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OF THE

SURVEY OF COTTAGE INDUSTRIES

IN THE

KURNOOL DISTRICT

BY

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CONTENTS.

	PAGES
1. Introduction	1
2. Notes on Cotton hand-spinning	2-3
3. ,, Cotton, Silk-weaving, Dyeing and Printing	3-7
4. ,, Cotton carpet and tape weaving	7-9
5. ,, Blankets or woollen rugs	9-12
6. ,, Grass mat-weaving	12-13
7. ,, Bangles	14-15
8. ,, Lacquer work	15-16
9. ,, Slate industry	16-17
10. ,, Miscellaneous industries	18
11. ,, New industries	19

46112

PRELIMINARY REPORT ON A SURVEY OF THE COTTAGE INDUSTRIES IN THE KURNOOL DISTRICT.

I submit my report on the survey of cottage industries in the Kurnool district. The survey of the district was commenced in the first week of September 1927 and finished by the third week of October 1927. I paid visits to the District Collector, the two Members of the Local Legislative Council and other influential non-official gentlemen of the district, and had the benefit of their views.

I toured round all the taluks of the district and visited typical centres of hand-loom weaving of cotton and silk, hand-spinning, cumbly weaving, cotton carpet weaving and other places where any cottage industry was or is in existence. I visited also the Siddhapuram criminal settlement in Nandikotkur taluk and obtained from the Inspector-in-charge valuable information regarding the industries that are carried on there. Kurnool, like many other districts, is predominantly agricultural and pastoral, and nearly 75 per cent of its population live by agriculture and tending of cattle and sheep. The tending of sheep is the special occupation of a sect of the people called 'Kurubas'. There are also Lambadis who keep herds of cows and cattle, living within easy reach of forests thrown open for grazing. The only industry besides agriculture which employs any considerable number of the population is weaving and this divides itself into weaving of cotton, silk and wool. The other industries outside the common run are mat-making, lacquer work, bamboo basket making and cotton carpet weaving, etc. I deal with them in the following paragraphs.

Hand-spinning.

Hand-spinning as a subsidiary occupation has a firmer footing in this district than in the other two districts surveyed by me. It has been in existence from time immemorial and has been practised by Kapus and Malas. The latter also do weaving in addition to spinning and in fact spinning and weaving are the mainstay of the Malas during the summer season when there is no demand for their labour. The farmer all over the district except in Kurnool taluk has preferred generally to clothe himself with the product of the cotton grown by him and for this purpose used to keep a sufficient quantity of cotton for turning into cloths. This bias in favour of handspun and hand-woven cloths is now disappearing as the area of cotton is fast decreasing owing to the displacement of it by groundnut crop for

which there is a good market, and the farmer prefers to buy his clothing in the market instead of worrying himself over its production by hand-spinning. According to the Tahsildars' reports, the total number of hand-spinning wheels in the district is 33,490 of which Cumbum taluk alone has 17,350 and Koilkuntla 6,000. The rest are distributed over other taluks--Yerragondapalam 300, Nandikotkur 2,500, Dhone 100, Nandyal 2,000, Sirvel 5,240. It is likely that in the off agricultural season there may be a temporary increase in the number. During the famine of 1920-21, the All-India Spinners' Association organized Khaddar spinning and weaving as a measure of famine relief at Nagalapuram, a village of Kurnool taluk at the eleventh mile on the Kurnool-Bellary road. So long as famine conditions prevailed, the concern was a successful one, drawing in many workers at the rates offered by the Institution, but as normal conditions reverted, the number of workers dwindled down and the few that remained at work demanded higher rates of wages with the result that the concern had to be closed down as unprofitable. The reason for the failure is obvious as the hand-spinning industry cannot, in the existing circumstances, claim to be a profitable whole-time industry.

As a subsidiary occupation, it is popular with the Kapus and Malas. They largely take to spinning in the hot weather when they have little work on hand. Even in other seasons old Kapu and Mala women, who cannot labour in the fields, work at the charka, chiefly, in Koilkuntla, Nandikotkur, Cumbum and Nandyal taluks. The yarn spun by Malas, especially in Panyam of Nandyal taluk and in Koilkuntla, is much finer than the yarn spun by Kapu women, the time taken being three to four days to spin a seer of carded cotton. The wages paid for fine spinning are 4 annas a seer while a rate of 2 annas is paid for spinning 10s to 12s. In my estimation, the yarn spun by the Malas which is popularly known as 'Mala yarn' is between 20s and 30s.

Spinning is done by Kapus by the same kind of charka as is in use in the Cuddapah district but the charka used by the Malas has a bigger revolving wheel and consequently makes a smaller number of revolutions in a given time than the wheel used by the Kapus, thus giving more time for the fibres to form into a twist.

The preliminary processes of carding and ginning are the same as in the Cuddapah district and there is no variation in the wages paid. Ginning is generally done by the Kapu himself. He calls the Pinjaris or Dudekulas for carding the cotton. The weaver who is ordinarily a Mala is given the required warp and sizing materials and is paid Re. 1 for a warp of 20 cubits length.

As already observed in my notes on hand-spinning of the Cuddapah district, hand-made cloth cannot be cheaper than mill-made one but there is a belief among the weavers of hand-spun cloth that it is more durable and stands better the rough wear and tear of an agriculturist.

