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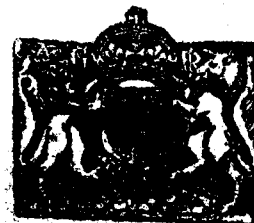
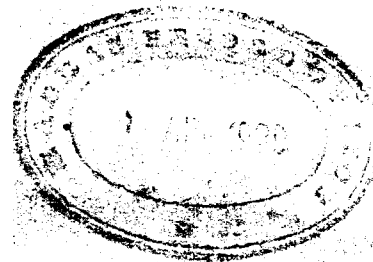
PRELIMINARY REPORT

ON THE

SURVEY OF COTTAGE INDUSTRIES

IN THE

GUNTUR DISTRICT



MADRAS
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PRELIMINARY REPORT ON THE SURVEY OF COTTAGE
INDUSTRIES IN THE GUNTUR DISTRICT.

Introduction.

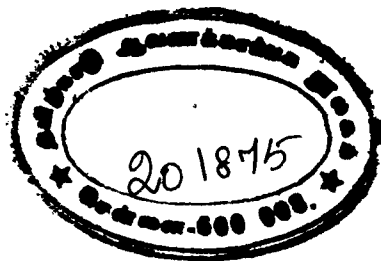
The survey of Cottage Industries in the Guntur district was conducted by a Tahsildar who visited all the important centres of the industries reported on.

The district is bounded on the north by the Kistna River, on the east by the Bay of Bengal and the River, on the south by the Nellore district, and on the west by the Kistna River, Kurnool and Nellore districts. It consists of 9 taluks, with an area of 5,735 square miles and population of 1,809,574 inhabitants. This district is predominantly agricultural and pastoral, and nearly 75 per cent of its population live by agriculture and tending of cattle and sheep.

After agriculture, the most important industry in this district affording employment to a majority of the industrial population is hand-loom weaving. According to the census of 1921, there were in the district as many as 14,974 hand-looms (19,035 according to the Statistical Atlas of 1923), which is, perhaps, the highest figure recorded in the whole Presidency for any one district. As cotton is produced in abundance in all the upland taluks, the industry of hand-spinning is carried on to a considerable extent side by side with hand-loom weaving. Owing to the impetus given by the khaddar movement, a fairly large quantity of the cotton produced in the district is turned into handspun khaddar cloth. The other industries of some importance are dyeing and printing and cumbly weaving, camp furniture making at Narasaraopet, kora mat weaving in Inavole, stone carving in Koppukonda and Durgi brass and copper works in Durgi, and marble industry at Rentachintala, besides the making of newar, pattis, etc., on a small scale here and there. The district is rich in the growth of tobacco of superior variety but it is exported abroad, while the tobacco required for making beedies is imported from outside. I shall deal with the principal industries in the following paragraphs.

Hand-spinning.

Hand-spinning as a subsidiary occupation has a somewhat firmer footing in this district than in any other district in the Presidency. The area under cotton crop was 96,939.67 acres



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last fasli. The district has a number of cotton presses and gins which clean cotton, press it into bales and export to foreign countries. The abundance of cotton growth in the district has given rise to the industry of hand-spinning in connection with hand-loom weaving. During the period of the "Non-co-operation movement" in 1920-21 there were as many as 150,000 spinning wheels in operation, but since then the number of charkas at work has come down, and now is 100,000, which is still the largest number recorded in any district of the Presidency. Sattenapalli, Palnad and Narsaraopeta taluks account for about 75 per cent of this number, the balance being distributed over other dry taluks, almost each village possessing a few charkas. There is practically no hand-spinning in the delta taluks of Tenali, Repalli, and Bapatla, where there is very little cotton grown.

As a subsidiary occupation hand-spinning is now followed by the females of agricultural classes, chiefly Kammas, Reddies, and Telagas, and, to some extent, by Gollas, Thogatas, Weavers, Malas, Madigas, and Muhammadans. They largely take to spinning during summer when they are disengaged from agriculture, and there is no demand for their labour. Both ginned and unginned cotton are available in the market and sold at Rs. 220 and Rs. 70 a candy respectively. Four candies of unginned cotton when ginned yields one candy of cotton. Cotton seed is sold at Rs. 24 a candy. In the cotton growing villages each farmer keeps a sufficient quantity of cotton grown by him for manufacture into cloths. Ginning in these places is generally done by the spinner with the hand-ginning appliance called 'Girika or Ratnam'. One maund of raw cotton can be ginned by a woman in a day, yielding 2 viss of ginned cotton. The wages given to a woman for ginning one maund in mills is 4 annas. Two dudekulas card one maund of cotton within a day and they are paid Re. 1 each, if they also prepare slivers with the assistance of their women, but where the spinner herself prepares the slivers, she deducts the slivering charge of 8 annas per maund and pays only Rs. 1-8-0 to the two carders. There will be a wastage of 50 to 120 tolas (or 80 tolas on an average) in carding a maund. For preparing slivers from one maund within a day at least two women are required, and they are paid 4 annas each. One viss of slivers when spun yields yarn 2 to 5 tolas less in weight. On an average each woman works for about six hours a day after attending to her household duties, and is able to spin about 2,400 yards of about

12s (weighing about nine tolas) in a day, earning As. 1-3 to As. 1-6 thereby, her average monthly earnings amounting to Rs. 2-8-0. The yarns generally spun in this district range from 10s to 20s, the upland taluks producing up to 15s, and deltaic area producing 20s. A spinner of 20s yarn earns on an average about Rs. 3 to Rs. 3-8-0 a month. There are four khaddar organizations in the district, of which only two supply slivers to the spinners (one at Guntur through the weavers and the other at Guruvareddipalem to the spinners direct), and take back yarn from them. At Guruvareddipalem the wages paid to the spinner for one viss of yarn of about 12s is Re. 1. The other two organizations purchase yarn from the spinners at the following prices, which vary according to the quality of yarn—

				RS.	A.	P.	RS.	A.	P.
10s to 12s	...	...	...	2	4	0	to 2	8	0
14s to 18s	...	...	...	3	0	0	to 4	0	0
20s to 25s	...	...	...	4	8	0	to 5	0	0
30s	...	...	...	5	8	0	a viss	(in small	quantity only).

Ordinary country charka of primitive type is in use everywhere.

Khaddar weaving.

The yarn spun by the female members of an agriculturist's family is handed over to the weaver who receives the wages either in coin or in the form of grain. The weavers are generally Malas, Padmasalis, and a few Thogatas, the Malas taking to weaving only in the off agricultural seasons. In the upland taluks the spinners themselves prepare warps from 14 to 16 yards in length and give them to the weavers with the required weft yarn—fourteen punjams. Such warps are also sold by the spinners at Rs. 4 to Rs. 4-8-0 each. The warps prepared by the spinners in the deltaic tracts are 7 to 7½ yards long of 7 punjams weighing about 13 to 16 tolas each and costing As. 6-6 to As. 8-6 according to demand. The preliminary processes of warping and sizing are the same as elsewhere, being peg warping and street sizing. Winding and warping is generally done by the women and children of a weaver's family. The Panchama weavers, who are either supplied with these ready-made warps or purchase them, size them immediately with either rice, cholam or ragi kanji; but the caste weavers soak these warps in water for four or five days after which they dry the yarn, wind it either on pantais or tin-bobbins, and prepare fresh warps 16 to 20 yards in length

containing 16 to 22 punjams of 20s yarn. Generally Malas weave below 20s and Padmasalis 20s and above. For winding one lb. of yarn a woman is paid As. 2-3, and for warping it As. 1-6. For sizing 20 yards by 52 inches of 20 punjams, 2 men are required and they are paid 4 annas each, but sizing is generally done by the weaver himself with the assistance of his brother weaver. Sizing material costs 1 anna to As. 1-6 and this is supplied by the weaver to the sizers where hired labour is employed. The wages paid for weaving one yard of 18 punjams of 20s is 4 annas and this includes charges for preparatory processes such as winding, etc. Where weaving is done for an agriculturist who supplies yarn (about 12s to 14s), and sizing material in grain, the weaver is paid 1 anna wages per cubit of 20 ins. by 45 ins. containing about 11 to 13 punjams. On an average the weaver works for about 10 hours a day, and is able to weave 8 to 10 yards of 12s, 6 yards of 16s, and 4 yards of 20s, earning from 8 annas to Re. 1 according to the quality and quantity of cloth woven by him. In the case of "Kuppadam" or cloth with design borders, a weaver with the assistance of a boy can weave only one yard in a day. The looms employed are both fly shuttle and old country looms.

Dhotis, khandwas, saris, bed-sheets, towels, shirting, and coating cloths are the chief patterns woven.

Economics for weaving a pair of dhotis, 7 yds. by 50 ins. containing 16 punjams of 14s weighing 100 tolas, costing 10 annas a yard or Rs. 4-6-0—

	RS.	A.	P.
Cost of ginned cotton—100 tolas	1	1	6
Wages for carding and making	0	3	6
Slivers—about 92 tolas when spun; 90 tolas of yarn is obtained and wages for spinning and warping it is	1	2	0
Weaving wages at As. 2-8 a yard of 40 inches	1	2	9
	3	9	9
	or 3	10	0
Weaver's sale price to khaddar organizations	3	11	6
Weaver's profit	0	1	6

RS. A. P.

Khaddar organization sale price to whole-sale dealers taking a profit of $6\frac{1}{4}$ per cent	3	15	3
Retail sale price	4	6	0

The annual production of khaddar cloth in this district is worth Rs. 1,25,000, about half of which is disposed of within the district, the balance being sent to the other Telugu districts.

Hand-loom Weaving.

