CHAPTER V

INDUSTRIES

THE need for development of industries is an accepted factor in the evolution of a region's economy. Bellary district is favourably situated in regard to the production of most of the raw materials needed for the development of its industries. The large number of roads laid in recent decades and the connection of the district headquarters by rail to Guntakal from whence lines radiate to Bombay, Vijayawada, Madras and Bangalore and the railway lines from Bellary to Hubli and Hospet to Kottur have all contributed towards industrial expansion in the district. The district abounds in valuable natural resources and basic raw materials vital for the expansion of key industries of the modern type; these resources have to be systematically exploited and utilised for capital works of a productive nature calculated to enhance the prosperity of the people of the district.

Bellary is rich in mineral wealth, especially in iron ore. The region between the twin ranges of the Sandur hills is " exceedingly rich in iron, richest in the whole of India and one of the richest in the world " (R. Bruce Foote). The district is also rich in manganese, the ore containing an average of 43 per cent of manganese dioxide. Agricultural raw materials of considerable value are raised every year. Cotton, which constitutes the main item for the textile industries, and oil-seeds, especially groundnut, which are responsible for a large number of oil mills, are grown in considerable quantities. Sugarcane is largely grown in Bellary and Hospet taluks and this has been helpful for the starting of sugar factories in the district. Among the other important industries may be mentioned cotton ginning and pressing, handloom-weaving and *beedi*-manufacture. In the following pages of this chapter, an attempt is made to briefly describe these and other industries of the district.

Old-time Industries

There is an old saying that " the first, the best and the most perfect of instruments is the human hand ". In the old days when the district had no factories which could be defined as modern

it was with the help of these perfect instruments, *viz.*, human hands, that industries were carried on. When we see the beautifully carved temples at Hampi—the seat of the Vijayanagara Empire—the inlaid work, the old traces of jewellery and pottery which attained a state of perfection, one cannot but be struck with the skilled craftsmanship of those days displayed by the people of the district. In this connection, we may quote two foreign writers who have left their impressions about the old craftsmanship of the Madras Presidency of which, till 1953, Bellary district was a part. Mr. W. S. Lilly writes: "It may be truely said that the artistic spirit displayed in the architecture of their temples permeates the life of the people. From the earliest times, they have been famous for their skill in the production of delicate woven fabrics, in the blending of colours, in the working of metals and precious stones; everything that comes from the hands of their artisans down to the cheapest toy or earthen vessel is a work of art". Sir George Birdwood has said: "Every house is likewise a nursery of the beautiful..... There is universally diffused popular appreciation of technical skill and taste in workmanship which must necessarily have had its effect in promoting the unrivalled excellence of the historic handicrafts....." The examples of such handicrafts in the district were silk and lace-embroidered clothes, toys and beautiful wares in brass.

Apart from those referred to above, which may be classed under industries of skilled workmanship, some other industries are also found to have flourished in the district in the old days. One such industry refers to the manufacture of big iron pans in which sugarcane juice was boiled. It has been recorded that "until recently, the manufacture of the huge shallow iron pans, in which sugarcane juice is boiled, was a considerable industry in Kamalapuram. The iron was brought by pack bullocks from Jambunathakonda and was smelted and worked by men of the Kammara caste."[1] Referring to the decay of this industry, it has been said in the same book that "of late years, the cheaper English iron has completely ousted the country product, the smelting industry is dead and the Kammaras confine themselves to making and mending the boilers with English material."

Glass Bangle Industry

Another important old-time industry was the glass bangle industry, which was once flourishing in Narasapur in Kudligi taluk. The bangles produced were of the plain variety and were sold within the district. Owing to the import of fancy bangles, the demand for the local bangles of this plain variety gradually decreased though it continued to hold its own importance for some years because of the religious significance attached to the bangles and also because the poorer classes continued to buy the cheaper

1. "The Fourteenth Tour of H.E. The Hon. Sir Arthur Lawley, Governer of Madras, in Mysore, Bellary, Anantapur and Hyderabad Districts", 1910, p.62.

qualities. To quote from the old Bellary District Gazetteer: "The glass bangle industry which flourished in Narasapur, Kudligi taluk, became defunct recently. The question of revival of this industry was specially investigated by the Department of Industries, but it was found that the industry was incapable of development. It was further held that even with Government assistance, the indigenous bangle manufacture would not be able to withstand intense foreign competition."[1]

Among the other notable old-time industries may be mentioned spinning and handloom weaving, oilseed pressing, hand-pounding of rice, jaggery-making, rope-making, leather-stitching, manufacture of crude equipment for the village drama, stone-carving and manufacture of bricks and country tiles. The causes for the decline of these industries are well known and are common to all districts. The village oil industry has lost its importance with the growth of oil mills and same is the case with hand-pounding of rice due to establishment of rice mills and hullers. The emergence of sugar mills and the growing habit among the people to go in for sugar relegated the manufacture of jaggery to the background. Among the old-time industries, handloom weaving is, however, still carried on in the district in spite of the import of machine-made goods.

Causes for decline of old industries

The general causes attributed to the decline of old industries are the lack of sufficient demand, paucity of funds, insufficient supply of raw materials, want of skilled workers, lack of efficient management and the absence of proper marketing facilities. The migratory character of many of the artisans has also contributed to this. Another reason for the decline of old-time industries was the diversion of younger members of the artisan families to other occupations, such as is brought about by a change in ideas and training. This diversion of younger members has been picturesquely described by Mr. Navarathna Rama Rao. He says: "When the younger members of an artisan family are taken out of the atmosphere of the home workshop and put to an ordinary school, not only is there a sacrifice, or at least an abandonment, of the advantages of tradition, inherited skill and aptitude accumulated through long years of successful work, but the industry also suffers from being starved of fresh minds, which might possibly have revitalised the worn body of an old occupation. This diversion of young talents not only injures the industry immediately, but renders its subsequent revival difficult and improbable. Such an industry is, as it were, chained to the past and rapidly withers and dies through sheer lack of motion and nutriment."[2]

Further, with opening-up of the district by railways, development of communications and expansion of trade and its influence

1. Bellary District Gazetteer, Vol. II, 1930, p. 75.
2. Census of India, 1931, Vol. XXV, Mysore, Part I, Report, p. 229, 1932.

over the economic condition of the people, the old-time industries began to lose their ground. But the process of decline was slow since the people of the upper class continued their patronage, though to a smaller extent, until they were succeeded by the younger generation which had not the same inducement or means to patronise the arts and crafts as their forefathers had done. Competition from more highly developed industries and the changes of tastes and the fact that people of the middle classes were in favour of cheapness of price also contributed to the lowering of the artistic beauty of the articles and the efficiency of the artisan. The gradual displacement in many cases of manual labour by mechanical labour made production possible on a large scale and at a cheaper price, though under such conditions the artisan had no opportunities to show his skill or dexterity in the work. The machine-made products, though of a better finish and polish, lacked the impress of individuality and the touch of the skill of the maker, and the artisans who had freedom of action and thought when carrying on the industries in their homes, soon lost their skill. The gradual increase in the population during the last few decades and the enormous importation of machine-made goods from outside together with the decline of the local industries created a large class of landless labourers who began to press upon the land for their sustenance.

Power supply

In its varied aspects of power supply and development, Bellary district utilised the advantages of both thermal and hydro-electric power. Before hydro-electric power was supplied to various towns and villages, there were three diesel power stations located at Bellary, Sandur and Hospet. At the time of the merger of Bellary district with Mysore State in 1953, only one thermal unit was functioning at Sandur and it was closed in 1956. When the Tungabhadra Dam was thought of and when the project was about to be commenced, the problem of electric power loomed large. The Madras and Hyderabad Governments, whose sustained efforts for the construction of a large reservoir across the Tungabhadra were about to be fulfilled, made an approach to the Mysore Government for supply of power. Under an agreement, the power generated at the Mahatma Gandhi Hydro-Electric Works at Jog was made available to the project. This power load was drawn from the Sokke Power House in Kudligi taluk, which is situated at the border of Chitradurga and Bellary districts. The bulk power drawn from Jog facilitated the construction works at the Mallapuram dam site. The power supply, which was till then met by the diesel stations, was changed into hydel power supplied from Jog.

At present, Harapanahalli, Hadagalli, Kudligi, Mallapuram and Siruguppa taluks are fed by power generated at the Munirabad Generating Station, while the taluks of Bellary, Sandur and Hospet are fed from the Tungabhadra Dam site and Hampi Power

Stations. It is also possible to feed Harapanahalli, Hadagalli and Kudligi taluks from the power generated at the Sharavathi Generating Station in Shimoga district. There are six Master-Unit Sub-Stations at the following places in the district which are administered by the Bellary Electrical Division. The installed capacity of each of the stations is noted below :—

Sl. No.	*Location of Sub-Station*	*Installed capacity*
1.	Bellary	2 of 8 MVA 66/11 K.V.
2.	Siruguppa	1 of 1 MVA 33/11 K.V.
3.	Toranagal	2 of 1 MVA 66/11 K.V.
4.	Kudligi	2 of 1 MVA 66/11 K.V.
5.	Harapanahalli	2 of 1 MVA 66/11 K.V.
6.	Hagaribommanahalli ..	1 of 1 MVA 66/11 K.V.

There are proposals to instal one more sub-station at Hospet of a capacity of 2 of 3 MVA 33/11 K.V. and to augment the capacities of the sub-stations at Hagaribommanahalli and Siruguppa by adding a 1-MVA capacity transformer to each so as to meet the increased demand for power in these areas. The Bellary Sub-Station is under the jurisdiction of the Tungabhadra Board authorities, but the distribution, operation and maintenance of electricity to Bellary city and the rural parts are under the control of the Mysore State Electricity Board. Since the Tungabhadra right bank power project was started as a combined venture of the Governments of Andhra Pradesh and Mysore, the power generated at the Tungabhadra Dam and Hampi Power Stations was being shared between these two Governments in the ratio of 3:1 till the commission of the first unit of the Sharavathi Generating Station, and thereafter the ratio has been 4:1. However, the power generated at the Munirabad Power Station (on the Raichur side) is being completely utilised by the Mysore State Electricity Board. While the installed capacities of the two stations within Bellary district, *viz.*, Tungabhadra Dam and Hampi Power Stations, are 36,000 K.W. each, that of the Munirabad Power Station within Raichur district is only 27,000 K.W.

Rural Electrification

All the major villages in the district have been electrified through a phased programme of development, in consultation with the District Development Council, Bellary. The progress of

rural electrification in recent years has been rapid as could be seen from the following table :—

Sl. No.	Name of Taluk	No. of villages electrified	
		As in 1960–61	As on 31-3-1970
1.	Bellary	23	83
2.	Hospet	12	40
3.	Hadagalli	13*	52
4.	Harapanahalli	5	36
5.	Kudligi	25	88
6.	Mallapuram	..	25
7.	Sandur	13	31
8.	Siruguppa	3	22
	Total ..	94	377

*Includes Mallapuram Taluk.

Power plays a prominent role in the development of agriculture in the district. The development of sub-soil water resources depend, in a large measure, on the lift arrangements that can be made. A good number of irrigation pumpsets have been energised in the district for lifting up water from irrigation wells, etc., for purposes of agriculture.

