35,016.93
		SR & Cess	40,038.12	2,020.64	6,058.76
	Minor Minerals	Royalty	5,981.75	25,828.77	31,810.52
		SR & Cess	106.83	263.34	370.17
1977	Major Minerals	Royalty	4,21,088.18	2,84,837.51	7,05,925.69
		SR & Cess	4,242.11	2,061.85	6,303.96
	Minor Minerals	Royalty	13,486.48	39,803.92	53,290.40
		SR & Cess	263.34	826.60	1,089.94
1978	Major Minerals	Royalty	4,28,447.02	2,97,640.81	7,26,087.83
		SR & Cess	4,469.89	2,050.86	6,520.75
	Minor Minerals	Royalty	23,979.88	1,75,126.27	1,99,106.15
		SR & Cess	316.60	147.30	463.90
1979	Major Minerals	Royalty	4,17,967.72	3,80,012.04	7,97,979.76
		SR & Cess	4,532.10	16,024.90	20,557.60
	Minor Minerals	Royalty	1,81,770.78	74,552.65	2,56,326.43
		SR & Cess	170.14	213.31	383.45

Source : Senior Geologist, Department of Mines and Geology, Dakshina Kannada Division, Mangalore.