The population of the district according to the last census was 1,809,574, of whom 47,533 were engaged in weaving and the processes connected therewith. The weavers belong to several castes known as Devangas, Padmasalis, Pattusalis, Thogatas and Malas. The total number of looms at work according to the last census was 14,974, which is the highest number recorded in any district of the Presidency. The Statistical Atlas of the district compiled in 1923, shows an increase in the number of looms by over 4,000, the total number being 19,035, and they are distributed all over the district, Bapatla taluk possessing the largest number. All these looms are engaged in weaving cotton fabrics only. There is no silk weaving in this district.

Cotton weaving in this district may be divided into two chief classes—(1) Coarse cloths made of handspun yarn and (2) cloths of various degrees of fineness of imported and Indian mill yarn, of which the first has been dealt with under hand-spinning. Cloths of the first class are coarse but of strong texture, and are worn chiefly by agriculturists of both sexes in upland tracts and by Khaddar enthusiasts. The cost of hand-woven cloth is somewhat higher than that of a machine-made one but being of stronger texture and warmer, it is generally preferred by the poorer classes of people. The weavers of this kind of cloth are chiefly Padmasalis and Malas, and they are scattered throughout the villages of cotton-producing taluks, but never in large numbers together in any centre as the demand is limited. Saris, khanduwas, dhotis, turban cloths, towels, coating and shirting cloths of 10s to 20s generally, and occasionally of 30s, are woven. Dyed yarn is used only for the borders of the cloth. Seventy-five per cent of the khaddar cloth woven in this district is taken over for export and sale by Khaddar organizations, four in number. All the looms using hand-spun yarn, with the exception of a few here and there, are fitted with fly shuttle slays.

Most of the weavers in the district are engaged in weaving cloth (1) of imported and Indian mill yarn. The chief weaving centres are Mangalagiri in Guntur taluk, Phirangipuram and Sattenapalli in Sattenapalli taluk, Ipurpalem, Chirala, Perala, Vetapalem, and Pandillapalli in Bapatla taluk, and Repalli, Peturu, Arumbaka, Bhattiprolu, Addepalli, and Ilavaram in Repalli taluk, of which Mangalagiri, Ipurpalem, Chirala, Perala, Vetapalem, Pandillapalli, Bhattiprolu, Addepalli, and Peteru are the principal centres of the industry. Imported mill yarn of counts ranging from 20s to 60s are generally employed, higher counts up to 100s being only used occasionally. The yarn (English, Japanese and Indian) is obtained from Madras, Calcutta, Bombay, etc., and dyed yarn from Madura. Yarn is also dyed at Chirala, but this yarn is said to be inferior to that produced in Madura. There are several yarn merchants who are keeping wholesale shops in almost every important weaving centre of the district, from whom the local weavers derive their supplies.

Imitation silk and mercerised yarn are also used for weaving saris and for borders of the cloth, and they are obtained from Madras. Gold lace is used only for cloths made to order.

The processes and implements are the same as those in use elsewhere. All the looms, with the exception of a few, are fitted with fly shuttle slays. The use of dobbies is known only in Bapatla taluk, and about 150 are employed in the chief weaving centres of that taluk for producing designs in borders of saris, etc. The looms and dobbies are prepared by the local carpenters. The preliminary operations followed include winding on tin bobbins or paritas, peg warping with certain exceptions, and street sizing. There are about 100 warping mills at work in the principal centres of weaving, of which Chirala, Vetapalem, and Mangalagiri possess the largest number. Preliminary operations of winding and warping are generally carried out by womenfolk and children. Sizing is invariably done by the weaver with the help of his brother weavers, and occasionally he engages coolies. Each weaver works by himself with his family for about eight to ten hours a day. For winding one ladi of yarn either on paritas or tin bobbins, the wages usually paid is 3 pies and for warping 2 pies to 3 pies. Prepared warps are also sold at some places such as Mangalagiri and Chirala. The length of the warps vary in different centres according to the pattern to be woven 18 to 19 yards for lungis at Vetapalem and Chirala, 19 cubits

for rumals and 42 cubits for saris at Chirala, 27 yards for dhotis, khanduwas and saris at Guntur, 20 to 22 yards at Mangalagiri, and 12 to 14 yards elsewhere. Two to four persons are required for sizing according to the length of the warps. As already stated, sizing is generally done by joint labour among the weavers but if hired labour is employed each sizer is paid 4 annas to 5 annas a day. On an average each weaver, who works for about ten hours a day, is able to weave 7 to 8 yards of 20s, 6 to 7 yards of 40s, and 5 to 6 yards of 60s, and earns wages of 8 to 12 annas. An extra wage of 4 to 8 annas for a piece is paid for producing elaborate figure patterns. The daily wages of a woman on an average comes to about 3 annas and that of a child to 6 pies.

Dhotis, khanduwas, saris, lungis or kailies, rumals, turban cloths, duppatis, and shirting cloths, are the chief kinds of cloth woven in this district. Of these, lungis are manufactured mainly at Chirala, Vetapalem, and Pandillapalli villages of Bapatla taluk, and also at Battiprolu, Addepalli, etc., villages in Repalli taluk. Rumals used by Muhammadans are made at Chirala only. The weavers of Mangalagiri produce only saris, khanduwas, and dhotis. The khanduwas and dhotis contain thin black and red borders, while the saris are of various degrees of fineness. In making coloured saris imported dyed twist, Madura yarn, and yarn dyed at Chirala are used. These saris, khanduwas and dhotis are made of 20s to 60s yarn and most of them are sold within the district, while small quantities are sent to Kistna, Nellore, the Nizam's Dominions, and the Ceded districts. The lungis made in Chirala, Vetapalem, and Pandillapalli are of a standard size, and are exported to Penang, Singapore, Federated Malay States, Colombo, Rangoon, etc. A different pattern of lungis, called "Sarama" or double lungis 36 cubits by 45 ins. of 30 punjams, is also manufactured at Chirala, and chiefly exported to Aden, Rangoon, and Colombo, abroad, and also to the Nizam's Dominions. There are about 100 merchants at Vetapalem, Pandillapalli, and Chirala who trade in lungis and have wholesale contracts with Madras firms. The agents of Madras exporters distribute orders to the local lungi merchants, supplying samples and quoting prices, purchase stocks wholesale and consign them to Madras. The monthly exports are worth about a lakh of rupees from these places. The rumals prepared at Chirala are of different patterns with flower designs, and they are chiefly sent to Arabia and Turkey, and also to the Nizam's Dominions. Both grey and dyed yarn of

40s are used in their manufacture. The length of the warp for these rumals is 10 cubits by 45 ins., containing 26 punjams, and one tan or eight pieces of rumals are woven from this by a weaver within three or four days, if they are of ordinary quality, and within eight days, if of superior quality. About Rs. 25,000 worth of rumals are produced every month. There are commission agents between the local rumal merchants and the dealers at Aden and in the Nizam's Dominions, and through them orders are executed. Merchants in the Nizam's Dominions also periodically visit Chirala for direct purchase. The rumal trade has been declining during the last ten years, as similar goods are being prepared now in the Nizam's Dominions. The value of the total annual outturn of all kinds of cloth in the district may be estimated at 20 lakhs of rupees.

The cost of manufacture of two lungis is given below:—

1. Coloured lungi: 18 yds. by $\frac{3}{4}$ yds. of 60s warp and 40s weft containing 22 punjams, made into two pieces, weighing about 50 tolas each piece (or 100 tolas whole)—

	RS.	A.	P.
Cost of 14 ladis, which includes dyed yarn	4	12	0
Winding and warping charges	0	6	0
Sizing charges, including the cost of sizing material	1	0	0
Weaving wages (3 days)	1	8	0
Cost of production	7	10	0
Selling price of two lungis	8	0	0
Profits	0	6	0

For weaving the two tans or pieces of lungis 18 yds. by $\frac{3}{4}$ yds. of 22 punjams, the sowcar advances to the weaver 14 ladis of yarns and Rs. 2 to Rs. 3 wages according to the pattern. Rs. 3-8-0 and above is given as wages for weaving a 'saram'.

A plain lungi 9 yds. by $\frac{3}{4}$ yds. is sold at Rs. 3-8-0, and a coloured at Rs. 4, while the plain saram 9 yds. by 45 ins. costs Rs. 5, and coloured Rs. 5-12-0.

2. Rumals: Mardani variety (male cloth), 19 cubits by 45 ins. of 26 punjams—superior variety—

	RS.	A.	P.
Yarn of 40s	2	14	0
Wages for tying knots	0	10	0
Winding and warping, etc.	0	8	0
Dyeing	0	8	0
Weaving wages	4	8	0
	9	0	0
This is made into 8 pieces of rumals.			
Sale price	9	8	0
Profit	0	8	0

Ordinary rumals are sold at Rs. 3 to Rs. 6 per tan of 8 pieces, and superior rumals from Rs. 9 to Rs. 20 a tan of 8 pieces. For weaving one tan of ordinary plain rumals, 10 ladis of yarn plus Rs. 1-4-0 wages are usually given to the weaver.

3. Economics for weaving 6 dhotis or 8 khanduwas or 3 saris of 40s yarn 22 yds. by $1\frac{1}{4}$ yds. containing 24 punjams weighing about 2 lb.—

	RS.	A.	P.
Cost of yarn—17 ladis	5	5	0
Winding and warping	0	8	0
Sizing	0	8	0
Weaving (4 days' time)	2	8	0
	8	13	0
Sale price to the sowcar	9	0	0
Sowcar's selling price	9	8	0

The conditions under which the weavers work have been fully described in my report on the Cuddapah district. The wages earned by the ordinary weavers throughout the district do not exceed 8 annas per day. When they work on old country looms fitted with hand-thrown shuttle slay their wages hardly exceed 6 annas, but those who work with fly-shuttle slay are able to earn 8 annas per day. Independent workers who purchase their own yarn and sell the goods in the market make about 2 annas more than the ordinary weavers. It will be seen that the earnings of a weaver barely affords him a living wage, even though he has the assistance of his women and children. Added to his poverty he is also addicted to drink which seriously affects his slender income. As a rule,

the weavers are indebted to the sowcars or the capitalists, and the average indebtedness of a loom ranges from Rs. 50 to Rs. 200. Except a few in Bapatla taluk, none of them possess any landed property. There are no co-operative societies for the weavers anywhere in the district. A credit society called "Padmasali Parapati Sangam," with a capital of Rs. 5,000, has been organised in Mangalagiri, but this is not intended for the weavers only. Only 30 persons have up to now taken shares in it.

