

As. 12); Uppinangadi* (H. 2, R. 2, B. 2, S. 1, F., As. 12); Nala† (R. 1, B. 1, F., As. 6) 17·4 m. Road ends at Guruvainkeré, 2 m., west of Beltangadi (see under Mangalore-Mysore Trunk road).

35. Sóméshwar-Kótéshwar Road, 29·2 m. Begins at Sóméshwar (see under Águmbé-Ghat Road), ends at 29·2 m., at Kótéshwar which is at 56·5 m. of the Coast Road North and 3½ miles south of Coondapoor. Gravelled road unfit for cars except during dry season when the Dhulyholé, 1 m., Goliholé, 4 m., Haladi stream, 17·6 m., are fordable. These have now been bridged; Sóméshwar* (R. 1, B. 1, S. 1, F., As. 6); Albady*† (R. 2, B. 1, S. 1, F., As. 6) 9·6 m.; Haladi* (R. 2, B. 1, S. 1, F., As. 6) 18·1 m. Motor-buses run from Sóméshwar to Kótéshwar.

36. Souda-Jannadi Road, 1·5 m. Starts from Souda and meets Sóméshwar-Kótéshwar Road at 19·5 m. Starts from the southern bank of the Haladi river and joins Sóméshwar-Kótéshwar Road at 19·5 m. Earthen road unfit for motors.

37. Souda-Siddapúr Road, 8·4 m. Partly metalled road. Shankernaráyana* (R. 1, B. 1, S. 1, F., As. 6). Starts on the northern bank of the Haladi river unbridged and joins the Hyder-Ghat Road at 10·7 m. Motor-buses run from Haladi to Siddapúr via Shankernaráyana.

38. Súrathkal-Bájpe Road, 8·4 m. Starts 9·8 m. of Coast road north and meets Mangalore-Kinnigoli Road at 10·1 m. Fit for motors in fair weather, earthen road.

39. Sítanadi-Brahmavár Road, 22 m. Starts at 53·6 m. of Águmbé-Ghat Road, ends at Brahmavár at 44·1 m. of Coast Road North. Partly metalled. Hebri* (R. 2, B. 1, S. 1, F., As. 6) 3 m.; Karje† (R. 1, B. 1, S. 3, F., As. 6) 11·4 m.; Brahmavár* (R. 2, B. 2, S. 2, F., As. 12). Motor-buses run from Brahmavár to Sítanadi.

40. Uppála-Karopadi road. Starts at 16·1 m. of Coast road south from near the Mangalapádi (r.s.) and joins Manjéshwar-Vittal-Puttúr road at 15·3 m. Gravelled, fit for motors. Bayár (R. 1, B. 1, S. 1, F., As. 4) 8·4 m. Motor-buses run from Mangalapádi (r.s.) to Bayár.

41. Wándse-Halkal Road, 10·4 m. Starts at Wándse and stops at Halkal on the Nágódi Ghat Road at 13·3 m., of Nágódi road. Partly metalled; fair-weather road for motor; Wándse (R. 1, B. 1, S. 1, F., As. 6) 0·3 m.; Jakkal (R. 2, B. 2, S. 1, F., As. 12) 8·2 m.

CHAPTER VIII.

OCCUPATIONS AND TRADE.

Pages 138 to 158.—*Substitute for this chapter the following:—*

General.

Agriculture, as in other districts of the Presidency, continues to be the occupation of the bulk of the population. The percentage of people employed in it in 1921 was 71 for

† Bungalows at these places have now been abandoned.

the whole Presidency and 72·3 for the district; and of the people supported by agriculture 58 per cent were actual workers and 42 per cent dependants on them. In 1931, a different method of classification was adopted for the preparation of statistics dealing with occupations or means of livelihood. For each occupation was given separately under each sex the number of actual workers, of working dependants and of workers following that occupation as subsidiary to some other main occupation, so that non-working dependants on workers were excluded from consideration altogether. This procedure has made comparison with the results obtained at previous censuses a matter of difficulty. It was, however, found that 43·6 per cent of the district population in 1931 were non-working dependants as against 44·5 for the whole Presidency, which means that the actual workers and their dependants who aided them were 56·4 per cent of the actual population as against 53·5 for the Presidency. In the other west coast district non-working dependants formed 61·1 per cent, the highest among all the districts, indicating that many of the earners had emigrated to other districts or provinces and were supporting the tarwad house by means of remittances from abroad. The high proportion of actual workers and working dependants in South Kanara shows that the people as a whole are fairly industrious and do not like "to simply sit and eat" (as the expression goes), while others work for them, unless they are incapacitated by age or other infirmity from joining the rest of the family and working with them.

