CHAPTER VI.

TRADE.

I.—COMMUNICATIONS.

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In 1820 so liable were almost all villages to be cut off for weeks together by swollen streams and flooded rivers that before the rains the people were forced to lay in a four or five months' store of provisions.[1] In 1826 Captain Clunes noticed that five main lines of road centred at Belgaum.[2] Two went north to Poona, one went north-east to Kaládgi and Sholápur, one went south-east to Dhárwár, and one went west to Goa and Vengurla in Ratnágiri. Of the two Belgaum-Poona roads, one, after passing about sixty miles through Kungarli, Yamkanmardi, Hukeri, and Chikodi, left the district at Gokarvádi in Chikodi. It then crossed Kolhápur and Sátára till it reached Poona after a further distance of about 150 miles. The second Belgaum-Poona road was 241 miles long. Of the whole length seventy-eight miles lay within Belgaum, passing through Kalkumbe, Marihal, Konur, Nagarmanoli, Kerur, and Sidápurhatti. It left the district at Kágvád about twenty-four miles west of Athni, and beyond Kágvád passed through Tásgaon and Koregaon in Sátára to Poona. From this second Belgaum-Poona road two lines branched, one to the north-west the other to the north-east. The north-west branch had a length of 128 miles of which about eight lay within Belgaum limits. It started from Sidápurhatti about ten miles north-east of Athni, and reached Karád in Sátára through Miraj. The north-east branch had a length of 191 miles, of which about twenty-six lay within Belgaum limits. It started from Konur about eight miles north-west of Gokák and reached Sholápur through Bijápur. The Belgaum-Sholápur road in the north-east for the first thirteen miles formed part of the Belgaum-Poona road which left the district at Kágvád. From Marihal the road passed east for about twenty-five miles when it left the district near Manikeri. It then for about thirty miles crossed the Mudhol state to Kaládgi. From Kaládgi it went north for about 135 miles through Bijápur to Sholápur. From Guchan-Kurbet on this line, about three miles north of Gokák, a road of about 150 miles, of which about seventeen lay within Belgaum limits, branched north to Sholápur through Jamkhandi and Bijápur. The Belgaum-Dhárwár road of about fifty miles formed part of the Belgaum-Bellári road and the Belgaum-Harihar road. From Belgaum a road ran west for about twenty-five miles, passing through Sinoli, Turakvádi, and Kálánandigad,

[1] Marshall's Statistical Reports, 64. [2] Clunes' Itinerary, 32-34, 68-73.

and after descending the Rám pass reached Kudási in Sávantvádi. At Kudási it divided in two, one branch about thirty miles long passing north-west to Vengurla, the other of twenty miles passing south-west to Goa. Few if any of these roads were in good order.

1829-1877.

In 1829 the roads joining the district with the coast were described as wretched tracts unworthy of the name of roads.[1] After 1829 for upwards of fifteen years little seems to have been done to improve the roads. Early in 1847 the Collector, Mr. J. D. Inverarity, brought to notice the injury which the cotton trade suffered from want of roads and bridges. In 1848, Mr. Townshend, the Revenue Commissioner, urged the necessity of improving the communications with the coast. The badness of the roads added seventeen to twenty per cent to the cost of carrying Belgaum cotton to Bombay.[2] In the same year, when Government made liberal concessions with the object of improving Belgaum cotton, one of the Members of Council, the late Mr. L. R. Reid, urged the necessity of supplementing the concessions by opening either railways or roads which would be passable at all seasons. In 1849, the Bombay Chamber of Commerce urged that good roads and railways should be made from the cotton districts to the coast and to Bombay, as until communications were improved it was impossible to establish up-country agencies.[3] Lord Falkland, the Governor of Bombay, (1848-1853) in recording the Chamber's recommendations recognized the importance of their advice. He regretted that funds were not available to carry out the improvements which Government had so much at heart. The Court of Directors expressed the hope that at no distant period they would be able to sanction the expenditure needed for improved communications. Shortly after this the Collector again urged on Government the necessity for improving the roads. But want of funds prevented Government doing anything beyond making a road through the Phonda pass to Vijayadurg in Ratnágiri. In 1850 the Dhárwár-Belgaum road was unfit for traffic as it was unbridged and as the Malprabha sometimes rose to a great height. During the rains carts could pass the river only at intervals sometimes of a fortnight. When the river was fordable the carts had to be dragged through the stream by two bullocks when unloaded and by four to six bullocks when loaded. There were generally about a dozen men shoulder-deep in water round each cart helping to turn the wheels and urging the frightened bullocks. The height of the wheels prevented much damage; still in some cases grain was considerably injured by the water.[4] Since 1864 the local funds system has placed increased means for constructing and improving roads in the hands of the Commissioner and Collector. Communications have been greatly improved. During the 1876-77 famine, many new roads were opened and many old roads were improved as relief works.

1883.

At present (1883), of forty-six roads, varying from a few furlongs to seventy-eight miles, one is Imperial, five are provincial, and forty

[1] Walton's Cotton, 8. [2] Walton's Cotton, 164. [3] Walton's Cotton, 165.
[4] Mackay's Western India, 393.

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are under local funds management. The total length represented by these roads is 792 miles, being twenty-nine of Imperial, 266 of provincial, and 497 of local funds roads. Yearly repairs cost on the Imperial roads about £800 (Rs. 8000), on the provincial roads about £9300 (Rs. 93,000), and on the local funds roads about £2550 (Rs. 25,500). The Imperial roads are the roads in the cantonment of Belgaum. Of the five provincial roads the first of seventy-six miles is part of the Poona-Harihar trunk road. This enters the district at Kangoli about twenty miles north-west of Chikodi, and passing through Nipáni, Sankeshvar, Yamkanmardi, Kákti, Belgaum, Bágevádi, and Kittur, leaves the district about four miles south-east of Kittur. It is metalled and bridged throughout, and has a large cart traffic during the fair months chiefly in grain and tobacco. The cost of making the road is estimated at £120,000 (Rs. 12,00,000). Of the second provincial road from Kaládgi to Vengurla there are two sections, one of seventy-eight miles west of Belgaum to Vengurla by the Ámboli pass of which thirty-one miles are within Belgaum limits and the rest are in Sávantvádi in Ratnágiri, the other section of seventy-three miles stretches east from Belgaum to Kaládgi, forty-two miles of it lying within the district. The western or Ámboli pass section, which is bridged and metalled throughout, was made in 1871 at a cost of about £140,000 (Rs. 14,00,000). During the fair season, when the port of Vengurla is open, a heavy cart traffic passes along this line. The whole line from Belgaum to Vengurla is repaired by the Executive Engineers of Belgaum and Kolhápur. The eastern or south Bijápur section is metalled and drained for the first fifteen miles only. It is a fair road thirty-six miles to Yargatti. Beyond Yargatti parts of it in black soil are almost impassable during the rains. Even in the fair weather the steep banks of many of the streams make it somewhat difficult for carts. In the dry season the cart traffic, especially in cotton, is heavy. The third road of about fifty miles starts from Dhárwár west to Linganmat about twenty miles south-east of Khánápur and runs through the southern part of the Khánápur sub-division to the Tinai pass in Kánara. This road, which is under the Executive Engineer of Dhárwár, is partly bridged and is in fair order for cart traffic all the year round. The fourth road of forty miles runs south to Khánápur and from Khánápur south-west to Bidi till it meets the Dhárwár and Tinai pass road at Linganmat. It has a few drains but no bridges and is passable for carts all the year round. The fifth road is of seventeen miles from Khánápur south to Sitavda on the Dhárwár-Tinai pass road beyond which the line runs to Supa in Kánara. This is passable for carts at all seasons. Of the local funds slightly repaired roads, which are mostly fair-weather tracks, there are four of some importance, the old Poona-Belgaum road, the Kolhápur-Bijápur road, the Sankeshvar-Yádvád road, and the Gokák-Nargund road. The old Poona-Belgaum road enters the district at Kágvád, and passing through Mánjri, Akhli, Chikodi, Vudurhal, and Kamatmur, joins the new or mail road at Gotur. This is the old mail road to Sátára by Tásgaon which was used before the Kolhápur route was opened. It is partly drained, but the larger streams are unbridged and the old metal is disappearing.

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Though now merely a local road it has considerable cart traffic, especially north of the Krishna at Mánjri. During the monsoon, for six or seven miles north of Mánjri, the road is almost impassable owing to its deep black soil and to the widespreading floods of the Krishna. The Kolhápur-Bijápur road, of 106 miles, crosses the Athni sub-division from west to east, and passes through the towns of Berag, Kempvád, Athni, Aigal, and Telsang. In the fair season this road has a good deal of cart traffic, but during the rains many portions of it in black soil are almost impassable. The Sankeshvar-Yádvád road, forty-eight miles long, runs east and west through Chikodi and Gokák, passing Hukeri, Guras, Arbhavi, Vadurhátti, Musgupi, and Kulgod, to Yádvád. It has some cart traffic in the fair weather, but during the rains parts of it in black soil are almost impassable. A line, thirty-six miles long, running south from Athni, passes through Darur, Terdal, Kankanvádi, Kalloli, and Arbhavi on the Sankeshvar-Yádvád road to Gokák. From Gokák it stretches south-east through Yargati on the Belgaum-Kaládgi road and Manoli, and, after crossing the Malprabha, runs through Sindogi and Halikati to Nargund in Dhárwár. Part of this road between Arbhavi and Yargatti is sandy and stony and difficult for carts. Beyond Yargatti, though not bridged, the road is at all seasons passable for carts and gives easy access to the market town of Manoli. Besides these four main lines of local funds roads there are several smaller lines and country tracks. From Athni, besides the roads already noticed, six lines radiate, one north towards Balgeri, one north-east towards Kanmari, one south-east with a branch at Nándgaon leading to Kokatnur, one south joining the Athni-Gokák line at Terdal, one south-west joining the old Belgaum-Poona road at Kágvád, and one north-west to Belanki. Besides the main road three lines centre at Chikodi, one from Kankanvádi on the Athni-Gokák line in the east, one from Kurundvád in the north which after passing south and crossing the Poona-Belgaum road at Yamkanmardi ends at Daddi, and one from Nipáni in the west. A line from Kurundvád passes through Borgaon and joins the Poona-Harihar road at Savdalgi in Chikodi. Other roads run from Yádvád twenty miles to Yargatti on the Belgaum-Kaládgi road in Parasgad; from Arbhavi in Gokák thirty miles to Modga on the Belgaum main line; from Bágevádi on the mail road in Belgaum twenty miles to Murgod in Parasgad; from Hongal through Kittur twenty-five miles to Bidi; from Belgaum twenty-nine miles to the Rám pass; from Hulki on the Belgaum-Kaládgi road eighteen miles to Sindogi and Murgod and Saundatti in Parasgad; a road from Macha on the Belgaum-Khánápur road twenty-six miles running through Jámboti to Kankumbi, where it splits, one branch leading six miles to the Mangeli pass and the other seven miles to the Chorle pass; from Jámboti to Khánápur ten miles; and from Khánápur to the Kel pass twenty-two miles.

Passes.

Across the Sahyádris, within Belgaum limits or on the main lines between Belgaum and the sea, are eight chief passes of which three are crossed by roads fit for carts. Beginning from the north and working south these are the Ámboli or Párpoli Pass on the Belgaum-Vengurla road in the Sávantvádi state forty-three miles west of

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Belgaum. It is an excellent pass nine and a half miles long with an easy gradient. It is bridged, drained, and metalled throughout, and in the fair season has a very great cart traffic. The RÁM Pass lies about thirty miles west of Belgaum on the old Belgaum-Vengurla road. In 1826 it was the great pass to the upper country from Sávantvádi, Málvan, Vengurla, and Goa. The approach to the pass, both above and below, was a made road, and the ascent was easy and passable for every sort of wheeled carriage. The tract of country below was wild, hilly, and covered with large trees, clumps of bamboos, and thick underwood with partial tillage in the valleys. Since the opening of the Ámboli pass road in 1871, the Rám pass has been abandoned and cannot now (1883) be used by loaded carts. It is little frequented except by traders from Goa and by Vanjári bullocks taking salt from the coast and bringing grain from inland. About twelve miles south of the Rám pass and about twenty-five miles south-west of Belgaum is the CHORLE Pass on the road between Sánkhali to Kankumbi. It is a mere foot-track though it can be used with difficulty by bullocks carrying salt. A mile or two to the south-east of Chorle is the PÁRVA Pass, and about eight miles south-east of the Párva pass is the KEL Pass on the road which starts from Khánápur and runs south through Heneghe. Both the Párva and Kel passes are, like the Chorle pass, fit for foot passengers and with difficulty for cattle. About twelve miles south-east of the Kel pass is the TÁMERI Pass, a mere foot-path. About twelve miles south-east of the Támeri pass is the TINÁI Pass. In the actual descent the road is well suited for carts, but immediately below, in the Goa territory, it is almost impassable with axle-deep ruts. The section in British territory is under the care of the Executive Engineer of Dhárwár.

Bridges.

There are six large bridges, three of stone and three of iron. The three stone bridges are on the Poona-Harihar road. One with seven forty-five feet spans is across the Vedganga in the 165th mile from Poona, the second is over the Harankási in the 187th mile, and the third is across the Ghatprabha in the 197th mile. The three iron bridges are on the Belgaum-Ámboli pass road. One, the Senavli bridge, in the seventh mile from Belgaum, has one Warren girder of sixty feet span and two plate girders each of thirty feet span; a second across the Kálánadi in the seventeenth mile has three Warren girders each of sixty feet span; and the third in the thirtieth mile across the Ghatprabha has two Warren girders each of sixty feet.

Tolls.

Of twenty toll-bars eleven are on provincial and nine are on local funds roads. Of the provincial toll-bars four, at Támbulvádi and Kanur on the Belgaum-Vengurla road, at Kudchi on the Belgaum-Kaládgi road, and at Desur on the Belgaum-Linganmut road, are in the Belgaum sub-division; two, at Sidanbhavi and Timápur on the Belgaum-Harihar mail road, are in Sampgaon; one, at Bidi on the Belgaum-Linganmut road, is in Khánápur; three, at Sutgatti, Sankeshvar, and Savdalgi, are on the Poona-Harihar mail road in Chikodi; and one, at Halki on the Belgaum-Kaládgi road is in Parasgad. Of the nine tolls on the local funds

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roads, two, at Turkevádi and Vaghotre on the Belgaum-Vengurla road across the Rám pass, are in Belgaum; two, at Chorle on the road from Belgaum to the Chorle pass and at Talevádi on the Khánápur-Talevádi road, are in Khánápur; one is at Chikodi on the Sutgatti-Chikodi road; one is at Vatnal on the Gokák-Saundatti road in Parasgad; two are at Tigdi and Gudas, both on the Sankeshvar-Lokápur road in Gokák; and one is at Kágvád on the Chikodi-Kágvád road in Athni. In 1881-82 the provincial toll-bars yielded £5401 (Rs. 54,010) and the local fund toll-bars £789 (Rs. 7890).

Rest Houses.

At Hukeri on the Sankeshvar-Gokák road two mosques are kept in repair for the use of district officers, and with the same object at Saundatti, the head-quarter station of Parasgad, some rooms in the fort are kept in order. Besides these there are ten bungalows for European and forty-two rest-houses or *dharmshálás* for Native travellers. Of the travellers' bungalows, four, one each at Belgaum, Támbulvádi, Pundre (Kanur), and Turkevádi, are in Belgaum; three, one each at Sutgatti, Gotur, and Nipáni, are in Chikodi; two, one each at Mugutkhán-Hubli and Nesargi, are in Sampgaon; and one is at Yargatti in Parasgad. The travellers' bungalow at Belgaum, which was built at a cost of £252 (Rs. 2520) is on the Poona-Harihar mail road; it has three rooms and is kept at a yearly charge of £13 4*s.* (Rs. 132); the bungalow at Támbulvádi, which in 1869 was built from provincial funds at a cost of £726 (Rs. 7260), is on the Belgaum-Vengurla road, has two rooms, and is kept at a yearly charge of £22 16*s.* (Rs. 228); the bungalow at Pundre or Kanur, which in 1868 was built from provincial funds at a cost of £700 (Rs. 7000), is on the Belgaum-Vengurla road, has two rooms, and is kept at a yearly charge of £20 8*s.* (Rs. 204); the two-roomed bungalow at Turkevádi, which was built at a cost of £219 (Rs 2190), is on the Belgaum-Rám pass road and is kept at a yearly charge of £8 8*s.* (Rs. 84). Of the three bungalows in Chikodi all are on the Poona-Harihar mail road and have two rooms. Of these the Sutgatti bungalow was built in 1848 at a cost of £290 (Rs. 2900) and has a yearly establishment at a charge of £18 (Rs. 180); the bungalows at Gutur and Nipáni were built in 1858 at a cost of £275 (Rs. 2750) each, and are kept at a yearly charge of £15 12*s.* (Rs. 156) each. Of the two Sampgaon bungalows the Mugutkhán-Hubli bungalow, which was built in 1839 at a cost of £321 (Rs. 3210), is on the Poona-Harihar mail road, has two rooms, and costs £18 (Rs. 180) a year to keep; and the Nesargi bungalow, which was built at a cost of £300 (Rs. 3000), is on the Belgaum-Kaládgi road, has two rooms, and costs £20 8*s.* (Rs. 204) a year to keep. The Yargatti bungalow in Parasgad is on the Belgaum-Kaládgi road; it has two rooms, was built at a cost of about £209 (Rs. 2090), and costs about £14 8*s.* (Rs. 144) a year to keep. Under the supervision of the Collector these bungalows are in the charge of a servant whose duty is to satisfy the wants of travellers. Only at the Belgaum bungalow is there a messman who has a small supply of oilman's stores, but is licensed to sell wines and spirits. A daily fee of 2*s.* (Re. 1) is charged to any one using the bungalow.

Of the forty-two rest-houses or *dharmshálás* with room for ten to

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150 native travellers, eight are in Belgaum, six in Sampgaon, five in Khánápur, eleven in Chikodi, seven in Parasgad, one in Gokák, and four in Athni. All are in the charge of servants paid out of local funds. They have been built from local funds since 1865 at a cost of £7 to £543 (Rs. 70-5430). The rest-houses are used free of charge and the Local Funds Committee repairs them when necessary. Except by Lingáyats who stay in monasteries or *maths* and some others who lodge in the porches and out-houses of temples these rest-houses are used by all Native travellers.

Ferries.

No public ferries are worked throughout the year; all the rivers are fordable during the dry season. Of the thirty-eight public ferries which are worked during the rains, eight, at Ainápur, Hálihál, Satti, Mahisvádgi, Savadi, Shirhatti, Chik Padsalgi, and Hire Padsalgi, are on the Krishna; nine, at Hadkal, Ghodgeri, Modga, Hansihal, Gokák, Daddi, Konur, Tigdi, and Dhavaleshvar, are on the Ghatprabha; two, at Bhoj and Bedakihal, are on the Vedganga; two, at Páchhápur and Gokák, are on the Márkándiya; three, at Mángaon, Kovad, and Chinchani, are on the Támraparni; twelve, one at Jámboti, two at Khánápur, and one each at Parasvad, Mugutkhán-Hubli, Hansikatti, Turmuri, Sangoli, Vákund, Korvikop, Virápur, Yakundi, and Manoli, are on the Malprabha; and one at Ghotgevadi is on the Tilári. These ferries are all maintained at the expense of local funds and are yearly farmed the proceeds being credited to local funds. The revenues from the different ferries vary from 2*s.* to £130 (Rs. 1-1300). Of three ferries which yearly yield £50 (Rs. 500) and upwards, one is at Mugutkhán-Hubli, one at Manoli on the Malprabha, and one at Gokák on the Ghatprabha.