The lines on which the condition of the weavers can be improved and the industry developed, have generally been indicated in the reports of the districts already surveyed, but the question will be thoroughly examined in the final report of the Presidency.

Dyeing and Printing.

The industry of dyeing and printing in this district may be subdivided into (i) the dyeing of cotton yarn and (ii) the dyeing and printing of cotton cloth. Yarn dyeing is carried on by Baliyas, Weavers, Thogatas, Meris, Gollas, Washermen, and Muhammadans, at Mangalagiri, Kunchenapalli (hamlet of Ipur), Muppala (Vinukonda taluk), Ulchi, Bhatiprolu, Addepalli, and Kanagala, while dyeing of both yarn and cloth is done by Telagas (or Baliyas), Rangrezus, Vysias, Salis (weavers), Washermen, and Muhammadans, at Guntur, Rentapalla, Phirangipuram, Rajupeta, Potavaram, Ongole, Inamanamellur, Nandipad, Chadalavada, Chirala, Perala, and Vetapalem. Of these places Chirala, Perala and Vetapalem in Bapatla taluk, Rajupeta and Potavaram in Narasaraopeta taluk, and Inamanamellur in Ongole taluk, are the chief centres of the industry.

-Yarn Dyeing.

Synthetic dyes and also a few indigenous dyes are chiefly used for dyeing yarn. Naphthol colours, alizarine red, and aniline black are the chief synthetic dyes used, and among the indigenous dyes vegetable indigo, Chiranjee-morinda bark, Kasa leaves, and ashes of milk-hedge for red, are chiefly in use. In Bhatiprolu, Addepalli, and Kanagala villages of Repalli taluk, Ulchi in Ongole taluk, and Rajupeta in Narasannapeta taluk, the weavers themselves dye yarn for weaving cloth. In the remaining villages dyeing is done on piece wage system by professional dyers such as Telagas (Baliyas), Rangrezus, etc. Yarn of 20s to 60s only is dyed in this district, as it is mostly in use for weaving coloured fabrics.

Indanthrene blue is used only by a few dyers at Chirala. The charge for dyeing 5 lb. of yarn with indanthrene blue is Rs. 3, and for dyeing it with naphthol colours Rs. 2. Alizarine paste is rarely in use now as it has been replaced by naphthol dye. The above rates are in vogue at Chirala, which is the principal dyeing and hand-loom weaving centre in the whole district. At Phirangipuram, Mangalagiri, and other places, at least Rs. 2-8-0 to Rs. 3 is paid for dyeing 20s box (10 lb.) with naphthol red, and Re. 1 to Re. 1-4-0 for dyeing with aniline black dye. Ordinarily three men dye 35 boxes of 5 lb. each in a day with naphthol colour, and for this at least three naphthol sets are required. In Vetapalem, Chirala and Perala villages coolie dyers are engaged by the weavers and they are paid 8 annas as wages per day each, the naphthol colours being supplied by the weavers. About 100 bales of yarn is dyed monthly at Chirala, which exports dyed yarn to several places in the Circars.

Cloth Dyeing.

There are about 100 karkhanas or dye houses, each engaging two to ten coolies, or about 500 coolies in all at Chirala which is the largest centre of dyeing in the district. The water of the Kunderu here is said to be specially suitable for dyeing purposes. Besides these karkhanas there are also about 150 individual dyers who dye for the sowcars on piece wage system. The dyers engaged in the karkhanas are paid monthly salaries ranging from Rs. 2 to Rs. 30 for full 30 days work. Boys who assist in the preparatory processes receive wages ranging from Rs. 2 to Rs. 10, while adults who do actual dyeing and block printing are paid from Rs. 15 to Rs. 30. Only foreign dyes, mostly of German origin, are used. The main dye stuffs used are naphthol, alizarine red, indanthrene blue, and other aniline dyes. Mordants such as leaves, etc., are used for alizarine colours, and Tantepu seeds for indigo dyeing. Alizarine is purchased locally at Rs. 54 a cwt. and naphthol sets at Rs. 12 a set. Indanthrene blue is obtained at Rs. 3 to Rs. 4 a pound. Naphthol soap, caustic soda, formaldehyde are also locally purchased at 4 annas, 3 annas, and 6 annas per pound respectively. There is no kalamkari work known as Palampore printing of Bandar type here. Japan sine (Ramabhanam mark) mulls, Trichur mill cloth, and rarely khaddar for saris, dhotis and khanduwas, are dyed and the borders are block printed. Naphthol colours, especially for red and chocolate, alizarine for red, and aniline salt for black, are mostly used for cloth dyeing. Wax is applied only for naphthol dyeing and printing, and it is

purchased at 3 annas a pound. One naphthol set is utilized for dyeing and block printing 6 to 12 kora sine tans. The wages paid for dyeing a 40-yard tan is As. 1-6 to 2 annas, and one can dye ten such tans in a day. For block printing a tan of 40 yards with naphthol red flowers, Rs. 3 is charged, and for block printing black flowers with mica, Rs. 4-8-0 per piece is paid. Forty tans are usually dyed and block printed in a week by four to six men. Rupees 3 is charged for dyeing and printing a tan of 40 yards with alizarine and black jet. Bleaching is done by the dyers as well as washermen, and As. 2-6 is paid for bleaching 1 tan. Sungadi saris of Madura type are prepared at Chirala, and the process of their preparation is similar to that described in the Madura report. Knots are tied by girls and women of all castes, except Brahmans. For tying knots in a tan of 40 yards the wages paid is 8 annas. About 50 tolas of 40s yarn is supplied to each woman or girl for tying knots in a tan. A woman or a girl is able to tie knots in about 14 yards of cloth in a day. These Sungadi saris are dyed with alizarine red. About 100 bales of cloth (each bale containing 50 tans of 40 yards each) are dyed monthly at Chirala and most of this production is done on behalf of the sowcars, who export the dyed cloths to the Northern Circars, the Ceded districts, South Arcot, and the Nizam's Dominions.

At other places there are no karkhanas but each dyer works by himself assisted by his family. The charges for dyeing at these places vary slightly from those given above. Khaddar yarn and cloth is dyed by the dye house opened by the All India Spinner's Association, Andhra Branch, Guntur, under the supervision of a master workman who has undergone training in the National College, Masulipatam. A printer and two washermen are also employed in the dyehouse. Washermen attend to bleaching besides dyeing. Both indigenous and foreign dyes are used for dyeing yarn, as well as for cloth. Borders are also printed lac and mica colours with stencil blocks. About 1 maund of khaddar yarn and 2,000 yards of khaddar cloth are dyed monthly for the All India Spinners' Association, who export dyed khaddar cloth to the Circars, Nellore, Chittoor, and Madras Khaddar Depot.

The industry is not organized, and the dyers are entirely in the hands of the sowcars and karkhana keepers, who supply cloth to them and regulate their wages according to market conditions. The lines to improve this industry have been indicated in the reports of the districts already surveyed, and I have no special recommendations to make.

Wool Spinning and Cumbly Weaving.

This industry is exclusively carried on by Kurumas at Dronadula in Narasaraopet taluk, Idimudi, Tativaripalem (hamlet of Bollapalli), Maddiralamuppala, and Koniki in Ongole taluk, and Arepalli, Arumbaka, and Kurupupalem (hamlet of Tsandavole) in Repalli taluk. Of course, Dronadula, Idimudi, and Kurupupalem are the principal centres of cumbly weaving in the district. There are about 180 looms at work. As raw wool is rarely obtainable in their own villages in quantities sufficient to keep them busy throughout the year, the Kurumas have to go for wool to villages in Bapatla taluk, where large flocks of sheep are maintained by Gollas and Kamma ryots. The staple available here is short, being only 2 ins. to $2\frac{1}{2}$ ins. long and coarse.

The methods adopted in shearing wool from sheep, cleaning and carding, and spinning and weaving it, are more or less the same as in Kistna and West Godavari districts. Here also, the shearing of wool is done twice a year, i.e., once in January and again in July, and the price paid for shearing it from 100 sheep varies from Rs. 6 to Rs. 12, with a cumbly worth about Rs. 1-8-0 to Rs. 3. Usually for shearing 100 sheep the charges paid are Rs. 6, and a cumbly worth Rs. 3, and the yield of wool averages from 12 to 14 viss (each sheep yielding about $\frac{3}{5}$ th seer). Shearing is done by the Kurumas themselves. After shearing, the wool is sorted according to colour, then cleaned and teased by hand, and carded with a stringed bow by the Kuruma himself. Where, however, large quantities of wool are required to be cleaned, the services of a dudekula (a professional bowman) are requisitioned. Two dudekulas can card one maund in a day and they are paid 8 annas each with one meal. There will be a wastage of $\frac{1}{4}$ to $\frac{1}{2}$ viss in carding one maund. Live wool is not generally sold, but when necessity arises each Kuruma takes wool from his brother Kuruma either on credit or on payment of Re. 1 a viss. Dead wool is not utilised in these parts. The yarns are spun by the Kurumas assisted by their own womanfolk by means of a spindle turned on the lap. The daily outturn of a spinner working for eight to ten hours is 1 to $1\frac{1}{2}$ seers. The wages paid for spinning 1 viss are 4 annas. After the wool is spun, it is peg-warped and sized with a paste of tamarind seed or kajagaddalu. The cumblies are woven on crude country pit looms and the shuttle used is a piece of hollow bamboo with a closed bottom. Weaving is mainly done by the males.