In regard to the improvement of the industry, I have almost the same recommendations to make as in respect of Cuddapah and reiterate them below:—

(i) The introduction of an improved form of charka which can produce better counts of yarn and run at greater speed.

(ii) An organization for storing good quality cotton in convenient centres and its distribution to the workers who do not produce their own cotton.

(iii) To secure good cotton seed through the agency of the Agricultural Department and when sufficient quantity of cotton is not locally available, to check export by levying export duty.

(iv) To improve the hand-ginning machine and the carding bow to give a better quality of carded cotton.

(v) To standardize counts and hanks.

(vi) To afford facilities through a co-operative society for the purchase of improved charkas and selling them to the poor on credit system, recovering the cost free of interest in easy instalments.

Cotton, Silk weaving, Dyeing and Printing.

The population of the district according to the last census is 914,890, of whom the cotton and silk weavers number 17,965 and 1,007 respectively. Among them 11,118 are actual workers. They are of castes known as Khatris, Kuruvanis, Padmasalis, Thogatas with a sprinkling of Muhammadans and Malas. The number of looms is 10,931 and they are distributed all over the district, Dhone and Markapur taluks possessing the lowest number. Cloths with both warp and weft of silk are not made anywhere except at Kodumur, but in Gudur, Pattikonda and Nandyal, cloths with silk threads either in the warp or in the woof or in borders are manufactured. In other places, coarse white cloths for the men are woven in very many villages and mainly by the Malas. Imported mill threads of counts up to 20s are generally employed, higher counts up to 40s being used here and there. The ryots to some extent still spin yarn from their own cotton and give it preferably to the Malas to be woven paying them for their labour. Cotton cloths for women are similarly made in very many villages but the greater part of them are for the use of the labouring classes. The only places that struck me as having a flourishing business were

Kodumur and Gudur. Here the weavers have work on their hand, obviously for the reason that there has been demand for their goods from outside the district. In other places owing to the rise in the price of yarn, the demand had contracted and a majority of the looms were idle. The weavers in the district except those of Kodumur, Maddikera and Gudur do not cater for the needs of other districts and so are driven to despair of finding a sale for their goods at a time when the price of yarn rises. Further the cloths they manufacture are from yarn of medium counts and similar to those manufactured by mills and, therefore, have to suffer severely from the unequal competition. There are hawkers of mill-made cloths visiting villages and selling goods on credit with the stipulation that the price should be paid at the harvest season and there are still others going about auctioning cloths in villages for prices which are comparatively lower than those charged for hand-made cloths and these people, to the utter discomfort of hand-loom weavers, have captured the village market which is the emporium of hand-loom productions. In Kodumur, there are Muhammadan hawkers among the weaving class who go abroad with goods for sale on a commission of one anna in the rupee. The cloths woven in Kodumur are exported to Mysore, Chittoor and Bangalore while those of Maddikera are sent to Sholapur, Yadigiri and Raichur. Lungis and Susis are woven with 20s and exported to Adoni, Guntakal, Gooty, Bellary and other places.

The conditions of this district do not differ widely from those obtaining in the Bellary district and the wages earned by the cotton weaver range from four to six annas while the silk weaver earns eight to twelve annas a day. In Kodumur where all-silk woven sadis costing about Rs. 40 to Rs. 50 are made, the wages earned by a weaver employed on them is Rs. 7 per piece and the time occupied is ten days. The use of mercerised yarn is rapidly gaining ground and cloths similar to all-silk made cloths are being manufactured at a comparatively cheaper price. They are popular among the lower and middle classes and there is a great demand for them. Kodumur has adapted itself to the change in fashion and is on that account prospering well.

The processes and implements employed are the same as those in use elsewhere. There are only a few fly-shuttle looms, though the bulk of the fabrics manufactured are coarse cloths of men and women that can easily be woven with them. There are no warping mills anywhere but warping is done on peg boards and sizing by hand in streets. The women and children assist in the preparation of the warp and other preliminary processes. For warping a bundle of yarn of 20s the wages paid are ten annas and for sizing Rs. 1-4-0. These rates with little or no variation prevail throughout the district.

Practically all the thread used is mill-made and is imported from Sholapur and Madras. Yemmiganur and Adoni are the yarn markets for weavers in Pattikonda and parts of Kurnool. The silk required by the Kodumur and Gudur weavers is obtained from Chennapatnam, Bangalore and Bombay. The Kodumur weavers also get imitation silk and weave women's sadis with solid border. Both yarn and silk are used in the manufacture of ravikkais either in the warp or in the woof or in both. Silk makutams, coating cloths and panchas are made at Gudur and Kodumur.

In the cotton-producing taluks, the ryot generally spins his own yarn and gets the cloth woven by a Mala. It is considered that a Mala weaves the hand-spun yarn much better than a Sali. He is given a wage of Re. 1 with two free meals for weaving a piece of 20 cubits long and 42 to 45 inches wide.