Of the thirty-eight public ferries sixteen have large ferry boats, eight have large canoes of which four are double canoes, thirteen are leather-baskets or *tokarás*, and one is an iron pan or *káil*. The boats and the canoes are made either by the executive engineer or by contractors at the cost of the local funds. They are of teak, mango, or *sávri* wood. The leather-baskets or *tokarás* are circular and are built of bamboo sticks covered with leather. They are generally built at the places where they are kept, or at the nearest sub-divisional head-quarters station. It requires no great skill to build a coracle. The large iron pan or *káil* is made by a village blacksmith. The ferry boats vary in size from eight feet long by eight broad and one and a half deep, to thirty-nine feet long by fourteen broad and three deep. They carry a quarter to two tons (15 to 120 *mans*) of goods, fifteen to 200 passengers, and some of them two to eight carts. Their fees are $\frac{3}{8}d.$ to $\frac{3}{4}d.$ ($\frac{1}{4}$-$\frac{1}{2}$ *anna*) for a man, 9*d.* to 1*s.* (6-8 *as.*) for a cart, and $1\frac{1}{2}d.$ (1 *anna*) for a horse buffalo or ox. The crew varies from four to sixteen on a boat, from one to ten on a canoe, and one to four on a basket. The crews are Bagdis, Bedars, Kabalgers or Thákurs, Kolis, Lingáyats, Maráthás, Mhárs, and Musalmáns. The boats cost £15 to £250 (Rs. 150-2500), the canoes £1 to £15 (Rs. 10-150), leather boats £1 to £3 (Rs. 10-30), and the iron pans £1 10*s.* to £5 5-30). Besides these public ferries eleven ferries are kept by *in* *rs* or holders of alienated villages. All yield a yearly revenue o ss than £50 (Rs. 500) except the

ferry at Mánjri in Chikodi across the Krishna on the old Belgaum-Poona road, about fifty-five miles north-east of Belgaum. The private ferry boats vary in size from thirteen feet long by six broad and two deep, to twenty-eight feet long by eight broad and three deep. They carry $\frac{1}{3}$ to $1\frac{2}{3}$ tons (20 to 100 *mans*) of goods and fifty to 150 passengers; five of the eleven private ferries are charitable ferries and charge no tolls. The fees levied on the rest are $\frac{3}{4}d.$ ($\frac{1}{2}$ *a.*) for a passenger, and 1*s.* (8 *as.*) for a cart. They do not carry animals. In 1881-82 the total public ferry revenue amounted to £473 4*s.* (Rs. 4732).

Railway.

The system of railways which is being introduced into the Southern Marátha and Kánarese districts of Bombay includes the East Deccan or Hutgi-Gadag, the South Deccan or Bellári-Marmagaon by Dhárwár and Hubli, and the West Deccan or Poona-Londa by Miraj and Belgaum. The West Deccan railway strictly ends at Belgaum; the thirty-three miles from Belgaum to Londa are called the Belgaum branch. Of these the lines which will directly affect Belgaum are the Bellári-Marmagaon and the Poona-Londa railways.

The line of the Bellári-Marmagaon railway passes east and west through about twenty-one miles of Khánápur in the extreme south of the district. It begins at $165\frac{1}{2}$ miles west of Bellári and about ninety east of Marmagaon at the station of Alnávar, a small village on the road from Belgaum by Khánápur and Bidi to Haliyál in North Kánara. From Alnávar it passes almost west along a low narrow saddle of the Sid Pagoda range eight and three-quarters miles to Nágargali. At Nágargali, $174\frac{1}{4}$ miles from Bellári and about eighty from Marmagaon, the line crosses the road to Hulsi and Nandgad both places of some little importance, and ascends north-west till it reaches the top of the Sid Pagoda range near Suligali 2325 feet above the sea and only seventy feet below Dhárwár. The line then crosses the Punda river and passes along its left bank till it crosses the river Turva near Londa station about twelve miles west of Nágargali. Close beyond Londa, at $186\frac{1}{4}$ miles from Bellári and about sixty-eight from Marmagaon, the line passes out of Belgaum limits. The estimated cost of the twenty-one miles within Belgaum limits amounts to £162,393 (Rs.16,23,930) or £7733 (Rs.77,330) a mile.

The Poona-Londa, the beginning of which was sanctioned in December 1883, passes north and south about a hundred miles through Athni, Chikodi, Gokák, Belgaum, and Khánápur, almost the whole length of Belgaum. This line will start from Poona, pass south-east through $46\frac{3}{4}$ miles of the Poona district and 117 miles of the Sátára district, and enter Belgaum at Shedbal in west Athni $169\frac{1}{4}$ miles from Poona. From Shedbal it will pass south about seventy-two miles to Belgaum and from Belgaum about thirty-three miles further south to Londa in the extreme south of Khánápur where it will meet the Bellári-Marmagaon line. The cost of the line between Poona and Belgaum is estimated at £8274 (Rs. 82,740) a mile or a total expenditure within Belgaum limits of £827,400 (Rs. 82,74,000). The works will be begun in 1884-85; they are expected to be completed in 1889. After Miraj 159 miles south-east of Poona the line passes eighteen miles east to secure a good crossing over

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Krishna. It enters Belgaum limits near Shedbal station about six miles north-west of the Krishna. From the Krishna it passes south-west sixty-six miles to Belgaum by Kudchi three miles, Nágral eleven miles, Chikodi Road near Kabur eight miles, Gokák Road near Sirdan ten miles, Páchhápur twelve miles, Khángaon twelve miles, and Belgaum ten miles. Except about four miles north-east of Belgaum, where the line turns south-east to avoid some hills and rough ground, the whole sixty-two and a half miles are practically straight. The limiting gradient is one in 100 and seventeen and a half miles of the section are level. There is no curve with a smaller radius than 600 feet. The only large village passed between the Krishna and Belgaum is Páchhápur, about twenty miles north-east of Belgaum with about 1500 people. The chief bridge is across the Krishna about 175 miles from Poona and three miles north-west of Gundigvar. The Krishna bridge has eleven spans of 150 feet girders, that is a total length of about 550 yards. Like the other big bridges on the Southern Marátha railways the Krishna bridge has breadth enough to allow a cartway to run alongside of the line. The piers are of masonry, those in the north founded on rock, those in the south founded on hard *muram*. The bridge is estimated to cost £73,500 (Rs. 7,35,000); of this the iron work in the girder is estimated to cost £23,600 (Rs. 2,36,000) and the erecting of girders £8500 (Rs. 85,000). The other large bridges are, Bekeri Bridge at 185 miles from Poona, with five spans of forty feet arches and an estimated cost of £3331 (Rs. 33,310); the Jágnur at 202 miles with eight spans of forty feet arches and a cost of £4841 (Rs. 48,410); the Ghatprabha at 208 miles with sixteen spans of fifty feet arches and a cost of £13,063 (Rs. 1,30,630); the Márkándiya at 221 miles with seven spans of fifty feet arches and a cost of £7076 (Rs. 70,760); the Bellári No. 1 at 225 miles with five spans of fifty feet arches at a cost of £5572 (Rs. 55,720); the Bellári No. 2 at 231 miles with four spans of forty feet arches at a cost of £2216 (Rs. 22,160). All these bridges have rock foundations for the piers, the piers of the Márkándiya and Bellári bridges resting on sandstone and the others on trap. For the section seven third class stations and one second class station are proposed, that is an average of one station to every nine miles of line. The details are, Shedbal at 169 miles from Poona, Kudchi 179 miles, Nágral 190 miles, Chikodi Road 198 miles, Gokák Road 208 miles, Páchhápur 220 miles, Khángaon 232 miles, and Belgaum 242 miles. The exact position of Belgaum station has not been fixed; it will depend chiefly on military considerations. As this section will form an integral part of the Southern Marátha Railway, the permanent-way, rolling stock, stations, and fencing will be similar to those in use on the rest of the company's line. From Belgaum the line runs south thirty-three miles and joins the South Deccan section near Londa station 186¼ miles west of Bellári. From Belgaum the line runs through cultivated ground about seven miles straight south to Desur. From Desur, where a high ridge is crossed, the line passes through forest falling 286 feet down a rather difficult hill slope seven and a quarter miles to Khánápur on the Malprabha. In this descent the line curves to the east and has a limiting gradient of 1 in 100. The Malprabha will be crossed near Khánápur by a

Railways.

bridge of eight fifty-foot arches whose piers will probably be founded on granite. From the Malprabha the line runs through thick forest eight miles straight south to Gunji. From Gunji, still through thick forest, the line passes over a *kotal* or saddle near Kirvale and then gradually descends till it joins the South Deccan railway half a mile east of Londa station. Three third class stations are proposed, at Desur 249 miles from Poona and about seven miles south of Belgaum, at Khánápur 258 miles from Poona and about sixteen miles from Belgaum, and at Gunji 266 miles from Poona and about twenty-four miles from Belgaum. Over the whole line there is abundance of granite and no scarcity of water. The only places at which much traffic is likely to be received are Belgaum and Khánápur. To help traffic the Kaládgi-Belgaum and the Bidi-Khánápur roads want improving. The cost of the thirty-three miles from Belgaum to Londa is estimated at £230,000 (Rs. 23,00,000) or £6970 (Rs. 69,700) a mile.

Post Offices.

Belgaum forms part of the Southern Marátha or Bombay Karnátak postal division. Besides the chief receiving and disbursing office at Belgaum it contains two town sub-offices, twenty-seven sub-offices, and twelve village post offices. Of the twenty-seven sub-offices and twelve village offices, seventeen sub and nine village offices are within British limits, and ten sub and three village offices lie in the Bombay Karnátak states. All are supervised by the superintendent of post offices, Bombay Karnátak division, and are paid by the Belgaum disbursing office. The chief disbursing office at Belgaum is in charge of a postmaster who draws a yearly salary of £180 (Rs. 1800) rising to £240 (Rs. 2400) in five years. The two town sub-offices, one in the city of Belgaum the other between Belgaum and Sháhápur, and of the twenty-seven sub-offices the seventeen within British limits, at Athni, Báil-Hongal, Chándgad, Chikodi, Gokák, Gokák Canal, Hukeri, Khánápur, Kittur, Mugutkhán Hubli, Murgod, Nandgad, Nipáni, Sampgaon, Sankeshvar, Saundatti, and Yamkanmardi, and the ten in state limits, at Gad-Hinglaj, Gargoti, Jamkhandi, Katkol, Mahálingpur, Mudhol, Rabkavi, Rámdurg, Ráybág, and Terdal, are in charge of sub-postmasters drawing £9 12*s.* to £36 (Rs. 96-360) a year. Of the twelve village post offices the nine within British limits are at Bágevádi, Garl-Husur, Hera, Manoli, Nesargi, Páchhápur, Vantundri, Yádvád, and Yakkundi, and the three in state limits are at Ajra, Angol, and Torgal. Of these twelve, five are in charge of village postmasters, drawing £9 12*s.* (Rs. 96) a year; five are in charge of village schoolmasters who in addition to their pay as schoolmasters receive yearly allowances varying from £2 8*s.* to £4 16*s.* (Rs. 24-48); and two are in charge of local residents who are yearly paid £2 8*s.* (Rs. 24) in one village and £4 16*s.* (Rs. 48) in the other. At the towns and villages which have either sub or village post offices, letters are delivered by twenty-seven postmen who are yearly paid £7 4*s.* to £12 (Rs. 72-120), and at the villages without post offices by fifty-four village postmen who are yearly paid £9 12*s.* to £12 (Rs. 96-120). Of the fifty-four village postmen nineteen are paid from Imperial and thirty-five from provincial funds. Besides by these postmen, letters are delivered in some places by postal runners who receive yearly from £1 4*s.* to

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Post Offices.

£4 16*s.* (Rs. 12 - 48) for this additional work. Besides delivering letters the village postmen clear letter-boxes stationed in villages, receive articles tendered for registration, and for the use of the village people carry with them postage labels, blank declaration forms of insured articles, and money-order applications. Except at all the twelve village offices and three sub-offices at Chándgad, Gargoti, and Mugutkhán-Hubli, where money orders only are issued, money orders are issued and savings banked at all the forty-two post offices including the disbursing post office at Belgaum. Mails from and to Bombay are carried by the Peninsula railway from Bombay to Poona. The mails from Poona to Belgaum are carried in pony carts or *tonga dáks* which run between Poona and Hubli through Sátára, Kolháp ur, and Belgaum, to Dhárwár. Except the disbursing post office at Belgaum and the two town sub-offices at Belgaum and Belgaum-Sháháp ur, which are directly subordinate to the disbursing postmaster of Belgaum, the Belgaum post offices are supervised by the superintendent of post offices, Southern Marátha or Bombay Karnátak division, who has a yearly salary of £240 (Rs. 2400) and whose head-quarters are at Belgaum. The superintendent is assisted in Belgaum by an inspector who draws £96 (Rs. 960) a year and whose head-quarters are at Chikodi.

Telegraph.

There is one Government telegraph office in the city of Belgaum.

II.—TRADE.

Traders.

The leading traders are Bráhmans, Lingáyats, Jains, Gujarát and Márwár Vánis, Maráthás, Komtis, Musalmáns, and Pársis. Their capitals vary from £500 to £20,000 (Rs. 5000 - 2,00,000). Except some agents of Bombay, Konkan, or inland merchants, most Belgaum merchants trade on their own and some on borrowed capital. The chief trade is with Bombay by Vengurla, Chiplun, and Goa. The agency for distributing imports and gathering exports may be roughly brought under five heads, local trade centres, fairs, markets, village shopkeepers, and travelling carriers.

Trade Centres, *Belgaum,*

The chief trade centres are, Belgaum, Báil-Hongal in Sampgaon, Nandgad in Khánápur, Nipáni and Sankeshvar in Chikodi, Gokák, and Athni. BELGAUM has about 250 traders, chiefly Bráhmans, Lingáyats, Nárvekars, Maráthás, Gujarát and Márwár Vánis, Pársis, and Musalmáns, with capitals varying from £500 to £20,000 (Rs. 5000-2,00,000). Some have capital of their own and some trade on borrowed funds. Almost all are independent traders. The chief imports are timber, ironware glass and other European articles, metal vessels, salt, and cocoanuts. Timber is bought at the Government stores in Kánara and sold at Belgaum to private persons and contractors. Ironware, glassware, and other European articles are brought from Bombay by Vengurla in the fair season and by Poona during the rains; they are sold to petty dealers and to consumers. Brass and copper vessels are brought from Poona and Sángli for local use; salt and cocoanuts are brought from Goa and Vengurla both for local use and to be sent inland. The chief exports are of grain, rice, wheat, gram, *jvári*, and pulse; and of cloth, *dhotars* or waistcloths and *sádis* or women's robes. Grain is bought by grain merchants at

Belgaum from petty corn dealers and growers and sent to Goa and Vengurla. The waistcloths or *dhotars* and the robes or *sádis* are bought by cloth merchants from local weavers and are either sold to Konkan merchants or sent to Dhárwár and Kaládgi.

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Trade Centres.

Báil-Hongal.

BÁIL-HONGAL in Sampgaon, about twenty-seven miles east of Belgaum, has about thirty traders, chiefly Lingáyats, Jains, and Bráhmans, with capitals varying from £500 to £10,000 (Rs.5000-1,00,000). All are independent traders. The chief imports are silk and cotton yarn, *sádis* or women's robes, *chol-kháns* or bodicecloths, waistcloths and headscarves, and betelnuts molasses and indigo. Silk and cotton yarn are bought in Bombay through agents or *daláls* and brought in steamers and native craft to Vengurla and from Vengurla to Báil-Hongal in carts. These articles are sold to outside traders as well as to local weavers. *Sádis* or women's robes are brought for local use from Gadag in Dhárwár and *chol-kháns* or bodicecloths from Guledgudd in Bijápur and from Hubli in Dhárwár. Betelnuts and molasses are brought from Yellápur in Kánara both for local use and for transport to Sholápur and Kaládgi. Indigo, waistcloths, and headscarves are brought from Madras for local use. Of exports cotton is the chief. Cotton is bought on market days from husbandmen and petty dealers and also from the surrounding villages by local traders and by the agents of Belgaum and Vengurla merchants. It is then sent to Vengurla.

Nandgad.

NANDGAD in Khánápur, about twenty-two miles south of Belgaum, has about thirty traders, chiefly Shenvi Bráhmans, Lingáyats, and Jains, with capitals varying from £500 to £3000 (Rs. 5000-30,000). Of the thirty traders three trade on their own capital and twenty-seven partly on their own and partly on borrowed capital. Most of them are independent traders and a few are agents of coast and inland dealers. The chief imports are cocoanuts, betelnuts, cocoanut oil, salt, and dates. These articles are brought either in carts or on pack-bullocks from Native Christian traders of Goa, and are sold to local traders. None of these imported articles are passed inland or sent to Dhárwár by Nandgad traders. But from the agents of Goa traders at Nandgad most of these articles are bought in exchange for wheat and other grain by the agents of Hubli, Navalgund, and Gadag traders in Dhárwár. At Nandgad there is no direct export trade. Formerly almost all the coast traffic was on pack-bullocks; since the opening of roads across the Sahyádris much of the pack-bullock traffic has given place to carts.

Nipáni.

Of NIPÁNI and SANKESHVAR, the two Chikodi trade centres, Nipáni, about forty-two miles north of Belgaum, has 100, and Sankeshvar, about thirty-two miles north of Belgaum, has fifty traders, chiefly Lingáyats, Jains, Shimpis, Márwár and Gujarát Vánis, and Bráhmans, with capitals varying from £500 to £2500 (Rs. 5000-25,000). Except a few agents or *daláls* the merchants are independent, some trading on their own and some on borrowed capital. The chief imports are betelnuts, cardamums, and pepper from Havig traders at Sirsi in Kánara; salt, cocoanuts, cocoa-kernel, dates, betelnuts, and copper sheets from Bhátiás, Gujarát and Márwár Vánis, and Musalmáns of Rájápur and Vengurla; and cloth, brass

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Trade Centres.

vessels, catechu or *kát*, nutmegs, almonds, and cloves from Bombay and Poona traders. All these articles are sold to local consumers and petty dealers. The chief exports are cotton, molasses, tobacco, chillies, hemp, and country cloth to Vengurla and Rájápur.

Gokák.

GOKÁK, about thirty miles north-east of Belgaum, has thirty traders, chiefly Lingáyats, Komtis, Bráhmans, Patvegars, Jains, and Musalmáns, with capitals varying from £1000 to £20,000 (Rs. 10,000-2,00,000). Nearly all the traders are independent, some carrying on business on their own and others on borrowed capital. The chief imports for local use are, silk, cotton yarn, and piece-goods from Bombay, *kháns* or bodicecloths from Guledgudd in Bijápur, rice from Haliyál in Kánara, and *gánja* or hemp from Rabkadi in Sángli. Of exports the chief are *sádis* or women's robes which are woven in large quantities at Gokák. Most of the robes are bought at Gokák by Konkan and Rájápur traders who carry them to the coast on pack-bullocks and ponies.

Athni.

ATHNI, about eighty miles north-east of Belgaum, has thirty traders, chiefly Bhátiás, Jains, Bráhmans, Lingáyats, and Márwár Vánis, with capitals varying from £2500 to £10,000 (Rs. 25,000-1,00,000). Of the thirty traders nine are independent and the rest are agents of Bombay, Chiplun, Miraj, and Jamkhandi merchants. The chief imports are sugar, dates, and gunny-bags from Bombay, and salt from Chiplun. The chief exports are cotton, wheat, and clarified butter. During the fair season the exports and imports from and to Athni find their way to Bombay in steamers and native craft by Chiplun and during the rains by rail from the Bársi Road station about ninety miles north of Athni.

Fairs.