The cumblies made here are of 2 patterns, viz., (1) ordinary cumblies of several sizes and varieties; and (2) "Jorahs," thick variety, which are subjected to the process of "mulling." Coarse cumblies of ordinary loose structure of 6 cubits 1 span ($3\frac{1}{4}$ yards) by 2 cubits 1 span ($1\frac{1}{4}$ yards) are usually made for the market, but cumblies of finer make and bigger size (7 cubits by 5 spans), or check patterns are also made to order. The ordinary cumby costs Re. 1-4-0 to Rs. 1-8-0 while a nicer variety with stripes costs Rs. 3 to Rs. 4. A family consisting of a husband, wife and a child can prepare one ordinary cumby in a day. If hired labour is engaged, wages of 4 annas is paid for weaving one ordinary cumby. At least $1\frac{1}{2}$ to 2 days time is taken for weaving superior varieties, and the wages varies with the fineness and texture of the cumby. The jorahs are made of white and black woollen yarn. They contain about 6 ins. black border on the four sides and are seven cubits long and five spans broad. After they are taken out of the loom they are subjected to the process of "mulling" (described in the Kurnool report), in order to secure closer texture and softness to the touch. At least four men are required for rubbing, while a woman is necessary to keep the water boiling and supply it to the workmen. No coolie is engaged for this as each weaver is assisted by his brother weavers. There is considerable shrinkage of wool in the process and the seven cubits jorah when treated in this way is reduced to four cubits one span in length with a corresponding contraction in breadth. These jorahs are sold from Rs. 2 to Rs. 10 according to quality and size. The market variety 4 cubits by 5 spans cost Rs. 2 only, and one day's time is taken to weave it. As in the case of a cumby, the wages paid for weaving an ordinary jorah is 4 annas.

Economics of weaving an ordinary cumby 7 cubits 1 span by 5 spans, weighing about $\frac{3}{4}$ to 1 viss with ganji, price Rs. 1-8-0.

Cut wool—

	RS.	A.	P.
Warp : 3 seers, weft : $1\frac{1}{4}$ to $1\frac{1}{2}$ seers	0	8	0
Spinning charges	0	3	7
Sizing materials	0	0	3
Weaving	0	4	0
	0	15	10
Present price	1	8	0
	0	8	2

On an average each weaver and his family who assist him in the preparatory processes, get about 6 annas to 8 annas a day.

The cumblies are so cheap and stand rough wear and tear so well that they are largely in demand by the agriculturists and the labouring classes. They are mostly sold within the district by the weavers themselves, who go about hawking them in villages. At Idumudi, Tativaripalem, Chinna Ganjam, etc., there are some commission agents of Madras and Bangalore merchants who generally advance money up to Rs. 15 each Kuruma, and take back the finished goods at a rate which is 3 annas less than the market price. Carpet weavers of Bandar and Ellore now and then purchase woollen yarn, white variety, from these Kurumas at Rs. 1-8-0 to Rs. 2-8-0 a viss, according to its quality and fineness.

This industry is not organized, and many of the Kurumas carry on the manufacture only as a subsidiary occupation. During transplantation and harvest seasons the majority of them work in the fields as they get better wages. The rainy weather is not suitable for weaving as the preliminary processes of warping, sizing and weaving are generally done in the open air outside their houses.

The chief obstacle for the progress of the woollen industry in this district is the scarcity of suitable raw material. Defective breeding of wool-yielding sheep, and insufficient nutrition, and the lines of improvement, have been suggested in the Bellary District Report.

Mat Industry.

Kora or reed mats.

The industry of kora mat weaving is carried on at Inavole in Vinukonda taluk. The village is two miles east of Gundlakamma railway station and seven miles distant from Vinukonda, headquarters of the taluk. There are altogether 38 families, consisting of about 60 males and 80 females, engaged in mat weaving, and they are of castes known as Biksha Guntas alias Pichi Guntas, Thogatas, Gollas, Telagas, Muttrasis, Malas, Muhammadans, and Dudekulas. Mat making is only a subsidiary occupation for all these people, who during agricultural seasons prefer to work as coolies and earn a better living. The total number of looms at work at present is 60. On an average males work for about ten hours a day, and females for about five or six hours. Weaving is solely done by the males, while females assist them in preparing aloe fibre thread required for warp.

The mats are woven from "tunga" (otherwise known as "kora") grass, which grows along the banks of rivers, water channels, and edges of stagnant pools. It is not available in Guntur district. The mat makers therefore get it from Manneru in Pamur taluk of Nellore district (about 80 miles distant from Inavole), Duvvaleru in Markapur taluk of Kurnool district, Bagaleru vagu of Giddalur, and Kamala cheruvu in Nandyal taluk of Kurnool district. It is said that reeds brought from Manneru and Duvvaleru are the best. The season for cutting reeds is from December to March. The workers generally go in groups to cut the reeds. They usually bring home quantities sufficient for use throughout the year. They contribute joint labour and the quantity obtained is distributed equally among themselves. The right to cut the growth on river and tank channels in the Nellore district is oftentimes sold by Government to contractors, with whom the mat weavers have to bargain. Last year Rs. 100 to Rs. 120 was demanded from the workers by the contractor at Manneru for cutting the growth there, which when cut yielded 16 cartloads of reeds. To this must be added the cost of cutting, cartage, etc. The removal of the pulp from the reeds and splitting it into two is all done at the spot. Four people can cut and prepare a cartload (or 20 headloads) of reeds within a month. Rupees 15 is incurred towards charges for conveyance of one cartload of prepared reeds from Manneru to Inavole. On an average a cartload of reeds costs them about Rs. 30 including charges for cutting and transportation.

The warp required for weaving mats is prepared from aloe fibre, which comes from Sirigiripadu, Veldurti, etc., in Palnad taluk, and Mellavagu in Vinukonda taluk. It is stocked by the local sowcars, from whom the workers purchase it at Rs. 30 a candy or Rs. 1-8-0 a maund. One candy of aloe fibre is required for preparing mats from one cartload of reeds. One seer of aloe thread is sufficient for weaving a mat and the warp required for a pair of plain mats is prepared in a day. The loom is of the same kind as used in the Ceded districts. No shuttle is generally used, but the kora edge weft, soaked in water, is passed through the warp by means of a stick, at one end of which is an eye for hooking the sedge. Each man weaves at least one ordinary mat, four cubits long and two cubits or five spans wide in a day, earning on an average 4 annas thereby. There are some who can weave about 6 to 8 cubits a day. One day is required for fastening borders of 5 woven mats of ordinary variety, and 3 pagadasala variety, and 6 pies per mat is paid for this mat.

The mats made here are four cubits long and one cubit to five spans wide, and their prices vary from 4 annas to Re. 1, according to the width of the mat. Dining mats of one cubit to three spans wide are sold at 4 annas each. Ordinarily four cubits by two cubits or five spans worth 12 annas to Re. 1 find a large sale. The workers here prepare fine mats also with designs and patterns known as padmam, pachis, or pagadasala, etc., and sell them at Rs. 2 each, but these are generally made to order. For producing ornamental effects coloured reeds are used, dark red and green being the most popular colours. It is estimated that about 350 mats of all sizes and varieties can be prepared from a cartload of reeds.

As already mentioned the workers here live by agricultural labour when there is demand for such labour, and also occasionally go for coolie work. It is difficult for them to get reeds at all times of the year, nor is it easy to import reeds at considerable cost from other places. They do not work during the rainy season as the looms are too large to be worked indoors. On an average it may be said that they are engaged in this work for about 6 to 8 months if the reeds are available and about 10,000 mats may be taken as the average output of all the looms in the village. The average daily income of a weaver and his family would work out to 6 annas roughly.

There is no steady demand at hand for these mats and the maker himself undertakes the sale of his goods by going from place to place. Generally three or four weavers collect stock from the other weavers, paying from Rs. 75 to Rs. 80 per 100 mats of all sizes and varieties and travel with the load all over the Circars excluding Ganjam, Belgaum, Hubli, Dharwar, Poona, Golkonda, etc., and hawk the ware. I am told that the hawker weaver gets only Rs. 5 to Rs. 10 net income for every Rs. 100 worth of mats sold by him.

Most of the workers are in debt, the indebtedness of each ranging from Rs. 100 if not more. There is of course a Co-operative Society in the village known as "Inavole Mat Weavers' Co-operative Credit Society," started in 1923, but there are only 15 members in it. This society has not been working properly, and it is practically of no help to the poor weaver. What is necessary is an organization for the supply of reeds and aloe from places where they are easily procurable, and for the collection and sale of the products of these workmen. Permission to remove the reeds free of charge,

subject to such conditions as local circumstances may require in each case, may go a long way to help the poor employed in the business.

Date Mats.

About 20 families of Erukulas in Kocherla village of Vinukonda taluk weave date mats during the non-agricultural season. The leaves required are cut and removed free of charge from the trees grown in the neighbourhood and in the porambokes and forests near Ipur, Garikipadu, Gammanampadu, Subbayyapalem and Pandipadu, and Marrivemula (Markapore taluk). The leaves are dried for one day and split into two. Males and females, as well as young boys and girls, do this work in their leisure hours. One ordinary mat four cubits by two cubits or 38 inches worth 4 annas is usually prepared in a day by one man or woman. There are a few who can weave $1\frac{1}{2}$ to 2 mats in a day. A girl can weave half a mat in a day. Mats of thicker variety costing 8 annas each are made to order, and four days' time is taken by a weaver to prepare one such mat. Four ordinary mats are prepared from one headload of leaves.

The supply of leaves is stated to be insufficient, and the present monthly outturn does not therefore exceed 200. At least 20 mats can be woven in a day if there is good supply of these leaves.