Dyeing is not very much practised in this district, except at Kodumur and Gudur. Much of the yarn is bought ready dyed. Indigo is grown to some extent in parts of the district and weavers can dye their yarn with it to secure blue colour, adopting the method in vogue elsewhere. A bundle of 20s costs Rs. 8 to Rs. 10 for dyeing heavily with fast indigo colour and Rs. 3 to Rs. 4 for dyeing lightly. In Pattikonda and Maddikera, dyeing with 'maddichakka' (*Morinda citrifolia* or Indian mulberry) grown spontaneously in the jungles is in vogue but is rapidly being displaced by the alizarine dye as the process involved in the former is laborious and has to be repeated a number of times to secure fast colour. The cost of dyeing a bundle of 20s is Rs. 4.

The dyeing of genuine and imitation silk is done at Kodumur and Gudur. The principal colour used is kiramanji and the same process as that described in the Bellary report is followed here both in bleaching and dyeing silks. To get a dark red colour, the bleached silk is first given a dip in a solution of alizarine and alum and allowed to dry for a day before it is treated to kiramanji dyeing. The colours that are in use in Kodumur are nephtols, orange, scarlet, yellow and green. Before dyeing silk with any of these colours, it is washed in a well-boiled mixture of nephtol soap, caustic soda, turkey red oil and water. Some of the master weavers seem to have learnt the proper method of dyeing and do not show any lack of knowledge of the art.

The weavers of both cotton and silk are largely in the hands of capitalists in Kodumur, Kurnool, Gudur, Maddikera and Pattikonda who advance them the thread, take the finished cloths and pay them piece-work wages for their labour. These capitalists are often rich men of the same community as the workers. They carry on export trade with Mysore, Bangalore and other places and make large profits. When the outside demand contracts, not only do they not

supply enough threads to give full work to the weaver but also reduce their wages. The workers are heavily indebted to the sowcars and cannot get out of their clutches, while others who have to depend upon themselves have little resources to fall back upon and consequently lead a precarious existence with the anxiety about the disposal of their goods always staring them in the face.

With frequent fluctuations in the price of yarn which hits hard the hand-loom weaver, it is a great problem to find out ways and means by which his condition may be improved. The demand that exists for hand-woven fabrics contracts suddenly when the yarn prices rise. The disparity in value between the hand-made and mill-made cloths becomes all the greater and looms large in the consumers' view, so that preference is shown to the latter class of goods.

The use of new methods and modern appliances which help to raise the out-put and reduce the cost of production is calculated to help the weavers, but there is always the lurking fear that if the production is increased, there might be no corresponding market for the goods and it might eventually lead to dumping. In Kodumur, Gudur and Maddikera the weaver population is sufficiently large enough to admit of organization but in the rest of the district, it is so widely scattered over very many villages that co-operation is difficult. The introduction of improved preparatory processes to diminish the cost of preliminary warping and sizing which the yarn undergoes before it is placed on the loom, is impossible in small villages with a thin weaver population.

The indebtedness of the weaver who in the generality of cases is landless and not resourceful, is a great stumbling block in the way of progress. He is always under the thumb of his sowcar who is keenly bent upon keeping him in serfdom. He has neither the property nor the courage to join a co-operative society that might be started for his benefit. The problem, therefore of solving the indebtedness of the weaver gives sufficient food for careful thought and until this is solved, and the weaver is freed from the shackles of indebtedness, co-operative societies are not likely to do much good to him. Thrift, of course, is the one means by which a person can help himself to be free but for one who is hopelessly involved, it has no virtue. Education seems to be the only panacea for this evil. The general recommendations that I have made in respect of this industry in the Cuddapah district will hold good in this district also.

Printing.—Cotton stuffs of coarse kind are printed in colours by hand at Sirvel, Koilkuntla and Nandyal by a few Muhammadan and Rangari families. They are made to order given by Muhammadans who attach a special value to them on occasions of marriage. They are presented to the married couples for use as bed sheets and

dupatties. The cloth is supplied by the person who gives the order. As the printings are done on coarse hand-woven cloths and inferior dyes are used, there is not much charm about them as the cloth does not take the printings evenly and well, though they bear a general resemblance to the well-known 'palampores' of Masulipatam and Kalahasti. The process followed in the printing of the designs is a tedious series of washings in various mixtures to get rid of the sizing in the cloths.

The printing is effected by stamping the cloths by hand with teak wood blocks on which are cut in high relief elaborate conventional floral patterns. These blocks are bought from Pamidi in the Anantapur district where this industry is said to be in a flourishing state.

Cotton carpets.

This industry is carried on in the district on the same lines as in Adoni of the Bellary district and the principal place of business is Kurnool. Cumbum was once famous for its thick carpets but the industry has almost died out, leaving only one family which undertakes to do the work to order given by a local merchant. There are 3,000 looms at work in Kurnool town, all engaged in manufacturing cotton carpets of varied colours and bed sheets called 'sujanis'. The looms are horizontal ones as in Adoni, but that at Cumbum is vertical and the weft threads are pressed down with a teathed hand-like wooden block to secure closer texture. It is this process combined with the stouter yarn used in the manufacture that distinguishes the Cumbum make from that of Adoni and Kurnool.