Of nine fairs held in the district one is in Belgaum at Chándgad; one in Sampgaon at Báil-Hongal; two in Chikodi at Sankeshvar and Yedur; three in Athni at Mangsuli, Kokátnur, and Kanmadi; and two in Parasgad at Ugargal. These fairs last one to six days, have an attendance of 2500 to 60,000, and an estimated sale of goods worth £150 to £3500. The fairs are chiefly distributing centres. The articles sold are cloth, metal and earthen vessels, camphor, glass bracelets, wheat, rice, cocoanuts, plantains, and other fruit, and cows bullocks horses ponies and other cattle. Some of the sellers are husbandmen, but most are retail dealers, chiefly Jains, Lingáyat Bráhmans, Gujarát and Márwár Vanis, and Musalmáns. The buyers are generally local consumers. There is little barter:

BELGAUM FAIRS, 1882.

NAME.	Month.	Days.	Patron.	People.	Sales.
					£
Chándgad ...	Feb.-Mar.	1	Ravalnáth ...	2500	150
Báil-Hongal ...	Nov.-Dec.	1	Basvana ...	4000	150
Sankeshvar ...	Feb.-Mar.	1	Shankarling...	25,000	1000
Yedur ...	Mar.-Apr.	1	Virabhadra ...	10,000	500
Mangsuli ...	Apr.-May.	3	Mártanddev...	8000	3500
Kokátnur ...	Dec.-Jan.	5	Yellama ...	1000	1400
Kanmadi ...	Apr.-May.	6	Daridova ...	8000	1600
Ugargal ...	Dec.-Jan.	1	Yellama ...	60,000	1700
Ditto ...	Apr.-May.	1	Ditto ...	10,000	...

Markets.

Besides at the seven trade centres of Belgaum, Báil-Hongal, Nandgad, Nipáni, Sankeshvar, Gokák, and Athni, weekly markets are held at Bágeshvari and Pátna in Belgaum, at Kittur in Sampgaon, at Khánápur in Khánápur, at Saundatti and Murgod in Parasgad, and at not less than fifty other large villages. The estimated attendance at weekly markets in the chief local trade centres varies from 2500 to 10,000, 8000 being the estimate for Belgaum, 6000 for Báil-Hongal, 5000 for Nandgad, 10,000 for Nipáni, 7000 for Sankeshvar, 3000 for Gokák, and 2500 for Athni. The weekly markets are both distributing and gathering centres. The chief articles for distribution are butter, salt, grain, cattle, cloth, molasses, and sugar, iron brass copper and earthen vessels, oil, spices, and tobacco. The sellers, who are generally retail dealers and sometimes producers, are Lingáyats, Jains, Gujárat and Márwár Vanis, Maráthás, and Musalmáns. The buyers are generally consumers who live at or near the market towns. There is little barter. The articles which are gathered at these markets are local produce chiefly cotton, tobacco, oil, salt, rice, horns, hides, fat, butter, and molasses. The sellers are grocers and petty dealers, and the buyers are local traders and agents of Bombay, Vengurla, and Rájápur merchants.

Shopkeepers.

Almost every village, except the smallest, has its shop. The shopkeepers are chiefly Lingáyats, Jains, Gujárat and Márwár Vánis, Nárvekars, Native Christians, and Musalmáns. They sell to villagers and travellers rice, pulse, salt, tobacco, chillies, oil, molasses, clarified butter, spices, and other necessaries. They are chiefly distributors. Barter prevails to some extent. The shopkeepers take cotton, millet, rice, and other grain and give salt, oil, molasses, and spices. They neither lend nor advance money to the villagers. They go to market towns to bring supplies and are not connected with large trading firms.

Carriers.

Carriers are either cartmen or pack-bullockmen. The cartmen are Maráthás, Lingáyats, Native Christians, Jains, and Musalmáns. They carry various kinds of grain, cocoanuts, betelnuts, salt, cloth, tobacco, molasses, cotton, hemp, chillies, sugar, blankets, myrobalans, dates, cocoa-kernel, iron, copper, brass, and other articles. They visit Goa, Vengurla, Rájápur, Poona, Sirsi, Haliyál, Yellápur, Hubli, Gadag, and Tálikoti. A few are traders and the rest carry goods for hire. The trading cartmen buy grain and other local products from merchants and producers, and carry them to places where they can sell them at a profit. Of late the number of cartmen has increased in consequence of the opening of new roads. Pack-bullockmen are chiefly Lamánis, Musalmáns, Native Christians, Lingáyats, and Nárvekars. They generally carry grain, salt, and cocoanuts. They visit Haliyál, Hubli, Tálikoti, Goa, Vengurla, and Rájápur. All are traders. They buy grain from up-country dealers and sell it to coast merchants and buy salt and cocoanuts from coast merchants and sell them to inland dealers. The number of pack-bullockmen has fallen as the bulk of the carrying trade is now done by carts.

Of Imports the chief articles are: Of timber, teak, jack,

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Imports.

and *matti* or Terminalia tomentosa are brought from the Government stores in Kánara and from Bombay, Sávantvádi, and Chiplun, and sold to local contractors and craftsmen. This timber is used in building houses and in making carts, boxes, tables, and chairs. Of house furniture, ironware, chiefly locks, hinges, bars, and nails; copper and brass vessels, dishes, plates, and water pots; and glasses, ornamental chairs and tables, and clocks and watches are brought from Bombay, Poona, Hubli, and Sángli by Márwár Váni, Jain, Pársi, and Musalmán traders. These articles are either sold to the people or to retail dealers. Copper and brass vessels are either sold by retail dealers in their shops, or the retail dealers sometimes go from village to village and sell their vessels for cash or for valuable second-hand clothes. Of food grains, rice is brought from Haliyál in Kánara and from Kolhápur, and millet wheat and gram from Dhárwár and Kaládgi, and from the Jamkhandi, Jath, Mudhol, Rámdurg, and Sángli states. These food grains are generally brought by grain-dealers and sometimes by grocers. Part is sold locally and the rest is sent to the Konkan. Sugar, dates, cocoanuts, cocoa-kernel, sweet oil, kerosine oil, and salt are brought from Goa, Vengurla, Chiplun, Rájápur, and Bombay, and molasses from Yellápur in Kánara. Some of these articles are sent to Dhárwár and Kaládgi. Fruits of different kinds are brought from Goa and Kolhápur by petty dealers and sold locally. European spirits and wines and drugs are brought from Bombay by Pársi, Musalmán, and Native Christian merchants, and sold in the town and cantonment of Belgaum. Of fine tools and appliances anvils, hammers, saws, files, and scissors are brought from Bombay by Márwár Vánis and Musalmáns and sold locally to craftsmen and other consumers. Of dyeing and colouring materials indigo is brought from Madras. Of cloth, European cotton goods, shawls, woollen and silk cloths, machine-spun yarn, raw and coloured silk, and silk waistcloths or *pitámbars* are brought from Bombay and Poona, *rumáls* or headscarves and *dhotars* or waistcloths from Madras, *sádis* or women's robes from Gadag, and *chol-kháns* or bodicecloths from Kaládgi. The importers are cloth traders, most of them Gujarát and Márwár Vánis and Lingáyats. Except silk and yarn, which are chiefly bought by weavers to make *sádis* and *dhotars*, the imported cloth is partly sold to local consumers and petty dealers and partly sent to Goa. Cards chessmen and other toys are brought from Sávantvádi; jewels and gold ornaments are brought by Poona, Kolhápur, and Miraj merchants and sold to the rich; pearls and coral are brought from Bombay by Márwár Váni traders called *motikars* or pearlmen. Pearl merchants generally stay in the large towns and make one or two trips in the district.

Exports.

[1] Cotton is the most important of Belgaum exports. Belgaum has no European cotton agents and no agents of Bombay European houses. A few persons in the larger towns represent native firms, but more business is done between Bombay and the up-country

[1] Most of the details about cotton trade and cotton industries are taken from Walton's History of Cotton in Belgaum and Kaládgi (1880).

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Trade.
Exports.
Cotton.

dealer at the South Konkan ports than in the cotton-growing districts. The system of trade in Belgaum is by no means uniform. Most landholders sell their own cotton and are consequently to this extent cotton-dealers as well as cotton-planters. After the cotton has been picked and ginned the season is generally too far spent to allow any but the very small outturn of American cotton to reach the coast before the latter half of May when traffic ceases. The bulk of the Belgaum cotton crop, at the expense of a considerable loss in value, is generally stored in damp godowns and dirty sheds and kept there till about the end of October. It is then taken out and weighed into bundles or *dokrás* of about 224 pounds which are covered with sacking and sewn with strong twine into packages about three feet long by two and a half broad. The cotton is neither pressed nor half-pressed; it is not even tightened by ropes. Most of these Belgaum bundles or *dokrás* find their way to Vengurla in Ratnágiri. Till 1871 when the new road to Vengurla across the Ámboli pass was opened, much cotton was carried on bullock-back down the Rám pass about thirty miles west of Belgaum. This route is no longer used, and the practise of carrying cotton on pack-bullocks is confined to a few packages from the north and north-east which make their way over the Sahyádris to the small Ratnágiri ports. The present road over the Ámboli pass has an easy gradient and is almost all that can be desired for bullock-cart traffic. This opening of the Ámboli pass road has affected the Kárwár and Kumta trade. Much traffic that formerly went from South Belgaum to Kárwár and Kumta now goes to Vengurla. Large quantities of cotton from the northern sub-divisions of Belgaum go to Chiplun in Ratnágiri about twenty-five miles from the mouth of the Váshishti river. In the customs returns this cotton appears as shipped at Anjanvel, on the south shore of the entrance to the Váshisti. A small quantity occasionally makes its way to the small ports between Vengurla and Anjanvel, but for practical purposes Vengurla and Anjanvel may be considered the ports for Belgaum cotton. The great drawback to Vengurla is that it is only a roadstead which is closed to shipping from June to October, and in heavy westerly winds is at all times dangerous. The cost of carriage from the ginning districts to the coast to a great extent depends on the number of carts available and on the time of year. The cartmen are generally husbandmen, and as soon as the sowing season draws near they rush to their villages often at great distances, to prepare and sow their land. From South Belgaum to Vengurla, a cart carrying some one thousand pounds of cotton is generally paid about £1 8*s.* (Rs. 14); to this at Belgaum has to be added a transit-agent's fee of 6*d.* (4 *as.*) With slight variations £1 8*s.* (Rs. 14) may be taken to represent the average cost of carting one thousand pounds of cotton from the Belgaum cotton fields to the coast, a distance from the farthest point of about 120 miles. This is a heavy charge. Taking 30*s.* a ton of 2240 pounds as the average of the cotton freight by steamers from Bombay to Liverpool during the year 1882, the charge from the Belgaum cotton fields to the coast is nearly twice as heavy as the charge from Bombay to Liverpool. Compared with Hinganghát, Dholera, and

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Broach cotton the local Kánarese cotton has the disadvantage of being much later of getting to market. The necessity for choosing a dry time of the year for picking prevents the cotton ripening before February and March. With the help of railways and quicker ginning it may soon be possible to send forward the cotton so that the new crop may reach Bombay before the end of May. Besides the interest on the money locked in the cotton for six or seven months, the early delivery of the crop in Bombay will save the damage from storage in dirty sheds and leaky godowns, a damage which is roughly estimated at about a farthing a pound. The returns for the Vengurla customs division for the five years ending 1882 show an average export of cotton worth £249,976 (Rs. 24,99,760). The bulk of this comes from Belgaum. From Vengurla some of the cotton goes by steamer to Bombay, a passage, including stoppages, of twenty-six to thirty-two hours; the bulk is shipped in the native craft known as *phatemáris* which take three to twelve days to reach Bombay. There are agents of Bombay native firms at Vengurla, but no agents of Bombay European firms. The customs charges are light; a one *anna* stamp and two manifests costing $\frac{1}{4}$ *anna* each that is a total charge of $2\frac{1}{4}d.$ ($1\frac{1}{2}$ *anna*). The cotton bundles or *dokrás* are allowed to remain on the landing for forty hours before any port charges are levied. Some of the cotton shipped from Vengurla comes from Dhárwár, but the bulk of it is from Parasgad and Sampgaon in Belgaum, and from Hungund Bágalkot and Bádámi in south Bijápur. All of it comes down the Ámboli pass. The shipments from the other parts of the district come by the routes that merge into the main coast-road not far from Ámboli. The bulk of the Vengurla shipments is of local Kánarese cotton; very little American goes by that route. The cost of freight by steamer and *phatemári* to Bombay ranges from 6*s.* to 14*s.* (Rs. 3-7) a local *khandi* of 756 pounds that is $\frac{1}{30}$ to $\frac{4}{30}$ times the average 1882 steamer freight from Bombay to Liverpool. The bulk of the trade is in the hands of Lingáyats, Gujarát Vánis, and Bhátiás. There are no transactions in Vengurla on European account. The bulk of the staple is brought from up-country for sale at the coast; comparatively little is bought in the cotton-growing districts. The growers or the local dealers consign it to agents at Vengurla who are the middlemen between the local dealer and the Bombay merchant. The Vengurla middleman's charges amount to 2*s.* 7*d.* (Re. $1\frac{5}{16}$) on every 756 pounds (1 *khandi*) of cotton.[1]

North Belgaum cotton goes to Chiplun and much that is grown in other parts besides Belgaum and Bijápur is carried there. The best cotton that reaches Chiplun comes from Athni and its neighbourhood; in Bombay this Athni cotton is known as *kacha kumta* or poor Kumta. The staple from the rest of north and north-east Belgaum is inferior to the Athni cotton. No American is grown so far north. All the cotton carried by this route goes down

[1] The details are: Brokerage 2*s.*, weighing charges for scale $\frac{3}{8}d.$, weighing charge for labour $\frac{3}{8}d.$, grant to a priest $\frac{3}{8}d.$, grant to temples 3*d.*, grant to a charity fund 3*d.*, total 2*s.* 7*d.* The Vengurla municipality makes no charge.

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the Kumbhárli pass, and nearly the whole of it reaches Bombay in *phatemáris*, as it is difficult and costly to get it into steamers which cannot pass so far up the Váshishti as Chiplun. During the five years ending 1882, the declared yearly value of the cotton shipped at Anjanvel, the Customs House at the Váshishti mouth which clears Chiplun shipments, averaged £147,466 (Rs. 14,74,660). The cost of carriage from Chiplun to Bombay varies from 1*s.* to 2*s.* (Re. ½-1) the *dokra* of about two hundredweights, and the same weight costs another 1½*d.* (1 *anna*) in porterage from the agent's godown to the vessel. The only other charges are 1*s.* (8 *as.*) a cart, for brokerage equal to about 2*s.* (Re. 1) a ton, and a fee of about three pounds of cotton, generally paid in kind, which the Chiplun dealers charge the up-country people for weighing the staple. At Chiplun nothing is levied by the municipality or for temples or charity. No permanent agents either of native or of European Bombay houses are settled at Chiplun; the trade is entirely in the hands of residents of Chiplun, who are the middlemen between the up-country dealers and the Bombay merchants. The voyage from Chiplun to Bombay takes three to twelve days. The system of trade at the small ports or landings between Vengurla and Chiplun is the same as the Chiplun system.[1] The owners of the vessels begin to beach them early in May when the south-west swell sets in. By or soon after the middle of May the Ratnágiri ports are closed till October.

During the last forty years Government have made repeated efforts to improve the Belgaum cotton trade. In 1841 the price of cotton in Bombay fell as low as 3*d.* (2 *as.*) a pound. In 1842 the expense of sending a *khandi* of 756 pouns of cotton from Belgaum to Bombay was estimated at £1 15*s.* (Rs. 17½).[2] In 1844, the Bombay cotton trade was so unsatisfactory that, at the request of the leading firms, a Commission was appointed of ten Government officers and merchants. This Commission made many valuable and business-like proposals. The proposal of most importance to Belgaum was the improvement of the roads between the Belgaum cotton fields and the coast. Regarding the growth of cotton the Commission made no recommendations beyond suggesting the introduction of better sorts of cotton. They strongly urged the need of improved cleaning and packing. The trade was also unfavourably affected by a considerable customs duty of about ⅙*d.* the pound (Rs. 5¼ the *khandi*). This duty had been fixed when the price of cotton was much higher, it was a heavy charge, and the Commission thought that it should be reduced. The Commission went into the question of the pressure of the land-tax and came to the conclusion that in some places the pressure was severe. Government adopted most of

[1] Beginning from Vengurla, the names of these small ports, of which there are nine, are Nivti, Áchra, Devgad, Vijayadurg, Jaytápur, Purangad, Ratnágiri, Jaygad, and Borya. The Vengurla shipments include shipments from Nivti and the Anjanvel shipments include shipments from Borya. The average yearly value of the cotton shipped from the remaining seven ports is £3859.

[2] The details were: Bullock hire Rs. 10, bagging and packing Rs. 3½, freight to Bombay Rs. 2½, Bombay charges Rs. 1½, total Rs. 17½.

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the Commission's leading suggestions. Orders were issued that the road to Kumta should at once be made fit for carts; the customs export duty was abolished; and a temporary reduction in land-tax was made in places where the pressure had been shown to be specially heavy. In 1845, in answer to inquiries made with the object of starting an English cotton company in the Bombay Karnátak, Mr. Mercer, the American planter (1841-1846), expressed the opinion that a company with £50,000 to £60,000 (Rs. 5-6 *lákhs*) might, on the plan he proposed, monopolize the cotton trade and return immense profits. Since Mr. Mercer made his calculation the cotton trade has so increased that in the opinion of Mr. Walton, who was cotton inspector in Belgaum from 1865 to 1880, a dozen companies each with the capital named by Mr. Mercer would fail to carry on all the present business. In September 1846 the Bombay cotton trade was still so bad that Government appointed a second Commission to inquire into the causes of the decline of the trade and to suggest remedies.[1] In March 1847, the Commission reported that they had no suggestions to offer regarding improvements in tillage. They were told by the American planters, who had experience in Belgaum and other districts, that the native methods were well adapted to the country. As regards the trade in Belgaum cotton the Commission recommended the abolition of all duties on raw cotton, an improvement in the port of Vengurla and in roads from Vengurla to the interior, and the opening of the Deccan by railways. They thought that the stagnation and loss in trade were due to the decline in the price of cotton.

In 1847, Mr. Jamsetji, a Pársi merchant, came to Belgaum to buy and export cotton. He wrote to the local authorities, told them he was anxious to buy and ship as much American cotton as he could get, and asked their support and help. He was promised every help compatible with the interests of the district, and was warned to be careful in his purchases, as the Collector was aware that acclimatized American cotton was being mixed and adulterated by the local dealers. In 1847, in a special report on the Belgaum cotton trade, Mr. J. D. Inverarity, the Collector, expressed the opinion that nothing would benefit the trade so much as the making of roads and the bridging of rivers and streams. The cost of carrying cotton from the fields to the coast was about 2*s.* 6*d.* (Rs. 1¼) the hundred pounds. At this time in the Belgaum markets cotton fetched about 1½*d.* to 2*d.* a pound (Rs. 50-60 a *khandi* of 756 lbs.) The competition of the local weavers was keen, and they paid as high as 2⅕*d.* the pound (Rs. 70 the *khandi*) for the best cleaned cotton. In 1848, Mr. Townshend, the Revenue Commissioner, showed that the cost of carrying cotton from Belgaum to Bombay added seventeen to twenty per cent to its price. In this year Captain Meadows Taylor urged that good roads should be made through the cotton plains to join into one main highway, on which the staple could be

[1] The Commission were: Messrs. H. B. E. Frere the present Sir Bartle Frere, H. H. Glass, R. Spooner, J. D. Inverarity, J. Bowman, R. W. Crawford, J. Smith, S. D. Murray, Kharsetji Jamsetji, and Kharsetji Káwasji.