There are two sowcars in the village who purchase the mats at 3 annas to 4 annas a mat, and sell them in the neighbourhood, making a profit of 6 pies to 1 anna per mat. These mats are used for packing jaggery, etc., and for spreading purposes.

This is a suitable subsidiary industry for the poorer classes. The Erukulas complain that they are experiencing great difficulty in getting sufficient stock of leaves, and, if permission is given to cut and remove them free of charge from Government reserves in the taluk, it would benefit them much.

Palmyra Mats.

Palmyra mats are woven by Telagas and Adi-Adhras during their spare hours in Amudalapalli, Nizampatam, Padmatlapudi villages of Repalle taluk, where there is considerable palmyra growth. Some of the workers are cultivators

and the rest are daily labourers. The leaves are either got from their own trees or purchased at Re. 1 per 100 and dried in the sun. The nerve portion is removed with a knife and the leaves are roughly trimmed before they are woven into mats. Eight mats are usually woven from a headload of 50 leaves or 100 mats from a cartload of 600 leaves. The mats woven here are 6 feet long and 3 feet or $3\frac{3}{4}$ feet wide and are worth 2 to 3 annas each. Each man or woman, working for about 8 hours a day, can prepare three or four mats. These mats are chiefly used for spreading purposes. About Rs. 500 worth of mats is the annual outturn in all the three villages, and they are sold to sowcars and others in Nizampatam, Repalli, and Cherukupalli fairs.

Cotton Carpet Weaving.

Gummanampadu, in Vinukonda taluk, was once noted for its cotton carpets or "Jambakanams," but recently, for want of sufficient work and encouragement, the weavers, who are Muhammadans, left the place for good and have settled at Julakallu of Palnad taluk. There are at present three families, consisting of four males, three females, and seven children, who are engaged in cotton carpet weaving at Kulakallu, financed by a local sowcar who supplies them with yarn, dyes, etc., and takes back the finished articles, paying them piece wages. Only two looms, vertical type, are now at work. Males work for about eight hours a day, and females who assist them in the preparatory processes, such as winding and twisting, work for about five hours.

The carpets prepared here are 4 cubits long by 5 spans wide, with black, white, and red stripes, costing from Rs. 5-8-0 to Rs. 7. 6s mill yarn is used for both warp and weft. Four threads of this yarn are twisted together by a charka and used for the warp. The weft also consists of four threads, which are not twisted but folded. The threads are dyed with alizarine red and aniline black. The size of warp here is 16 cubits for four carpets and two men weave about 3 spans a day, earning 6 annas each. No shuttle is used, but the weft yarn made into a convenient bundle is passed through the warp and pressed down with a toothed hand-like wooden block to secure closer texture. The sowcar pays for each carpet Rs. 3 as wages for ordinary variety and Rs. 3-4-0 for superior variety, supplying the yarn and the dyes required.

Economics for weaving a superior carpet of white, black, and red stripes, 4 cubits by 5 spans, weighing about 7 to 8 seers worth Rs. 7—

	RS.	A.	P.
6s mill yarn, half a box	3	0	0
Dyes given by the sowcar	0	4	0
Amount paid by the sowcar to the weaver for weaving the carpet	3	4	0

Weaver's expenditure out of Rs. 3-4-0 paid to him by the sowcar :—

	RS.	A.	P.	
Winding and twisting ... 0 12 0	0	12	0	These are done by the weaver and his family. No coolie is en- gaged.
Dyeing ... 0 4 0	0	4	0	

Weaving wages for two men for three days	2	4	0
	3	4	0

	RS.	A.	P.
	6	8	0
Sale price	7	0	0
Profits	0	8	0

The average monthly outturn of each loom at present is eight carpets or sixteen carpets for both. As already mentioned, the weavers are not working independently, but are making carpets for the local merchant, who sells them in the village and in the neighbouring villages through hawkers. As the output is very limited, the carpets are not exported elsewhere.

Cotton Patti or Screen Industry and Sash Weaving.

Coarse cotton pattis, used largely as purdas (screens) and stitched into "Valasamus" (pedlar's bags) are produced at Macherla in Palnad taluk on a small scale affording employment to about 20 families of Lingabalijas, consisting of about 50 males, equal number of females, and 30 children. This is their sole occupation except in cultivation and harvest seasons, when they go out for coolie work in fields. They also weave cotton sashes or "kasikokas" along with the screen cloth. On an average the males work for about ten

hours a day, and females for about five to six hours. There are at work at present about 20 looms of the ordinary primitive type, and similar to those used for weaving hemp tattus in the Cuddapah district.

Each purda piece is generally ten yards long and ten inches wide of 14s warp and rough handspun yarn weft. For a complete purda or screen, five 10-yard pattas are required, and each is torn into four pieces, thus making twenty pieces in all, and stitched to one another. An ornamental effect is produced by dyeing the lengths alternately red and black. The borders are covered with newar and stitched and 21 copper rings are fixed on the top. 14s mill yarns are used for warp, with their edges twisted together. For winding and twisting a ladi of yarn used for warp the wages paid is 2 annas. Warping is done by the weaver on pegs fixed on the wall, and the length of each warp is ten yards, made of $2\frac{1}{2}$ ladis of yarn. If hired labour is engaged, wages of 6 pies is paid for warping $2\frac{1}{2}$ ladis of yarn required for a patta 10 yds. by 10 ins. Handspun yarn required for weft is prepared by the female members of the family, who spin at Re. 1-6-0 a viss. The weft also consists of three threads wound on a "pantee," but not twisted together. The yarn is not sized, and no shuttle is used, but the weft yarn, wound round a piece of stick, is passed through the warp and beaten tight with a wooden knife. In this way each man is able to weave ten cubits or five yards in a day, and earns about 8 annas, and at this rate two days time is taken for weaving a patta 10 yds. by 10 ins., and full ten days for weaving a complete purda excluding preparatory processes.

Dyeing of purda cloth with red and black is done by five families belonging to "Meri" caste. Alizarine for red, and a preparation of myrabolam, iron sulphate, etc., for black, are used. For dyeing the twenty pieces of pattas required for a complete screen, the wages paid to the dyers is Rs. 4 and they take ten days for dyeing (eight days for bleaching eight times in sheep dung, oil and tsoudu and two days for washing and dyeing with red or black). For bordering a complete purda, 18 yards of newar 2 ins. to 3 ins. wide, worth Rs. 1-14-0, is required. This newar is prepared locally by Dudekulas. For stitching the twenty patta pieces into a complete purda with newar border and 21 rings fixed at the top, a "Meri" is paid Re. 1 wages by the weaver. The rings are made of copper wire by the local goldsmiths. About ten tolas of copper wire, worth As. 6-8, is required for making the full set of 21 rings, and the brass-smith is paid

wages at the rate of three pies per ring, the total cost of the set of 21 rings thus amounting to Re. 0-12-0. The purdas are of different sizes, and sold by weight at Re. 1-4-0 a seer. The complete purda $5\frac{1}{2}$ yds. by $2\frac{1}{4}$ yds, weighing about 4 viss, is usually sold at Rs. 25.

The cost of manufacture is—

For one patta 10 yards by 10 inches weighing $4\frac{1}{2}$ seers—

	RS.	A.	P.
Warp yarn required is $2\frac{1}{2}$ ladiis	...	1	4 0
Winding and twisting this	...	0	5 0
Peg warping	...	0	0 6
Weft yarn—2 seers	...	0	14 0
		2	7 6
Weaving wages for two days by one man	...	1	0 0
Dyeing with black and red	...	0	12 0
		4	3 6

Five such pattas are required for full purda—

	RS.	A.	P.
Thus cost of full purda	...	21	1 6
Newar for bordering the full purda	...	1	14 0
Rings	...	0	12 0
Stitching charges	...	1	0 0
Cord for hanging	...	0	6 0
		25	1 6
	or	25	0 0
Sale price	...	25	0 0

There is practically no gain except the wages earned by the weaver, amounting to about 8 annas a day for weaving, and by the members of his family for assisting in the preparatory processes such as spinning, winding, and twisting, etc.

These purdas are generally made to order. Orders for them are received from or through the officials of the taluk.

There are now sowcars in the village who finance the weavers and take back the finished goods. For want of sufficient work, only four out of the twenty looms are now engaged in weaving the purda cloth. The monthly outturn of each loom is three complete purdas if there is sufficient work, but the average annual outturn of the four looms at present is said to be only 50 purdas.

For weaving pattas for bags, two threads of 14s yarn are twisted together for warp. The wages usually paid for twisting one ladi of yarn for this purpose is 3 annas. Here also warping is done on pegs, and wages for warping one ladi comes to 6 pies. The weft consists of three threads of handspun yarn wound on pants. One patta of 10 yards by 7 or 8 inches is torn into 3 pieces, which are stitched together and folded into a bag and the sides stitched. A weaver takes two days' time for weaving a patta required for a bag, and earns from 5 to 6 annas a day. Stitching is done by the weaver himself. These bags are also sold by weight, and each ordinary bag, weighing $2\frac{1}{2}$ seers, is sold for Rs. 2. The bags are mostly used by Vysya merchants, pedlars, bangle sellers, etc., for carrying rice, salt, pulses, bangles, etc. All the 20 looms are engaged in weaving these bags and the average monthly outturn of each loom is 15 bags.

Economic aspect—one bag.

	RS.	A.	P.
Warp yarn, $1\frac{1}{2}$ seers	...	0	10 0
Winding and twisting and warping	...	0	3 6
Weft yarn, 1 seer	...	0	6 6
Weaving and stitching, 2 days	...	0	12 0
		2	0 0
Selling price	...	2	0 0

On an average about 3,000 bags are made every year, which are sold locally and also sent to other places, especially the Nizam's Dominions.

Besides making pattas for screens and bags, the Linga-baliyas weave sashes or kasikokas, 7 cubits by 3 ins. on the same loom. These sashes are either pure white or dyed red,

the former variety being sold at 8 annas each and the latter at 10 annas each. Two threads of 14s mill yarn are twisted together and used for both warp and weft.