The class of people that manufacture carpets and sujanis are mostly Muhammadans, women also being largely employed in the business as the work can be done in their homes without offending the purdha system. There are also small work-houses wherein Muhammadan women are exclusively employed. There are ten or twelve master workmen, each with 20 or 25 looms employing coolies to do the work. The workers get advances from their employers and work off their dues by repaying small sums out of their earnings but seldom secure redemption as they constantly borrow for their one hundred and one wants. The independant workers make credit purchases of the required yarn from the Marwari and other yarn dealers and sell the finished goods to them at a more favourable rate, or repay the debt which is charged at a high rate of interest. The former class earns wages from five to six annas per diem, while the latter makes about seven to eight annas. A skilled workman who is able to weave rugs and bed-sheets with design can earn twelve annas to one rupee per day.

Different patterns of carpets and rugs are manufactured but the bulk is of an inferior kind of fugitive colours. As in Adoni, the same recipe made out of hirekachu (ferro-sulphate and myrabolan powder) is used for dyeing in block or blue colour, indigo dyeing being resorted to only in costly varieties. Carpets for use as canvas for easy-chairs and at prayer times by Muhammadans (42" × 29") are also manufactured and occasionally tent carpets are made to order.

The demand for the costly variety is largely from Bombay while the cheaper variety is exported to Hyderabad, Madras, the Circars and other places. The yarns used in the weft are 6s and 10s in Kurnool and 3s and 4s in Cumbum. The Cumbum variety is much thicker and a carpet of 6' × 3½' weighs as much as 3½ lb. Sholapur and Madura are the principal markets from which dyed yarn is obtained by the Kurnool merchants while the Cumbum sowcar gets his yarn from Kurnool.

The dyeing of yarn is generally done locally and occasionally ready dyed yarn is obtained from Madura. Vegetable indigo is used in the costlier variety of rugs and is obtained locally as it is grown in the Kurnool and Cumbum taluks. In the cheaper variety, ferro-sulphate solution is used which gives weight to the yarn. As in Adoni, the carpets of the ordinary kind are sold by weight and almost at the same rate of As. 4-6 per seer.

Unlike Adoni, Kurnool has the decided advantage of having two perennial rivers running through it which afford facilities for washing yarn dyed with sulphur black with sodium sulphate. Instead of using this superior dye, which is not costlier than the ferro-sulphate preparation, the makers employ only the latter for no other reason than that it gives some weight to the yarn. This dishonesty in trade is likely to affect their reputation in the long run but unfortunately the merchants are blind to it.

The industry on the whole seems to be in a flourishing condition, but the persons who are largely benefited by it are not the workers who sweat by their labour but the merchants who are capitalists. Co-operative societies for supply of yarn and sale of finished goods may be of real help to the wage-earners, but unfortunately they are too deep in debt to get out of the clutches of the capitalists, and any attempt in the direction of affording facilities to the really needy is so beset with difficulties that its failure is almost certain. The dyeing of yarns is a costly item in the manufacture and a Demonstrator who can examine the current processes and teach methods by which the quality can be improved without raising the cost of production would be of great service to the manufacturers.

Allied with the industry of making carpets is the industry of *Tape making*. The same counts of yarn as are used in making carpets are used in this manufacture and sometimes four to five threads of No. 6s are twisted together by a charka to make the yarn stouter. Kurnool and Nandyal are the chief manufacturing centres and they export the tape to Madras, Guntur, Trichinopoly, Nellore, Bezwada and Rajahmundry. The wages for weaving 180 yards is Rs. 1-8-0. The width is generally $1\frac{1}{2}$ to 2 inches. Muhammadan and Dudekula women largely employ themselves in the work as it gives them employment at their house. The loom is very simple and small costing about a few annas and is within the reach of the poor. There are capitalists who make advances and get the work done. There is also a demand for the article locally as it is largely used as canvas for cots. I am not in a position to state if these workers can weave narrow tape that is largely in use in public offices, but if they could be taught to make it, it would be a distinct gain to the community.

Blanket or Woollen Rugs.

The population of the Kurubas was 26,499 according to the census of 1911 and 28,106 according to the last census. Woollen blanket weaving is their principal industry. It is confined to the taluks of Kurnool and Nandikotkur but is more extensively practised in the latter. Owing to the favourable conditions of the district in having long ranges of richly clad hills, the shepherd class whose professional work is the tending of flocks find great facilities for their bringing up. The primary object of these people is not so much to rear the sheep for its wool as to use it as a manuring agent for ryots' fields and for its skin and mutton. The wool is only used incidentally with the result that much care is not taken in the breeding of the animals to produce long stapled wool. The wool drawn from the Kurnool sheep is of short staple being only $2\frac{1}{2}$ inches long, while the sheep from the Nizam's dominions and Bellary yield a longer staple of $3\frac{1}{2}$ to $4\frac{1}{2}$ inches and 5 inches respectively.

As in Bellary, the first shearing is done when the sheep are six months old and thereafter two shearings are done in a year, once in summer and again in winter until they are four or five years old. After that, their wool is worthless and they are sold for the table. The summer shearing is found to be superior in quality, while the wool of the winter shearing is comparatively more soiled with dirt and mire by rainy weather. The lengths of fibre are also uneven owing to breakage by thorns when sheep force their way through thorny bushes which have a luxuriant growth during the rainy weather. Thistles and thorns are also found in the knots of the wool of the winter shearing. The yield of wool per sheep is about a seer of 24 tolas and a maund of sheared wool costs Rs. 7 to Rs. 8.