With the increase in the quantum of power generation, the consumption of electrical energy has also increased over the years. While there were only 10,905 domestic lighting installations in the district in 1961, the number had gone up to 23,555 by the end of March 1970. Similarly, there has been perceptible increase in the number of other types of installations also, as could be seen from the sub-joined table :—

Sl. No.	Types of Installations	No. of Installations	
		As in 1961	As on 31-3-1970
1.	Domestic lighting	10,905	23,553
2.	All electric homes	48	689
3.	Commercial lighting	528	6,200
4.	Public lighting	4,390	12,853
5.	Low tension commercial power	389	1,541
6.	High tension commercial power	5	18
7.	Extra high tension commercial power ..	..	1
8.	Water supply	16	65

The increase in the consumption of electrical energy is correspondingly fetching more revenue to the Government for its power development activities. The average sector-wise consumption of electrical energy per month in the district and the revenue demand in respect of the same are indicated in the table given below :—

Sl. No.	*Type of use (sector-wise)*	*Average consumption per month (in units)*	*Average revenue demand per month (in Rs.)*
1.	Domestic lights and fans	3,79,832	1,24,058
2.	Domestic small power	17,363	2,958
3.	Commercial lights and fans ..	2,13,788	79,827
4.	Medium and low voltage	6,61,164	99,591
5.	Commercial small power	28,538	4,239
6.	High voltage	7,28,436	3,51,163
7.	Public street lights	1,63,031	26,554
8.	All electric homes	94,595	10,918
9.	Irrigation pumpsets	5,15,559	75,897
10.	Public water works	31,376	4,481
	Total ..	28,33,682	7,79,687

Power for Industries

The hydro-electric power of the Tungabhara Project is not only serving the needs of the farmers but also that of the industrialists. It has provided a sound base for industrial expansion and development in the district. Among the few notable industries developed after the advent of hydro-electric power, mention may be made of the two sugar factories, one of the India Sugars and Refineries Ltd. at Hospet, and the other of the Bellary Central Co-operative Stores at Kampli, the Tungabhadra Steel Products Ltd. near the Tungabhadra Dam, the M. G. Automobiles at Bellary, the Metals and Ferro Alloys Plant of the Sandur Manganese and Iron Ores Ltd. at Vyasanakere and the Bellary Spinning and Weaving Mills at Bellary. A much larger quantity of power will be required for the steel plant at Toranagal, work on which has already begun. Thus the availability of cheap and abundant power has raised new hopes in the minds of the people. It is leading them to new fields of adventure on the develoment front.

The work of supply, distribution and maintenance of electricity in the district is under the charge of an Executive Engineer (Electrical) of the Mysore State Electricity Board, who heads this Electrical Division, which was established in October 1953. The main functions of this Division include, among other things, energising of irrigation pumpsets, electrification of villages and towns, proper

distribution of electricity to various classes of consumers and operation and maintenance of the transmission and distribution system within its jurisdiction. To assist the Divisional Office in these and other functions, there are three sub-divisional offices in the district with their headquarters at Bellary, Hospet and Kudligi, each headed by an Assistant Engineer (Electrical). Besides, there is another sub-division headed by another Assistant Engineer, whose duty it is to quicken the pace of progress of energising of irrigation pumpsets and rural electrification work in the district. The Executive Engineer and the Assistant Engineers, in turn, are assisted in their duties by a number of technical and ministerial personnel consisting of seven Junior Engineers (Electrical), 41 Supervisors, 14 Operators, one Tracer, 22 First and 68 Second Division Clerks, one Stenographer, five Typists, five Store-keepers, 20 Meter Readers, 18 Class IV officials and 306 members of maintenance staff. The Indian Electricity Act, 1910, the Indian Electricity Rules, 1956, the Electricity (Supply) Act, 1948, and the Electricity Supply Regulations, 1970, of the Mysore State Electricity Board are the Acts and Rules that are administered by this Electrical Division in the district.

Mineral resources

Bellary district is known for its rich mineral resources, the most prominent of them being iron ore, manganese and red oxide of iron. The Sandur hills are rich in these resources and are being exploited on a large scale. Topographically, the Sandur territory is an elliptical valley with its long axis running north-west south-east. It is enclosed by lofty parallel ridges rising from the level of Sandur town situated in the centre of the valley. There are high peaks ranging between 3,200 feet and 3,600 feet, both on the east and west of Sandur town. The principal ones are: the Donimalai (3,421 feet) and a peak, 3,525 feet high, one-and-a-half miles from Ranjitpur on the east of Sandur town; Ramgad, a well-known hill station, and Kumaraswami-betta (3,610 feet) where the famous temple of Shri Kumaraswami (or Kartikeya) is situated. The hills are crowned by wide lateritic plateaux. The hills are mainly built up of great walls of resistant and banded ferruginous quartzites of deep brown, red and pink colours. The hills and high plateaux, together with the picturesque gorges and ravines, present a beautiful landscape.

Extensive deposits of haematitic iron ore of high grade occur in this region in several parallel and disconnected bands for a length of about 30 miles in a north-west south-east strike direction. While the average annual production of iron ore in the district is about three million tons at present, the total ore reserves in the district are estimated at about 1,000 to 1,250 million tons.

The deposits, as reported by the Geological Survey of India, are mostly in the interior and in high ranges and have not been exploited so far. Attention during the last serveral years has been

concentrated, mostly by private lease-holders, on the eastern limits of the Sandur belt which is more favourably situated being within a distance of six to ten miles from the railway. Though there are over 200 mining leases in the area and the production of iron ore has steadily increased over the years, so far only the easily workable float ore lyng in the slopes of the hill ranges has been exploited while the main iron ore reefs on the high ranges have remained untouched.

While there are a large number of leases granted, attempts have not yet been made to concentrate mining at a few selected places. Most of the present-day mining comes from a number of small producers, who merely work the soil to a depth of three to four feet and collect the float ore. Mining cost is low because of the easy availability of the ore requiring only a little capital expenditure. This condition is, however, not likely to last long. It is necessary, therefore, that mining and supply of iron ore should be planned on a long-term basis. It may have to be confined to certain select areas capable of yielding large quantities of iron ore.

Principal mines

The following are the places where some of the principal mines, worked by over 50 lessees including the Mysore Minerals Ltd., and producing ores of iron, manganese and red oxide are located in the district (in the taluks of Bellary, Hospet and Sandur) : (1) Belagal, (2) Halkundi, (3) Haraganadona, (4) Ingalgi, (5) Kallahalli, (6) Jambunathanahalli, (7) Sankalapura, (8) Vyasanakere, (9) Kariganoor, (10) Jaisingapur, (11) Vittalapura, (12) Karadikolla, (13) Bhujanganagar, (14) Jogappanakolla, (15) Donimalai, (16) Ramgad, (17) Nandihalli, (18) Ubbalagundi, (19) Narayanapur, (20) Nelagolla and (21) Rajapur.

Of these, two major ore deposits, one in the Donimalai range and another in the Ramandurg range, have been investigated in detail in recent years. While the Ramandurg deposits have an estimated reserve of 160 million tons of haematitic iron ore analysing 63 to 68 per cent Fe., the Donimalai deposits have indicated a net reserve of 75 million tons of hard lumpy ore and an equal quantity of fine ore. These latter deposits are located on the eastern flank of the Sandur valley. With a view to exploiting this source, the National Mineral Development Corporation, a Government of India undertaking, has taken up the Donimalai Iron Ore Project at an estimated outlay of Rs. 21.56 crores for the exploitation of 98 million tons of deposits over a period of 20 years.

Donimalai Iron Ore Project

The Joshi Committee appointed by the Government of India had envisaged some years ago an iron ore production target of eight million tons for export from the Bellary-Hospet area as part of the all-India export target of 25 million tons per annum by 1970-71. This was the basis for requiring the National Mineral Development Corporation Ltd. to take up investigation of a deposit of required magnitude in the Bellary-Hospet range. The

Ramandurg deposit lying on the western flank of this range was taken up first for such investigation, which, however, revealed that the generation of fines from this deposit was likely to be over 70 per cent and, therefore, too excessive for economic exploitation in the context of the demand for fines as it then stood. The Kumaraswami deposit presented certain procedural difficulties and therefore, the Donimalai deposit, being the remaining one of the three major deposits reserved in this area for exploitation by the public sector, was taken up. The investigations commenced during the latter part of 1965 and the final report of the Geological Survey of India was ready in June 1968. These investigations have been the most exhaustive for a single deposit so far in this country, largely on account of the nature of the geological formation encountered.

The Donimalai deposit, as already stated, lies on the eastern flank of the Sandur valley, which forms part of the Bellary-Hospet range. It is 35 miles by road from Bellary and Hospet towns and seven miles from Sandur. The deposit has been divided for convenience into two broad sections, referred to as the North Block and the South Block, and contains six distinct ore bodies, two in the South Block and four in the North Block. The total length of the deposit is about 10 kilometres, the width varying from 50 to 200 metres. It is thus a very long and narrow deposit, and makes mining, especially on a large scale, a challenging problem.

The Government of India gave its final approval for the Donimalai Project Report, based on the investigations of the Geological Survey of India, in September 1969. The Project envisages an outlay of Rs. 21.56 crores plus about rupees three crores for a new branch railway line linking Toranagal on the Hospet-Madras broad gauge line with Narasapur/ Mudukulpenta at the foot of the Donimalai hill. It provides for the exploitation of 98 million tonnes of ore in a period of 20 years, with an annual run-of-mine through-put of four million tonnes. The mine is to be a fully mechanised one, providing for mining operations with conventional mining equipment of a relatively high per-unit-output. i.e., 150 mm. dia. blast hole drills, 4.6 cu.m. bucket capacity electrical shovels and 50-tonne dumpers. The run-of-mine through-put will pass through primary and secondary crushers and possibly a tertiary crusher. Provision is being made for wet screening and re-circulation of over-sized ore. The crushed product will be subjected to screening leading on to a lump ore and a fine ore stockpile, from where it will be mechanically stacked, reclaimed and loaded into railway rakes formed alongside the stockpiles. The plant will flow down the western flank of the hill and emerge at Narasapur negotiating a tunnel of about 900 metres in length.

The lump ore will be sized to—30+6 mm. specifications. The ore is expected to analyse around 65 per cent Fe. A very important

characteristic of the ore is its relatively low alumina content, which is between 2 to 2.5 per cent on an average and provides a near ideal alumina-silica ratio. A study for the establishment of a pelletisation plant to treat the blue dust and other fines has also been taken up and is nearing completion.

The work on the Project is already in progress and it is expected to go into production by January 1973. The administrative offices of the Project have been located in a building constructed at a cost of about Rs. 50,000 at Sandur. The production from this Project will amount to one-and-a-half times the aggregate current production from the Bellary-Hospet region. Production in the private sector is also expected to rise progressively, especially after the construction of the railway line to Donimalai. A mine of this magnitude, producing ore through mechanical operations, and the installation of a pelletisation plant will open up a new chapter in the iron ore mining industry in this area.

Mysore Minerals Ltd.

As already stated earlier, the Mysore Minerals Ltd., an undertaking of the Government of Mysore, is a lessee for exploitation of iron ore in the district. It has its deposits in the Ettinahatti range and in Kallahalli near Vyasanakere, and is producing, on an average, one lakh tonnes of ore for export. At present, its export is confined to iron ore of larger sizes, leaving the fines and blue dust as a waste. With a view to utilising these fines and dust, thus securing better conservation of this natural resource, the Mysore Minerals Ltd. entered into an agreement with Messrs. V. M. Salagaocar Brother Pvt. Ltd. of Goa in February 1971 for the establishment of a pelletisation plant in the Bellary-Hospet area in close proximity of the desposits being worked. For this purpose, a new company is to be formed, which will undertake initially exploration of the deposits held by the Mysore Minerals Ltd. in order to establish the potentiality for setting up the pelletisation plant.