Economics for weaving a sash.

	RS.	A.	P.
Yarn for warp and weft—8 tolas of 14s ...	0	2	6
Weaving charges, including preliminaries—one day by one weaver ...	0	5	3
	0	7	9
Dyeing charges with alizarine by a "neri" ...	0	2	0
	0	9	9
Selling price ...	0	10	0
Profits ...	0	0	3

There is no demand for these sashes nowadays, belts having now taken their place. They are woven only whenever the Lingabalijas have no other work to do. Washermen, barbers, etc., go in for these sashes.

The makers are generally poor and have to depend upon local sowcars for the money necessary to purchase yarn, not only paying them the profit charged on the yarn sold to them, but also on the value of yarn given to them on credit. If a co-operative credit society could be formed specially for this class of workers, and yarn supplies arranged for, their profits will be greater. The screens prepared here are strong and durable, and if advertised can have an extended market.

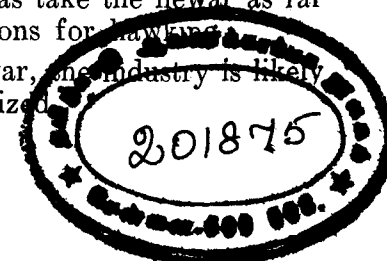
Cotton Tape Making.

About fifteen families of Dudekulas in Macherla village of Palnad taluk, weave, during their leisure hours, cotton tape or "newar," largely used for lacing country cots. This is followed as a subsidiary occupation to cotton carding, slivering, preparing beds, etc., and also agricultural labouring during transplantation and harvest seasons. On an average a man works for about eight to ten hours a day, and a woman for about six hours. There are about 15 looms at work. They are similar to the one used in "tattu" weaving, but the width is smaller, being only two inches. Mostly handspun

yarn and rarely mill-made yarn of 14s are used. The hand-spun yarn is generally produced by the weaver's family. It is also spun by Lingabalija women, to whom the weaver supplies slivers and takes back yarn, paying them wages at 1 anna to As. 1-6 for one savaseer of yarn (4 savaseers is one viss). This handspun yarn is very thick and rough. Mill-made yarn of 14s is used only for newar made to order. It is purchased from the local yarn merchants at Rs. 7 to Rs. 7-2-0 per box of 10 lb. The width of tape prepared here varies from 1 in. to 2 ins., but one inch tape only is usually made. The method of weaving is very simple. Three threads of handspun yarn or nine to fourteen threads of 14s mill yarn are twisted together by women by a charka to make the yarn stouter. Warping is done on eight pegs fixed on the ground, and two vissees of warp is prepared in two hours by a weaver. The warp is then stretched and a single heddle is used. The weft thread, which is wound round a piece of stick, is then passed through the warp and pressed into the right position by means of a hatchet shaped piece of wood, somewhat sharpened along one edge. A man working for about eight to ten hours a day can weave about 50 cubits of newar, and a woman 20 to 30 cubits during her spare hours. Ordinarily two vissees of newar is required for lacing an ordinary cot, and three to four days' time is taken by a Dudekula to weave this. If hired labour is engaged for weaving, 8 annas is given as wages for weaving one viss. Newar is always sold by weight at so much per viss. At present two vissees of newar made of handspun yarn is sold at Rs. 5-12-0. Where newar is prepared of 14s mill yarn, Padmasalis who are engaged are paid 12 to 14 annas as wages for twisting and winding one box of 14s yarn at 1 anna per ladi. Warping and weaving are done by the Dudekula himself, but if hired labour is engaged for weaving, the wages paid for one viss of newar is 12 annas. This mill yarn newar is now sold at Rs. 7 to Rs. 7-8-0 for two vissees; but, as already stated, it is made to order only. On an average eight days' time is taken by each family to prepare two vissees of newar, and 4 annas may be taken as the daily earnings of each tape-maker. As this is not the whole-time occupation of the Dudekulas here, the monthly production is only about Rs. 100 worth of newar, most of which is consumed within the district. The weaver himself directly sells the newar he prepares, and sometimes the Dudekulas take the newar as far as Bezwada and the Nizam's Dominions for lacing.

As there is a fair demand for newar, the industry is likely to be remunerative if properly organized.

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Hemp Gunny Manufacture.

In Maddipadu and Rachavaripalem villages of Ongole taluk, a special class of people called Perikas carry on the industry of weaving coarse sacking or "pattas" from hemp fibre, which are used as gunny-bags, canvas for easy-chairs, cots, etc. There are about 25 families at Maddipadu and 80 families at Rachavaripalem solely engaged in this work during the non-agricultural season. During cultivation and harvest seasons the Perikas, both male and female, go for coolie work in fields. On an average the males work for about ten hours a day and females who assist the males in preparatory processes such as spinning, etc., work for five or six hours.

These pattas are made of sunnhemp or gogu fibre, whichever is cheaply available. Sunnhemp is not grown in Ongole taluk in any large scale, and the little quantity that is grown is mostly used for cattle feeding and manure. For sunnhemp fibre the Perikas go to Vinukonda taluk in this district, Podili taluk in Nellore district, and Cumbum taluk in Kurnool district, during Chaitram and Vysyakam (March to May), where they purchase fibre from the ryots at four to six viss a rupee. There would be at least one viss wastage when the four viss of fibre is cleaned and carded before spinning. Spinning is done by the weaver and his family members by twisting the fibre on the lap by means of a "kaduru" or suspended spindle. The daily outturn of a spinner is three-fourth viss to 1 viss. One viss of thread costs 8 annas to 10 annas. Warping is done on the loom itself, and the warp is removed and soaked in water, placed on a slab and beaten, so that any impurities still remaining in it may be removed. The length of the warp is usually 25 cubits, containing 80 to 84 threads if the width of the patta is 10 inches and 100 to 120 threads if it is one foot. The warp is sized with rice ganji. The weaving is of the coarsest kind, and the implements used are also quite primitive. The loom is similar to that described in my report on the Cuddapah district. Pattas of width of 10 ins. to 12 ins. only are woven, as the loom is not suitable for weaving more than that width. In each patta four red and four black threads are put in the warp to produce an ornamental effect. For this the yarn is dyed by the weaver himself. A man helped by his family will be able to prepare one patta 22 cubits long by 10 ins. or 12 ins. wide in a day, earning about 8 annas for the labour contributed by himself and his family. If hired labour is engaged, 4 annas is given as wages for weaving one patta, including

preparing warp, dyeing, etc. The 22 cubits patta is stitched into two bags and each bag is sold at Re. 1 to Re. 1-4-0. For spreading purposes the same patta is torn into four pieces and stitched together. Pattas used as canvas for camp chairs, cots, etc., are made to order only.

Economic aspect for weaving a patta stitched into two bags.

	RS.	A.	P.
About 4 viss hemp yarn, of which 2 viss to $2\frac{1}{2}$ viss for warp, 1 to $1\frac{1}{4}$ viss for weft, and $\frac{1}{4}$ viss stitching thread ...	2	0	0
Dyes, red and black, for dyeing 8 pogus in the warp of a patta ...	0	0	6
Sizing materials ...	0	1	0
Weaving ...	0	4	0
	2	5	6
Sale price at present ...	2	8	0
Gain ...	0	2	6

Gogu fibre is available in Ongole taluk. It is used only if it can be purchased for Rs. 30 to Rs. 40 a candy. Beyond that price it might not be profitable to weave pattas with this fibre. In the case of gogu fibre pattas, cleaning and sizing of the warp is unnecessary, and such pattas are also stitched into two bags, each bag being sold at Rs. 1-8-0.

On an average the Perikas do this work for about eight months in the year. The average outturn of each family in the eight months does not exceed 100 pattas. The industry is fortunately not sowcar ridden. Among the weavers there are about 16 persons who take pattas from the other weavers at a price which is 6 pies to 1 anna less than the market price, and they go as far as Rajahmundry and the Nizam's Dominions selling these articles to the merchants, pedlars, ryots, etc. Twelve inches wide pattas are generally purchased at Tenali and other places in Guntur district, and 10 inches wide pattas in Kistna and West Godavari districts.

As a subsidiary occupation this industry affords very good possibilities in that the raw materials sufficient for a year's need can be stocked and drawn upon whenever required, and there is no reason why others also should not take to it. There is a vast area under sunnhemp and gogu cultivation in the district, but the hemp crop is mostly used for fodder and manurial purposes. There is likely to be a wider demand for the pattas if the width can be increased and coarseness of the texture lessened.

Metal Industry.

Durgi in Palnad taluk is the only place in the district where brass and copper images and brass vessels for domestic use are manufactured. There are five families of Viswa-Brahmans, who also carve stone images during their leisure hours. (This is dealt with separately.) There are only five brass-smiths, who work for about eight to ten hours a day, each assisting the other when necessary. Copper is used for casting idols and other figures of gods and goddesses, and brass for preparing "vahanams." This work is generally executed for temples. The size of the copper images made range from one foot to two feet, and that of vahanams about one yard in length and breadth. Old copper wares are purchased from the local sowcars at Rs. 13 to Rs. 14 a maund, and three images of one foot size are cast from one maund of copper. These idols are cast in moulds which are warped with wax, coated over with clay, and then worked and polished by hand, with iron files, chisels, needles, etc. Images made from one maund are usually sold for Rs. 40. Sheet brass, obtained from Narasaraopet, at Rs. 13 to Rs. 14 a maund, is mostly used for vahanams, which are partly cast and partly beaten. Old brasswares purchased at Rs. 8 to Rs. 10 a maund are also used. For vahanams also Rs. 40 per maund is usually charged. Coal is generally obtained from Adigoppala agraaharam at 12 annas a bag.