The wool obtained in the district is mainly shorn from the sheep and occasionally dead wool is also used but more sparingly in Nandikotkur than in Kurnool. The wool is not dyed but the fancy grey, black and white border stripes are made by picking out the different colours of the natural wool.

The cumblies that are manufactured in the district differ from those made in Bellary both in texture and quality. The Bellary blankets are finer and superior in texture while the Kurnool cumblies are more soft to the touch on account of mulling. The yarn used in Kurnool is stout and greatly uneven in strength and uniformity. It is spun with 'Takli', a spindle turning round in a coconut shell while the yarn is twisted on the lap of the spinner. The charkas in use at Bellary for spinning wool yarn are not heard of in Kurnool except at the Siddhapuram settlement where the Donga Woddars employ them in spinning. The yarn produced here is finer than elsewhere and the Superintendent who has been evincing great interest in the work of the settlement gets prepared not only the ordinary kind of jadis that are locally made, but also gets spun fine yarn suitable for making woollen overcoats. The daily outturn by a woman working from 7 a.m. to 5 p.m. is 8 to 10 seers, while only half the quantity is produced outside. The Superintendent has also introduced twill weaving in the settlement. A cumbly made in Bellary of 9 feet \times 45 inches weighs about $4\frac{1}{4}$ lb., while the weight of a jadi of Kurnool of the same size is from 8 to 15 lb. The difference in weight is due to loose weaving with stouter wool yarn.

The cumblies are woven with a loom designed on much the usual principles but primitive and clumsy in practice. Every alternate thread in the warp is stringed to a bamboo and operated upon to give a shred for the shuttle to pass through. The looms in use in the settlement are fly shuttle looms and the shuttles are of the kind employed in cotton weaving but of a considerably bigger size, whereas those in use elsewhere are hollow bamboo pieces with the bottom closed in which the yarn is stuffed. I observed in the Bellary Report that wool yarn spun with charkas might not stand the strain in weaving with fly shuttle looms but the experience gained in the Siddhapuram settlement has shown that charka-made yarn stands the strain. The outturn with a fly shuttle loom is nearly double that obtained with a country loom. In the manufacture of cumblies, the Kurubas are assisted by their womenfolk. The latter clean the wool and tease it by hand. Then the local Pinjari strings and cards it. He is paid 5 annas wages for $8\frac{1}{3}$ lb. of wool. The charge for spinning the same weight is 8 annas while the wages for weaving a cumbly 7 cubits by 38 inches is 4 annas, slightly higher rates being paid for the workers in the settlement. For spinning yarn of finer counts suitable for woollen overcoats, the rate of wages paid at the

settlement is As. 3-6 per seer of 24 tolas. The preparatory process of warping and sizing are done by the Kurubas themselves and when hired labour is employed, which is rarely done, a wages of annas 3 is paid for each sheet.

After cumblies are woven, they are subjected to the process of mulling in order to secure closer texture and softness to the touch. There is considerable shrinkage of wool in the process and the local makers invariably stitch together two half sheets of 7 cubits by 38 inches to obtain a cumbly of 5 cubits long and 54 inches wide after mulling, as their looms are not wide enough to produce a single sheet that would give the required dimensions after shrinkage. 'Mulling' is a laborious process and is done when the weaver has woven a sufficient number of sheets to employ the minimum number of coolies required for the operation. Four male coolies are indispensable for rubbing while a woman coolie is necessary to keep the water boiling, and supply it to the workmen. Two sheets forming a cumbly are stitched together to give greater width and rolled tightly. They are placed on a cot stringed with roughly woven date rope which is placed in a slanting position. Then two people stand on either side opposite to each other and rub the folds of the cumbly pouring boiling water on it. This process which is necessary to fuse the woollen threads is continued four or five times for each fold, boiling water being poured on it all the while. Thus in the course of a day about fourteen small or ten big cumblies are mulled. Each coolie is paid 8 annas. At the Siddhapuram settlement, nine or ten cumblies are mulled by six men and two women coolies in a day, who earn wages at the rate of 4 annas for each cumbly mulled. The wages paid for mulling thinner cumblies are higher than those for the thicker ones, as the work is comparatively more difficult. After mulling is finished, the cumblies become ready for the market. The price of each cumbly varies from Rs. 1-12-0 to Rs. 6 or Rs. 7 according to quality.

The industry is not organized and the Kurubas carry on the manufacture as their subsidiary occupation. Those who own flocks tether them on the ryots' lands before the sowing season while others work in their own lands or elsewhere. The rainy weather is not suitable for weaving as the preliminary processes of sizing and warping and also weaving are done in open air outside their houses. The summer is the most suitable season for them when they engage themselves solely in the manufacture. The great annual festival at Tarturu which happens at about the month of May is their market for the finished goods. All that they could make ready by then is sold away. Never has the Kuruba felt any anxiety for the disposal of his goods. He does not know where the demand comes from, but is always able to sell his wares almost at his doors. This is also the

experience of the Superintendent, Sidhapuram Settlement, who is always able to command sales for his manufactures. The merchants of Kurnool buy the stock for export to various places in the Presidency.