The plant, which is ultimately estimated to cost about Rs. 25 crores, is expected to be commissioned in about five years from now (1971). Tentatively the capacity of the plant is envisaged at two million tonnes per annum. Apart from utilising its own fines, which are at present dumped out as waste, the plant will also be of great benefit to the other mine-owners of the area, who are also unable to realise any value on their fines. The project, when completed, is expected to provide employment to about 2,500 to 3,000 people.

Other mineral-based industries

Messrs. Sandur Manganese and Iron Ores Ltd., who are lease-holders of 29 square miles of area in Sandur taluk for iron and manganese ores, are among the largest producers of manganese in the country. The Company's annual production of manganese ore has now reached 2.5 lakh tonnes. It has established a pig iron plant at Vyasanakere on Hospet-Harihar road, close to the raw

material resources, with an installed capacity of 100 tonnes of foundry grade pig iron per day. (For more details, please see under 'Large-scale Industries').

With the establishment of the Minerals and Metals Trading Corporation of India, a Government of India undertaking, the export business of minerals has been organised on more economic lines. The mineral exports are channeled through this Corporation. A regional office of this Corporation has been established at Bellary for this purpose.

The following statement indicates the production of iron ore, manganese and red-oxide of iron in Bellary district during the five-year period from 1965 to 1969 :—

Year	*Iron ore*		*Manganese ore*		*Red Oxide*	
	Production in tonnes	*Value in Rs.*	*Production in tonnes*	*Value in Rs.*	*Production in tonnes*	*Value in Rs.*
		(in lakhs)		*(in lakhs)*		*(in thousands)*
1965 ..	24.25	84.87	1.25	43.75	4.6	78.20
1966 ..	30.00	105.00	1.60	56.00	6.0	102.00
1967 ..	28.00	112.00	1.80	63.00	9.5	161.50
1968 ..	30.50	122.00	2.50	100.00	8.0	136.00
1969 ..	28.15	125.08	2.24	88.21	12.4	220.00

(*Source*—State Department of Mines and Geology).

Manganese ores produced at these mines average between 38/40 per cent Mn., containing 14 to 16 per cent Fe., with very low silica and phosphorous contents, the latter being less than 0.05 per cent. The ore is almost entirely free of obnoxious material and other impurities usually met with in manganese ore. The excellent physical and chemical properties of this ore have made it internationally famous as the "Sandur Ore".

The production of iron and manganese ores in the district is exported through the ports of Madras, Cuddalore and Kakinada on the east coast, and Karwar and Marmagao on the west. The red oxide of iron is, however, consumed within the country for the manufacture of paints. The principal countries to which the iron and manganese ores are exported include Japan, U.K., U.S.A., Belgium, France, West Germany, Czechoslovakia, Italy, Netherlands and Norway. The nearest port connected by rail to the Bellary ore deposits is Marmagao. In fact, Karwar on the west coast is still nearer, but it is not connected by rail beyond Hubli. There is, however, a proposal to lay a railway

line connecting these two places in the near future. At present about five lakh tonnes of iron ore from this district are moved by rail to Hubli and then by road to Karwar. The development of Karwar port will enable economical transport of iron ore.

Quartz is also produced on a small scale for use in the pig iron plant of Messrs. Sandur Manganese and Iron Ores Ltd. at Vyasanakere. About 1,200 tonnes of 99 to 99.5 per cent SiO_2 purity are produced annually and consumed within the district.

Other minerals like gold, copper, magnesite, calcite, gypsum, galena, soapstone, diamond and limestone are also available in small quantities in the district, but they are not being exploited at present. Particulars about them are indicated in the geology section of Chapter

Large-scale Industries

Bellary has been essentially an agricultural district with approximately 63 per cent of its geographical area under cultivation. Apart from the mining industry referred to earlier, there are only about half-a-dozen large and medium-scale industries in the district, concentrated mostly at Bellary and Hospet. Among them are two sugar factories, a heavy structural plant of all-India importance in the public sector, a pig iron plant processing local ore, a motor body-building unit, and a cotton-spinning and weaving mill. A brief account of each of these industries is given in the following paragraphs.

Manufacture of sugar

The sugar industry today is one of the major industries in the country and the progress it has made in recent years is significant. The Indian sugar industry owes its development to the grant of protection to it in the 1930s and it was at this time that two factories within the confines of the present Mysore State came into existence, one at Mandya and the other at Hospet. Another factory on a co-operative basis at Kampli was organised in 1958 and thus there are now two sugar factories in Bellary district. It is learnt that a licence has since been granted to Messrs. Kothari Sugars and Chemicals Ltd., Madras, for establishing another sugar factory at Desanur in Siruguppa taluk, with an installed crushing capacity of 1,500 tonnes of cane per day.

The main raw material needed in sugar manufacture is sugarcane. This is grown abundantly in and around Hospet and Kampli. Sugarcane was grown largely in Hospet taluk even during the last century. It has been said that "sugarcane is grown in rotation with paddy every second, third or fourth year, according to the richness of the soil and the supply of manure available. The cane is a thick-stemmed white variety which was introduced into the district in 1840 by Mr. Blane, then Sub-

Collector....On an average, some five-eighths of all the cane grown in the district is raised in the one taluk of Hospet." * The area under sugarcane in Bellary district during 1960-61 was 16,049 acres and more than two-thirds of this area was in Hospet taluk and this had increased to 26,198 acres by 1968-69. Next in importance in sugarcane cultivation in the district are the Siruguppa and Bellary taluks.

While locating a sugar unit, transportation costs are to be considered as they tend to limit the size of the plant. Transport costs affect location of an industry in two ways: (i) cost of transporting raw materials to the factory and (ii) cost of transporting finished products from the factory to the market. Depending on the nature of the materials "location pull" may be either towards the sources of raw materials or near the markets. The sugarcane being bulky as raw material and weight-losing in character in the process of sugar manufacture, the sugar industry is one which has to be raw material-localised. Thus, Hospet taluk being mainly a sugarcane growing area, the factories which are located at Hospet and Kampli are of ideal location. Hospet is a railway station which is connected with Hubli and Guntakal. There is a proposal to convert the Guntakal-Hospet line into a broad-gauge to facilitate easy transit of goods.

Nearness to electric power is also an important factor. The availability of hydro-electric power from the generating station at the Tungabhadra Right Bank has added importance to this industry here.

India Sugars & Refineries Ltd., Hospet

The year 1933 saw the establishment of many sugar factories, mainly due to the tariff protection announced by the Government of India with a view to increasing sugar production in the country and to decreasing the import of foreign sugar. Taking advantage of this concession and also considering that Hospet has irrigation canals taking off from the Tungabhadra river right from the days of the Vijayanagara empire and is a well-known jaggery-producing centre, a public limited company under the name of India Sugars and Refineries Ltd., was registered on 13th April 1933 under the provisions of the Indian Companies Act, 1933, at Madras under the managing agency of Messrs. A. Ranganathan & Co.

The erection of the factory was completed by December 1934 and after trial operations during the 1934-35 season, the factory commenced regular production from the year 1935-36. The local raiyats not being very enthusiastic about the establishment of this factory, the Managing Agents had to face considerable difficulties in the initial stages. The attempts made by the Manag-

*Bellary District Gazetteer, Vol. I, p. 79, 1904.

ing Agents to secure land for cultivation of sugarcane were not fruitful. Shri V. Ramalingam, who succeeded Shri A. Ranganathan as the Managing Agent, launched a scheme of developing the lands on the other side of the Tungabhadra river, *i.e.*, in the Munirabad area, where land was available easily from Nawab Salar Jung's estates. This land was reclaimed, deforested and made fit for cane cultivation by renovating the old irrigation channels. But as these preliminary expenses became heavy and the Company incurred losses, the cultivation had to be abandoned. Shri V. Ramalingam died in 1942 and from 1942 to 1945, the Company was managed by a Board of Directors, with Rukn-ul-Mulk S. Abdul Wajid as Chairman and Rao Saheb A. D. Thandu Mudaliar as Managing Director. In August 1945, the management of the Company was entrusted to "The India Sugar Agencies Private Ltd." In 1946, Shri M. R. Morarka, an industrialist of Bombay, took over as the Managing Director of the Company and he continued to manage the affairs of the Company till the expiry of the managing agency on 31st December 1969.

In the earlier stage of working of this factory, the average yield of cane per acre in the Hospet area was between 18 to 20 tons per acre, while the ruling price of cane then was Rs. 23 per ton. The gross return per acre was only about Rs. 500, and from an acre of cane only about 1.8 tons of sugar could be obtained. With a view to improving both the quality and quantity of the cane grown in the area, intensive propaganda was undertaken by the Company, cultivators were advised to adopt better methods of cultivation and they were provided with the necessary credit facilities. As a result, the average yield of cane per acre in the area went up to about 30 tons and the average gross return per acre rose to about Rs. 2,900. This, in turn, led to an all-round improvement in the economic condition of the sugarcane-cultivators of the area.

The installed crushing capacity of the sugar factory, which was 600 tons per day in the beginning, was raised to 1,000 tons during the year 1956-57. Further expansion programmes were carried out raising the crushing capacity to the present 1,250 tonnes of cane per day. It also holds a licence for further expansion to 1500 tonnes and the implementation of this scheme is now (1971) on hand. The factory is expected to work with this enhanced capacity form the crushing season of 1972-73. The total production of sugar, which was about 50,000 bags per annum in the beginning, has now gone up to 2,50,000 bags. Similarly, the capital investment of the Company has also increased from its original Rs. 14 lakhs to over Rs. 1.5 crores by now. The following statement indicates the working results of the factory from its inception upto the end of 1969-70 :—

Crushing season	*Quantity of sugar-cane crushed (in tons)*	*Quantity of sugar produced (in tons)*	*Average recovery of sucrose*	*Number of working days*
1934–35 ..	4,684	446	9.53	35
1939–40 ..	38,786	3,409	8.72	131
1944–45 ..	64,561	6,104	9.46	145
1949–50 ..	87,631	9,369	10.68	160
1954–55 ..	1,27,609	13,068	10.23	207
1959–60 ..	1,53,133	16,006	10.42	178
1964–65 ..	2,24,027	21,628	9.63	218
1965–66 ..	2,10,285	20,611	9.76	201
1966–67 ..	1,61,926	16,624	10.15	148
1967–68 ..	1,48,257	15,871	10.60	133
1968–69 ..	2,49,482	22,687	9.06	218
1969–70 ..	2,31,218	19,814	8.58	204

Installation of Distillery

The question of disposal of by-products like molasses in the factory was also considered by the Company and it was realised that the only profitable way of utilisation of molasses was converting it into spirit or potable liquors. The Company, therefore, obtained a licence for installing a distillery in 1945 and erected a plant for the manufacture of spirit in 1946, with a daily capacity of 600 gallons. This was raised to 3,000 gallons of spirit per day in 1963. With the lifting of prohibition in the State, the distillery has started the manufacture of liquors such as brandy, whisky, rum, gin, etc., from the year 1968.

In the year 1952, a subsidiary company to this parent company was formed under the name of "Manjula Confectionary Ltd.", for the manufacture of sweets. But due to keen competition in the field, the company could not make any headway and hence it was subsequently closed down and its machinery were sold out.

The early years of this sugar factory had been very trying, but by progressive expansion and co-operation of the raiyats in supplying increased quantities of sugarcane required by the factory, the production has reached a figure of about 20 to 22 thousand tonnes per annum at present (1971). The company is having another subsidiary company, *viz.*, the Salar Jung Sugar Mills, Ltd., situated at Munirabad (within the confines of Raichur district) on the other bank of the Tungabhadra river. It has a crushing capacity of 1,000 tonnes of cane per day and it has its own farms to the extent of about 1,000 acres.