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carried in carts down the Phonda pass to Vijaydurg in Ratnágiri, which he stated had a port fit for ships large enough to carry the cotton direct to Europe instead of round by Bombay. A fairly large quantity of the staple was then carried through Sankeshvar in Belgaum to Rájápur in Ratnágiri, a famous place of trade during the latter part of the seventeenth century. About the same time the Collector of Belgaum calculated that the average cost of carrying 756 pounds (1 *khandi*) of cotton was £1 (Rs. 10) to Kumta and 18s. (Rs. 9) to Vengurla. Besides by the cost of getting it to Bombay the export of cotton to England was burdened by heavy freights between Bombay and England which in 1847 were about £7 the ton. In 1848 the Collector reported that on its way to Bombay, Belgaum cotton was exposed to every form of evil. Moving at the rate of one or two miles an hour in rude carts or on bullock-back, over bad roads, the dew and the dust did their worst. The bullocks were loaded and unloaded twice a day, generally near watering places, and their packs were rolled in the mud. During the march each bullock consoled himself by keeping his nose in his leader's pack, and steadily eating the cotton. The loss in weight, which had not been made good by dust, was too often supplied by water and mud at the journey's end. Half of the night was lost in loading and unloading and the bullocks seldom did more than eight miles a day. All along the way petty chiefs and village headmen demanded tolls and stopped the cotton if the toll was not paid. Even after it was on board ship exactions did not cease. Till 1840 when his state lapsed to the British Ángria the chief of Kolába made all vessels stop off Kolába till his officers came on board, examined the cargo, and levied heavy and vexatious exactions. Mr. Townshend, the Commissioner, confirmed what the Collector said about the perils by land. The want of roads to the sea was the ruin of the inland people.

In 1849, the Bombay Government recommended merchants to establish up-country agencies. The Chamber of Commerce replied, that in the backward state of roads up-country agencies could not succeed. They urged Government to open the cotton districts by roads and railways to the coast and especially to Bombay. If this was done all other improvements would follow without trouble or expense. Lord Falkland then Governor of Bombay (1848-1853), recognized the great value of roads. He regretted that want of funds prevented Government from doing what they wished. Mr. J. P. Willoughby, one of the members of Council, thought that the financial pressure should not be allowed to stand in the way. If trade was not looked to the financial pressure must grow greater. Trade was sick, if not dying. He never remembered such a forest of masts waiting for freight in Bombay harbour. The Board of Directors in acknowledging the papers hoped at no distant period to be able to sanction the expenditure needed to improve communications. One result of the want of roads was a great inequality in local prices. In places with an easy outlet the price of cotton was double or treble its price in a place where export was difficult or impossible. In some places the cost of exporting it made the growth cotton impossible. About this time (1849-50) Mr. Channing the

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superintendent of cotton experiments calculated that taking Bijápur and Belgaum together the average cost of carrying a *khandi* of 756 pounds of cotton to the coast was a little over £1 8*s.* (Rs. 14). The full expense of carriage from Bijápur to Bombay he estimated at an average of £1 11*s.* (Rs. 15½), from Belgaum to Bombay he thought £1 2*s.* (Rs. 11) covered the cost. Mr. Channing expected that the opening of the Phonda pass route to Vághotan would do much for the Belgaum and Bijápur cotton trade. In 1849 the revised assessment was introduced in Gokák and Parasgad. The survey officers estimated that in the whole of Belgaum, which at that time included a large area of the best cotton lands of South Bijápur, about one million two hundred thousand acres were suitable for cotton. On a proper system of crop rotation this would give an available yearly area of about three hundred and seventy thousand acres. It was estimated that the land rent or assessment represented about seventeen per cent of the value of the gross produce. This proportion would become less as roads were opened and cultivation improved.

In 1847 the attention of Government had been drawn to the difficulty and danger of shipping cotton from the South Konkan and Kánara ports in April and May. After several years of examination and surveying Government decided that Vijaydurg, about thirty miles south of Ratnágiri, was to be the cotton port of the future, and that the trade was to centre at Vághotan, about ten miles up the river, where was a depth of eighteen feet at low water spring tides. From Vághotan good roads were to be made over the Sahyádri passes to Kolhápur about eighty, and to Belgaum about a hundred miles. When these roads were finished it was hoped that the bulk of the Belgaum and Bijápur produce would be sent to Vághotan, and that the agents would there put it in boats and send it to ships at Vijaydurg. These hopes have not been realized. The trade is too fluctuating to send large ships regularly to Vijaydurg. The advantages of direct shipments would probably be more than counterbalanced by the increased freight and higher insurance that would be demanded by ships that had to go to Vijaydurg instead of to Bombay. Trade never took to the Vághotan and Vijaydurg route and since 1871 when the excellent Á'mbóli pass road was opened it has centred at Vengurla.

The Government cotton experiments during the three years ending 1848-49 did not do much to increase the cotton trade. The yearly average outturn was only a little over a hundred and seventy bales each of 392 pounds. Even of this Government had bought two-thirds and the merchants less than a third. In 1849, the Manchester Chamber of Commerce urged Parliament to inquire into the unsatisfactory condition of the Indian cotton trade. In 1850, as the House of Commons refused the inquiry, the Manchester Chamber of Commerce, with the help of the Chambers of Liverpool Blackburn and Glasgow, sent an agent to India. Most of the inquiries of their agent, Mr. A. Mackay, were made in the Bombay Presidency. Mr. Mackay, who travelled through the Bombay Karnátak in 1851, reported to the Manchester Chamber of Commerce

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that the bad state of roads greatly interrupted the trade of the district; that only paltry sums were spent by Government on road improvement; that the few good roads were useless for trade as they were made for military convenience; and that improved not extended cultivation of cotton was what was wanted.[1] In reply to Mr. Mackay's statements Mr. H. W. Reeves then Revenue Commissioner [illegible]., and other District Officers including Messrs. W. H. Havelock and M. J. M. Shaw-Stewart pointed out that so far as external commerce was concerned the Karnátak districts were well off for roads; that there were two outlets for the produce of the country, the Vengurla road across the Rám pass for the districts north of the Malphrabha, and the Kumta road for the southern districts; that considering the difficulty of the country much had been done to improve roads; that besides the metalled roads mentioned by Mr. Mackay many fair weather roads were fit for carts; that the necessity of improving roads had engaged the attention of District officers and of Government as early as 1845, and that steps were being taken to improve roads; that the metalled roads made by Government for military purposes were of the greatest use to trade, as the military stations were excellent and convenient markets for local produce; that Mr. Mackay underrated the value of the important road from Belgaum to Vengurla by the Rám pass; that an unbroken and very rich traffic was carried on between Vengurla and Belgaum throughout the fair season; and that the improvement of the cotton trade must come from the merchants of Bombay establishing direct agencies in the cotton districts, and thus dispensing with the host of native middlemen who ate up a large portion of the profit which would otherwise fall to the husbandmen.[2]

In 1850, the Collector of Belgaum complained of the apathy of the Bombay merchants in not making arrangements for up-country buying. The merchants replied that until roads were opened no up-country agency could succeed. In 1850 Messrs. Lancaster and Co., of Bombay, sent a Mr. Davis as their agent to Belgaum. He made large advances to secure American cotton. Mr. Reeves, the Collector, expected that during that season the firm would spend [illegible]ly £20,000 (Rs. 2,00,000). Mr. Davis was also empowered to buy [illegible] other firms. Under these circumstances Mr. Reeves thought that Government should cease to buy. Mr. Davis found it difficult to get seed-cotton as in return for the Government seed the cotton-growers were bound to bring all the seed cotton to the Government gins. He begged that this hindrance might be removed; he stated he was making ginning houses at every five or six miles through the cotton country; and, in return for concessions, he offered to rent all the Government ginning establishments, and to guarantee that he would purchase every pound of the American crop. The Collector supported Mr. Davis' application, and Government approved of Mr. Reeves' proposals. They directed that, except in cases where the landholder was anxious to carry out his engagement with Government, the Collector was to cease buying cotton on Government account.

[1] Mackay's Western India, 414. [2] Rev. Vol. 55 of 1855.

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In 1852 Mr. Young, the Collector of Customs in Bombay, brought to the notice of Government that the cotton received from Belgaum on Government account was inferior to what the Bombay merchants were buying in the same district. As the spinners and others in England had come to look on the yearly Government consignments as the standard of what India could prod , he thought it his duty to bring the inferior state of the cotto , the attention of Government. He recommended that this consig ment of cotton should not be sent to England. Government ordere the superintendent of experiments to Bombay to examine the cotton. The examination of the parcels showed that out of 4553 bales of American cotton 723 contained inferior and dirty staple. On this, early in 1853, Government issued orders that on receipt of the cotton which had already been ordered, no more was to be bought, that the quantity on which advances had already been made was to be carefully examined, and that none but what was good was to be sent to England. In 1854, under orders from the Court of Directors the accounts of all Government shipments were made up by the Accountant General. These shipments included nine consignments. They amounted to 5574 packages, of which 5419 were bales, 152 were half bales, and three were bundles or *dokrás*. Of the nine consignments seven showed a profit of £7950 (Rs. 79,500) and two showed a loss of £1677 (Rs. 16,770), that is on the whole transactions a net profit of £6273 (Rs. 62,730). No details are available to sh w what portion of the whole amount was Belgaum cotton, but it is wort hy of note that there was no Belgaum cotton in the two shipments th at showed a loss.

In 1855, an enterprising merchant, Mr. A. C. Brice, settled n Dhárwár and did a large cotton business. A sub-agency w s established at Saundatti to buy Belgaum cotton, and he project more agencies in the same district. Mr. Brice owned upwards of thousand head of draught cattle and a corresponding stock of cott carts.

Ten years later during the American war the Belgaum cot trade greatly increased, though fraud and dirt-mixing prevent the cotton from realizing nearly so high a price as it wo have fetched had it been clean. The efforts made to check fra and to improve the outturn of cotton by spreading the use American seed and of sawgins have been shown under the hea of Adulteration and Ginning. The immense number of sm ginning places made it almost impossible to check the mixing of cotton and the adding of dirt, and the difficulty of keeping saw-g ins in order and the damage caused by saw-gins in bad order prevent ed the efforts to improve the cotton trade from succeeding. Sin ce 1870 partly from the decline in the value of the American cotto , but chiefly from the difficulty of getting it ginned, the growth f American cotton and the use of saw-gins have almost ceased. Sin ce 1876 the Government supervision of the trade and of the gins h as been withdrawn.

The whole exports of Belgaum cotton, together with a sm ll quantity from South Bijápur and neighbouring Native State, rea h

Bombay through the Ratnágiri ports. The famine of 1876 and 1877 lowered the value of the Ratnágiri exports from £400,750 in 1874-75 to £330,946 in 1877-78 and to £331,738 in 1878-79. For the five years ending 1882-83, the returns of the customs divisions of Anjanvel, Ratnágiri, Vijaydurg, Málvan, and Vengurla give the highest value of cotton at £494,240 in 1879-80, the lowest at £331,738 in 1878-79, and the average at £401,300. The details are:

Cotton Exports, 1878-1883.

Customs Division.	Value of Exports.					
	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	Total.
	£	£	£	£	£	£
Vengurla ...	210,112	261,532	294,278	228,481	255,527	1,249,880
Anjanvel ...	118,364	228,990	176,814	102,795	111,266	737,329
Ratnágiri ...	5	314	20	14	239	592
Vijaydurg ...	3187	1592	2261	2907	1699	11,646
Málvan ...	70	2712	291	276	3708	7057
Total ...	331,738	494,240	473,664	334,423	372,439	2,006,504

According to rough estimates by Bombay merchants and cotton dealers, of the total supply of American cotton or as it is called sawginned Dhárwár received at Bombay from the Bombay Karnátak about sixty-eight per cent is from Dhárwár and the remaining thirty-two per cent from Belgaum, Bijápur, and the Bombay Karnátak states; and of the Kumta or local cotton supply about sixty-eight per cent comes from Belgaum and Bijápur and thirty-two per cent comes from Dhárwár. Nearly the whole of the American goes from Bombay to Europe; none is used locally and very little remains in Bombay. The Kumta when pure, though not very white has a strong and fairly long staple. It is particularly well suited for spinning the lower counts of yarn up to twenties and is largely used in the Bombay mills. Very little goes to Europe. According to the Bombay Cotton Report for 1882-83 in the Bombay market sawginned Dhárwár averaged about $5\frac{1}{4}d.$ the pound in 1879-80, $5\frac{1}{16}d.$ in 1880-81, $5d.$ in 1881-82, and $4\frac{7}{8}d.$ in 1882-83; in the Liverpool market it averaged $6\frac{5}{16}d.$ the pound in 1879-80, $5\frac{1}{2}d.$ in 1880-81, $5\frac{9}{16}d.$ in 1881-82, and $5\frac{1}{4}d.$ in 1882-83. In the Bombay market Kumta or local cotton sold for $5\frac{1}{8}d.$ the pound in 1879-80, $4\frac{3}{4}d.$ in 1880-81, $4\frac{7}{16}d.$ in 1881-82, and $4\frac{7}{32}d.$ in 1882-83; in the Liverpool market it sold for $5\frac{3}{4}d.$ the pound in 1879-80, $4\frac{13}{16}d.$ in 1880-81, $4\frac{7}{8}d.$ in 1881-82, and $4\frac{5}{16}d.$ in 1882-83. Inquiry in Bombay shows that in the Bombay market a *khandi* of 784 pounds of sawginned Dhárwár is at present (December 1883) worth £2 (Rs. 20) more than a *khandi* of Kumta. In November 1879 a *khandi* of Broach was worth £1 10*s.* (Rs. 15) more than a *khandi* of sawginned Dhárwár and £3 to £3 4*s.* (Rs. 30-32) more than a *khandi* of Kumta; at present (1883) Broach is worth £2 10*s.* (Rs. 25) more than sawginned Dhárwár and £4 10*s.* to £5 (Rs. 45-50) more than Kumta. In November 1879 a *khandi* of good Dholera was worth 10*s.* (Rs. 5) more than a *khandi* of good sawginned Dhárwár and £1 10*s.* (Rs. 15) more than a *khandi* of Kumta; at present there is no difference between the value of Dholera and of sawginned Dhárwár and a *khandi* of Dholera is worth £2 (Rs. 20) more than a *khandi* of Kumta. In 1879 a pound of American Mid Orleans was

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worth $\frac{3}{4}d.$ more than a pound of good sawginned Dhárwár and $1\frac{1}{2}d.$ more than a pound of good-fair Kumta; at present a pound of American Mid Orleans (November 1883) is worth $1\frac{5}{16}d.$ more than good sawginned Dhárwár and $1\frac{15}{16}d.$ more than good-fair Kumta.

Miscellaneous.

Besides cotton the chief Belgaum exports are brassware, grindstones, grain, butter, and cloth. Of brassware the chief articles are brass lampstands or *samais*, small water-sipping ladles and cups or *pali panchapátris*, small round god-boxes or *sampushtas*, waving lamps or *nirájans*, and other articles used in worship. These are made by the Otari casters of Gokák and sold at Gokák to dealers from Kolhápur, Dhárwár, and Hubli. Grindstones are made at Arbhavi in Gokák by masons or Pátharvats, and taken for sale in carts or on pack asses to Poona, Sátára, and Dhárwár. Rice wheat millet and gram, molasses, and tobacco are bought from the Lingáyat, Jain, Marátha, and Musalmán growers by the trading carriers and traders of the market towns, and sent to Kaládgi, Dhárwár, Goa, Vengurla, Rájápur, Sirsi, and sometimes to Bombay. Clarified butter is bought from Marátha Lingáyat and Jain husbandmen either in their own villages or in market towns on market days, and is sent in tin boxes by a few Nárvekar dealers to Bombay by Vengurla. Of cloth, *sádis* or women's robes are best woven at Belgaum, Gokák, and Báil-Hongal, and *dhotars* or waistcloths at Belgaum and Báil-Hongal in Sampgaon. Robes waistcloths and other coarse cotton cloth are generally bought from the weavers by the local traders and either locally sold to Goa, Rájápur, and other Konkan traders or sent for sale to Dhárwár and Kaládgi. Myrobalans or *hirdás* are sent in large quantities from Belgaum. They grow wild in the forests of Khánápur, Belgaum, and Chikodi, and are gathered for the forest officers during the fair season and kept at Government stores where they are sold to contractors. The contractors send the myrobalans to Vengurla where they are sold to agents of Bombay and European merchants.

There has of late been a considerable increase in the import of European cotton yarn and cloth, boots and stockings, and among articles of house furniture clocks, watches, glasses, ornamental chairs, and tables. These articles are used by the well-to-do, especially by those who have received an English education. Kerosine oil and matches are largely imported and are used by all except the poorest.

III.—INDUSTRIES.

Industries.

The chief Belgaum crafts are cotton-ginning, cotton spinning and weaving, calico-printing, dyeing, toy-making, copper and brass work, pottery, and oil-pressing.

Cotton-ginning.

One of the chief industries of the district is the ginning of cotton, that is the separating of the cotton wool from the cotton seed. Though the practice is greatly neglected, the cotton should be dried before it is ginned. If it is not dried the fibre is stained or otherwise harmed. To dry it the cotton is spread in the sun and is frequently turned so that every part of it, especially the seed, may be thoroughly dried. Seed-cotton or *kapás* is not in good order for ginning unless the seed cracks, and does not crush between the teeth of the gin. Cotton cannot be rightly ginned in wet or even in damp weather. A

short smart shower unless followed by a steady dry wind will stop cotton-ginning for days.

Each landholder is careful to put on one side part of his best local cotton for home spinning. This is ginned separately and with much more care than what is meant for sale. The quantity set apart for home spinning depends on the number of women in the household and the leisure they have for working the spinning machine or *nalu-rati*. For home-spinning the staple is so well cleaned that not a single seed can be found in a dozen pounds. Three machines are used for ginning cotton, the ginning wheel or *charkha*, the foot-roller or *hattigudda*, and the sawgin. The ginning wheel or *charkha*, though still found in a few remote villages in the north of the district, has for many years been discarded in favour of the foot-roller. The ginning wheel is a very rough machine. It consists of two cylinders, one of wood the other of iron, which revolve on endless screws at the ends of rollers. The cylinders, which are twenty to twenty-four inches long, are fixed touching each other, parallel and horizontal, in a strong wooden frame twelve to sixteen inches high. The iron cylinder which works on the wooden cylinder is about half an inch in diameter. It is thickest in the middle and tapers slightly and gradually towards the ends. The wooden roller is much thicker. It is one and a half to two inches in diameter, and on one end has a rude wheel sixteen to twenty inches in diameter fixed on the centre. A piece of wood stuck in the rim of the wheel serves as the handle for working the roller. On the other side of the ginning wheel, at the end of the iron roller, is a second handle for turning it. When in work, the ginning wheel is fixed on the ground between two persons, each of whom takes a handle and turns it in an opposite direction, and by turns feeds the wheel with seed cotton. The seed is turned out on one side and the wool on the other. Nothing but cotton is cleaned in the wheel. It turns out more work than the foot-roller, but does not work so well. The cost of ginning with the wheel is about half-way between the cost of ginning by the saw gin and by the foot-roller.

The chief local appliance for ginning cotton is the foot-roller called *hattigudda* in Kánarese. The foot roller is a rude primitive machine which does not cost more than 1*s*. (8 *as*.). Its chief parts are the *tevantghi* that is the three-legged stool on which the ginner sits worth 2*d*. (1½ *as*.); the *aru-kul* or flat-stone about one foot by six inches and two inches thick worth 3*d*. (2 *as*.); the *kuda* an iron roller about one foot long and tapering from about three-quarters of an inch in the middle to a point at the ends worth 6*d*. (4 *as*.); and two wooden soles or *pavantgis* for placing under the feet when turning the roller, generally made of flat pieces of split bamboo costing little or nothing. The foot-roller is worked only by women and girls. In cleaning cotton by the foot-roller the seed cotton is laid in the sun, frequently turned, and when well dried is sharply beaten with a thin bamboo called *shedi* that it may be as loose as possible for ginning. When a heap of cotton is ready the ginner sits on her three-legged stool. She sets the stone on the ground before her and on

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Cotton-ginning.

the stone lays the iron roller whose ends stand about three inches beyond the side of the stone. On each end of the roller she sets one of the bamboo soles. She leans forward still sitting but partly balancing herself on her feet which she rests on the bamboo soles at the ends of the roller. She takes a handful of seed cotton in her right hand and pressing with her feet on the bamboo soles moves the roller back and forwards on the stone. As the roller moves she drops seed cotton under it and the pressure of the roller on the seed cotton separates the wool from the seed. The seed comes out in front and the cotton wool comes out behind. As the cotton wool comes out the ginner keeps pulling it under her stool with her left hand.