The industry is capable of improvement in many respects. Firstly, the breed of the sheep should improve to yield a better quality wool. Co-operative societies for breeding sheep on the lines recommended for the Bellary district may be tried, with advantage, since this district has better grazing facilities than the other. Rams for stud purposes may be imported and the cross-breed distributed all over the district. Another improvement to be effected is in regard to the method of carding wool. The local Pinjaris do the work indifferently, leaving a lot of tufts and wicks in the carded wool. This is a loss to the Kurubas. At the Sidhapuram Settlement where there is strict supervision, such indifferent work is punished by cutting off the wages of the carder. Any attempt by an expert to improve the methods of carding may be worth the trial. After carding, the wool is not cleared of streaks (uncarded wool if any) and made into slivers by putting some grease or oil to allow the smooth running of fibres. On this point the Kurubas should be educated.

The 'Takli' is also a primitive appliance and as already pointed out does not bear comparison with the charka in giving a finer and more uniform yarn. The charka in use in Bellary and at the Sidhapuram Settlement would improve the quality of yarns if it can be introduced here. For this purpose, demonstration at the doors of the people is necessary. The loom should also be improved. While it is possible to weave with fly-shuttle looms at the settlement, there is no reason why such looms should not be adopted by the local weavers. The production can also be increased twofold without fear of overstocking the market as there seems to be a great demand for the articles produced.

Grass mats.

Mat weaving is done only in two villages in this district, viz., Lingojipalle in Cumbum taluk and Gorakallu in Nandyal. There is only one family in the former village who migrated from Ayana-vole in Vinukonda taluk of the Guntur district, while 20 families who are all Telagas live in the latter village, following the same occupation. Mat weaving is a subsidiary occupation of these people who during the agricultural season prefer to work as coolies and earn a living. Some take lands on lease and cultivate them.

The mats are woven from 'tunga' grass which grows along the margins of banks of the Kunderu, Sagaleru and Gundlakamma streams. The material is available within 5 to 10 miles of the

village of Gorakallu while the Lingoipalle family whose work is of a superior kind gets the reeds from Kanigiri taluk of the Nellore district, in conjunction with the plaiters of mats at Ayanavole in the Vinukonda taluk where there are about 100 looms working. The season for cutting reeds is from October to January. The workers generally go in groups to make the cuttings required for their use throughout the year. They contribute joint labour and the quantity obtained is distributed among themselves in proportion to the labour contributed. The Gorakallu people get their supply free of all charges as no seigniorage is levied by Government for removing the reeds from the river but in the Nellore district (Kanigiri) and also in the Markapur taluk the right to cut reeds is sold by Government and the makers have to pay hard cash for removing the wild growth. A cart-load of grass costs them Rs. 40 including charges for cutting and transportation. The thread used for warps is extracted from aloe plants and is procurable at Rs. 1-8-0 per maund. Five maunds of thread are required for weaving a cart-load of prepared reeds.

The Gorakallu workers are not very keen in their subsidiary occupation. They weave only plain mats of short dimensions, 4 cubits long and 33 inches wide, and cannot increase the width as their looms are not adaptable to greater widths. The workmanship is not good. Each mat costs 5 or 6 annas and the demand is purely local. The Lingoipalle worker makes good mats with coloured reeds and is capable of weaving patterns and designs. The ordinary kind woven by him is 4 cubits long and 42 inches broad costing about 8 to 10 annas. He can prepare fine mats with designs and patterns costing about Rs. 4. It is estimated that about 400 ordinary mats can be prepared from a cart-load of reeds costing about Rs. 40.

There is no ready demand for the manufactures, and the maker has no connexion with any local merchant or any others in the neighbourhood, who can purchase his make for export to other places. He has to depend upon himself for the sale of his goods and go from place to place to sell them. He travels all over the Circars and the Ceded districts with his load and this travelling takes away a decent slice from his earnings. There seems, however, no remedy for this as he lives by himself removed from his co-workers at Ayanavole.

This is an indigenous cottage industry and the workers depending on it belong to the labouring classes. The amount of revenue accruing to Government by sale of the right for removing the reeds which are of wild growth is, perhaps, insignificant but would go a long way to help the poor employed in the business, if it is remitted. I would therefore make the recommendation that the removal of the reeds may be permitted free of charge subject to such conditions as the local circumstances may require in each case.

Bangles.

The bangle industry in this district has not met with the same fate as in the sister districts of Bellary and Cuddapah. It is in a flourishing condition in Dhone, where a Muhammadan merchant has been running the concern. He keeps a small factory engaging a dozen workmen trained in the art of manufacture. They are natives of Mochigeri in the Bellary district, where this industry was once in existence. The block glass required for bangles is obtained from Ferozabad in Agra district of the United Provinces and is melted in a furnace 5 feet high built for the purpose. Its bottom measurement is 13 feet round and the top 6 feet 9 inches. It has 12 openings with a pan fixed to each for keeping the glass. The furnace is lighted from the bottom and the heat generated melts the glass in the pans. A workman is ordinarily able to melt 24 seers (20 tolas a seer) a day and manufactures 1,000 bangles of the thicker and 1,600 of the thinner variety. The average outturn per day in this workshop is 10,000 to 12,000 bangles, turned out of two Bengal maunds of glass. Between 400 to 500 Bengal maunds of glass are thus used up in a year.