Economics for preparing three copper images of 1 ft. size from 1 maund of copper—

	RS.	A.	P.
Copper—1 maund	14	0	0
Lead—1 viss	0	12	0
Wax—1 viss	2	8	0
Coal—4 bags	3	0	0
Cow-dung cakes—4 bags at 12 annas a bag	3	0	0
	23	4	0
Sale price	40	0	0
Surplus	16	12	0

The three idols are prepared by two workers in about twenty days, and Rs. 16-12-0 may be taken as wages for their labour or As. 6-8 per day for each worker. As the manufacture of these images is followed more or less as a subsidiary occupation whenever orders are forthcoming, the value of the average annual outturn does not exceed Rs. 400.

As the above work will not keep them engaged throughout the year, they manufacture brasswares such as bindais (water-pots), tappelas (cooking vessels), spoons, lampstands, etc. The work done in this case is plain beaten work and molten metal is used only for the bottom of cooking vessels and sheet for the body and rim. Four ordinary bindais are usually prepared from one maund of sheet brass by a worker, assisted by another, within one month. All these vessels are generally made to order, and the wages paid invariably is Rs. 10 per maund of vessels or 4 annas per seer. The four bindais are sold in retail at Rs. 26 to Rs. 27, i.e., at Rs. 4 per six seers.

Financial aspect: Manufacture of four bindais from one maund of sheet brass—

	RS.	A.	P.
Sheet brass—1 maund and 1 viss at Rs. 13 a maund	14	0	0
Wages paid for preparing four bindais is Rs. 10 of which Rs. 2 is spent for charcoal, tin, wax, etc.	10	0	0
	24	10	0
Sale price	26	0	0
Profit	1	6	0

Rupees 8 is the wages for the labour of the workman, who takes full one month for manufacturing these four bindais. On an average the daily earnings of each worker comes to about four annas.

Big bells hung or used in temples are also cast in bell metal by the workmen here. They purchase old bell-metal wares at Rs. 8 a maund from the local sowcars, who obtain the stuff from Narasaraopet. These bells weigh from 2 viss to 6 viss each and are sold at Rs. 40 a maund. Ordinarily two bells from one maund of metal are prepared. Orders for these bells are very rarely received.

There are no sowcars here who finance these workers and take back from them for retail sale. Orders for the vessels come from the neighbouring villages within a radius of 10 to 15 miles. Only Rs. 1,000 worth of brassware are usually prepared annually.

As the workers are very few in number, there is not much scope for developing the industry.

Camp Furniture making.

Narasaraopet, the headquarters of the taluk and the Revenue division of the same name, has been famous for the manufacture of camp furniture. There are at present eight karkhanas, each engaging about 10 to 25 workers, who are Muhammadans and Telagas. The workers are paid monthly salaries ranging from Rs. 2 to Rs. 22, according to the nature of work turned out by them. The karkhanadars are master workmen belonging to the same castes. They work for nine to ten hours a day from 6-30 a.m. or 7 a.m. to 12 noon and from 2 p.m. to 6-30 p.m. Boys who blow the bellows and assist the workmen are usually paid Rs. 2 to Rs. 4 a month, and workers who earn salaries up to Rs. 15 attend to preliminary and miscellaneous work, such as hammering, riveting, planing, etc., while those who get salaries from Rs. 15 and above are expert workers who do fitting and finishing work. Only four to six workers of the last class are engaged in each karkhana. These salaries are paid to the workmen only if they work for all the days in a month and for short work or absence on any day in the month their salaries will be cut off proportionately. About Rs. 200 worth of implements are required for each karkhana.

Iron bars required for the manufacture of camp furniture are usually obtained from Madras at prices ranging from Rs. 30 to Rs. 33 a candy (20 maunds), according to their size and variety, but these prices often fluctuate according to market conditions. Railway freight charges amount to Rs. 6 per candy of iron bars. These bars are also sold locally and at Guntur at Rs. 2 to Rs. 2-4-0 a maund. White cedar wood required for camp cots and camp rocking chairs is obtained from Kallai in Malabar at Rs. 5 per cubic foot plus Re. 1 railway freight charges, in the shape of reapers of the sizes specified by the karkhanadars. Teak wood is purchased locally or at Bezwada at Rs. 4-4-0 to Rs. 4-8-0 a cubic foot, and the charges for sawing one cubic foot into planks amount to 12 annas.

The furniture manufactured here consists of camp cots (with or without mosquito curtain fittings), camp easy, rocking and swinging chairs, ordinary camp chairs with or without arms, camp tables with or without drawers, camp bathing stools, benches, push-cars for children, and camp cradle stands (cradles are obtained from Madras). On an average about Rs. 6,000 worth of furniture is manufactured in a month in all the karkhanas. All the eight firms have printed

catalogues of their own, and there is good advertisement on modern lines. The camp furniture prepared here goes as far as Madras, Bangalore, the Ceded districts, the Northern Circars, the Nizam's Dominions, and even to the Punjab occasionally. The furniture is generally purchased by merchants of other places who sell the articles in retail at a profit of 4 to 8 annas on each article. It is also handed over to agencies in outside districts on commission basis. Only one firm has engaged travelling agents for advertising and selling stock to merchants and consumers.

There is a great deal of competition amongst the karkhanadars and the profits realized do not exceed 8 annas in the case of a chair and Re. 1-4-0 for a cot. On an average the profits amount to at least Re. 1 on a camp cot, 6 annas on an easy chair, and 4 annas on an ordinary chair.

Most of the karkhanadars are well off and do not require any financial aid. There is no separate co-operative society for camp furniture makers, but there is a credit society in the town in which some of them are members and they get loans from it carrying interest of As. 12-6 per mensem per Rs. 100.

Marble Industry.

Stone polishing on a small scale is carried on at Rentachintala in Palnad taluk by a Roman Catholic Christian, and his two brothers, assisted by two other workmen. They learnt this art from Madras workmen who did sculpture work in the local Roman Catholic church. The marble slabs required are obtained free of charge from the patta lands and Government porambores of the village, about four miles distant from the workspot. These slabs are of different hues, such as black, buff colour, reddish brown, pale bluish green, etc. Marble stone, black variety, is also available at Rayavaram, about ten miles south-west of Rentachintala. The stone is cut from the quarry and the daily output by a single workman is a slab of 8 square feet. No coolies are engaged for the purpose. A cartage of Re. 1 in summer or Rs. 1-8-0 in the cultivation season is charged for carting slabs from fields to the workspot.

Paper weights, table planks of several sizes and varieties (such as round, square, pentagon, hexagon, etc.), tombstones, and polished slabs with inscriptions engraved on them, are the articles prepared here. No mosaic or figure work is attempted.

The workmen work for eight hours a day in a shed about 12 feet square in the compound of the local Catholic church. The master workman pays 12 annas wages a day to his assistants. The tools or implements used are a saw for sawing the slabs to the necessary sizes, chisel and hammer for cutting, dressing, and shaping, and square brick-shaped leaden pieces for polishing them. All these tools are very crude and the process of manufacture is very tedious and occupies a lot of time. Two men take usually $2\frac{1}{2}$ days to saw a table plank $2\frac{1}{2}$ ft. by $1\frac{1}{2}$ ft. by 1 in. thick from a slab 3 ins. thick, and are assisted by another man for sprinkling water while sawing. The slab is then dressed by chisel and hammer and smoothened by rubbing steel powder over the surface with a piece of hard stone, water being sprinkled over it as and when required. It is further smoothened by rubbing fine sand got from Modagals. For polishing it emery powder, both rough and smooth, is rubbed on the surface with water by means of the lead pieces. A light coating of varnish is also given. This process renders the surface smooth and glossy. Four days' time is taken on the whole to complete such a slab and Rs. 3-8-0 per square foot is charged. On an average one man is able to shape one square foot of stone within a day and he takes $1\frac{1}{2}$ days for smoothening and polishing it. Paper weights $3\frac{1}{2}$ ins. by $2\frac{1}{2}$ ins. by 1 in. thick are sold at 12 annas each, and only one such weight can be prepared by a worker in a day. Steel powder for smoothening the surface of the slabs is obtained from the local blacksmiths, and about Rs. 4 worth of powder is required for a slab of 30 sq. ft. Emery powder is obtained from Madras at 10 annas per pound and at least 2 lb. of emery powder is required for polishing 30 sq. ft. For manufacturing tombstones of 3 ins. thickness and above Rs. 3 is charged per square foot and Rs. 3-8-0 is charged for preparing stones below 3 ins. thickness, as in the latter case there is more sawing work involved. For engraving inscriptions, As. 1-6 to 3 annas per letter is charged according to the size of the letter.

The workers complain that they have not sufficient work throughout the year. On an average about Rs. 150 worth of work is executed in a year. Tombstones, table planks, etc. are made only to order. The workmen prepare paper weights whenever they have no other work to do and keep them in stock. These are not advertised or handed over to sowcars for sale but they are generally purchased by Europeans, missionaries, and officials, who visit the place. Orders for tombstones,

table planks, etc., are received from Nellore, Guntur, Bezwada, Ellore, and Rajahmundry, through the local missionaries. The master workman usually receives half the cost of the tombstone or table plank as advance. The workers appear to have been dependent to a great extent on the patronage of local missionaries, both Roman Catholic and Protestant, and very good samples of their work are found in the local Roman Catholic and American mission churches and other buildings.

The question of assisting in the development of this small marble industry has received the attention of the Department of Industries on several occasions during the last decade, and even now the question of the availability of suitable hand tools and appliances is being investigated. As already mentioned, the tools or implements used are very crude, and much time and labour is wasted in the work. With better tools and modern appliances it should be possible to very greatly reduce the time and the labour required in sawing, dressing, and polishing the stone. As the railway which is now under construction from Guntur to Macherla passes through the area where the marble stone is found, the cost of transport of the polished marble will become much cheaper, and the possibility of developing this industry with better advertisement may be examined.

Stone Carving.