The rates for cleaning with the foot-roller vary in different places. The following are perhaps about the commonest. The owner of the cotton or the owner's man, serves the seed cotton to the women in a body. As each woman brings her cleaned cotton back, it is weighed and she is paid at a rate equal to about 3*s.* 4*d.* (Rs. $1\frac{1}{16}$) the hundredweight of ginned cotton. Another plan is to serve seed cotton to each woman, and pay her by the weight of the seed cotton. In this case the rate represents about 3*s.* 3*d.* (Rs. $1\frac{5}{16}$) the hundredweight of cleaned cotton. On the other hand, if they wish the cotton to be really clean and free from seed or dirt the woman is paid by the amount of seed and dirt she takes out of the cotton at rates which represent a charge of about 4*s.* 4½*d.* (Rs. $2\frac{3}{16}$) a hundredweight. The system of having two ginning rates, a high rate to ensure clean cotton for the local spinners and a low rate to ensure dirty cotton for the Bombay buyers, prevails over the whole district. If honestly worked the foot-roller cleans local cotton better than any other machine. It is the only machine that does no harm to the fibre. At the same time the process is very slow. This slowness is a serious evil as the local cotton cannot be ginned in time to reach Bombay before the rains, and by being packed in leaky godowns and dirty sheds loses much of its value.

Saw-ginning.

The outturn of American Belgaum is now so trifling that few sawgins are used and these few are in bad repair. Most of these sawgins have ten to eighteen saws. The machine is worked by the hand in a room eighteen feet by fifteen. The room is divided into two spaces separated by firm bamboo matting. Of the two spaces the smaller about twelve feet is used as a lint room, and the larger is set apart for the gin. The gin must be firmly placed against the partition of the smaller room. In the partition-matting a hole should be cut of the size of the gin-flue and the flue should be placed in the hole and passed two or three inches beyond it. The small or lint room should not be too air-tight; if it is too air-tight the flue gets choked and hinders the working of the gin. The gin must be perfectly level as well as firm. It must be so firmly secured either by strong pegs or masonry that while at work it remains perfectly still. The smaller strap should then be put on the inner and larger rim of the saw pulley, and over the top of the brush pulley; this will make the brush pulley move inwards, that is in the opposite direction to the saws. The band must be fixed round the wheel

of a pulley post at the back of the gin and tightened by a rack fastened to the pulley post. Care must be taken that the fans or brushes keep the flue clear of ginned cotton, and at the same time raise enough draught to drive the ginned cotton twelve or fourteen feet. If the fans are not properly arranged, the ginned cotton will gather close to the mouth of the flue, and stop the gin. The spindle of the driving wheel must be placed eighteen feet from the saw pulley, and the wheel should be placed in a line with the gin so that the strap or band may run freely and smoothly. The band should have holes in its joining ends so that it may be tightened or slackened at will. When the band is arranged the wheel should be firmly fixed, so that it may work with perfect steadiness. Five workers are wanted, four drivers at the wheel and one to feed the gin. The feeder places a quantity of seed-cotton on the top of the machine, and with his back to the driving wheel stands opposite and close to the gin, facing the hopper-box which receives the seed-cotton and in which the saws revolve. Experience is wanted to make a good feeder, so that the roll of the cotton in the hopper-box may revolve equally and steadily. At starting it is well to fill the hopper with a mixture of equal parts of seed and seed-cotton. The feeder should then lift the box on its hinges, high enough to keep the saws clear of the mixture in the hopper. Then the drivers should begin and as soon as the gin is in motion, the box should be put down sharply, evenly, and firmly. The working of the saws forces the contents of the box to go round, and the feeder must keep on supplying cotton neither too slowly nor too fast. The roll or contents of the box should move steadily with the hopper full, but not overcharged. If the roll of cotton in the box does not begin to go round as soon as the saws are in motion the box should be lifted once, or if necessary twice, and be again carefully set down in the way described. This lifting will also be necessary every now and then to clear the box of the cleansed seed that may gather at the bottom of the grates. In fine bright weather, for damp at once injures ginning, an eighteen-saw gin in good work will in an hour gin one hundredweight of seed cotton. In starting and working a gin care must be taken that the saws revolve through the cotton only, and that they do not rub against the grates. To make sure of this the hopper should be allowed to become empty or almost empty, and, with the hand resting on the saw whirl, the saws should be made to revolve slowly. If any of the saws gives the slightest touch to the sides of the grates, the adjustment is wrong. The saws are easily put right by seizing the saw in a pair of plyers or pincers and working it until it is seen to revolve in the exact centre of the space between the grates. If all the saws press on one side, the whole of them and the spindle are wrong, and to put them right the spindle must be properly replaced on the bearings. Unless these adjustments are made the fibre will be damaged. Every time that the saws are examined, the seed board must be carefully replaced, or the seed will either fall too freely and not properly stripped of the wool, or, if the opening is too small, the seed will not fall away at all and the gin will be stopped. The seed board is easily replaced by the travelling nuts that are fitted for the purpose. Every care should be taken that the cotton seed is free

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Saw-ginning.

from stones, lumps of earth, or other matter likely to injure the teeth of the saws. The gin should be kept carefully clean and all its bearings well oiled. Of the three modes of ginning the sawgin is much the most rapid. An eighteen saw-gin driven by four men and fed by a fifth will turn out twenty pounds of clean cotton in less than half an hour. Two men working a wheel gin or *charka* turn out about twenty pounds of clean cotton in twelve hours. The foot-roller works still more slowly. Ginning with the foot-roller costs about half as much again as ginning with the saw-gin, and the cost of the wheel gin is about half-way between the cost of the foot-roller and of the saw-gin.

The arrangements for working saw-gins vary greatly. The richer dealers often employ their own staff of men so that it is not easy to calculate what the ginning costs them. When the owner of the seed cotton has neither a gin nor his own men he commonly gives 694 pounds of American seed cotton to five labourers four of whom drive and one feeds the gin. These men are bound to give the owner 482 pounds of ginned seed and the 212 pounds of cotton wool. For this they are paid 4*s.* 6*d.* (Rs. 2¼) which is about 2*s.* 4½*d.* (Rs. 1 3/16) the hundredweight of clean staple. The charge for the use of a gin varies from 2*s.* (Re. 1) the 694 pounds of cotton seed in the slack season to 4*s.* or 6*s.* (Rs. 2-3) in the busy season. The nominal outturn of clean cotton is 212 pounds in 674 pounds. This is much above the actual outturn and to bring the weight of clean cotton to what is required the labourers have to add weight. To increase the weight of the clean cotton they let as much dirt as they can pass among the clean cotton and with this object always prefer to use gins which are out of order. A saw-gin in really good order if honestly worked, gives much less than 212 pounds of good clean cotton wool from 694 pounds of the present poor and mixed American. Mr. E. P. Robertson, when Collector of Dhárwár (1868-1875) brought to notice that gin-owners kept their saw-gins unrepaired for years till the teeth of the saws were almost worn away. Saws worn to knives cleaned more cotton and cleaned it more easily than when the saws were fresh. The fact that saws worn to knives cut the cotton into masses of fluff made no difference to the gin owners.

Though the saw-gin is intended only for American cotton, it is often used in the Kánarese districts for ginning the local staple, especially when the local cotton has been dulled or soiled by rain or has been beaten down on the ground. With the foot-roller it is impossible to give damp and dirty local cotton anything like a good appearance so the holder passes it through a saw-gin, which freshens it and makes it look better. The dealer generally does his best to pass this sawginned local cotton as sawginned American, and those who do not know sawginned American are often deceived.

A serious objection to the general use of the saw-gin is the difficulty of keeping the teeth of the saws in order. Many experiments have failed because the teeth of the saws were either badly shaped or were too sharp. The tooth should be a not too blunt hook, in shape much like a rose thorn. As the saws move

round in the hopper, the tooth catches the fibre. To do its work properly the tooth must be sharp enough to catch the fibre and blunt enough to hold the fibre without in the least cutting it. If the tooth is too flat or blunt it will catch the cotton and crush it, and often the seed as well, in lumps against the grates of the gin. If the brushes or fans are in proper order, they sweep off the fibre as soon as the tooth has laid hold of it. If the brush does not sweep off the fibre, the fibre is carried round back into the hopper, and the tooth, blocked with the fibre, forces its way through the seed cotton doing much harm. To keep the teeth at the proper sharpness and curve Mr. Walton (1865-1880) found it necessary to make a special file. Every workman who filed the teeth had the model of a perfect tooth with him and was told to file the tooth to the shape of the underpoint of a man's little finger. Many American planters object to bran-new saw-gins. The planters take off the roughness of fresh teeth by working them for a little with cotton seed and sand.

The following is a summary of the efforts which have been made to introduce the use of saw-gins into Belgaum. Saw-gins were brought into India as early as 1828. In 1828 one of two Whitney saw-gins sent by the Court of Directors to the Bombay Government was forwarded to the Bombay Karnátak for trial. So long as the saws were under skilled European control and care they worked well. But all officers agreed that it was unsafe to trust them to cotton-growers or cotton dealers. The mistake was at first made of ginning the local cotton in the saw-gins. In many cases the result was that the cotton was cut to pieces. In fact the saw-gin is suited only to New Orleans cotton, whose fibre clings so tightly to the seed that the ordinary gin cannot separate it. In 1835, Lord Ellenborough, President of the Board of Commissioners for the Affairs of India, suggested that specimens of the machinery used in cleaning cotton in America, Brazil, India, and Egypt, should be sent to London, and that Indian seed cotton should be sent with the gins that experts might determine which was the best machine. A foot-roller and a wheel-gin were sent by Dr. Lush from Belgaum. In 1836 to encourage the cotton trade, the Bombay Government abolished the 5*s.* 6*d.* (Rs. 2¾) tax on wheel gins. This measure did not much affect Belgaum. In 1838 Dr. Lush condemned the American Whitney gins. He said much time had been lost by assuming that because the machine did well in America it must do well in India. He added that a gin was wanted which would do the same for India that the Whitney gin had done for America. On this the Court of Directors offered a prize of £100 (Rs. 1000) to encourage mechanics to invent a gin suitable for Indian cotton. The result was unsatisfactory. Saw-gins were first made in the Karnátak about 1845. Nearly at the same time, with the aid of local craftsmen, Mr. Mercer the American planter succeeded in making a saw-gin in Dhárwár and Mr. Channing in Belgaum. The local saw-gin though somewhat imperfect worked fairly so long as it was under skilled supervision and management. Under every other condition it failed. As the number of local saw-gins increased, it was found impossible to keep wooden framed gins in repair.

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They were also found unsuited for permanent use by the husbandmen. No matter how well seasoned the wood and excellent the workmanship, they fell to pieces under the rough treatment of the gin owners and their servants. In the towns and villages the local saw-gin was never successful till every possible part of it was made of the strongest iron. Even iron gins are so roughly used that it takes the most constant efforts to keep them in anything like good order. When he has bought a saw-gin, the local dealer thinks he has done all he should be called on to do, and that his first expense should be his last. He does not understand that saw-gins want keeping up to the mark. So long as it can go round, he is most unwilling to spend even the smallest sum to keep his gin in repair.

In 1844 some cotton dealers objected to the saw-gins because the cotton they turned out was too clean. About the same time the Collector reported that the cotton dealers at Báil-Hongal and Saundatti, had applied that saw-gins might be put up in their towns. The Collector was allowed to grant their request and Mr. Channing set up the gins in some old Government buildings at the cost of about £20 (Rs. 200). In the same year (1845) Government set up two more saw-gins one at Murgod and another of fourteen saws on the Government farm at Nágenhál. Except the gin on the Government farm these saw-gins were let to local dealers. To encourage careful picking the ginning charges were 2*s*. (Re. 1) for 756 pounds (twenty-seven *mans*) of well picked and 672 pounds (twenty-four *mans*) of ordinarily picked seed-cotton. Mr. Channing represented that, if the price of saw-ginning was brought within the means of the local merchants, he believed saw-gins would come into general use throughout Belgaum. He asked to be allowed to make two machines at a cost of £19 16*s*. (Rs. 198) each, which, he added, was about half the price at which such gins could be procured from England or America. Early in 1847 these proposals were sanctioned.

Mr. Channing estimated that he could make and issue twenty good saw-gins at about £16 16*s*. (Rs. 168) and good twenty-five saw-gins at about £17 8*s*. (Rs. 174) and at ten per cent less if more than six were made at one time. These machines could be made and fitted on the spot, except the saws, which must be brought from England. So long as these gins were under direct European management and were mended and adjusted by skilled mechanics, they answered their purpose well. They ceased to work well when they were taken to dealers' ginning houses, and subjected to rough and ignorant usage. A machine fitted for such rough treatment was never made until every part of it was made of strong iron. Even the iron gins went wrong if workmen were not constantly going round with inspectors after them to see not only that the workmen mended the gins properly, but that the gin-owners allowed them to mend them. Later in the same year (1847) the available saw-gins were found to be too few. To increase ginning facilities the Bombay Government applied to the Court of Directors for 5000 saws for new gins. Only four saw-gins were kept on Government account and during the season one of these was sold for £22 (Rs. 220).

Sixteen more were being made for Government and for private persons. In the same year the cost of cleaning American cotton by the saw-gin was 5*d.* (3½ *as.*) for eighty pounds, and the cost of cleaning local cotton by the foot-roller was 6¾*d.* (4½ *as.*) for eighty pounds. In 1848 the demand for saw-gins spread in some of the neighbouring states. Government suggested that prizes should be offered to the local craftsmen for the best saw-gin. Mr. Simpson, the superintendent of cotton experiments, opposed this suggestion. The native craftsmen had much skill in imitating, but, without training, they could not make a machine that required such nicety and exactness as a saw-gin. He thought no one should be allowed to sell saw-gins who had not spent six months in the Government factory.

In the same year in consequence of the representations of the Honourable Mr. Reid twelve hundred new saws were received from England in Belgaum. Even this did not meet the demand. About this time some of the sawginned cotton sent to England was found to be damaged; it was said because the gins were worked at too great a speed. There was some difference of opinion among experts as to the best number of revolutions in the minute. All agreed that hand labour, which implied slow turning with occasionally extremely fast spurts, was bad for the staple. In 1852, to improve the ginning machinery and to settle the disputed point regarding the best rate of speed, Government determined to hold a public trial in Calcutta and offered a prize of £500 (Rs. 5000) to the maker of the best gin. Mr. Channing, who had at first said that the best rate was 180 turns in the minute, afterwards raised his estimate to 200 or 250 turns a minute. The Dhárwár superintendent thought even a higher rate than 250 turns was advisable. Opinions still differ as to the best rate of speed.

Early in 1849, at the suggestion of the Manchester Commercial Association, the Court of Directors sent out 200 cottage saw-gins. Great pains were taken with this handy machine. No less than four models were made; one chiefly of wood, the rest of iron. Each was worked on a different plan and all were made under the advice and suggestions of those who were well acquainted with India and its cotton trade. Dr. Forbes Royle who was present at the trials, thought the gin made of iron with saws and brushes moved by wheels and bands the best. He recommended that it should be introduced into India chiefly on the ground that if each land-holder had one of these handy machines in his house, he would be independent of other labour, and his family would gin his cotton crop. He thought there would not be much difficulty in introducing the gin, as it could be no novelty in Belgaum and other districts where the people were already acquainted with sawginning. The iron model was farther improved, and the Court of Directors ordered two hundred to be sent to India. It was calculated that with this small machine one man would be able to gin sixteen pounds of seed-cotton in the hour at an expense of less than 6*s.* (Rs. 3) for five hundred pounds of cleaned cotton, while the hand-power gins at work were found to turn out for each man less than one pound an hour, at an expense of nearly 8*s.* (Rs. 4) for five hundred pounds of clean staple, and the old Indian wheel-gin cleaned

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fifty pounds of seed-cotton a day at a cost of 10*s.* (Rs. 5) for every five hundred pounds of clean cotton. It was estimated that the cost of wear and tear, to every bale of cotton cleaned by these three machines, was for the cottage gin a little over 1*s.* 4*d.* ($10\frac{3}{8}$ *as.*), for the saw-gin about 1*s.* 8*d.* ($13\frac{1}{3}$ *as.*), and for the Indian wheel gin a little over 6*d.* (4 *as.*). A number of the cottage gins were distributed in Belgaum and Bijápur. They were worked for a time, were never repaired, and in the end were thrown on one side as lumber. In Mr. Walton's opinion these cottage gins did not get a fair trial When worked by skilled Europeans, as by Dr. Wight in Madras, these cottage-gins succeeded well. With eight of them Dr. Wight ginned about 4000 pounds of cotton; if he had had them Dr. Wight could have kept 200 gins at work. Even with a fair trial Mr. Walton doubted if the cottage gins would have answered in Belgaum. They would be roughly used and get out of order and there was no means of putting them right if they once went out of repair.

In 1850 the demand for saw-gins in Belgaum was at its greatest height. Forty were at work in twenty-one towns and villages and orders for thirty-seven were registered. In the same year (1850) the Collector of Belgaum calculated that ginning with the foot-roller cost 12*s.* to 14*s.* (Rs. 6 - 7) and with the saw-gin 7*s.* (Rs. $3\frac{1}{2}$) the *khandi.* About the same time Mr. Channing calculated that with the saw-gins then in work in Belgaum, with an assistant, he could clean about 1,200,000 pounds of raw or seed cotton, and without an assistant about 700,000 pounds of raw cotton a year. To meet the great demand for saw-gins it was arranged that ten Government saw-gins should be sent from Dhárwár and that small machines should be made which could be sold to landholders for 16*s.* (Rs. 8). It was hoped that the people would buy the small machines and keep them in their houses, and that this would remove one of the main objections to the growing of New Orleans cotton. These efforts ended in failure, as these small cheap gins were unsuited to stand the rough and ignorant treatment they received. Up to this time it does not seem to have been noticed that to saw-gin the local cotton in the same way as the American did it incurable harm. The demand for gins which was so brisk in 1850 soon passed away. In 1851 of twenty-six Government gins only five were at work and of fifty-six private gins only twenty-two were at work. This collapse seems to have been partly due to the failure of the American crop and partly to faults in the gins. Mr. Davis, the first European agent in Belgaum, took twenty-five of the Government gins, but returned them as he found they did not work well.