Co-operative Sugar Factory, Kampli

The Kampli Sugar Factory, which was sponsored by the Bellary Co-operative Central Stores, was the first sugar factory to be developed on co-operative lines in the State. At a time when the Bellary Central Co-operative Stores was in search of

new avenues of business, the Government of India announced their decision to encourage the co-operative sugar industry in order to give an opportunity to the cane-growers to have their cane processed in their own sugar factory and thereby solve the vexed problem of the clash of interests of the industrialists and the cane-growers. The Co-operative Stores immediately explored the possibilities of setting up a Co-operative Sugar Factory at Kampli, one of the most important sugarcane-growing centres in the district. For want of a sugar factory nearby, the sugarcane growers in about 5,000 acres of land were all along using their cane for the manufacture of jaggery. The enthusiastic support and response from some raiyats of the area when the idea of starting a co-operative sugar factory there was put to them, confirmed the Bellary Central Co-operative Stores in their view that they should put up a sugar factory at Kampli and in 1954 the final decision was taken to go ahead with the project. In pursuance of this decision, an application was immediately submitted to the Central Government for the issue of a licence for the purpose of setting up the sugar factory and the licence was granted before the year was out.

It was decided to set up the plant at a spot one-and-a-half miles from Kampli and 30 miles from Bellary on the Bellary-Kampli road with a crushing capacity of 600/800 tons of sugarcane per day and orders were placed with a German Company for the supply of the plant at an estimated cost of Rs. 41,31,095. The site was selected in consultation with the sub-committee of the Sugarcane Licensing Board which visited the place in 1954.

The original estimate of investment on the factory was worked out at sixty-five lakhs of rupees. Several pieces of plant and machinery had been over-looked in the estimate and their costs had to be added to the original estimate pushing up the final total cost. Added to this, additional unforeseen heavy costs had to be borne by way of enhanced freight charges and additional expenditure resulting from delayed transport due to the sudden and unexpected Suez crisis. The sum total of all these factors was that the original calculations were completely upset and the gross investment on plant and machinery alone went up to Rs. 81.19 lakhs, as against the meagre resources of the Stores which was as follows :—

	Number of Members	*Share Capital*
		Rs.
1. Individual Members ..	3,010	10,85,750
2. Institutions	102	1,02,700
3. State Government ..	1	15,00,000
Total	3,113	26,88,450

It was, therefore, necessary to look to various sources, chiefly to the Government, for their finance. Money was borrowed from the Industrial Finance Corporation, the Bank of Mysore, the State Bank of India and from the Government of Mysore. The entire investment on the factory, including lands and buildings, plant and machinery, temporary sheds for staff, general equipment and stores, electrical installations, spray pond equipment, water works and various other items came to Rs. 1,08,97,816. Besides this, a sum of Rs. 14.48 lakhs by way of revenue expenditure was incurred from the time of the initiation of the scheme till the commencement of production. All this had to be met from borrowings and the share capital as noted below :—

		Rs.
1.	Loan from Government of Mysore ..	18,15,660
2.	Loan from State Bank of Mysore ..	15,60,000
3.	Loan from State Bank of India	14,55,030
4.	Loan from B.D.C.C. Bank (Open Loan) ..	14,47,534
5.	Share Capital	26,14,844
6.	Loans from Industrial Finance Corporation	25,00,000
	Total ..	1,13,93,068

Unforeseen difficulties in the initial stages made it impossible for the Stores to meet the target date of 1957-58 for the commencement of full-scale crushing in the factory and only a token of 4,451 bags of sugar was manufactured that year. Full-scale crushing on business lines was begun in November 1958 and continued till April 1959 when 76,796 bags of sugar of the best quality were produced and the recovery percentage was as high as 11.19. The average crushing was about 750 tons per day, which would have been bettered but for lack of cane due to transport difficulties. This difficulty was, however, solved subsequently with the Government laying the required roads from the villages to the factory. The factory produced 1,25,767 bags of sugar during the 1959-60 season (between November and April) while the production during the 1960-61 season was 1,58,130 bags of fine sugar. The production reached an all-time high of 2,22,037 bags during the crushing season of 1964-65 and it was fluctuating from year to year thereafter.

In the very next year, after the full-scale crushing in 1958-59, a net profit amounting to Rs. 5.58 lakhs exclusive of all commitments and including depreciation on plant and machinery was earned by the factory. The performance in the next year, *i.e.*, 1960-61, was more gratifying in that the profits for the year went up to Rs. 8.87 lakhs. Thereafter, there have been fluctuations in the fortunes of the factory in that it earned profits during some

years and incurred losses during others. The losses during the years 1968-69 and 1969-70 were considerable.

The average yield of cane per acre in the area is between 28 and 30 tonnes. The present average crushing capacity of the factory is between 1,100 and 1,200 tonnes per day, *i.e.*, about 1.7 lakh tonnes in about 150 working days. This would require an acreage of at least 6,000 under cane cultivation for assured supply to the factory. There is more than enough acreage under this crop in the area (*i.e.*, within a radius of 10 miles) to warrant the expansion of the crushing capacity to 1,500 tonnes or more per day as, with the facilities provided by the T.B.P. Canal and the Magani roads, the acreage under cane cultivation is on the increase. The raiyats' representatives are offering their full co-operation to see that the factory does not suffer for lack of adequate cane supplies.

The sugar factory at present provides employment to about 1,000 persons of all categories during the crushing season.

Sandur Manganese & Iron Ores Ltd.

The Sandur Manganese and Iron Ores was started as a private limited company, in the year 1954, by Shri Yeshwantrao Hindurao Ghorpade, the former ruler of Sandur, to take over the mining lease granted to him by the State Government in 1953, over an area of 29 square miles. This mining lease was previously held by a foreign company called the G.S.M. Co. from 1907 to 1953. This new company was converted into a public limited company in July 1964 in order to establish an electro-metallurgical industry in the area mainly for the production of foundry grade pig iron of which there was considerable shortage in the country. The authorised capital of the Company, which was Rs. 50 lakhs in the beginning, was increased to Rs. one crore, and later to Rs. 1.25 crores after devaluation.

The Company decided to install a 15,000 KVA electric reduction furnace and got a project report prepared by M. S. Dastur and Company, Consulting Engineers. A 10-year agreement was entered into between the Company and the Mysore State Electricity Board in 1968 for the supply of power on a stable basis, since electricity is a crucial factor in this power-intensive industry. The electric reduction furnace, which was designed to produce 40,000 tonnes of foundry grade pig iron per annum initially, was obtained from an Italian firm and was erected at Vyasanakere on the bank of the Tungabhadra near Hospet. After completion of the work, this metal and ferro alloys plant was inaugurated on 20th February 1969. The capital cost of this project was Rs. 3 crores, of which the foreign exchange component was Rs. 1.18 crores. The share capital raised for the project was Rs. 73.5 lakhs, including Rs. 22 lakhs of foreign participation. Apart from the finances obtained within the country,

the Company also obtained Belgian and Italian credits towards import of machinery on deferred payment basis.

This 15,000 KVA electric reduction furnace of the Company is said to be one of the biggest of its kind in the country. It is capable of making several electro-metallurgical products and is equipped with three Sodeberg, continuous, self-baking electrodes. The slipping of electrodes is controlled by an hydraulic system, which is a special feature of this furnace. The control room is provided with sophisticated equipment to ensure fine control over the furnace operation. The main raw materials charged into the furnace for the production of pig iron are ore, coke, limestone and quartz. Some manganese ore is also added whenever required. The furnace is tapped at regular intervals, when the molten pig iron flows into the ladles, which are lifted by electric overhead travelling cranes, and placed in position for the pig iron to be poured into the moulds of the pig casting machine. The plant has a well-equipped maintenance shop and laboratory for analysis of raw materials, pig iron and slag to ensure proper quality control. It produces both standard grade and special grade electric pig iron of good quality. The future expansion programme of the company envisages, among other things, the installation of a pre-reduction kiln to increase the production of foundry grade pig iron to about 70 to 80 thousand tonnes per annum.

Mining operations

The existence of manganese ore in the Sandur area was first discovered by one Capt. Newbold as early as 1838 and the first prospecting licence for this ore appears to have been granted in the year 1906. The Sandur manganese ore is known to possess an excellent mechanical and chemical composition. It is reputed for its low phosphorous content. As already stated earlier, the Company holds a mining lease, extending over an area of 29 square miles, for mining manganese and iron ores. During 1968, the Company produced about 2.1 lakh tonnes of manganese ore as against its initial production of about 30,000 tonnes in 1954. It exported about 1.7 lakh tonnes of ore during the year 1968 to Europe and Japan. From 1969 onwards, the Company's exports have further increased and the figure stood at about three lakh tonnes during 1970-71.

The quality of iron ore in the Sandur range of hills is also said to be one of the best in the world, with an iron content ranging from 62 to 66 per cent. The Company has also undertaken mining of iron ore in recent years and is understood to be producing about a lakh of tonnes of ore since 1969-70.

The mining area has an integrated system of internal transport by diesel locomotives, self-acting inclines and ropeways. The labour strength of the Company is over 3,000 and construction of quarters for them with adequate facilities has progressed steadily since 1954.

The total capital investment of the Company as on 31st December 1970 was Rs. 4.86 crores. It has earned foreign exchange of Rs. 2.39 crores and has been working on a profitable basis.

Tungabhadra Steel Products Ltd., Hospet.

The Tungabhadra Steel Products Limited, situated close to the Tungabhadra Dam in Hospet taluk, is a successor to the Workshops and Machinery Division of the Tungabhadra Reservoir Project, which was started in 1948. In 1952, it was converted into a Shutter Manufacturing Factory for the manufacture of gates, hoists and penstocks required for the Tungabhadra Project. After the completion of the project, it was felt that the capacity and know-how created in this workshop could be advantageously utilised for the benefit of other river valley projects in the country. Accordingly, its activities were expanded and in 1960, it was registered as a company with equal equity participation by the Governments of Mysore and Andhra Pradesh. The total paid-up capital of the company at that time was Rs. 50 lakhs. In 1967, the Government of India also participated in the equity capital of the company with a view to further developing the factory and contributed Rs. 51 lakhs, *i.e.*, 51 per cent, as its share of the equity capital.

The Tungabhadra Steel Products have entered into a technical collaboration agreement with Messrs Neyrpic, Grenoble, France, for the design and manufacture of all types of gates and hoisting equipment. The products manufactured by this undertaking at present include spillway gates, sluice gates, canal gates (both radial and vertical lift types), power-operated hoists required for these gates, penstocks fabricated out of mild steel, electric overhead travelling cranes, electric transmission towers, gantry and goliath cranes, building structurals and pressure vessels. The factory consists of a structural workshop, a machine shop, a foundry, a design section, a rubber seal section and a galvanising plant. As the existing factory premises are found to be inadequate for implementing the development programmes of the Company, about 82 acres of land were acquired nearby and a new galvanising plant, capable of handling 3,000 MT of structurals per annum, has been installed at this new site. The galvanising bath available in the plant is one of the biggest in the country, which can take structurals of 9,500 x 800 x 1,400 mm. size. Ultimately, all the sections of the factory will be shifted to the new site.