It was found in 1921 that 901,586 people were supported by agriculture, 162,207 people by industries including transport, 106,043 by commerce and 32,723 by the professions and that their percentages were respectively 72·3, 13, 8·5 and 2·6. The corresponding figures at the census of 1931 were of actual workers and working dependants 415,593 people engaged in agriculture, 140,152 people engaged in industries (including in it the transport services), 42,983 people engaged in commerce and 18,418 in the professions, working to percentages of 30·3, 10·2, 3·1 and 1·3, respectively in regard to them. Adding to these the ratio of non-working dependants they, for comparison with the percentages in 1921 come to 73·9, 18, 5·3 and 2·3, respectively. There is thus a decrease in people dependant on commerce and the professions and an increase in those dependant on agriculture and industries. There has undoubtedly been greater precision in recording the means of livelihood at the last census which accounts for the decreases appearing under last two items and the increases under the first and second. Formerly any one who was a general unskilled labourer or one who had no specific means of livelihood will call himself a cultivator, farming being a more honourable

occupation than many others and so was brought under agriculture without question, but at the last census the actual means of subsistence was ascertained by cross-questioning, if necessary, and so more accuracy is claimed for its return.

Agriculture.

Coming now to the people dependant on agriculture, or as they call it in the census jargon, "exploitation of animals and vegetation," it has been stated already that 30·3 per cent of the district population was engaged in agriculture either as earners or as working dependants. Of those thus engaged in cultivation the number employed as non-cultivating owners were 13,846 or 3·3 per cent; 53,311 were cultivating owners or 12·8 per cent; 49,071 were tenant cultivators or 11·8 per cent; 126,475 non-cultivating tenants or 30·4 per cent; and 152,297 agricultural labourers or 36·6 per cent. There were besides 4,216 people engaged in the cultivation of special crops like coconut (1,434), coffee (456), pan-vine (426), tea and coffee (99), market gardeners and flower and fruit growers (2,000), pasture (828), stock raisers, breeders and shepherds (4,497), and fishermen and hunters (11,089) of whom only 30 were classified as hunters. Agricultural labourers and non-cultivating tenants constituted 67 per cent of the total persons engaged in agriculture. The proportion of landholders (16·1 per cent) to the total number engaged in agriculture and pasture is less than the Presidency proportion (40·1 per cent). There was, however, a large preponderance of non-cultivating tenants (30·4 per cent) as against the Presidency ratio of 1·6 per cent. The apparent paucity of landowners and the large proportion of non-cultivating tenants are due to the peculiar systems of land tenure prevailing in the district, land being held on the *warg* tenure and sublet to tenants who may be permanent on a fixed rent or tenants at will. The *mulgeni* and the *chalgeni* tenants are more or less permanent, that is to say though called tenants they are practically owners who cultivate their holdings which are on an average extremely small in extent. It is a phenomenon in this as in most other districts that the cultivating landowner in whose class must be included many of the actual permanent tenants, is losing ground everywhere in favour of the cultivating tenant and the non-cultivating owner or even the agricultural labourer, which implies that the small farmer is being forced to relinquish his holding to the town money-lender for whom he works on the land as a tenant or to the actual tenant cultivator or labourer or that an appreciable number of them have turned townwards to join the army of factory labourers or odd-jobbers. Of the agricultural labourers a good proportion is not engaged throughout the year but is taken on special work only such as harvesting or transplanting or if employed longer are paid by the month and dispensed with when work is slack.

An account of the agricultural methods pursued by the people of South Kanara is found in the first volume of the District Manual edited by Mr. J. Sturrock, I.C.S.