About 1851 the Bombay Government sent to Belgaum some cotton cleaning machines, designed and constructed by a Mr. Mather, for which he had received a prize of £50 (Rs. 500) and the Bengal Agricultural Society's Medal. Captain, afterwards Sir George Wingate, the head of the Southern Marátha Revenue Survey, who had paid particular attention to cotton cleaning machinery, tested the Mather gin and pronounced it a poor adaptation of the native wheel-gin and inordinately dear at £8 (Rs. 80). In this opinion all officers who tried the Mather gin agreed. In 1852

of fifty Government saw-gins only two were at work and of thirty-nine private saw-gins only thirteen were at work. In 1855 Mr. Reeves brought to notice the damage done by saw-gins in bad order. The landholders and local dealers of Dhárwár and Belgaum looked solely to the quantity of cleaned cotton they could turn out in a day. They were reckless as to the way in which the cotton was cleaned; they worked their saw-gins so long as they could be kept going. In 1856 when the orders of the Court of Directors to stop cotton experiments reached Belgaum the Government ginning houses were valued at about £712 (Rs. 7120). The order stopping experiments was modified as regarded saw-gins as it was found that no one but Government could supply them. The damage done by careless ginning, of which Mr. Reeves complained, proved so serious that some new machines of the best quality were ordered. The new machines were carefully distributed in Dhárwár, but in Belgaum and Bijápur little was done. To keep the cotton-ginning machinery in repair apprentices, all of them Indo-European youths were (1857) trained under the superintendents. Some of the apprentices learned well, but none stuck to the work as all found better-paid employment. Government sold the English-made gins at £40 (Rs. 400) for an eighteen and £20 (Rs. 200) for a ten saw-gin complete including the driving gear. The machines were of the best class and were always put up and thoroughly tested before they were made over to purchasers. During the American War (1862-1865) immense numbers of gins were imported and made in the country.

In 1866 and 1867 Mr. Walton, the superintendent of Government cotton ginning, established repairing factories at Navalgund and Ron in Dhárwár. As these factories were near the Belgaum and South Bijápur frontiers they were entrusted with the gins of those two districts. The factories were much used till, in 1870, Mr. Walton left for England, and it was arranged that the Dhárwár factories were not to mend gins beyond Dhárwár limits. Since then the Belgaum and Bijápur saw-gins have fallen more and more out of order, until the people have almost ceased to grow American cotton because they have no machinery to clean it with. So far as is known only about thirty saw-gins are left in the district. Of the thirty, twenty-eight are in seven villages of Parasgad and two are at Báil-Hongal a large village in Sampgaon. Of these thirty gins few are in use, partly because of the want of means for repairing them. The price of gins which during the American war was as high as £120 (Rs. 1200) now ranges from £5 to £8 (Rs. 50-80).

Cotton Pressing.

No Belgaum cotton is either full-pressed or half-pressed. In 1847 Mr. Channing devised a cotton-press at an estimated cost of £8 (Rs. 80) which the Collector said could be made and put up by any local mechanic. Mr. Channing was allowed to set up this press in the town of Saundatti. Many other attempts have been made to introduce the use of presses. All have failed. The failure has been due partly to the difficulty of keeping the machinery in order, but chiefly because the exporters cannot trust the local dealers. The exporter knows that when opportunity offers, the up-country ginner

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and dealer will always adulterate and pack falsely. So the cotton he buys must be loosely packed that his hand may be able to reach any part of the bundle. So long as this well-founded distrust continues no press can succeed. A minor objection to pressing was that the cartmen charged as much and often more for carrying pressed than unpressed cotton. It is doubtful whether half presses would be a gain; but there is no doubt that the cotton trade would greatly profit if bales could be full pressed in Belgaum and Dhárwár and sent unopened to Europe.

Cotton Weaving.

The chief cotton weaving towns are, in order of importance, Gokák with a yearly outturn of goods valued at about £15,000 (Rs. 1,50,000), Chikodi Sankeshvar and Báil-Hongal each with a yearly outturn valued at about £12,000 (Rs. 1,20,000), Belgaum with a yearly outturn valued at about £11,500 (Rs. 1,15,000), Mundgod Athni Páchhápur and Deshnur each with a yearly outturn valued at about £10,000 (Rs. 1,00,000), Manoli and Garl Hasnar each with a yearly outturn valued at about £9500 (Rs. 95,000), Saundatti with a yearly outturn valued at about £9000 (Rs. 90,000), Kittur with a yearly outturn valued at about £7500 (Rs. 75,000), Mugutkhán-Hubli Bágevádi Marihal and Sulibhávi each with a yearly outturn valued at about £7000 (Rs. 70,000), Nesargi with a yearly outturn valued at about £6500 (Rs. 65,000), and Sampgaon with a yearly outturn valued at about £4000 (Rs. 40,000). Weaving is also carried on to a fair extent at Tailsang, Kágvád, Shailbal, Ainápur and Kunmadi, in Athni; at Ankalgi, Yádvád, Kavjalgi, Mamdápur, and Kurbat in Gokák; at Nipáni, Hukeri, Bhoja, and Kangoli in Chikodi; at Kovad and Chándgad in Belgaum; at Bidi, Khánápur, Nandgad, Itgi, Parasvad, Kitávad, Bogánar, and Haidur in Khánápur; at Sangoli, Manketti, Nágenhál, Tarmeri, and Hanchkalti in Sampgaon; and at Yekundi, Asundi, Sutigeri, Susanghi, Hasur, and Hanchinhal in Parasgad. The yearly outturn of all the hand looms of the district is estimated to be worth about £200,000 (Rs. 2,00,000).[1]

Spinning is carried on all over the district except in Belgaum and Khánápur, and is practised more or less by the women of every caste except Bráhmans. The women spend most of their spare time in making cotton yarn. In most black plain villages the yarn is made either from cotton grown on the spinner's land, or from the cotton which has been paid to the women and children of the house fo picking their neighbours' crop. The yarn is taken to market and is there either sold for ready money, or bartered for salt, grain, curry stuff, and other articles. Petty dealers move about the country and attend the village weekly markets to gather yarn. When they have gathered a large quantity, they take it for sale to one of the leading hand-loom weaving towns.

Process.

For spinning into yarn and weaving into cloth the Belgaum and Bijápur people use nothing but the local cotton. They say that they

[1] These are Mr. Walton's estimates for 1879 (Belgaum Cotton, 142). Since 1879 chiefly from the competition of Bombay steam made cloth the hand-loom weaving has declined. The opening of railways and the establishment of mills at Hubli and probably at other Kánarese trade centres will further depress the local hand-loom industry.

cannot spin sawginned American, they use none of it and the whole crop is exported. As has been noticed they take the greatest pains that the cotton they spin is pure. The cotton is picked with special care and they ensure thoroughness and honesty on the part of the foot-roll ginners by paying them, not as they do when the cotton is to be exported by the weight of the ginned cotton, but by the weight of the seeds and dirt ginned out of the cotton. The local cotton cleaned by the foot-roller makes a strong and good though somewhat coarse and uneven yarn, and the local hand-loom cloth is wonderfully strong and lasting. The local cotton is also largely used in the Bombay mills and the demand would be greater if the growers took anything like the care of the cotton they export which they take of the cotton they spin. The immense number of foot-roller ginning-places, for every holder of cotton works foot-rollers in his own house or yard, makes the checking of mixing an almost hopeless task.

Process.

Teasing.

Before cotton is ready for spinning, it has to be teased by the Pinjáris or cotton-teasers most of whom are Muhammadans. These Pinjáris tease the cotton by laying it on the tight gut string of a harp-shaped frame called *bessi* which they set trembling by beating it with a dumb-bell shaped blackwood mallet.[1] In teasing cotton the harp-shaped frame or *bessi* is fastened to the roof of the house with the wooden part up. The sieve or *tutti* is set on the ground below the frame and on the sieve cotton is piled. The teaser sits on the left of the sieve and taking the frame in his left hand and the dumb-bell mallet in his right hand, draws the gut string of the frame among the pile of cotton and deals the string so sharp and heavy a blow that the quivering gut tosses the cotton into the air and opens it letting the dust and dirt pass through the sieve on to the floor. With two or three teasing frames at work the air is so thick with dust and fluff that no one but a teaser can stay in the room. When the teaser thinks he has made the cotton clean and soft enough, he takes the tapering bamboo stick in his right hand and rolling it deftly on his thigh gathers at the stick point a finger-long curl or roll of cotton called *hanji*. A teaser is paid 3*d.* (2 *as.*) for cleaning about six and a half pounds called a *dhada* of these curls or rolls. Sometimes, instead of cleaning other men's cotton, the teaser buys cotton from petty hawkers or from small village shopkeepers who take cotton from pickers in exchange for salt, grain, and curry stuff; teases it; and sells the rolls at 5¼*d.* (3½ *as.*) the pound. These rolls are seldom so well cleaned as the rolls which a teaser turns when he is called to a man's house and paid to tease the cotton.

Reeling.

The next process in working cotton into yarn is reeling. Cotton is

[1] The parts of the teasing appliance are a blackwood frame called *bessi* (K.) worth 10*s.* (Rs. 5); a goat-gut cord called *bihu* (K.) fastened as tight as a harp-string from end to end of the frame, worth 2*s.* (Re. 1); a dumb-bell shaped blackwood mallet called *korathi* (K.) worth 1*s.* (8 *as.*); a bamboo bow with a common string called *billa* (K.), worth ¾*d.* (½ *anna*); a bamboo sieve called *tutti* (K.), on which the teased cotton rests letting the dust and dirt pass through, worth 6*d.* (4 *as.*); a tapering eighteen inch long stick called *gania* (K.) round which the teaser winds the teased cotton in curls or *hanjis* worth ¼*d.* (¼ *anna*), and a bamboo stick called *shedi* to gather the teased cotton. The whole cost of the teaser's tools is 13*s.* 7*d.* (Rs. 6½).

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Industries.

Reeling.

reeled on the spinning wheel or *nulu-rati* (K.) which is worth 1*s.* 3*d.* to 1*s.* 6*d.* (10-12 *as.*) and is much like the old English distaff. On the frame shaft a small wooden upright is set, and on the upright an iron pin called *kadaru*. This pin is fixed upon two short pegs on the outside, and is held together by the shaft thread which passes round the wheel. The wheel is worked by the right hand, the cotton roll or *hanji* from which the yarn is twisted being held in the left hand. As the wheel turns, the pin spins round and rapidly twists the fibre into yarn. As the yarn forms it is reeled on the pin and when the reel has grown to a certain size it is taken off and another is begun. These oblong reels of cotton twist or yarn are called *kudali*. As soon as the spinner has enough of these reels, she again fixes them one by one to the iron pin or *kadaru*, the end of the twist being passed through a bamboo tube called the *huvinghi*. The yarn is then arranged on a rack-like wooden machine fitted with pegs, called *hassamari* and costing about 1*s.* (8 *as.*). The yarn is worked in and out among the pegs until enough has been wound to make a hank or *putti*. The hank is taken off and a new one begun.

Spinning.

In a Hindu house there is next to no sewing. Almost all clothes are worn as they come from the loom, so that when there is no field work, after their housework is over, the women have a good deal of spare time. As a class the women are very hardworking and spend all their spare time in spinning. Most women spin five hours a day, and others whose housework is light spin still longer. Ripening crops are generally watched by women, many of whom may be seen sitting on some raised part of the field working the thread-wheel and scaring birds and other thieves. A clever woman will spin four ounces of cotton in five hours. The return is small. On a market day the women take the hanks to the nearest town. A hank of coarse yarn weighing about eight ounces and six yards long, sells for about 3$\frac{3}{8}$*d.* (2$\frac{1}{4}$ *as.*) and a hank of fine yarn five yards long and weighing six ounces fetches 2$\frac{5}{8}$*d.* (1$\frac{3}{4}$ *as.*). Taking off the price of the cotton rolls this leaves only $\frac{3}{4}$*d.* ($\frac{1}{2}$ *anna*) for two days' spinning. These starvation rates are the result of the competition of English and Bombay machine-made yarn; formerly the thread wheel yielded a fair return. The spinners sell their hanks of yarn to weavers and to tape and rope makers.

Dyeing.

If he is going to weave coloured cloth the buyer hands his hanks to the dyer. For the best fast colours the dyer charges 4$\frac{1}{2}$*d.* to 5$\frac{1}{4}$*d.* (3-3$\frac{1}{2}$ *as.*) and for less lasting or brilliant colours 1$\frac{1}{2}$*d.* to 3*d.* (1-2 *as.*) for each hank. The coarser yarn is generally dyed with the cheaper dyes and the finer yarn with the dearer dyes. After being coloured, the hanks are dried by spreading them along a pair of stands called *huditheres* (K.) costing about 1*s.* (8 *as.*). Uncoloured yarn is soaked in water for about three days and is then spread on the drying stands. Little yarn is spread to dry at the same time as the yarn should be washed or dyed just before it is arranged on the loom.

Warping.

In dyeing, the yarn is as far as possible arranged so that each fibre may lie separate and in proper order for weaving. To arrange the yarn, a number of flat bamboo sticks, called *khumbhis*, together

worth about 1½*d.* (1 *a.*), are laid between the upper and lower fibres. After the sorting or *hassu* is finished the yarn is taken off the stands to be sized. The size used in the Bombay Karnátak is Indian millet starch. It is thoroughly worked into the yarn by hand, and the yarn is again stretched on the stand or *hudither*. After this second stretching, to make it fair and even and take off surplus size, the yarn is most carefully and repeatedly brushed with an instrument called the *kunchghi* worth about 7*s.* (Rs. 3½). For the finer cloths this brushing or combing takes much time and requires great skill. The brushed yarn which is called *vunki* is taken off the stand and arranged on the loom, a process known as *hanaji*. In arranging the yarn on the loom one end of the fibres is fastened to four round sticks or *koles*, which in weaving are at the extreme other end of the web from the weaver and then each fibre is passed between the teeth of the comb or *tutt* which lies across the web in front of the weaver. Two flat sticks called *shullis* (K.) are shoved in to keep the upper and lower fibres of the web from entangling. When the fibre-sorting is finished the web is again fixed on the stand or *hudither*, and then the threads are placed in their final position according to the texture of the cloth which is to be woven. After this final process the yarn which is called *hormatghi* is taken from the stands and fixed to the loom or *mugga*, when it gets its final name of warp or *negi*. The whole process of preparing the warp yarn is carried on in the open air.

The yarn used for the woof or cross threads is differently prepared. Local yarn if undyed is well soaked in water. Dyed yarn is not soaked and neither dyed nor undyed yarn is sized. It is next stretched between two rude stands called the *hari*, rough upright wooden posts with several pegs in them, for the proper arrangement of the yarn. When the yarn is ready the end is taken off and fastened to a conical reel called *hati* worth 1½*d.* to 3*d.* (1-2 *as.*). English or Bombay yarn is not put on the round *hari*, but on a wheel of bamboo sticks called a *rattal* worth about 3*d.* (2 *as.*). This change of process is needed because English yarn is made in such short hanks that no peg-winding is wanted. When the yarn is ready it is reeled on to small bobbins called *kankis* on a wheel called *rutti*, almost the same as the spinning-like wheel or *nalvratti*. In reeling English or Bombay yarn the bamboo stick wheel *rattal* is placed close to the spinning-like wheel or *ratti*, and over the iron pin or *padaru* is drawn a hollow reed or millet stalk; the end of the yarn is brought from the bamboo-stick wheel and fastened to the hollow reed; the spinning-like wheel is turned, and as much yarn as is wished is reeled off. In reeling local yarn the peg-post or *hati* is brought close to the spinning-like wheel and the yarn is reeled. The bobbins or *kankis* are laid in a basket close to the weaver who fastens one on an iron pin in the shuttle, uses it and when it is empty fastens a new one. After a piece of cloth is finished, it is unrolled from the *kunti* or weaver's beam at the top of the loom and neatly folded square. It is then considered ready for the local market or for export.

The Kánarese call the loom *mogga*; the Musalmáns call the loom

Chapter VI. Trade. Industries. *Weaving.*

kám. Looms vary considerably in quality and cost.[1] The price ranges from about 10*s*. to £1 (Rs. 5-10) and even higher. The size of the weaving room for one loom is about eighteen feet by eight, for two looms eighteen by twelve, and for three eighteen feet square; each loom wants six feet extra. In towns where weaving is carried on to a large extent few work-rooms have only one loom. Most have two or three, and some, especially at Belgaum and Guledgud in Bijápur, have four. A new loom is rare. Many looms are for sale at a half or a third of their cost.

Beginning from the weaver's end the parts of a loom are: The pit or *mugga teg*, thirty inches by fifteen and twenty inches deep, in which the weaver sits as he weaves. In front of the pit is the weaver's beam or *kunti*, a solid square bar about four feet long by four inches broad. It has a ridge on one side in which a thin round stick called the beam-stick or *kunta da shull* is fixed. To this beam-stick are fastened the ends of the warp yarn. The beam has socket ends and is so fixed, that, as his work advances, the weaver can turn the beam and roll the web loosening the warp at the other end by a pulley and rope which is fastened to a peg close to his right hand. The beam is kept in its place by two strong pegs the *nali ghut* and the *honkal ghut*. Across the warp hung from the roof by strings and a stick is the frame or batten called the *hulghi* which encloses the comb or reed called *tutt* between whose reeds the warp yarn is passed. Next to the batten is the heddle harness with heddle strings hanging from two thin bamboo tubes fastened to heddle sticks or *biza koles* which are attached to the roof. The heddles are provided with loops or eyes through which the warp yarn is passed. The heddles communicate by strings and sticks with the treadles or *havanpads* in the pit by pressing which alternately with his foot the weaver

[1] The names and the cost of the different parts of a loom are: One comb-frame or *hulgi* of tamarind or blackwood, worth 9*s*. to £1 (Rs. 4½-10); one reed comb for common cloth very neatly made, 1*s*. 3*d*. (10 *as*.); one comb for fine cloth made with English thread, 3*s*. 6*d*. (Rs. 1¾); one *hanaghi* which in addition to the comb holds two *biza* to keep the warp separate and regular, 1*s*. 9*d*. (14 *as*.); one *kunti* or weaver's beam with two peg for rolling the cloth as it is made, 3*s*. 6*d*. (Rs. 1¾); one *ard dunghi* or cross bar to lift the warp, 7½*d*. (5 *as*.); one *kai guta* 1½*d*. (1 *anna*); one *anair* or *ambir dunghi*, 4½*d*. (3 *annas*); one *nevghi haggi* or rope to keep the warp stretched, 4½*d*. (3 *as*.); one *chingi koli* or stick to which the warp ends are fastened, 3*d*. (2 *as*.); one *meni guta* peg for fastening the rope, 1½*d*. (1 *anna*); two *tankoles* the sticks that are attached to the *biza* holes, with the two wooden soles, the *havinpads*, 2¼*d*. (1⅝ *as*.); two *kal pavatgis* complete, 3*d*. (2 *as*.); two *khumbis* for regulating the texture of the cloth, 1½*d*. (¾ *anna*); two *shulls*, ¾*d*. (½ *anna*); two *chaker yards* or rude pulleys, 3*d*. (2 *as*.); one pair of *shed kutgis* with needles, 1½*d*. (1 *anna*); two *kuttis* or shuttles made of buffalo horn, 1*s*. 3*d*. (10 *as*.); one *nali ghut*, ¾*d*. (½ *anna*); one *honkal ghut*, 1½*d*. (¾ *anna*); one pair *nimbada ghut*, for keeping the *kal pavatghi* in its place, 3*d*. (2 *as*.); total £1 (Rs. 10). This is about the cost of a good medium loom fit for ordinary work. Some much commoner and not so complete can be bought as cheap as 10*s*. (Rs. 5); others for making fine goods out of the higher counts of machine-made yarn with silk ornament, cost £2 to £2 10*s*. (Rs. 20-25). The more expensive looms have the following extra fittings: One *pata gat* complete, a frame fitted over the loom with sixteen pulleys for cords to pass through, to keep separate all the different silks. This is used in making elaborately patterned borders in expensive cloth. They cost 2*s*. (Re. 1) to 2*s*. 6*d*. (Rs. 1¼) each. A set of five to nine light iron and wooden rods or *sulls* hang by the pattern frame to keep the silk and other rich border threads distinct so that in weaving the woof thread may pass through them. They cost 1*s*. 9*d*. (14 *as*.) to 2*s*. 9*d*. (Rs. 1⅜) the set. The Kánarese call the warp *negi* and the woof *hoke*.

forces the heddles to carry up and down the warp yarns which are passed through their loops or eyes and so leave a passage for the shuttle between the two rows of warp yarn. The treadles are fastened by ropes to two pegs in the bottom of the loom-pit. Beyond the reed and the heddle harness is the cross bar or *ard dundghi* fixed to the ground on two pegs or *pevigutas* and used for raising the warp. Beyond the cross bar three sticks are placed across the warp to keep the yarn from getting out of place. The further end of the warp is fastened to the *chingi koli* (K.), a round wooden bar, and to the bar another shorter piece of wood is wound by a strong twine in the centre of which a rope called the *veigi hagga* (K.) is fastened and secured to a strong peg called the *meniguta* (K.). From the peg the rope is drawn back close to where the weaver sits and is fastened to another peg called the *raiguta* (K.). This rope the weaver loosens whenever he has web enough to wind round the beam. When the loom is ready, the weaver sits on the ground with his legs in the pit and works the heddles one by one by pressing his feet on the treadles. He passes the shuttle with its reel of thread sharply from right to left and back again as he lifts and lowers the fibres of the warp by working the treadles. After each passage of the shuttle, the weaver brings the woof yarn home by drawing the batten or reed frame heavily against the edge of the web. To keep the web from shrinking until there is enough to wind on the beam two bent rattan sticks with a needle in either end are fastened at the sides of the cloth.