The factory now provides employment to over 770 persons. The employment potential is expected to go up by 30 per cent when its expansion programmes are fully implemented. The value of production, which was about 37.42 lakhs in 1960-61, had gone up to Rs. 106 lakhs in 1969-70. With the expansion in the field of irrigation and power under the Fourth Five-Year Plan, the Company has received substantial orders and it is expected that the

turnover will steadily increase in the coming years. The following statement indicates the working results of the company during the last decade, *i.e.*, from 1960-61 to 1969-70 :—

Year	*Production (in Metric tons)*	*Value (Rupees in lakhs)*	*Profit earned (Rupees)*	*Sales (Rupees in lakhs)*	*Number of workers employed*
1960-61 ..	1,900	37.42	1,82,845	31.63	875
1961-62 ..	1,500	38.38	2,92,991	41.37	827
1962-63 ..	2,400	44.63	1,23,817	40.09	811
1963-64 ..	2,800	53.24	—52,169	64.33	772
1964-65 ..	2,300	74.10	10,58,983	75.45	781
1965-66 ..	1,800	78.50	10,48,117	75.45	736
1966-67 ..	1,500	65.85	14,00,872	57.00	675
1967-68 ..	1,050	64.10	15,28,345	64.29	682
1968-69 ..	2,305	72.50	9,64,364	82.03	671
1969-70 ..	3,892	106.00	4,80,044	N.A.	771

M. G. Automobiles, Bellary

Messrs. M. G. Automobiles, Bellary, a company of automobile engineers and coach-builders, had its beginning in 1924 with the starting of a single bus service called the Neelakantheshwara Motor Service. The fleet of buses of this company was gradually increased and to meet the maintenance and repairs of the growing fleet, a workshop was started in 1936 in the fort area of Bellary town. The increasing demand for vehicle repairs necessitated the expansion of the workshop and, therefore, a modern type automobile workshop was constructed in Patel Nagar on the Bellary-Anantapur road and it was equipped with latest machinery and other apparatus. The Company undertook agencies for chassis, spares and motor fuel and also dealership for Tata diesel vehicles for Bellary and Raichur districts in 1960. To meet the growing needs of the customers, an up-to-date service centre, a show-room and a spare parts section were added in 1962. Thus it is to-day one of the largest units of its kind in Mysore State.

The lack of facilities in the neighbouring districts and the need for providing additional service to transport operators, prompted the Company to start a body building section in 1954 by obtaining the required materials and skilled personnel from distant places like Bombay and Madras. Within a short period, the demand for body-building increased which necessitated the establishment of a new section for building all-metal bodies, especially to cater to the needs of the Mysore State Road Transport, in 1957. A few years later, *i.e.*, in 1964, the construction of all-aluminium bus bodies was taken up. Thus to-day the Company is in a position to undertake construction of all types of bus bodies—composite, all-metal and all-aluminium. Besides, it builds not only ordinary bus bodies but also deluxe and luxury bus bodies. At present, it caters

not only to the needs of private operators but also to the needs of the State Transport Corporations of Mysore and Andhra Pradesh. For rendering effective after-sales service to its customers, the Company established a Branch Service Centre at Raichur in 1970.

The M.G. Automobiles has a capacity to build 30 new bodies every month. It has employed about 600 persons of various categories to man its different sections. The capital investment of the concern, which was about two lakhs of rupees in the beginning, has now gone up to about Rs. 34 lakhs. Various labour welfare amenities such as financial aid, medical aid, canteen facilities, co-operative stores, uniforms, etc., have been provided to the workers in the concern. The chief architect of development of this industrial unit is Shri M. Somappa.

Bellary Spinning & Weaving Co., Ltd.

The Bellary Spinning and Weaving Co., Ltd., Bellary, was established in the year 1963 with an authorised capital of Rs. one crore, with the object of starting a spinning and weaving factory at Bellary which is situated in the cotton belt of the Deccan plateau. Soon a site measuring about 75 acres by the side of the trunk road to Hospet, about four miles from Bellary town, was acquired and the necessary buildings were put up. After erection of the required machinery, some of which were imported from Japan, the factory was inaugurated in March 1966, but it was not until April 1967 that regular production could be commenced. The total capital investment on the factory, as at the end of 1970, stood at about Rs. 74 lakhs.

Though the licensed capacity of the factory is 12,320 spindles, it is now working with only 8,360 spindles and is producing fine yarn of 20 to 40 counts, which is most suitable for handloom weaving, especially with power. It is yet to take up weaving of cloth. It is said that only about 50 per cent of the capacity of the machinery and equipment in the factory is now being made use of. There are proposals to add another 3,960 spindles and about a hundred power-looms in the coming years so as to make the factory a composite and economic unit. During 1970, about 3,500 bales of yarn worth about Rs. 47 lakhs were produced in the factory. The subjoined statement indicates the quantum of production of yarn and its value, from the inception of the factory upto the end of 1970 :—

Year		Production (in bales)	Value (in rupees)
1966	..	631	6,34,045
1967	..	1,625	18,65,600
1968	..	2,924	33,29,189
1969	..	2,702	32,03,993
1970	..	3,506	47,03,695

Most of the yarn produced in the factory, especially of 20 and 26 counts, is exported to Bangalore for consumption by the power-looms. More than 80 per cent of the cotton requirement of the factory is obtained within the district. This has given a fillip to the cotton-growers and dealers of the area who had to look up to outside markets so far. Since its inception in 1966, the factory has purchased cotton worth more than a crore of rupees. The factory has provided employment to about 360 persons (including apprentices), about 85 per cent of whom are recruited locally. However, consequent on the factory not working to its optimum capacity and owing to financial and other reasons, the factory is said to be working under a loss to the extent of about 4 to 5 lakhs of rupees every year inclusive of depreciation. It is expected to turn the corner in the near future when the remaining spindles and power-looms are installed.

Vijayanagar Steel Project, Toranagal

October 14, 1971, was a red-letter day in the modern history of Bellary district, for it was on that day that the Prime Minister of India inaugurated work on the fifth steel plant in the country in the public sector, at Toranagal in Hospet taluk, which was once the archway to the glorious Vijayanagar empire. While it is undoubtedly a significant event for the industrial development of Mysore State as a whole, the district of Bellary in particular can look upon the event as a turning point in the history of its development. Aptly christened as the Vijayanagar Steel Project, it is designed for an initial production of two million tonnes of steel with provision for future expansion to four million tonnes. The plant, which is to be wholly designed and built by the Central Engineering and Design Bureau of the Hindustan Steel Ltd., is expected to be commissioned by about 1978. Latest engineering and technological innovations in iron and steel industry would be adopted in this ambitious project, which is estimated to cost about 300 crores of rupees.

Toranagal was selected for the location of the steel plant, because rich iron ore is available in abundance in its vicinity. The reserves are so ample that they not only meet the needs of the present project and its future expansion, but also leave a large surplus for export. The ore in this area is of very high quality and ranks among the rich iron ores in the world. The vast reservoir on the perennial river Tungabhadra, which is close by, assures enough water supply to the new steel town. The State Electricity Grid lines, fed by the Sharavathi and Tungabhadra Hydro-Electric Power Stations, which pass through this area, meet the power needs of the steel plant and the township. Rail and road communications are well established in this area. While Toranagal itself is a railway station, the nearby town of Hospet is linked with both the broad gauge and metre gauge railway lines. Thus, in all aspects, Toranagal offers the best site for this integrated large-scale steel project. Only coal, which is not available locally, has to be obtained from outside.

The steel plant is expected to have large-capacity blast furnaces with latest engineering and technological innovations. The question of setting up large L.D. converters for steel-making and continuous casting units is also being considered. The finishing mills will include *inter alia* a wire rod mill of four lakh tonnes capacity, a light merchant mill of three lakh tonnes, and a light and medium section mill of five lakh tonnes, totalling to about 1.2 million tonnes of finished steel. In addition, the plant will also produce four lakh tonnes of billets a year. About 10,000 acres of land are being acquired for locating this steel complex, which is expected to create employment opportunities for an estimated 20,000 to 25,000 skilled and semi-skilled workers in the first stage. The steel plant will also provide scope for a number of ancillary industries in the area, including foundries for the manufacture of ordinary and alloy castings, slag granulation and slag cement plants, etc.

A strong base already exists for further agricultural development in the area. Industrial development in the major and ancillary sectors, which is sure to follow the establishment of the steel project, will ensure speedy progress in the non-agricultural sectors of the economy also. Thus an area which, barely 25 years ago, was known to be a famine area and whose economy was subjected to frequent strains, will perhaps emerge as one of the richest and most productive parts of the country.

Small-scale Industries

There is general acceptance of the neeed to intensify the development of small-scale and cottage industries. Providing greater employment and income opportunities, especially to the semi-urban and rural population, they act as a great stabilising force. They contribute to a faster rate of industrial development by serving as feeder and ancillary units. In view of this, greater importance has been attached to them in the industrial policy resolution of the Government and in the successive five-year plans. Several promotional measures have been undertaken for their healthy development.

According to the 'Mysore Industrial Directory' published jointly by the Department of Industries and Commerce, Government of Mysore, and the Mysore Chamber of Commerce and Industry, Bangalore, in December 1970, there were in all 243 registered small-scale industrial units in Bellary district in 1969-70. They had together invested a capital of about four crores of rupees and employed about 5,430 persons. These industries could be divided into nine broad categories as follows :—

(1) Textile Industries; (2) Food, Beverage and Tobacco Industries; (3) General Engineering Units; (4) Wood Industries;

(5) Printing Presses; (6) Leather and Rubber Products; (7) Chemical Industries; (8) Ferrous and Non-Ferrous Industries; and (9) Miscellaneous Industries. A brief account of each of these categories of industries is given in the following paragraphs.

Textile Industries

The textile industries included cotton ginning and pressing and decorticating units, units for the manufacture of ready-made garments, sarees, hand-bags, hold-alls, bed-sheets, towels and the like. The total number of units falling under this category in the district was 71, of which 21 were engaged in the manufacture of ready-made garments and the rest in cotton ginning and pressing and decorticating, etc. While more than 50 per cent of these units were concentrated in Bellary city, the rest had been spread over Harapanahalli, Tekkalakota, Kottur, Hadagalli, Hospet and other places. The total capital investment of these units was estimated at about Rs. 49.72 lakhs, their estimated annual production being worth about Rs. 40 lakhs. They had provided employment to over 1,330 persons.

Garment-making units

The ready-made garment industry was started in Bellary during the first world war to cater to the needs of the military personnel stationed here. The industry passed through various vicissitudes between the two war periods. But to-day, it occupies a prominent place among the small-scale and cottage industries in Bellary district. In fact, Bellary is stated to be the second important centre in the entire Mysore State for the manufacture of ready-made garments. These several organised units not only produce garments for internal consumption but also cater to some of the markets in various parts of India. The industry is understood to have made much headway during the last about ten years. It provides full-time employment to about 1,500 persons and part-time work to about 3,500 workers, and provides job work to about 60 satellite units. During 1969-70, the total turnover of all the units in the district was estimated at about Rs. 150 lakhs. Bellary is especially noted for the manufacture of children's garments as also pants and half-pants for adults; other garments in keeping with the current needs and fashions are also manufactured. However, it is reported that most of the units are ill-equipped and only machines of old type are in use. Hence the future development of this industry depends, to a large extent, on the installation of time and labour-saving modern machines and equipment. According to the Lead Bank Survey Report of the Syndicate Bank, there were in all 80 ready-made garment making units (both registered and unregistered) in the district in 1969-70.

A Garment Manufacturers' Association was formed at Bellary in December 1965. During 1971, 27 garment manufacturing units in Bellary had become members of this Association. Among the objectives of the Association were the promotion, mutual help and

co-operation among ready-made garment manufacturers, protection of the interests of its members, popularisation of the use of ready-made garments and advancement of the tailoring technique in the manufacture of garments.