Stone carving on a small scale has been carried on from time immemorial by a few Viswabrahman families at Koppukonda in Vinukonda taluk and Durgi in Palnad taluk. This is more or less followed as a subsidiary industry to metal work. There are at present four stone carvers at Koppukonda, who make shirt buttons, bharinas (a small cup with a lid for keeping saffron used by Hindu ladies), katika kayas a still small cup with a lid for keeping Hindu ladies' eye paint), oval-shaped snuff boxes, ink bottles, chess pieces, and small images such as Lingam, Nandi, Hanuman, Vigneswara, Gopalakrishna, etc., from a peculiar kind of black stone found in the fields and waste lands, in Inavole and its hamlet Cherukumpalem, Mukkellapadu and its hamlet Jaddavaripalem, and Peddavaram. The workers go to the above villages for fetching the stone thrice a year once in January and February, second time in April and May, and third time in August, and on each trip they get three baskets of stone, each 2 days' time. Each worker engages two coolies for picking up and conveying the stones, paying each coolie 6 annas as wages

per day with one meal. From one basket of stone about Rs. 30 worth of articles are usually prepared. Except buttons and bharinas, all other articles are made only to order. The daily outturn of each worker, working for about six to eight hours, is either 50 shirt buttons worth 4 annas a dozen, 10 katika kayas worth 2 annas to 3 annas each, or 8 kunkuma bharinas worth 4 annas to 6 annas each. Ten days' time is taken to prepare one chess set worth Rs. 7 to Rs. 9. The sizes of images prepared here range from 2 ins. to 4 ins. long, with proportionate width, and their price varies from Rs. 6 to Rs. 8. A 4 ins. Anjaneya takes six days' time to finish and is sold for Rs. 7 to Rs. 8. All these articles made of black stone are polished with a mixture of charcoal powder and ghee.

I. Economics for preparing 50 shirt buttons by a workman assisted by a coolie within a day is as follows :—

	RS.	A.	P.
Stone	...	...	No value
Coolie for getting it to the workspot	...	0	4 0
Wages for the assistant	...	0	4 0
Lac	...	0	1 0
Charcoal and ghee	...	0	1 0
		0	10 0
Sale price of 50 buttons	...	1	0 0
Gain	...	0	6 0

which may be taken as the wages of the workman.

II. Economics for chess set worth Rs. 8—

	RS.	A.	P.
Stone including conveyance charges	...	2	0 0
Lac	...	0	2 0
Charcoal	...	0	2 0
Coolie engaged for 2 days for turning the lathe	...	0	8 0
		2	12 0

The workman takes ten days for preparing this, and earns Rs. 5-4-0 for his labour (deducting his expenditure Rs. 2-12-0 from the sale price Rs. 8). Each worker uses in a month about 30 tolas of lac, purchased for Rs. 2 at Vinukonda. There is an abundant supply of charcoal as the village is adjacent to a forest. One basket of coal, sufficient for one month, is purchased by a worker at 8 annas.

As already mentioned, this industry is followed by the workmen as a subsidiary occupation. On an average only Rs. 50 worth of articles are prepared by all the workmen in a month. These are not handed over to any sowcar for sale. Generally officers, clerks, etc., purchase them through the village officers of the village. Lingams, Nandis and Vigneswaras are taken by the workmen during Sivaratri festival days to Srisaillam, where they are purchased by Lingabaliyas and Jangams who, in their turn, take them to Ceded districts and the Nizam's Dominions for sale to the Saivites there. These Lingams and Nandis are made of grey stone, brittle variety, and black stone, hard variety. They are very tiny, below 1 in. size. One thousand Lingams, grey variety, are usually sold at Rs. 6 to Rs. 8, and 100 black variety, at Rs. 3 to Rs. 4. A Nandi made of grey stone is sold at 3 annas to 4 annas each, while a black stone Nandi costs Rs. 6 to Rs. 8. At least Rs. 400 worth of these images are usually sold at Srisaillam. Where a coolie is engaged by the worker for carrying the ware to Srisaillam, he is paid 6 annas to 8 annas daily with two meals.

The workers here complain that they have not sufficient work throughout the year, as orders are very rarely received for images, chess pieces, etc. It is reported that each worker can turn out about Rs. 300 worth of articles in a year if orders are forthcoming.

At Durgi there are also five workers who make stone idols from a peculiar kind of pot stone locally available in fields and waste lands. Their primary occupation is manufacturing brass and copper wares and images, and this stonecarving is followed by them as a subsidiary occupation. Stone idols of gods and goddesses are made to order only. On an average each man works for about eight to ten hours a day. The sizes of idols prepared here vary from 3 ins. to 1½ yards, larger sizes being made occasionally. Ordinarily a Nandi 3 ins. by 2 ins. is sold at 8 annas, and images of Anjaneya, Rama, and Sita of 4 ins. by 5 ins. size, etc., cost Re. 1 each. Statues and Nandis above one foot are generally made for temples, and Rs. 16 is charged for an image one yard high. A small Nandi 3 ins. long by 2½ ins. high, with proportionate width, is made by one man within 1½ days, and is sold for 8 annas. About one month's time is taken by a man for preparing a statue one yard in size. On an average each workman is able to earn from 4 to 8 annas a day, according to the quality of the work turned out by him. As

there is not sufficient work throughout the year, about Rs. 200 worth of work only is turned out annually by all the workmen. Orders usually come from Narasaraopet, Sattenapalli, and Palnad taluks, and rarely from Bezvada. The workmen demand at least half the cost of the image with each order. The quality of the work turned out here is inferior to that of Koppukonda. The workmen who know the art are few in number and their total output per annum may not exceed Rs. 2,000 even if a wider market can be found. The articles made by them cannot by their very nature command a wider market. Most of the articles made are fancy ones representing Hindu idols, and used by a few rich Hindu families. There is not much artistic value in them to command a foreign market.

Manufacture of Scented Bathis, Oils, etc.

Kondavid, in Narasaraopet taluk, was once famous for its scented sticks and oils, but in view of the competition of imported foreign perfumes, which are cheaper and superior in quality, the indigenous industry in the place is practically dying out. There are at present about 200 families of Muhammadans who are engaged in the manufacture of scented oils, bathis, etc. Attars and scents, which are not prepared here at present, are obtained from Kanuj, Cawnpore, Lahore, Delhi, Calcutta, Bombay, and Madras. Only fragrant oils such as jasmine, chemeli, agar, benzoin, lime, etc., are now extracted. Bathis are solely prepared by women in their leisure hours. Each worker holds the secret of the art to himself and will not divulge the several constituents of the mixture used, their proportions, and their source of supply. Jasmine is abundantly grown in the locality.

Most of the people engaged in the industry own lands, but some have no other means of livelihood. Each family prepares about Rs. 25 to Rs. 30 worth of scented oils in a month. There are no perfume shops in the village, but a male member of each family takes about Rs. 150 to Rs. 200 worth of perfumes during the months of November to June and hawk them in towns and villages in the Nizam's Dominions and in the Northern Circars.

Due to the keen competition from the foreign perfumeries, the industry is nowadays not at all remunerative to the workers, and the ultimate decay of the industry would seem to be near at hand.

Beedi Manufacture.

Beedi manufacture is carried on exclusively by Muhammadans in Guntur, Tenali, Vetapalam, and Ammanabrolu. There are a few karkhanas at each place opened by Muhammadan capitalists, in which a number of Muhammadan coolies are employed, each making 1,000 "jadi" beedies (stout variety), or 1,500 "sad" beedies (ordinary), earning about 10 annas a day. Each worker is assisted by a boy, who is paid 2 to 3 annas by the worker out of his daily earnings. "Tumki" leaves, used for rolling beedies, are obtained from the Nizam's Dominions, Kalahasti, Venkatagiri, etc., at Rs. 15 or so per 1,000 bundles. One bundle of these is sufficient for 100 beedies. Tobacco required for beedies comes from Mysore to Madras, and it is obtained by the Karkhanadars from there. Three varieties of tobacco, at prices ranging from Rs. 4 to Rs. 13 a maund according to quality, are mixed together to form the beedi dust. The tumki leaves after being soaked in water are taken out and kept under a weight for one night. The next morning they are cut with a pair of scissors into the required sizes by the workmen, stuffed with tobacco dust, and rolled up. 40s yarn purchased at 5 annas to 6 annas per ladi, is used for tying the beedies. For twisting 1,000 ordinary beedies, ten bundles of tumki leaves, 10 annas worth of tobacco, and 4 annas worth of yarn, are required, and the worker is paid 7 annas as wages. For rolling 1,000 jadi beedies, twelve bundles of tumki leaves, 11 annas worth of tobacco, and 4 annas worth of yarn, are required, the worker being paid 10 annas as wages. One thousand beedies are made into twenty packets and they are usually sold at Re. 1-5-0 "sad" variety, and Rs. 1-10-0 "jadi" variety.

This industry is carried on throughout the year, and provides an excellent subsidiary occupation all the year round. It involves no outlay, nor does it demand any skill. There is a vast forest area in the district and if tumki leaves could be grown locally in those forests the trouble and expense of getting the leaves from distant places could be saved to the workers and pave the way for the development of the industry.

New Industries.

There are extensive areas under palmyra palms in the Bapatla, Repalli, and Ongole taluks along the coast, but the produce is not made use of from an industrial point of view.

In spite of the abundant growth of hemp, gogu, and alœ plants in the district, there is very little organized attempt to utilize the fibres for the manufacture of good ropes, besides twine, cordage, gunny, etc. As already mentioned in the body of the report, the hemp crop is mostly used for purposes of fodder and manure, and in only two or three villages of Ongole taluk are these fibres used for weaving pattis. In the rural tracts, the cultivator himself generally prepares his own requirements of rope and twine out of the produce of the village fields. The fibre has several uses and measures might be devised to start the manufacture of ropes, etc., from it.



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