Outturn.

The cloths woven in the Belgaum hand-looms are women's robes *sádis* (M.) or *siris* (K.), seven to nine yards long and one and a quarter yards wide. They vary in price from 2*s*. 3*d*. to 10*s*. (Rs. 1½-5) when made of coarse village yarn, and from 5*s*. to £1 10*s*. (Rs. 2½-15) when made of fine machine-made twist with silk borders and costly colours. Bodices, *kolis* (M.) or *kubsas* or *kubassas* (K.), vary from coarse plain cloths to rich showy stuffs. The size for grown women is about three quarters by half a yard. The price varies from 6*d*. to 3*s*. (Rs. ¼-1½) a piece. Girls' robes or *kirgis* (K.) worn by girls of five to thirteen are two and a half to five yards by two to two and a half feet. They are sold at 1*s*. 3*d*. to 6*s*. (Rs. ⅝-3) a piece. Men's waistcloths are generally woven in pairs. The size of each is three yards by one for grown men and they are smaller in proportion for youths and boys. A pair of coarse waistcloths varies in price from 1*s*. to 3*s*. (Rs. ½-1½), and a pair of superior waistcloths with silk edgings cost 2*s*. to £1 4*s*. (Rs. 1-12). Báil-Hongal is noted for its fine waistcloths. Boys' waistcloths or *bhuchkhanis* (K.) are one and a half to two and a half yards long by three quarters of a yard broad. They are worn by boys of five to fifteen and vary in price from 6*d*. to 2*s*. 9*d*. (Rs. ¼-1⅜) a pair. Headscarves or *rumáls* (K.), are three to five yards square. The way of wearing the headscarf varies according to the wearer's caste. Most are made of machine-spun yarn. They vary in price from 9*d*. to 6*s*. (Rs. ⅜-3). At Chikodi and Deshnur a larger and costlier headscarf called *mundar* (K.) is made fifteen to fifty yards long and eight to twelve inches broad. These headscarves are worn by Maráthás, Musalmáns, and others, who, though natives

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Industries. *Outturn.*

of the country, dress differently from the ordinary Kánarese. At Chikodi their price varies from 3*s.* to £1 10*s.* (Rs. 1½-15) and at Deshnur some sell as high as £3 (Rs. 30). The costlier turbans have the outside end elaborately adorned with silk and gold or silver tinsel. Longcloths called *khádis* (M.) or *hachdás* (K.) when taken off the loom are about eleven yards long by one yard broad. They are used as bedding, as veils for Musalmán women when they walk abroad, and for making into coats for Musalmáns, and at Gokák, Murgod, and Manoli for printing with coloured designs. These longcloths are always made of hand-spun yarn; cloths made of coarse yarn are chosen for printing, as they take the stamp and show the designs much better than finer cloth. Their price varies from 2*s.* 6*d.* to 5*s.* (Rs. 1¼-2½). Coloured handkerchiefs or *vastras* (K.) are woven at Sankeshvar. They are two feet to one and a half yards square and are used among the forest tribes as head coverings, and among the labouring classes as waistbands. Their price varies from 1½*d.* to 9*d.* (¾-6 *as.*). At Belgaum and at Mugutkhán-Hubli is made a cloth of various patterns known as *susi* (K.) about eight yards long by one yard broad. These cloths are used for making coats trousers and other articles worn by Musalmáns, by Maráthás for bedding, for clothing by Goanese Christians, and a large quantity is bought by Government for various uses in regimental hospitals. *Susi* varies in price from 2*s.* 6*d.* to 4*s.* (Rs. 1¼-2) a piece. At Bágevádi a coarse sheeting called *nadka* (K.) is made. These are two and a half by one yard in size and in price vary from 10½*d.* to 1*s.* 3*d.* (7-10 *as.*).

Of the local goods those woven at Báil-Hongal are of what are known as the Dhárwár and Sholápur patterns and those at Páchhápur as the Sháhápur pattern; at Athni the favourite patterns are known as the Jamkhandi, Sátára, and Chiplun; at Gokák the favourite patterns for robes are the Kolhápur, and for waistcloths the Sángli, Kolhápur, and Miraj; and at Deshnur the favourite patterns for headscarves and waistcloths are the Jamkhandi and Rámdurg, and for robes and bodices the Sholápur and Konkan.

Carpets.

Carpets or *jemkhanis* (K.) are made chiefly at Belgaum, Báil-Hongal, and Mugutkhán-Hubli. Carpet-making, which from the Hindustáni names for all the parts of the loom seems to have been brought from North India, is almost entirely in the hands of Musalmáns. Unless the carpets are small, a special loom is used which like the ordinary loom is called *mugga*. It consists of two *thaklás* or wooden bars with posts and pegs worth 12*s.* to £7 (Rs. 6-70), two *gulis* worth 3*d.* to 6*d.* (2-4 *as.*), one *pesbhánd* worth 4½*d.* to 9*d.* (3-6 *as.*), one *pansa* worth 1*s.* 3*d.* to 2*s.* 3*d.* (Re. ¾-1⅛), and one *kamán* worth 3*d.* to 6*d.* (2-4 *as.*), the whole costing 14*s.* to £7 4*s.* (Rs. 7-72) according to the size and quality of the loom and the kind of carpet to be made. The *thaklás* are two long wooden bars about eight inches in diameter either round or eight-sided, which are fixed one about eight feet from the ground the other close above the ground, on two upright wooden posts, thus making the loom an upright frame. This upright frame is set in the workshop or *kárkhána* where a hole is dug three feet square by two and a half

feet deep. The threads of the carpet are made from the usual country yarn. They are twisted to the proper size for the kind of carpet required and are fixed from the upper to the lower cross bar. Two *gulis* or sticks, secured with twine in the same way as the *hanagis* of the cloth-loom, are fixed to the carpet thread. In passing the cross thread the workman pulls these two sticks one after the other, and he closes and tightens the texture by working the iron comb called *panja*. The *gulis* or sticks are supplemented by the *kamán*, a semicircular stick secured by string at each end and fixed to the *peshband*, a long bamboo which stands on pegs behind the weaver. Carpets five to fifteen feet long by twenty inches to fifteen feet broad sell at 1*s.* 6*d.* to £1 2*s.* (Rs. ¾-11). The small pieces are used by Musalmáns as praying carpets. The patterns are various, most of them being in gaily coloured stripes. Every colour is brought into use from sober gray to brilliant orange.

Ropes.

Cotton is worked into twine and rope varying from the finest cord of two or three strands of yarn to heavy ropes. They are six feet to ten yards long and sell at 1½*d.* to 1*s.* (1-8 *as.*). From this cordage whip-lashes, horse reins, and yoking bands are made. These ropes are made on a primitive machine called *kám*. This includes a *kám* which is either a wooden frame if a rope of three strands is to be made, or a board if a rope of six strands is to be made, and is worth 6*d.* (4 *as.*); *vuttis* or sticks, three being used for a rope of three strands and six for a rope of six strands, worth nothing; a *putti*, a flat wooden board with holes, into which the strands are put and rolled, to give the proper twist to the rope, worth 1½*d.* (1 *anna*); a *bagai* a cone-shaped piece of wood, often a fragment of a Pinjári's hammer, in which six fair leaders are cut, through which the strands of the rope are passed, to keep them in place, is worth 3*d.* (2 *as.*); a manti, a large piece of wood forked into two stems, to which an iron hook the *bore khudi* is fastened, to fix the end of the rope, and on the wood a large stone is placed heavy enough to give the needed drag on the rope, to prevent it curling into coils while being made, worth 6*d.* (4 *as.*).

Other miscellaneous goods are *páls*, in Kánarese called *guddars*, which are strong cloths or rather light carpets twelve to thirty feet long by eight to twenty-five broad, made by sewing firmly together stripes of strong stuff called *gudar putti*. Making these *guddarputtis* is a separate, and in Amingad, Ganjuihal and Bijápur in Bijápur, and Mugatkhán-Hubli, in Sampgaon a fairly large industry. These cloths are used to cover the big family-cart when the women and children are going to any domestic festival or religious fair; for making booths in markets; for rude tents used when on a long journey, especially by the Vanjáris, to protect their packs; for sorting oilseeds and grains; and for carrying grain from the fields. They are also used as carpets. A finer cloth called *padam* is used in the same way as the *guddar* and also for making bags and curtains. The *padams* are generally about fifteen feet by nine, of various colours, red and white and blue and white being the favourites; they cost 1*s.* to 2*s.* (Re. ½-1) a piece.

Chapter VI. Trade. Industries. *Tape.*

Tape or *ladi* is generally three to six feet long by three quarters to one and a half inches broad; it costs ½*d.* to 1*d.* (½-¾ *as.*) a piece. Tape is of many sizes and sorts, both white and coloured, for binding and ornamenting native saddles, for embellishing horses' head gear, for making bridles, for fastening travelling and money bags, for binding bedding, and for making tents. A very broad thick strong tape called *navár* is much used in making tents, for stretching on sleeping cots, for waistbands for labouring people and regimental sepoys, and for messengers' belt or badges. Belts or *puttis* sown together are made into cloths or *pálś* and *gudars* or carpets, and into bags for pack-bullocks, travelling bags, and other uses. All these articles are made from the yarn spun by the women on the spinning wheel during their leisure hours. Head harness for horses called *muki* is made of heavy tape about twenty by one and a quarter inches, woven from strong thick thread. They sell at 3*d.* to 6*d.* each (2-4 *as.*). Horse reins or *lagáms* are round ropes about as thick as a man's little finger and five to six and a half feet long; they sell at 6*d.* to 1*s.* (4-8 *as.*). *Guddarputtis* or carpet belts are generally coloured in red and white stripes, of different lengths, and of various breadths though seldom more than nine inches broad. A piece eighteen feet long costs 1*s.* to 2*s.* (Re. ½-1) according to quality. The machine used in weaving floor-cloths and tape is distinct from the loom. It is called a *tána*, is very rude and rough, and can be bought complete for 9*d.* (6 *as.*). It includes three parts, the *tána* frame worth 6*d.* (4 *as.*), the *ghut* or pegs worth 1½*d.* (1 *anna*), and the *hatha* or knife worth 1½*d.* (1 *anna*). The *tána*, a strong square wooden frame, is firmly fixed in the ground. Two cross sticks are fastened to the side posts, the upper stick being flat and the lower round. At the middle of the lower stick are a number of strings called the *biza*, through which the yarn to be woven is passed, and carried over to the top on the flat stick. The full length is then stretched and passed round a strong wooden peg or *guta* and brought back to the side of the *tána*, and there fastened to a second peg. This gives the length to be worked at full stretch. The weaver sits beside the frame with his reel of woof yarn, and passes the reel through the warp backwards and forwards giving the cloth a drive at each pass with the knife or *hatha*. This industry is almost entirely in the hands of the poorer class of Muhammadans. When he intends to make these miscellaneous articles, the weaver goes to the nearest market on market day, and buys hanks or *puttis* of coarse yarn. He takes the hanks home and opens and sorts them carefully into as many threads as the thickness of the intended article requires. These are then twisted into the necessary strands, or thick threads, by a largish spinning reel called a *bhirki*, worth 3*d.* (2 *as.*) This spinning reel is a cone-shaped piece of wood through whose centre a long thin stick is fastened. It is worked by taking the stick in the right hand, and fastening to it the end of the thread to be twisted. Then with the palm of his hand the man gives a quick rolling motion to the thread on his thigh, with the reel hanging down and rapidly revolving. When this length has been sufficiently twisted, he winds it round the reel, and starts with another length, and so on, until he has enough to fix the frame.

Industries.

Weavers.

The Belgaum weavers belong to many castes: Hatkars, Patvigars, Sális or degraded Patvigars, Padamsális, Lingáyats, Maráthás, Khatris or Chutris, and Musalmáns. The weavers are an orderly, quiet, and respectable class. Except some of the more wealthy who make expensive goods and employ workmen most weavers get all the work done by their own households and employ no outside labour. The engagement is always by contract, and a fair workman, on a long day's work, earns about $3\frac{3}{4}d.$ ($2\frac{1}{2}$ *as.*). A weaver noted as a skilful and rapid worker earns more.

Shopkeepers and exporters make considerable advances to the weavers of the town in which they live, and the weavers are bound to deliver the goods within a certain time. Breaches of contract are rare. The richer townspeople order expensive cloths to be made of a particular size and description. They generally advance money while their orders are being carried out. Weavers of coarse cloth are fairly busy throughout the year. Weavers of the finer cloths are busy only during the eight fair months. Weavers work about eight hours a day, keep all the important holidays, and stop work on every *amávásya* or no-moon day. The average monthly earnings of a man his wife and two children vary from 8*s.* to 16*s.* (Rs. 4-8) if employed in weaving coarse cloth, and from 16*s.* to £1 12*s.* (Rs. 8-16) if employed in weaving the finer cloths.

Trade.

After meeting local wants, the different cotton goods are sent to other parts of the district and to places outside of the district. The cheaper and coarser goods are sold by the weavers, in the villages on market days, and they also go hawking them in the small places that have no regular markets. The higher class of goods are sold to shopkeepers and exporters. Numbers of pack-bullocks travel all over the country, whose owners both buy and sell local cotton goods. The Sampgaon and Kittur goods for the most part are made to meet the wants of the *malnád* or rainy country near the Sahyádris where the bulk of the people are poorer than the people of the black plains. The goods are bought by these people at the weekly fairs or are taken to them by peddlars. The goods from Athni go to Sháhápur and Kágvád and to Bágalkot and Jamkhandi; the Gokák goods go to Belgaum, Sháhápur, Nipáni, and Sankeshvar, and to Kolhápur and Bágalkot; the Chikodi goods go to Sankeshvar, Nipáni, Belgaum, and Sháhápur, to Kolhápur, Miraj, and Sángli, and to Málvan, Rájápur, and Vengurla in Ratnágiri; the Belgaum goods go to Sháhápur and Nandigad, and to Goa, Vengurla, Ratnágiri, Sávantvádi, and Málvan in the Konkan; the Sampgaon goods to Belgaum, Sháhápur, Nandigad, and the hill country, to Mudhol, Bágalkot, Jamkhandi, and Sholápur, and to Vengurla and other coast towns; the Parasgad goods go to Belgaum, Nipáni, Nandigad, and Dhárwár, Nargund, Mudhol, Bádámi, Kaládgi, Jamkhandi, Miraj, Kolhápur, Poona, Sholápur, and in small quantities to the coast; the Khánápur goods occasionally go in small quantities to Belgaum and the coast.

Weaving.

In 1817, when Belgaum and Bijápur came under British rule, almost all the cotton which was a very small crop was used locally. The number engaged in spinning and weaving was small, but with

Chapter VI. Trade. Industries. *Weaving.*

increased security for life and property the number rapidly increased until the weavers became an important class. The demand for raw cotton and the supply of raw cotton increased together. This went on till 1840, when the local weaving trade was worth lákhs of rupees a year. The first known estimate of the amount of cotton used locally appears in 1852-53, when 3332 *khandis* of 784 pounds each are estimated to have been used in the district, against 4937 exported. The district at that time included the three important cotton-growing sub-divisions of South Bijápur, Bágalkot Bádámi and Hungund. For the five years ending 1853-54 an average is recorded of about 5063 *khandis* exported against 2772 *khandis* kept for home use. In 1854-55 the estimate is 3597 *khandis* kept for home use and 5792 *khandis* sent away; in 1855-56 the estimate is 2979 *khandis* kept for local use and 3865 *khandis* sent away; and in 1856-57 3913 *khandis* kept for local use and 5779 *khandis* sent away. For the five years ending 1856-57 the average is 3547 *khandis* kept for home use and 5416 *khandis* sent out of the country. In 1857 in Sampgaon about two hundred looms were at work in the villages of Deshnur, Báil-Hongal, and there were several looms in Sampgaon, Mugutkhán-Hubli, Mankatti, and other villages, over the whole sub-division supplying work for an estimated total of about five thousand. What they chiefly made were robes turbans and waistcloths of coarse cotton cloth, part to meet the local demand and the rest to send to the Konkan through Belgaum. Most of the weavers worked on their own account, a few employed labour and owned four or five looms. At Belgaum there were four to five hundred weavers who made coarse cloth only. The coarse Belgaum cloth and similar cloth made close by in Sháhápur was all used in the neighbourhood. Most other villages had ten to thirty weavers.

In 1857 in Chikodi the revenue survey officers found that slightly over two thousand persons were maintained by weaving in addition to about another thousand equally divided between the towns of Nipáni and Sankeshvar. Of the two thousand, over five hundred lived in Yamkanmardi, and about two hundred and fifty in Chikodi; the rest were scattered in small numbers among the different villages. No high-class goods were made. Only the usual waistcloths, turbans, women's robes, and coarse cloths; almost the whole was used locally. In the Ankalgi petty divsioin of the old Páchhápur sub-division less than five hundred persons were engaged in cotton weaving; of those three hundred were in Páchhápur, and the rest were scattered over the other thirty-two villages. The Kittur petty division of the Bidi sub-division contained forty-one villages, and had close upon eighteen hundred and fifty persons supported by weaving, nearly half of these being in Kittur itself, a town of over seven thousand five hundred inhabitants; the others were scattered through the rest of the petty division.

Large as it still is hand-loom weaving is a falling industry and grows less year by year. The competition of English that is Manchester goods, locally called *manaji peit mál*, that is goods made at the town of Manaji, has been growing stronger during the last twenty-five years, and during the last twelve years the competition

Industries.

Weaving.

of Bombay-made yarn and cloth has been still more severe. The branch of the local weaving industry that has been most affected is the weaving of the more costly and better paying goods. Many places that used to do a large trade in piecegoods now weave nothing but the coarser cloths. At one time, the weavers were one of the wealthiest of up-country classes. But for many years the margin of profit left to the weaver has been so small that many came to poverty. The 1876 famine fell with peculiar severity on the weavers as they had no store of grain, and as soon as grain became dear the demand for their cloth ceased. Most of them were unfitted for the heavy labour of the ordinary relief works. Still some of them took to labour and are said to be better off than they were as weavers. Since 1877 the position of the weavers has been improved by a brisker demand for cloth and by the cheapness of yarn and of grain. The hand-loom weavers are likely to suffer from the opening of railways. Railways will tend to raise the local price of grain and will cheapen the price at which English and Bombay cloth can compete with the produce of the local hand-looms. To this will probably be added the still more ruinous competition of local weaving mills. In 1880 Mr. Walton estimated that about twenty per cent of the cotton crop was used locally. All that is used is Kumta that is local cotton.

Printing.