Cotton Ginning Units

Cotton ginning is a pretty old industry in the district. The beginnings of this industry date back to the 18th century when Rao Saheb Maganlal Dalpatram Khakhar and Rao Bahadur Sabhapathy Mudaliar established ginning factories in Bellary town. A little later, two or three more factories came to be established in the same place. The first world war gave an impetus for the development of this industry and this period recorded a substantial increase in the number of ginning and pressing factories in the district. The pace of expansion was, however, retarded after 1925. But the period of the second world war again witnessed an increase in the number of ginning and pressing units. According to the Assistant Director of Industries and Commerce, Bellary district, there were 34 ginning factories registered with the department in the district during 1970-71. These factories were mostly concentrated in Siruguppa, Hadagalli, Kudligi and Bellary taluks, Kottur (in Kudligi taluk) alone accounting for seven units. The availability of cotton in large quantities is the cause for the concentration of these units in these taluks. Some of these factories have also groundnut decorticators along with ginning machines.

The tools and equipment used in this industry are steam or oil engines, boilers, single or double roller gins, cotton operators, drilling machines, high and low pressure cotton presses and the like. The cost of ginning a bale of cotton of 165 kgs. in 1970 was Rs. 18.50. The ginning factories do not have work throughout the year since this is a seasonal industry.

Food, Beverages and Tobacco Industries

There were 53 small-scale industrial units under the category of food, beverages and tobacco industries in the district during 1969-70, with a total capital investment of about Rs. 97.24 lakhs, the number of persons employed in them being 1,220. Of these, 18 units were in Bellary and the rest at Hospet, Hagaribommanahalli, Hadagalli, Siruguppa, Kottur, Ramnagar, Harapanahalli, Ittigi and a few other places. Of the 53 units, as many as 45 units were engaged in decorticating of groundnuts, manufacture of oil and oil-cake, rice milling, etc. Some of these units had also cotton-ginning machines in them.

Oil Mills

According to the Assistant Director of Industries and Commerce, Bellary district, there were 15 registered oil mills in the district producing mostly groundnut oil and cake. Another 15 units were engaged both in decorticating and pressing of oilseeds. Among the existing oil mills in the district, the earliest to be established was the Indhala Hiremath Ginning, Oil Milling and

Decorticating Factory at Kottur in 1905. With the increase in demand for oil and the gradual increase in the area under groundnut cultivation, more and more oil mills came to be established in the various parts of the district, the noted centres of oil production being Bellary, Hadagalli and Ramnagar. The plant and machinery used in this industry are steam engines, boilers, expellers, rotary machines and filter presses. According to the Lead Bank Survey Report of the Syndicate Bank, there were in all 371 ginning and oil mills (including unregistered units) in the district in 1969-70.

Beedi Factories

Among the other industries coming under this category are beedi-making units, which were five in number (registered units) in the district during 1970. While three of these units were at Bellary, the other two were at Harapanahalli, the biggest of the units being the Sovereign Beedi Factory at Bellary. It is also the oldest beedi factory in the district, having been established as early as 1917. These factories had invested a total capital of about Rs. 3.30 lakhs and had employed 917 persons. A special feature of this industry is that it has provided employment to many poor women, particularly the *purdah*-bound housewives.

The other small-scale industries under this category in the district were nine rice and flour mills, three confectionery units, a coffee powder unit and an ice factory and cold storage, as in 1970.

General Engineering Industries

The general engineering industrial units were 39 in number in the district in 1970, of which as many as 25 units were located in Bellary city and the rest at Hospet, Sandur, Siruguppa and a few other places. The total capital investment of these units was about Rs. 16.12 lakhs and they had employed about 290 persons. Of these, as many as 16 units were engaged in the manufacture of agricultural implements since there has been good demand for them because of the several agricultural development and extension schemes taken up under the Tungabhadra Project. In addition, some other units which were engaged in the manufacture of buckets, trays, drums and the like also manufactured agricultural tools and implements. (According to the Lead Bank Survey Report of the Syndicate Bank, there were altogether 50 units engaged in the manufacture of agricultural implements in the district.) Of the remaining units, about a dozen were engaged in servicing and repairing of automobiles, servicing of oil engines, body building, repairs of machines and such other allied items of work, while two units were making steel furniture, safes, cabinets and the like. In addition to these, there were three units producing household utensils, hospital equipments and surgical items, two units manufacturing barbed wire for fencing, a unit making wiring pipes and another manufacturing small drilling machines.

Wood Industries

There were 24 industrial units in the district, mostly at Bellary and Hospet, engaged in sawing of timber and manufacture of bullock carts, wooden furniture and building materials. Fourteen of these units were saw mills, six were cart-making units and the remaining four were engaged in the manufacture of wooden furniture, etc. The total capital investment of these units was about Rs. 5.42 lakhs, while their annual estimated production was worth about Rs. 6.50 lakhs. About 150 persons were employed in these units.

Printing Industry

With the development of education, expansion of trade and commerce and industrial advancement, the printing industry is gradually coming to the fore in the district. During 1969-70, there were 19 printing presses registered with the Department of Industries and Commerce, in the district, of which nine were at Hospet, five at Bellary, two at Harapanahalli and one each at Hadagalli, Siruguppa and Kottur. Most of these presses were power-operated and they undertook printing, mostly job works, and book-binding. On an average, only three to four persons were employed in most of these presses. While the total capital investment of these units was about Rs. 3.98 lakhs, their annual estimated production was worth about Rs. 3.74 lakhs. They had employed, in all, about 90 persons. According to the Lead Bank Survey Report, there were, in all, 37 printing and book-binding units in the district as in 1968-69.

Leather and Rubber Products

Among the industries engaged in the manufacture of leather and rubber products in the district during 1969-70 were a leather-tanning unit and a rubber-stamp-making unit, both located at Hospet, and seven tyre-retreading, tube vulcanising and tyre-repairing units, of which five were at Hospet and two at Bellary. The proximity of Hospet to the various mining areas in the district, where a large number of transport vehicles ply for carrying ores, appears to be the main reason for the concentration of these units at this place. While the total capital investment of these units was about Rs. 1.55 lakhs, the value of their annual production was estimated at about Rs. 7.61 lakhs. They had employed in all about 45 persons.

Chemical Industries

There are a few chemical industries in the district which are engaged in the manufacture of washing soaps, insecticides, red-oxide, mixed fertilisers and agarbathies. There were eight such units during 1969-70, of which six were at Bellary and two at Hospet. Of these, two units were producing washing soaps, two agarbathies, and one each insecticides, mixed fertilisers, red-oxide, candles and *pan masala*. While the soap factory of K.V. & Sons at Bellary was the oldest (1930) unit, the factory of Shaw Wallace and Co. Ltd. near Hospet, which produces mixed fertilisers, is the biggest. This latter unit produces about Rs. 20 lakhs worth of fertilisers per annum and employs about 20 persons. Information

about its capital investment is, however, not available. The other seven units put together have invested a capital of about five lakhs of rupees, while their estimated annual production is worth about Rs. 6.67 lakhs, the number of persons employed being about 60.

Ferrous and Non-Ferrous Industries

During the year 1969-70, there were just two small-scale industrial units in the district, both located at Bellary, engaged in the production of non-ferrous and ferrous castings and agricultural implements. They had invested a total capital of Rs. 4.21 lakhs and produced articles worth about Rs. 1.65 lakhs per annum, the number of persons employed being about 40. Of these, the Mudugal Industries at Bisalahalli near Bellary is a bigger unit with a capital investment of about four lakhs of rupees.

Plastic Industries

Bellary is also known for the manufacture of plastic bangles and fancy articles. The bangles produced here are sold not only within Mysore State, but also in the neighbouring States of Andhra Pradesh and Tamil Nadu. During 1969-70, there were nearly a dozen small-scale units, all located in Bellary city, engaged in the production of plastic bangles and other articles. A few of these units were also producing paper bags and fountain pens. The total capital invested by these units was of the order of about two lakhs of rupees, while the value of their annual production was estimated at about Rs. 7.63 lakhs. They had, in all, employed about 80 persons.

Other Industries

There were, in 1970, also a few other small-scale industries in the district, of which the Indian Hume Pipe Company Ltd., Hospet, was the biggest. Established in 1953 with a capital investment of about Rs. 2.03 lakhs, it produces about Rs. 7.52 lakhs worth of R.C.C. hume pipes and other cement products annually, the number of persons employed being about 45. There was also another smaller unit at Bellary manufacturing cement products, ventilators, tubes, etc. Among the other small-scale industries in the district was a unit producing *supari*, agarbathi and tooth powder, another producing french polish, lac polish, paints and electrical insulation, a third making glass wares, a fourth manufacturing mirrors and wind-screen frames and a fifth producing lead shots. All these units were located at Bellary, the one producing *supari*, agarbathi and tooth powder being the biggest of the units with over 70 persons working in it.

According to the Assistant Director of Industries and Commerce, Bellary district, the total number of registered small-scale industrial units in the district had gone up to 385 by the end of April 1971, as a result of an intensive campaign undertaken during 1969-70 for the promotion and development of small-scale industries in the district. But according to the report of the Lead Bank Survey of Bellary district conducted by the Economic

Research Department of the Syndicate Bank, there were, in all, 567 small industrial units in the district in 1968-69, with a total estimated production of Rs. 1.10 crores annually. This number perhaps includes the industries both in the organised and unorganised sectors.

Khadi and Village Industries

The *khadi* and village industries are of considerable importance in improving the economic condition of the rural population. In a district like Bellary, where agriculture is the mainstay of the population, provision of subsidiary occupations is a great necessity. In the absence of these auxiliary occupations, there would be an exodus of rural population to industrial centres during periods of enforced inactivity in agriculture. This would put out of gear the tranquillity of rural economy. Realising this fact, the Government of Mysore have been encouraging and assisting the *khadi* and village industries in the district as elsewhere in the State. There are about twenty different kinds of village and cottage industries spread all over the district, the more important of them being handloom-weaving, pottery, carpentry, blacksmithy, leather stitching, oil *gana,* mat-weaving, basket-making and the like.

Handloom Weaving

Handloom weaving is an important ancient industry which has survived even to this day. It has been experiencing difficult times ever since the mill-made fabrics of the British Indian cotton mills came into the market. However, after the achievement of independence, the Governments both at the Centre and the State, have been endeavouring to support this rural industry by extending financial and other forms of assistance. It was estimated that there were nearly 4,000 handlooms engaged in the weaving of cotton, silk and woollen fabrics in Bellary district in 1964. But, according to the Assistant Director of Industries and Commerce, Bellary district, the total number of *active* looms in the district as in 1971 was only about 600. The weavers in the district purchase their requirements of yarn both locally and from the mills at Davanagere, Bangalore, Bombay and Coimbatore through local merchants. Among the important handloom-weaving centres in the district are Tambrahalli, Moka, Hagari-bommanahalli, Hampasagara, Kottur, Ujjini and Bellary, where *dhoties,* sarees, *chowlies,* towels, shirtings and bed-sheets are produced.

Coloured cotton cloths for women are woven in many places, of which Hospet and Bellary are important centres. In some of these places, cloths with narrow silk borders or having either the warp or weft of silk, or partly of silk and yarn either in the warp or weft or in both are also made and in no centre pure silk cloths (both warp and weft in silk) are made, except against orders placed with the manufacturers. Mostly the Devangas, several sub-sects of Sales, Kuruvanis and Thogatas are engaged in weaving cotton and silk cloth. The cotton yarn is dyed locally, the chief

colouring being indigo dye and *maddi* red. Raw silk is bleached in a solution of ' tsoudu ' and lime and dyed with *kiramanji*. Ready dyed yarn is also obtained where the weavers are not able to dye the yarn themselves or to get it dyed in the neighbourhood.