The process of manufacture is the same as that described in the report of the Bellary district regarding this industry. 'Kandi' or redgram stalks are used in lighting the furnace. These stalks are left in fields uncared for and they are gathered and stocked by the merchant at a small cost of Rs. 2 or less per cart-load. In this way he has been able to solve one of the obvious difficulties of keeping down the cost of fuel required for melting.

The varieties of bangles manufactured here are superior in quality to those produced in Bellary, and are made more attractive by plating them with tinsel. This variety is sold at Rs. 4 to 5 whereas the ordinary one is sold at Rs. 2-8-0 per 1,000. Small boys are trained to this work and earn about 8 annas a day by plating 1,000 bangles.

The market for the bangles is in the districts of Kurnool and Cuddapah and the demand for the wares keeps the workshop engaged all through the year. The merchant is able to make a net profit of Rs. 2 a day. He has visited Ferozabad and has seen the manufacture of block glass there and intends to start the industry here in case facilities are given him to obtain cheap fuel. The freight on a Bengal maund of block glass is Rs. 2-8-0 from Ferozabad while the cost price of the cheapest block glass is Rs. 3-5-0. The freight may be saved if it were possible to produce the block glass at Dhone or anywhere in reasonable proximity, but the previous detailed investigation on the subject, which was specially conducted by the Industries department to ascertain the possibilities, if any, of resuscitating

what was once a flourishing industry, resulted in a finding that it was past redemption. Individual cases of manufacturers flourishing may be found here and there but the general disintegration of the workers seems to have advanced far too much to bring them under a co-operative system or to work them under factory conditions.

This industry is said to exist in the Anantapur district and at Kalahasti and until I have had an opportunity to study the conditions there, I do not propose to alter the opinion expressed in the Bellary Report regarding the improvement of this ancient industry.

Lacquerwork.

This industry is carried on on a small scale in Nossam, a village 17 miles from Koilkuntla and in the Kurnool town. There are two families in the former village and one in the latter. One of the families of Nossam migrated temporarily to Kurnool to execute a job-work of preparing vahanams or vehicles for carrying God in procession in Hindu temples. They ordinarily prepare fans, trays of different shapes (round, octoganal and oval) and small kerchief boxes and work on them with lacquer. The work done is beautiful and artistic and the designs are of natural objects representing floral life.

The wood used in the manufacture is 'puliki', 'medi' and 'pedda vepa' but the worker in Kurnool often uses ready-made trays of jack wood imported from Palghat where they are made with a lathe. The first operation in the work is to get a smooth surface and this is obtained by coating the wood with a white 'suddha' (earth) which is locally available. White lead also is occasionally used in nice work. Designs of birds and plants are worked by hand on the articles with a brush and coloured with appropriate tints and where figures in relief are required they are produced by the use of a sticky paste made of finely powdered cowrie. After giving a coating of varnish, thin silver foils are used and a further coating of varnish is given. This gives a beautiful golden yellow to the metallic tinselery and makes it glittering. The colours do not fade quickly and the brightness of the tints is preserved for a number of years. Besides doing the above fancy articles, the workers are capable of carving statuettes and idols out of stone with artistic beauty. Similarly painting is done on finely tanned leather of goat skins. The nature of the work cannot but be tardy as it requires skilful handling of the brush. Consequently the articles manufactured are highly priced and are not within the reach of all. They can be appreciated only by persons who have a cultured mind for beauty and art with whom money value is not the chief consideration. As such the articles do not find a ready market and the only institution

that has been rendering valuable help in the preservation of the art is the Victoria Technical Institute, Madras, which has been regularly getting things made from the Kurnool artisan. The Nossam man who appears more skilful in the art has not secured the patronage of the institution for obvious reasons that he lives in an out of the way place and cannot execute orders promptly.

The industry is dying out for lack of capital and the artisans being resourceless, cannot afford to spend long time on the manufacture of fancy articles, the demand for which must of course be precarious. It is desirable that the artisan at Nossam should be placed in touch with the Victoria Technical Institute.

Slate Industry.

The slate industry has been of recent growth in the Markapur taluk, having been started in the year 1921. It received a great impetus after the War owing to the contraction of import trade from Germany, when large profits were made by the traders. Encouraged by the high prices prevailing at the time and the comparatively large margin of profit obtainable, the industry came into existence in the Cumbum taluk also but declined rapidly and became extinct as it could not survive the after-effects of the War and compete successfully with the Markapur industry, which had the advantage of being nearer the quarries which are found in parts of the zamindari of the Raja of Venkatagiri, within four or five miles from Markapur. The exclusive right of quarrying is sold to contractors and a cart-load of slate stones delivered at Markapur free of all charges costs Rs. 5. The industry is carried on on well organized lines by local capitalists. There are 12 workshops or small factories in the town which employ labour in shaping and sizing slabs and framing them. The soft wood required for frame work (Vernacular name 'Puliki') was hitherto available in the Reserved Forests of Chelama and Gazulapalle but is now imported from the forests near the Singareni Collieries in His Exalted Highness the Nizam's Dominions, owing to the lack of transport facilities for bringing the wood from the interior of the British Reserves. There is a judicious division and co-ordination of labour in the manufacture, each man or set of men being engaged exclusively on each different process. The labourers are paid on the piece-work system on the unit of a box containing a dozen of each of the following four sizes: 12" × 9", 10 $\frac{1}{3}$ " × 8 $\frac{1}{2}$ ", 9 $\frac{3}{4}$ " × 8" and 8 $\frac{1}{2}$ " × 7" all with frame. The dresser and the planer of the stone gets 6 annas, the sawer of the wood 7 annas, the groove cutter 2 annas, the framer 2 annas and the planer of the wooden frame 1 anna. The cost of a box of slates delivered at the Markapur Road Railway Station roughly comes to Rs. 3-15-0 and the selling price is from Rs. 4-4-0 to Rs. 4-8-0. This gives a profit of 5 to 9 annas per box.