At Murgod, Gokák, and Manoli, cloth is stamped or printed with wooden blocks in various patterns and colours. This was at one time a large and important industry. Even now more calico-printing is done at Murgod than in the whole of the rest of the Bombay Karnátak. At Murgod about fifteen Shimpi families find constant employment as calico-printers. They work about eight hours a day and keep all the leading Bráhmanic and local holidays. Their women and children help in washing the cloth. Their average daily earnings vary from 6*d.* to 9*d.* (4-6 *as.*). They sell their prints from place to place or at their houses to cloth dealers. They suffered severely during the 1876 famine, and are depressed by the constant fall in the price of imported prints. In brilliancy, purity, and fastness the dyes used by these Belgaum block printers are better than those in imported English prints. In spite of the hardest treatment in washing, a local print keeps its colour and lustre, till it is worn threadbare. The printing is done by hand with small blocks of *hasan* Bridelia retusa wood worth 6*d.* to 8*s.* (Rs. $\frac{1}{4}$-4) on which designs are skilfully and tastefully carved in relief by men of the Jingar caste. The printers work the blocks with great speed and skill, and their wares are still very popular. The fall in price prevents the present printers from doing such good work as their fathers did. Still they have a surprising knack of choosing patterns and colours which please both at a distance and close at hand. In their competition with the local printers the outside prints have the advantages of cheapness and variety.

Calico Printing.

Only the coarser *khádi* or *hachda* cloths are used in block printing, as coarse cloth shows the prints and colours much better than fine cloth. In calico-printing the cloth is taken to water, if possible running water, and is thoroughly soaked and well shaken.

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The washing and drying go on between three and four days until all trace of size has disappeared. The cloth is then soaked for three days and pulled about in a mixture of oil and water. It is again taken and washed in the river, and after a second thorough drying it is steeped in a mixture of myrobalans or *hirdas* and water. After this second drying it is ready for printing.

The articles used in making dyes are *hirdás* or myrobalans, *nil* or indigo, *kusbi* Carthamus tinctorius oil, iron filings, anters gum, *máeephals* or gallnuts, and *surang* a brown dye. Indigo is brought from the Madras Presidency and gallnuts and *surang* from Sholápur. The other materials are of local origin. In making ready the dye, iron filings are dropped into water and kept in water for three days. The iron-laden liquid is drawn off little by little, as much water as has been taken away being each time added. When enough iron-water has been stored gum is mixed with it until the compound becomes thick soft and sticky. If the ground-work is to be coloured the cloth is soaked in a dye of the desired shade. After the ground-work is dyed, the stamping begins with the iron-water and gum, mixed with the required colour, or, if no other shade is added, the iron-water and gum print a dark ironstone. After stamping so as thoroughly to fix the prints and colours, the cloth is boiled in *surang* and water. The printed cloth is dried and again taken to a river and gently washed. It is then finished by a dressing of rice starch and dried and the starching and drying are repeated time after time for six days. The charge for the whole process is 2*s.* 6*d.* (Rs. 1¼) for each piece ten yards long by one yard wide. Among the cloths printed are *jázams* a light carpet for floors, *pachodis* large cloths for covering the body, chintzes, dark red spotted prints much used for clothes by Muhammadans, *palangpuds* for bed coverlets, waistcloths and turbans, *asmangiris* or ceiling cloths, and *pardás* or curtains used in Musalmán houses, tapes for cushions and mattresses, rose-coloured chintz, tent lining, a variety of red printed cloths for bedding, native saddle-cloths, and book-binding cloths. As a rule, one yard of printed cloth costs 9*d.* to 1*s.* (6 - 8 *as.*) The floor-cloths or *jázams* vary in price from 6*s.* to £1 12*s.* (Rs. 3 - 16) according to the length and breadth of the cloth, a *pachodi* costs 4*s.* to 16*s.* (Rs. 2 - 8), and a bed cover 1*s.* 6*d.* to 2*s.* 6*d.* (Rs. ¾ - 1¼). Murgod, the long established head-quarters of calico-printing, still sends a considerable quantity of goods to Shábápur, Belgaum, Dhárwár, Kaládgi, Kolhápur, Miraj, Sángli, Jamkhandi, and the coast.

Dyeing.

Cotton thread dyeing is a separate industry at Gokák and Manoli in Parasgad. It supports 250 families of Bandhgárs or workers in red, who belong to the Náglik division of the Lingáyat sect, and eleven families of Nilgárs or indigo-workers who, except two families of which one are Chunárs and the other are Musalmáns, are mostly Maráthás and Námdev Shimpis. The Bandhgárs are said to have come about a century ago from Kalyán in the Nizám's country and Adváni or Adoni in Bellári. About 1850 there were three hundred families. Of the origin of the Nilgárs nothing is known. Since 1850 their number has increased from nine to eleven families. A cotton-thread dyer's appliances are simple. They are a mortar and a few pestles

for powdering *surang* root and *pápdi* or carbonate of soda, a copper vessel for boiling the yarn, and two or more large wide-mouthed earthen vessels to prepare and store the dyes. As a rule each dyer makes his own dye-stuffs. The chief dyes for colouring red are the roots of the *surang* which come from Sholápur and *pápdi* which is used when a fast colour is not wanted. The black dye is indigo. In preparing the red dye the *surang* root or *papdi* is pounded to fine powder. To 4½ pounds of this powder are added half a pound of alum powder, a pound of oil, and some water. Besides indigo the black dye contains *tarvad* (Cassia auriculata) seed, lime, and milk-bush or plantain ashes. Indigo and *tarvad* seed are powdered and put into a large-mouthed earthen vessel partially buried in sheep or goat dung, and over the indigo and *tarvad* a solution of lime and ashes is poured into the vessel. The mixture is stirred every day and is left for five days in the earthen vessel, when it is considered fit for dyeing. The thread they dye is both of local and of Bombay manufacture. Bombay thread being finer is greatly used by rich Bandhgárs and is woven into fine cloth. The usual steps taken to make the yarn ready for the dye is to boil it in a strong caustic lye in which carbonate of soda plays an important part. Alum is one of the commonest mordants. The lye consists of goat or sheep dung, milk-bush or plantain tree ashes, oil, and water. The yarn to be dyed is steeped in the lye, trampled under foot, and dried in the sun. This process is repeated for eight days. On the ninth day, the yarn is soaked in water, boiled for some time, washed in clean water, and dried in the sun. It is then dipped into the prepared colour, and the dipping is repeated four to eight times according to the desired brilliancy. In some places yarn is boiled; in other places it is simply washed and dipped into the colouring matter, and steeped in the dye-stuff a larger or a smaller number of times according to the required blackness.

The Bandhgárs find much work all the year round, and the Nilgárs are busiest between June and October As a rule both Bandhgárs and Nilgárs work eight or nine hours a day, from seven to eleven or twelve in the forenoon, and, after the midday rest, from two to six. They never work at night. If work is pressing they rise about four and go to a river or reservoir to wash the yarn. They keep most of the leading local and Brahmánic holidays. The Musalmán Nilgár family keep three Musalmán holidays, but stop work on many Hindu holidays because the weavers their employers are mostly Hindus. The women help the men. A Bandhgár earns 6*d.* to 9*d.* (4-6 *as.*) a day. The rich Bandhgárs dye their own yarn and sell it to weavers at 16*s.* to £1 12*s.* (Rs. 8-16) a *chaukdi* of twenty-four hanks, each hank weighing sixteen *tolás*. Bandhgárs who have no capital remain as dyers in the service of their richer castefellows. Bandhgárs' yarn is used locally, and when the local market is overstocked and dull, it is sometimes taken to the surrounding towns. Nilgárs dye weavers' yarn and are paid according to the quality of the colour. Poor Nilgárs work under rich Nilgárs. Of two hundred Bandhgár families fifteen are rich living in substantial houses and owning £200 to £5000 (Rs. 2000-50,000), eighty-five are middle class, and a hundred are poor. Of the eleven families of Nilgárs the two richest

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are said to be worth about £500 (Rs. 5000), three are middle class, and six are poor. The Bandhgárs suffered much during the 1876-77 famine. The competition of outside goods is rapidly ruining their calling, and some of the families who were reduced to distress by the last famine are said to be likely to leave their homes and settle in some other part of the country. The Nilgárs also suffered during the last famine. Neither Bandhgárs nor Nilgárs are bound by any trade rules.

Silk-Dyeing.

About forty families of the Sankar caste in Belgaum and about ten families of Sális at Gokák spin and dye raw silk. The silk-workers at Belgaum are labourers and those at Gokák capitalists. Their business is dull during the rainy season and brisk at other times. The raw silk comes from Bombay. After it is coloured it is generally sold to local weavers at about £1 8*s.* (Rs. 14) a pound. The workers are well off and the industry is rising.

Wooden Toys.

Fancy furniture and wooden toys are made here and there in the district. Gokák and Deshnur in Sampgaon are noted for their wooden toys. Toy-making supports twelve families in Gokák and three in Deshnur. All of them belong to the Jingar caste who claim to be Kshatriyas or corruptly Chhatris. They are said to have been brought into Belgaum about a century and a half ago by one Bhimráv son of Anandappa, the headman of Kágal in Kolhápur. Bhimrav's grandson Bápu Jingar, a skilful painter and wooden toy-maker, was patronised by a chief of Kolhápur about eighty years ago. He lived for ten years in the service of the prince and after his patron died he went to Gokák and lived among his relations, maintaining himself by making wooden toys, palanquins, and the *abdágirs* or ornamental umbrellas which are carried over native chiefs. It was he who taught his relations how to make wooden toys. The Jingars are also employed to paint temples and rich men's houses. They have given up their old craft of leather-working and every member of their small community is forbidden to work in leather on pain of losing caste, though in practice this offence is condoned by a caste feast. The wood generally used for toys is all local woods, silk-cotton *sávar* Bombax malabaricum, *umbar* Ficus glomerata, and teak. Besides wood, the chief materials used are varnish, beeswax, coloured tin plates called *begad* (M.), and gold-leaf. These things are brought from Belgaum or bought of local dealers. The material generally used for colouring red is vermilion, for yellow orpiment, for white whitelead, and for black indigo. A wooden toy-maker has six tools, a saw worth 1*s.* to £1 (Rs. ½-10), an adze worth 4*s.* to 8*s.* (Rs. 2-4), a plane worth 2*s.* to 8*s.* (Rs. 1-4), a file worth 1*s.* to 2*s.* (Re. ½-1), and two chisels one for coarse work worth 1*s.* to 4*s.* (Rs. ½-2), and the other for fine work with a very sharp point worth 3½*d.* to 6*d.* (2¼-4 *as.*).

They make cradles, palanquins, toys, fruit, animals, men, and gods.[1] They are skilful workmen, and their wares are much

[1] The chief articles made and their prices are: A Bráhman his wife and child Rs. 5; a Marátha his wife and child, Rs. 5; a Váni his wife and child Rs. 5; a Váni at work, Rs. 3; a cultivator Rs. 5; a weaver Rs. 3; a blacksmith Rs. 3; a potter Rs. 2½; a goldsmith Rs. 2½; a tailor Rs. 2; a calico-printer Rs. 2; a Nilgár dyer Rs. 2; a Bandhgár dyer Rs. 2½; a Kurub blanket-weaver

admired especially by Europeans. The figures are life-like and the fruit is surprisingly natural and highly finished. Their wares have a local sale among rich Hindus and Pársi merchants of Belgaum, but most of them go to Bombay to the agents of Bombay work-box makers. From Bombay their wares find their way all over India. At times advances are made and the demand is strong, but, as a rule, it is rather dull. Wooden toy-makers generally work about nine hours a day, from seven to eleven in the morning, and from two to six in the afternoon. When orders are pressing they work extra hours sometimes till nine. During these extra hours they do not carve or paint; they mix dyes and make other preparations. Boys help the men in preparing colours, the women do not help the men. The average yearly income of a toy-making family is said to vary from £10 to £30 (Rs. 100 - 300). They generally make articles to order, and seldom have more than two or three pounds (Rs. 20 - 30) ıvested in stock. They are unsteady workers and never finish in me. They take few holidays, but are often idle from want of work. uring the 1876 famine, except a few families who were supported the Chief of Jamkhandi, they were reduced to distress. Many had sell their property and a few had to leave their homes. The low e of grain in some of the years since the famine has helped n and some have recovered from their famine losses. They are

½; a Teli oil-presser Rs. 8; a butcher Rs. 3; a comb-maker Rs. 2½; a r Rs. 4; a washerman and his ass Rs. 3; a Bhisti or water-carrier Rs. 3; a with his water-bag by his side, Rs. 2; a Burud or basket-maker Rs. 2; a with his cart Rs. 5; a banker Rs. 3; a Jingar or harness-maker Rs. 3; ıter Rs. 3; a shoemaker Rs. 4; a woman spinning cotton Rs. 3; a woman ; cotton Rs. 2; a schoolmistress Rs. 3; a Kásár putting bangles on the hands oman Rs. 5; a Patvegar twisting silk Rs. 5; a well for watering Rs. 12; r-spring for bathing Rs. 7; a well for drinking Rs. 7; a Korvanji with ld Rs. 3; a liquor-seller Rs. 7; a Máng or a carrier of dead cattle Rs. 2; maker Rs. 5; a dancing girl Rs. 9; a Jangam or Lingáyat priest Rs. 2; ádi with bell and ladle Rs. 3; a Bairágí or ascetic Rs. 2; Gondhalis or Rs. 2; a Kid-bid-joshi or gipsy Rs. 3; a Dasáyya beggar Rs. 2½; a horn- s. 2; an old man and an old woman Rs. 5; a Puránik or reciter of hymns our wrestlers Rs. 8; a snake-charmer Rs. 9; a Sudgad-Shiddi or sexton ½; a Lamáni or carrier with his wife Rs. 9; a Mena Rs. 9; a palanquin . 10; a Moglai carriage Rs. 10; a Chopdár or mace-bearer Rs. 2; a Pattevála peon Rs. 2; a Kázi or Musalmán priest Rs. 2; a Mulla or Musalmán school- naster Rs. 2; a Pársi Rs. 2½; an Emperor Rs. 30; five princes Rs. 15; five rich men Rs. 15; a Bráhman bathing Rs. 3; a cow Rs. 2; an elephant Rs. 10; a camel Rs. 3; a panther Rs. 10; a she-buffalo Rs. 2; a she-goat Rs. 2; a he-goat Rs. 2; a ram Rs. 2; a tiger Rs. 3; a bear Rs. 2; a boar Rs. 2; a stag Rs. 2; a deer Rs. 2; a hare Rs. 2; a jackal Rs. 2; a mouse Re. 1; a scorpion 8 *as.*; a *heggana* or rat Re. 1; a lizard 8 *as.*; a *jhural* or beetle 8 *as.*; a dog Rs. 2½; a monkey Rs. 2½; an ape Rs. 2½; a lizard Re. 1; a snake Rs. 3; a large serpent Rs. 3; a parrot Re. 1; a dove Re. 1; a sparrow Re. 1; a starling Re. 1; a crane Rs. 2; a crow Re. 1; a hen Rs. 2½; a cock Rs. 3; a lion Rs. 3; a *Kámdhenu* or cow of paradise Rs. 3; a *tás* a kind of skylark Re. 1; a fish Re. 1; a tortoise Rs. 3; a crab Rs. 2; a bunch of mangoes Rs. 1½; a bunch of plantains Rs. 1½; a jack fruit Rs. 1½; a watermelon 12 *as.*; a pomegranate 6 *as.*; a fig 6 *as.*; a jujub fruit 6 *as.*; an almond 4 *as.*; a sugarcane 8 *as.*; an apple 6 *as.*; a tamarind pod 8 *as.*; a bunch of grapes Re. 1; a pine-apple Rs. 1½; a pair of maize heads 6 *as.*; a guava 6 *as.*; a cashewnut 6 *as.*; a lemon 6 *as.*; an orange 7 *as.*; a *papanas* pumelo 10 *as.*; a *sitáfal* or custard-apple 6 *as.*; a *bhendi* 2 *as.*; a brinjal 4 *as.*; a gourd 8 *as.*; garlic 4 *as.*; chillies green 1 *a.*; chilli red 1 *a.*; a *padval* or snake-gourd 6 *as.*; a *rátále* or sweet-potato 2 *as.*; a *dodke* 4 *as.*; *tondle* a vegetable 2 *as.*; a cucumber 3 *as.*; a *kavit* or wood-apple 4 *as.*; *máhulung* a fruit 6 *as.*; *popai* a fruit 4 *as.*; *rámfal* or sweet sop 6 *as.*; a white gourd 6 *as.*; a *gájar* 2 *as.*; Cassia fistula pod 2 *as.*; *kárle* or bitter gourd *as.*; a radish 6 *as.*; a carrot or onion 4 *as.*; *shevaga* or horse-radish pod 2 *as.*; an *vala* or emblic myrobalan 8 *as.*; a *karvand* or corinda 8 *as.*

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not bound by a guild, every one is free to sell his things at any price he chooses.

Industries.

Copper.

Copper vessels are made in Belgaum by sixty families of Jain Bogars and by Musalmán labourers. The copper comes from Bombay in sheets chiefly by sea through Vengurla. The copper is beaten into cooking and drinking vessels of different forms. The demand is steady. The Bogars sell their articles direct to consumers at Belgaum and other market towns and fairs. The price varies from 3*d.* to £5 (Rs. ½-50) according to weight, the rule being 6¾*d.* (4½ *as.*) the *sher* of twenty *tolás*. The workers are well off and the trade is steady.

Pottery.

Earthen pots are made throughout the district by Marátha and Lingáyat Kumbhárs who make earthen pots of various sizes, tiles, and bricks. The pots and tiles are made on a wheel turned on a short pole fixed upright in the ground. Bricks are made in a quadrangular wooden frame. Potters are busy during the hot season and idl during the rains. They work about ten hours a day. They keep a local and Bráhmanic holidays and rest on every no-moon or *amávásy* The women and children help the men in preparing the earth for t pots. They take their pots for sale to market towns and sell the ti at home. The price of a pot varies according to size from ½*d* 1*s.* (½-8 *as.*). The price of tiles varies from 8*s.* to 16*s.* (Rs. 4 and of burnt bricks from 4*s.* to £1 4*s.* (Rs. 2-12) a thousand. average yearly earnings of a family range from £5 to (Rs. 50-200). As a class potters are poor. The craft is ne rising nor falling.

Oil-Pressing.

Oil is pressed from *til* Sesamum indicum, *kusbi* Carth tinctorius, *bhuising* or groundnuts Arachis hypogea, and *amb* hemp Hibiscus cannabinus. The oil-pressers are Lingáyats, Mar Khatris, and Musalmáns. Telis or oilmen are found in alm towns and large villages. Their chief settlements are Belgaum in Sampgaon, and Athni. The oilseed is partly grown in the partly brought from Bijápur, Sátára, and Kolhápur. Most [illegible] have some capital. The oil-mill includes a *gán* or cylindrical sto block half buried in the ground, and a *kani* or wooden roller to whic a heavy weight is hung and which is turned by two bullocks. Abou thirty-five or forty pounds of *til, bhuising, kusbi* flour, or *ambádi* are thrown into the hole of the block, and the roller is placed on the block and turned. When the seed is crushed the powder is mixed with water and the roller is again put in motion till all the oil is pressed out. The employment is steady. The mill is generally at work twice a day from six to eleven and from two to seven. Oil-pressers never work on Mondays. The women help them in grinding the oil-seed. The average daily earnings of a family are 4½*d.* to 9*d.* (3-6 *as.*). The pressers sell the oil to oil-dealers or direct to consumers at their houses, and sometimes hawk it from door to doo and from village to village. The price of oil is about 6*s.* (Rs. 3) for twenty-six pounds (1 *man*). Oil-pressers as a class are well off. Within the last few years their profits have been greatly reduced by the competition of kerosine oil which almost all classes have take to use as a lighting oil.