The varieties of women's cloths manufactured in the district are mostly required for local consumption. Those manufactured at Hospet and Kottur are chiefly consumed in the western taluks of the district. Some centres like Hampasagara have specialised in manufacturing cloths for *ravikes* (bodice) and scarcely weave any other kind, the result being that large stocks remain on hand until the marriage season creates a demand for them.

Kambli Weaving

The *kambli* is a woollen blanket which serves sometimes also as bed, overcoat or umbrella as the occasion demands. It is made from the wool of sheep by the Kurubas who are shepherds tending flocks of sheep for the purpose. This industry is mainly carried on in the taluks of Kudligi, Harapanahalli and parts of Hospet. The *kamblies* of Harapanahalli taluk are known for thier fineness of texture and are of nearly the same quality as that of Davanagere in Chitradurga district. This fineness of texture is obtained from the wool of sheep shorn when they are not older than six months.

Assistance to Weavers

It has been reported that most of the active handlooms in the district have been brought into the co-operative fold and 20 Weavers' Co-operative Societies have been organised. Besides being provided with technical advice, Weavers' Co-operative Societies have been sanctioned considerable amounts of loans for working capital from the funds provided for the plan schemes and also from the Reserve Bank of India. Loans have also been given for share capital. The Weavers' Co-operative Societies have also been supplied with various improved weaving equipments. Further, to rehabilitate the weavers displaced by the construction of the Tungabhadra Project, two housing colonies of 50 houses each at Tambrahalli and Hagaribommanahalli and another housing colony of 100 houses at Hospet have been constructed. During the Second Plan period, a total expenditure of Rs. 4.91 lakhs was incurred on the several handloom development schemes sponsored by the State Government in this district, while the expenditure incurred during the Third Plan was about Rs. 7.40 lakhs. Another sum of Rs. 5.83 lakhs has been allocated for this purpose under the Fourth Plan.

Khandasari Industry

On account of localisation under the Tungabhadra Project Low Level Canal, there has been a considerable increase in the area under wet cultivation, as a result of which the raiyats took to growing of sugarcane. But the rates of jaggery were so low that the raiyats were not able to get good returns. Therefore, in addition to the two large-scale sugar factories, the manufacture of khanda-

sari sugar was thought of and two co-operative societies, one at Hirehadagalli and another at Siruguppa, were established for this purpose. Of these, the society at Hirehadagalli is reported to have since become defunct.

The other society at Siruguppa had been assisted financially by the State Khadi and Village Industries Board to the tune of Rs. 30,000. But it is learnt that even this society is now (1971) under liquidation. However, another unit for the manufacture of khandasari sugar has come up recently in the private sector at Ramsagar in Hospet taluk.

Village Oil Industry

As already stated earlier, the village oil industry is fairly old in this district. Before the establishment of oil mills, oil was produced mainly by means of village *ganas*, a number of which exist even now, by *ganigars* or *vaniyars* who have this as a hereditary occupation. Oil is produced from groundnut, castor, gingelly, sesamum, etc., in *ganas* and wooden mills driven by bullocks. The main centres of production of oil by this method in the district are Tambrahalli, Hospet, Chigateri, Lakshmipura, Bellary, Tekkalkota, Siruguppa, Kolagalli and Sandur.

With a view to improving the economic condition of those who are still depending on this indigenous industry for their livelihood, efforts have been made to bring them into the co-operative fold by organising industrial co-operative societies and extending them financial aid and assistance in other forms. During 1970-71, there were nine such oil *gana* industrial co-operatives in the district, one in each of the above mentioned centres. The Mysore State Khadi and Village Industries Board has extended a total financial assistance of Rs. 1,29,700 to these societies, of which Rs. 7,500 was in the form of grant and the rest as loan.

Pottery

Pottery has also been one of the ancient rural industries in the district. The potters in the district mainly produce unglazed cooking pots and also other articles like earthen pitchers, water jars, frying pans, dishes and the like. Although the gradual increase in the use of cheap metallic vessels has greatly decreased the demand for earthenwares in recent years, there is still some demand for the latter. Bellary, Sandur, Sirigeri and Aladahalli are among the important pottery centres in the district. The equipment of a potter consists of the traditional wheel, frames and buckets. Making of quality earthen products depends more on the skill of hands than on equipment. Since the economic condition of the people pursuing this profession is bad, efforts have been made since the last about a decade to bring the potters also into the co-operative fold by organising industrial co-operative societies of potters and extending them financial aid and assistance in other forms. Four such industrial co-operatives, one

in each of the above-mentioned centres, have been assisted financially by the Mysore State Khadi and Village Industries Board to an extent of Rs. 42,510, of which a sum of Rs. 11,210 was in the form of grant and the rest as loan.

Leather Industry

Leather-working is pursued by a section of the Harijans of the district as a hereditary occupation. They undertake mostly manufacture and repair of shoes and chappals. The economic condition of this class of people is also none too happy. In order to help improve the living conditions of the persons engaged in this industry, seven leather craft co-operative societies have been organised in the district, two at Bellary and one each at Kanchikere, Tekkalkota, Magala, Hospet and Harapanahalli. Of these, the Leather Stitching Society at Kanchikere and the Cobblers' Craft Co-operative Society at Bellary have received a loan assistance of Rs. 1,750 and Rs. 40,394 respectively from the State Government. The remaining five societies have also been given a total financial assistance of about Rs. 1,14,510 by the State Khadi and Village Industries Board, of which a sum of Rs. 39,140 was in the form of outright grant and the rest as loan. It is, however, reported that a few of these societies have since become defunct.

Carpentry and Blacksmithy

Carpenters and blacksmiths play an important role in the rural economy of a district. The Bellary district has a number of carpentry and blacksmithy units dispersed all over the district. While some of the carpenters in the urban areas manufacture also ordinary furniture of domestic use like cots, tables, chairs and benches, those in the rural areas mostly produce the common type of building fixtures like doors, windows and roofing materials as also agricultural implements. Such of those individual carpenters who are unable to purchase the required quantities of wood, etc., due to their poverty, work in bigger establishments on payment of wages.

Every big village in the district has at least one or two families engaged in blacksmithy. They produce and repair agricultural implements, re-tyre cart-wheels and undertake such other jobs. The artisans in these industries generally use tools and equipment of old types and they are financially unable to replace them by improved kinds. In order to obviate their difficulties, industrial co-operatives of carpenters and blacksmiths are also being organised in the district wherever possible. The Smithy Workers' Craft Co-operative Society at K. Kallahalli, which was started in 1955-56, is engaged in the production of agricultural implements, for which there is good demand in the district. This society has been given a financial assistance of Rs. 71,497 by the Government. It has been helpful in providing full-time employment to the otherwise under-employed or unemployed blacksmiths of the area.

Gold and Silversmithy

Gold and silver-smiths are found in towns and in every big village. They are engaged in the manufacture of small gold and silver ornaments like ear and nose-rings, gold and stone-studded rings, *thalies* used in marriages, wristlets and bangles and other golden ornaments and silver wares. The enforcement of the Gold Control Orders in 1963 by the Government of India had considerably affected a number of goldsmiths in the district as elsewhere. With a view to rehabilitating them, several measures were undertaken by the State Government including organisation of industrial co-operative societies of goldsmiths. During 1970-71, two such societies were functioning in the district, one at Bellary and another at Hospet. Each of these societies was provided with a working capital of Rs. 40,000 by the Government. Financial assistance was also given to a number of individual goldsmiths to enable them to start cottage industries, petty shops, etc. Educational concessions were given to their children. Training facilities and employment assistance were also provided to them. Now their condition has improved.

Mat and Basket Weaving

Basket-making and mat-weaving from bamboo and date-palm has been another rural industry which is in existence in the district from very early times. This industry provides full or part-time employment to a number of families in the rural areas. Besides baskets and mats, other articles of household use such as screens, tree-guards, cots, chairs, tables and trays are also made. But all the same, the economic condition of the people engaged in this industry is also far from satisfactory. With a view to ameliorating their living conditions, attempts have been made in recent years to bring as many of them as possible into the co-operative fold. Among the societies so organised, mention may be made of the Mat Weavers' Co-operative Society at Chikkajogihalli in Kudligi taluk, which is manufacturing mats of good quality both out of weeds and date-palm. This society was given a financial assistance of Rs. 29,164 by the Government and this entire amount has already been repaid by the society.

Other Village Industries

There are also several other village and cottage industries in the district such as soap-stone industry, fibre industry, hand-pounding of paddy and neera-palmgur industry. Of these, the last-mentioned industry is understood to have now decome defunct consequent on the lifting of prohibition in the State since 1967. While there were four Fibre Craft Co-operative Societies in the district, one each at Halekote, Emmiganur, Obalashettihalli and Tekkalkota, there was also an industrial co-operative society each for soap-stone workers and for hand-pounding of paddy. While the fibre societies and the society for hand-pounding of paddy have been provided with financial assistance by the State Khadi and Village Industries Board, the soapstone workers' society has been financially assisted by the District Industrial Co-operative Bank Limited, Bellary.

Khadi and Village Industries Board

The Mysore State Khadi and Village Industries Board has been maintaining a district office at Bellary since 1961 for the administration and implementation of the several *khadi* and village industrial development schemes taken up in the district. The Board extends not only financial assistance to various *khadi* and village industries but also provides technical guidance and training facilities to those engaged in them. According to the District Officer of the Board stationed at Bellary, upto 1970, 35 *khadi* and village industrial co-operative societies in the district had been given a total financial assistance of a little over Rs. 7.56 lakhs, of which Rs. 1.46 lakhs were in the form of outright grants and the rest in the form of loans. The industries thus assisted included *khadi*, fibre, wool, limestone, pottery, leather, non-edible oil, gur and khandasari, hand-pounding of paddy and village oil industries.

Rural Industrialisation Scheme

A Rural Industrialisation Scheme, as sponsored by the late Dr. M. Visvesvaraya, was introduced in the district in 1954 with the main objective of inducing the rural people to take the initiative of establishing suitable small industries and, as far as possible, to depend upon themselves for their development, without looking for external aid. For this purpose, the district was divided into group-circles, taking density of population as the main consideration. Everyone in the group-circle had his share of work under the scheme and was to be self-reliant.

At the commencement of the Second Five-Year Plan, this scheme was being implemented through Rural Industrial Co-operative Societies under the guidance of Village Development Committees. There were 29 such societies in the district at the rate of one in each hobli (revenue circle). Later, these societies were amalgamated and formed into Taluk Industrial Co-operative Societies and eight such societies, one for each taluk, were constituted in the district by 1964. These societies are affiliated to the District Industrial Co-operative Bank Ltd., Bellary. A District Industrial Co-operative Society has also been organised at Bellary, exclusively for the purpose of catering to the credit needs of the small-scale and cottage industries in the district. Although these societies continue to function and provide credit facilities for the development of rural industries, the work of the Rural Industrialisation Scheme, as such, was merged with the activities of the Industries and Commerce Department with effect from 1st January 1960.

Industrial Co-operatives

The Second Five-Year Plan laid stress on the formation of industrial co-operative societies for various village and cottage industries with a view to bringing the artisans into the co-operative fold, to providing them credit facilities, etc. The scheme of organising more such societies was continued during the Third Plan. In Bellary district, in all, 57 industrial co-operative societies (excluding Weavers' Co-operative Societies) had been organised

by the year 1970, with a total membership of about 21,590. Almost all these societies had received financial assistance, both as loans and grants, either from the Government or from the State Khadi and Village Industries Board, as already referred to earlier.