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Next in importance to agriculture come the industrial pursuits. In 1931, there were 140,152 people actually engaged in some industry or other including transport services or in the language of the census officer "in the preparation and supply of material substances." They formed 10·2 per cent of the population and with their non-working dependants 18 per cent. With a copious and unflinching rainfall and with the hills clad with forests of rich timber and the plains and hill slopes studded with large coconut plantations, the talipot, sago and arecanut palms, the district possesses abundant material for several industries and the long sea-coast gives occupation for a number of people in fishing and manning boats and in industries connected with fish-curing and the manufacture of fish-oil and guano—both articles of commercial value as manure. The main industries are the making of coir yarn and rope and the manufacture of metal vessels mostly from copper and of jaggery from coconut, palmyra and sago palms. The possession of a fine kind of clay has given rise to the establishment of a large number of factories for the manufacture of building, flooring, ceiling and ridge tiles, which have come to be known as "Mangalore tiles" and are exported to all parts of India and Ceylon and to East Africa. These industries will now be briefly noticed in the following paragraphs.

Industrial
pursuits.

The textile workers totalled 11,725 or 9·4 per cent of the industrial workers (excluding transport services). There is no ginning, cleaning or pressing of cotton, jute or wool in the district, but of cotton-spinners and weavers there were (in 1931) 5,729 of whom about 750 were in Mangalore town alone. There are no cotton spinning mills in the district, weavers and weaving establishments getting their yarn supplies from outside the district from the Madura and Bombay mills. Hand-spinning of cotton is said to have existed years ago in a few villages in Kásaragód and Puttúr taluks, but they must have disappeared with the import of cheap mill-made yarn and cloth. At Niléshwar, the All-India Spinners' Association has started hand-spinning with a view to produce khadar cloths and to let the people have hand-spinning as a subsidiary occupation during seasons when they have no work to do in the fields. These spinners are a few old women and girls among Jédars whose caste occupation is weaving. The cotton required is grown in a few villages of the Kásaragód taluk and sold to the Association at Niléshwar. The seeds are first separated by passing the cotton between two moving wooden rollers fixed to a frame and then carded and distributed, and the yarn is spun on the charka. It is no doubt coarse and the

The textile
industry.

cloth woven from it too thick for wear. The spinners and weavers do not earn anything more than what they could by weaving dhoties with mill-made yarn though the cloths cost more and are bought by khadar enthusiasts. In Maipádi of Kárkál taluk a few schoolmasters have learned spinning with a view to its introduction in the local board school. They got ginned cotton from Húbli and gave the yarn they got from their spinners to local weavers for making into cloths. The hand-spinning of cotton and the weaving of khadar cloths is of doubtful economic value, whatever other virtues their enthusiasts may claim for them.

Weaving.

Handloom weaving is not, however, a flourishing business in this district. There are not many actual weavers and what little increase there has been in workers has been due to the influence of the Basel Mission which has started weaving establishments for giving work to their converts. Sálíans and Jédars in certain villages in the Mangalore and Kásaragód taluks still weave on pit-looms, but Christian, Muslim, Billava and Bant weavers have been using frame looms introduced by the Basel German Missionaries. From the pit looms, weavers produce *dhotis* for men and *saris* for women, while from the frame looms are produced coloured striped *saris* for women, shirting cloths and bedsheets. There are numerous frame looms at work in Mangalore and Udipi, all fitted with the fly shuttle and generally with dobbies for making designs on borders. The pit-loom weavers work in family groups and the others in a factory under a master workman or capitalist and the workers earn not less than eight annas a day. Except at Niléshwar where handspun yarn is used in about ten looms, in all other places mill-yarn of counts ranging from 10s to 40s from Bombay are used in Mangalore and Udipi, except that the weavers of the Kásaragód taluk get their yarn from Cannanóre. Dyed yarn is generally got from merchants by the weavers, but some factory-owners at Udipi and Mangalore have taken to dyeing the yarn they require with German colours. The frame loom weavers warp yarn on warping mills of which there are about 40 to 50 in Mangalore and 35 in Udipi. The sizing is done in streets as in other districts, but warp threads are sized on the loom itself with a brush. For pit-looms, however, the winding of yarn for the weft and peg-warping is done by women and the actual weaving by the men.