The demand for slates is from all parts of India except the Punjab and some of the large importing centres are Akola, Khandesh, Cawnpore, Madras, Bombay and Calcutta. The number of boxes exported every month averages about 3,000.

The economics of the industry is given below for one box of slates—

	RS.	A.	P.
Slabs for one box of slates	0	7	0
Shaping charges	0	5	0
1½ cubic feet of puliki wood	0	9	0
Freight from Singareni Collieries including cartage ..	0	12	0
Cutting charges for the required sizes and making frames.	0	9	0
Fitting charges	0	2	0
Planning the frames	0	1	0
Nails for framing	0	1	0
Softening with sand paper	0	0	6
	<hr/>		
Total ..	2	15	3
Empty boxes for packing	0	12	0
Packing charges	0	1	6
Carting charges to railway station	0	1	0
Miscellaneous	0	1	3
	<hr/>		
Total cost ..	3	15	0
	<hr/>		

The cost of wood is As. 5-6 to As. 7-6 per cubic foot at Singareni Collieries and the railway freight including cartage from Markapur Road Railway Station to the town comes to 8 annas per cubic foot. When the wood was available in the reserved forests of Chelama and Gazulapalle, there was a comparatively larger margin of profit owing to the proximity of the reserves. Now, the charge of railway freight comes to more than the cost of wood per cubic foot. It is understood that the soft wood which is not even fit for fuel is charged the same rate as teakwood. There is no doubt that in the interests of the development of this nascent industry in which private enterprise has been conspicuously forward, a reduction in the rate of freight charged will be a boon to it. The industry employs a large number of labourers, about 200 to 300 a day, and gives them employment throughout the year.

Miscellaneous Industries.

Devanakonda in the taluk of Pattikonda was once known to manufacture small brass and copper images of idols which found a ready market in fairs and festivals, specially at Mantralayam in Adoni taluk of the Bellary district. The makers were gold and silver smiths who are now dead. Their survivors have allowed the art to die out. In Gumperumanudinne, Sirvel taluk, there are two families of sculptors who do carving on stone. They are generally employed in carving door-frames and domes of temples. They ordinarily take the work on contract, but when they are engaged on daily wages they demand Rs. 1-4-0, with free boarding and lodging.

Another sundry industry is the manufacture of baskets and mats from bamboos. There is a special class of people called 'Medars' whose whole-time occupation is in preparing these articles. The Nallamalai forests produce large quantities of bamboos which are exported to Bellary, Guntur and other districts. Mats are woven in very large numbers and exported to Bellary and parts of the Bombay Presidency. The workers are poor and depend upon contractors of forests who purchase bamboo coupes for their supply. They give them green bamboos at so many a rupee, and get in exchange mats prepared. The outer green part is used for making winnows and baskets. Both men and women engage themselves in the work. Besides the above household things, the Medars make also cots, cradles and boxes out of the bamboo scantlings. They seem to be skilful enough to learn the manufacture of any other fancy articles if they are taught. It was said that once rough paper was made out of the bamboo pulp, but that industry is now dead.

Co-operative societies for the benefit of Medars, who are a hard-working class of people, may prove successful. For lack of capital, they are now in the hands of capitalists who exploit their labour cheap.

Beedi manufacture is carried on in Owk and other places adjoining forests. 'Tumki' leaves, which abound in forests, are sold in head-loads by the Yenadis and Chenchus. Tobacco is either locally grown or obtained from Guntur. A number of Muhammadan boys are employed in the manufacture, each preparing 1,000 beedies a day and earning wages of 5 to 6 annas. The leaves, after being soaked in water, are taken out and kept under a weight on the previous night. The next morning they are cut with a pair of scissors into the required sizes by the workmen, stuffed with powdered tobacco and rolled up. A thousand beedis cost about 12 annas and are sold for 14 annas or one rupee. Muhammadan women are allowed to cut leaves into sizes in their houses and supply the manufacturer.

New Industries

None of the Tahsildars make any recommendation as to the possibility of starting any new industry in this district. Bamboos are produced in enormous quantities in the forests and the question of utilizing the pulp and other forest products for the purposes of cottage industries may be considered by experts. The district is rich in its forests, affording abundant facilities for grazing. In Nandikotkur and Nandyal taluks, the Lambadis keep herds of cows here and there, obviously for breeding purposes, but very little care is taken in selecting good stud bulls and restricting their service. There is a promiscuous mixture of all cattle which impoverishes the breed. Improvements in this direction may be useful.

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