District Industrial Co-operative Bank

With a view to promoting and developing the small-scale and cottage industries in the district by providing them with necessary credit facilities, a District Industrial Co-operative Bank was established at Bellary in 1964, with an authorised share capital of Rs. 25 lakhs. It is through this bank that all the Government financial assistance to the industrial co-operative societies in the district is channelised. It also offers credit facilities to small-scale industrialists out of its own funds and renders all other routine banking facilities. The different kinds of loans advanced by this bank include working capital loan, key loan, hypothecation loan, loans against deposits and loans against Government and other trust securities.

During 1969-70, the bank had 198 members including the State Government and industrial co-operative societies. It had advanced, in all, loans amounting to Rs. 10.16 lakhs to its members during that year in the form of short-term, medium-term and long-term loans.

Home Industrial Activities

The Department of Industries and Commerce has been giving grants-in-aid to institutions like *mahila samajas* in the district for undertaking handicrafts activities such as tailoring, embroidery, knitting, rattan work, mat-weaving, etc. Besides, equipment like sewing machines, cloth and mat-weaving looms are also provided to some of the institutions. Technical assistance, if required by the institutions, is also provided. About 15 registered *mahila samajas* in various parts of the district are being assisted by the Department with provision of maintenance and equipment grants. During 1970-71, a total sum of Rs. 11,600 was thus provided to 15 institutions as maintenance grants, while three of these institutions also received Rs. 1,220 as equipment grant. It is reported that this scheme of granting financial aid to the *mahila samajas* by the Department of Industries and Commerce has since been discontinued.

Industrial Estate

With a view to providing suitable factory accommodation and modern facilities to the small-scale industries, an Industrial Estate has been established at Bellary. The Mysore Small Industries Corporation Ltd., which has been entrusted with the responsibility of constructing the Estate, has built six sheds, four of 'D' type and two of 'C' type, at a total cost of about Rs. 4.33 lakhs. These sheds have already been allotted to the small-scale entrepreneurs of the district for starting industries like manufacture of bolts and nuts, pulverising of red-oxide, etc.

Credit facilities

The Government, in their declaration of industrial policy, have assured that all possible assistance would be given to help the growth of industries in the State, both in the public and private sectors. The Mysore State Aid to Industries Act, 1951, had been helpful to the industrial entrepreneurs in the State. After the formation of the new Mysore State, a uniform Act was passed in 1959 laying down the mode and method of extending financial help for the establishment and development of industries. Under the Act, provision has been made to extend financial aid in the form of loan or bank guarantee to such of the industries as are not covered by the Mysore State Financial Corporation Act and also when the loan required does not exceed Rs. one lakh. The State Director of Industries and Commerce is the statutory authority for sanctioning loans to industries under this Act. The Assistant Directors of Industries and Commerce in charge of districts have also powers to sanction loans under this Act upto Rs. 2,000 to small entrepreneurs. In Bellary district, 36 small-scale industrial units have been granted loans amounting to about Rs. 1.46 lakhs during the period from 1963-64 to 1970-71.

The Mysore State Financial Corporation, which was established by the Government of Mysore in 1959, also grants loans to various categories of industries, from Rs. 25,000 upto Rs. 10 lakhs. Upto the end of March 1970, the Corporation had disbursed loans amounting to Rs. 15.11 lakhs to ten industrial units in the district.

As stated earlier, the Bellary District Industrial Co-operative Bank has also been granting loans to small industries in the district, apart from disbursing the amounts of the financial aid sanctioned by the Government to rural artisans, industrial co-operatives, etc. During the period from 1968-69 to 1970-71, the bank had granted loans amounting to Rs. 17.17 lakhs to several small-scale industrial units in the district.

Some of the commercial banks have also been providing credit facilities to small-scale industries in the district since recent years. The pace of providing industrial credit by these banks has been accelerated after the nationalisation of the major commercial banks. While the Syndicate Bank's advances to industries in the district upto 1970 were of the order of Rs. 56.80 lakhs, the State Bank of India had advanced Rs. 51.87 lakhs during the period from 1966-67 to 1969-70. The Andhra Bank had advanced more than Rs. 71 lakhs to several industries in the district during the four-year period from 1966-67 to 1969-70, while the Vysya Bank's advances during the same period were of the order of about Rs. 60 lakhs. During 1969-70, the Canara Bank had granted industrial loans amounting to Rs. 45.73 lakhs in the district, while the State Bank of Mysore's contribution in this regard upto the end of 1970 was to the tune of Rs. 15.89 lakhs. The Central Bank of India

had also granted loans to the extent of Rs. 11.61 lakhs to some industries in the district during 1969-70, while the Canara Banking Corporation's contribution in this respect was about Rs. 8 lakhs.

As mentioned earlier, the Mysore State Khadi and Village Industries Board has also advanced a sum of Rs. 7.56 lakhs to 35 industrial co-operative societies in the district.

Supply of machinery on hire-purchase

The Department of Industries and Commerce helps small-scale industrial units to obtain machineries, indigenous and imported, on a hire-purchase basis from the National Small Industries Corporation, New Delhi. Under this scheme, financial assistance is rendered to small industrial units for purchase of machines of the value exceeding Rs. 500 and repayment of the amount in easy instalments spread over seven years. Upto the end of 1970, 21 industrial units in the district had been supplied with different types of machineries under this scheme. These included lathes, drilling machines, sewing machines, electric motors, pulverisers, welding and cutting machines, vertical band saws, grinding and boring machines and the like.

Incentives to entrepreneurs

With a view to assisting the entrepreneurs in establishing and developing industries, several incentive measures have been taken by the State Government in recent years. An organisation called the Mysore State Industrial Investment and Development Corporation was established in Bangalore in 1964-65. It offers complete project reports and marketing data and helps in obtaining industrial licences and possible concessions from Government and also participates in the share capital of such industries and underwrites new issues of shares. Scarce raw materials such as non-ferrous metals (like copper, zinc, lead, etc.), B.P. and G.P. sheets and the like are supplied to small-scale industrial units through the Mysore Small Industries Corporation, the Minerals and Metals Trading Corporation of India and the State Trading Corporation of India.

A cash refund is allowed on all sales-tax paid by entrepreneurs of new industries on raw materials purchased by them, for the first five years from the dates on which the industries go into production. Government have also impressed on all local bodies in the State the importance of rapid industrial development of every area in the State and have urged them to exempt raw materials, building materials and capital equipment needed by the new industries from payment of octroi for a period of five years from the dates on which these units obtain industrial licences or get registered. In respect of lands obtained for industrial purposes, the recovery of conversion fine is waived for five years. Besides, all new industries are also exempted from the payment of electricity tax for a period of five years from the dates on which these industries go into production. Further, the price

payable for the land offered by the Mysore Industrial Areas Development Board for starting new industries, has been ordered to be recovered in easy annual instalments spread over ten years. In addition, the State Government have reserved over 50 items of articles for being exclusively purchased from small-scale industrialists in the purchase programme of the State Government.

Industrial Associations

There is an association of small-scale industrialists of the district called the "Bellary District Small-Scale Industries Association" at Bellary. The main objectives of this Association are to organise, improve and protect the interests of persons engaged in small-scale industries in both the urban and rural areas of the district. The mine-owners of the district have also formed an association called the "Bellary District Mine-Owners' Association" for protecting and safeguarding the interests of the mine-owners of the district and for effectively representing the mine-owners in all matters connected with the business of mining and sale of mineral ores. The registered office of this Association is situated at Hospet.

Industrial training facilities

Prior to the formation of the new Mysore State, the industrial training centres in different areas had their own syllabus and method of training, and several of them were not organised well so as to give a systematic instruction. With a view to effecting uniformity in the system of training and syllabus and to improving the working of these institutions, the Government reorganised the existing training institutions and a full-fledged Artisan Training Institute was started at Siruguppa. This Institute has training facilities in carpentry, smithy and cotton-weaving. Only 25 candidates are admitted for training in each of these crafts. Candidates of the age-group between 14 and 20 years, who have passed the primary fifth standard, are eligible for admission to training. A period of one year has been fixed uniformly for institutional training in each craft followed by an in-service training of six months. Each trainee is paid a stipend of Rs. 40 per month during the institutional training and Rs. 50 during in-service training. Further, as a follow-up action to encourage the trainees to settle in the crafts and pursue the same after training, each trainee is given a "tools kit" consisting of tools and equipment suitable to the craft in which the candidate receives training, of the value not exceeding Rs. 250 as interest-free loan recoverable in annual instalments.

With a view to imparting training in modern techniques of production, a Model Carpentry and Smithy Centre has been started by the Government at Bellary. For making the workers conversant with the use of the latest machines and equipment, such machines and equipment have been installed in this centre. The period of training ranges from six months to one year and during the period of training, a stipend of Rs. 50 per month is

paid to the trainees. Besides imparting training, this centre has also been designed to take up a regular production line as well.

In order to utilise the abundant raw materials available in the area and at the same time to impart training in improved methods of mat-weaving, a Mat-Weaving Training Centre has been started at Chikkajogihalli in Kudligi taluk. The duration of the training is one year and each trainee is paid a stipend of Rs. 40 per month during this period.

There is also an Industrial Training Institute at Bellary, run by the Department of Employment and Training, which trains candidates for jobs like those of draughtsmen, welders, fitters, turners, electricians, etc. A Junior Technical School has also been functioning at Bellary since 1965. In this school, which is run by the Department of Technical Education, technical subjects like engineering and workshop theory and practice of carpentry, fitting, electrical wiring and servicing, and machine shop work are taught for a period of three years along with the usual academic subjects. Further, there is also a Polytechnic at Bellary which offers three-year courses at diploma-level in civil, mechanical and electrical engineering and two-year certificate courses in cabinet-making, tailoring, blacksmithy, electrical wiring, etc.

Welfare of Industrial Labour

Promotion of welfare of industrial labour is an important factor for the development of industries. Towards this end, provisions of the several labour legislations have been brought into force in the district (see Chapter XVII). The Provident Fund Scheme has been introduced in all bigger industrial establishments, while the Employees' State Insurance Scheme has also been extended to this district from February 1972. The India Sugars and Refineries, Hospet, which is the oldest large-scale industry in the district, has provided free medical aid to all its workers and certain educational facilities to their children. Housing facilities have been provided to a considerable number of its workers. A co-operative stores and a canteen have also been attached to the factory. The other sugar factory in the district, *i.e.*, the Co-operative Sugar Factory at Kampli, has also provided free medical aid and some educational facilities to their workers and their children. A canteen, a recreation club and facilities for indoor and outdoor games have also been made available in addition to providing housing facilities to a good number of workers. Similar amenities have also been provided by the Tungabhadra Steel Products Limited, Hospet, and the M.G. Automobiles, Bellary. The latter has also provided uniforms to its workers.

The Sandur Manganese and Iron Ores Limited has also constructed labour and staff quarters. In addition to provident

fund, gratuity, sickness and maternity benefit schemes, etc., introduced under the various labour legislations, drinking water facilities have been provided both in the labour camps and at work-spots. The Company is maintaining a well-equipped hospital and a high school at Deogiri for the benefit of the workers and their children. It has also organised an employees' co-operative society by extending financial assistance towards its working capital. The Bellary Spinning and Weaving Company Limited, which is comparatively a new establishment, is yet to provide housing facilities to its workers. Several other medium and small-scale industries of standing in the district also have been giving medical aid and educational facilities to their workers and their children. In addition, the women employed in them are given maternity benefits as required under the law.