The cloths made on handlooms are disposed of in shandies or by hawking; and there are also some shops owned by the capitalists at Mangalore where the cloths made on looms by the weavers for wages are kept for sale. There is a belief that hand-woven cloths are more durable than mill-made ones which accounts for the industry continuing to thrive notwithstanding great competition. *Saris* for women and cloths for

men are sold in large quantities in the shandies. Shirting cloths and bedsheets are made on looms in small quantities, as they have to be sold at a price much higher than that for which similar goods made on the mills can be bought. Mercerised cotton cloths with designs on borders are also woven by men who had learned it from the workers in the Basel Mission weaving establishments. The weavers of Niléshwar had a co-operative society and borrowed to the utmost limit from it and being unable to repay have had to see the society liquidated. A co-operative clearing house for the goods which will also be an agency for the supply of yarn and for the sale and payment of a suitable advance to the workers will greatly help the weaving community for this district. Such an organization is in course of formation with Government help and much good is expected to flow from it.

There were in 1935, fifty large and small weaving establishments in the district engaging nearly 10,000 people, a third of whom were women and children. There were then, 2,500 looms weaving cotton (1,500 in Mangalore taluk, 471 in Udipi, 404 in Kásaragód, 53 in Coondapoor and 52 in Kárkal), besides 5 looms weaving silk fabrics in Mangalore, an equal number weaving artificial silk in that and in Udipi taluks. *Saris* of Mangalore and Goa patterns, lungis, checks, bedsheets and towels are woven in these looms using cotton, silk, Italian spun silk and Mysore filature silk yarns. The finer counts of yarn are got from Japan. *Saris* made in this district are exported to North Kanara, Goa and Bombay and lungis to Ceylon, Malabar, Bombay, Calcutta and Arabia.

There is a large hosiery factory in Mangalore managed by the Commonwealth Trust, Ltd., and equipped with up-to-date machines. Superior qualities of cotton and silk underwear of various descriptions are manufactured in this factory and marketed throughout the country. About 200 people (mostly women) are employed in this factory.

Of workers in fibre there were 5,824 (of whom 4,483 were women) and of workers in leather 104. Coir-making is an important cottage industry carried on in the coastal villages and gives employment to large numbers of Mappillas, Navayathas, Billavas, Roman Catholics, and Adi-Karnátakas. The industry flourishes in Uppinda, Marvante, Uppinakudru, Karavadi, Kóni (near Coondapoor), Tonse West, Malpe, Tenka Ykkár, Ullál, Manjanadi and Telangéri. It is not confined to any particular class of people, but is carried on by members of different castes always in addition to some other occupation such as agriculture or trade. The workers in Kásaragód taluk are mostly Mappillas, while in the other taluks they are different, viz., Mogers, Halepaiks, Khárvis, Holeyas and poorer Roman Catholic Christians. The district is rich in plantations of

Hosiery.

The fibre
industry.

coconut palm. These are found all along the sea-coast and for four or five miles inland. About 100 trees are planted in an acre and each tree yields about 100 nuts a year, and 13,000 coconut husks yield a candy of coir. When the nuts are ripe (that is about 10 months old) they are plucked and gathered and then husked and the husks are soaked in water or "retted" in marshy places of the beds of rivers called Ghaznis in the hot season and removed at the commencement of the rainy season. Foul water has to be expelled and fresh water let in at frequent intervals. The best sites for "retting" are along the brinks of backwaters wherein the rise and fall of the tide brings about the best conditions. The husks are kept under water from six to ten months and then removed and cleaned with fresh water and dried. They are then beaten down with wooden hammers to remove the pith from the fibre. Roughly about a pound of fibre can be obtained from the husk of five coconuts. The soaking is the work of the men and the beating for the separation of the fibre from the pith that of the women as also the spinning. The loose yarn is then twisted on wooden wheel frames to bring the shreds closer into cords of various thickness, and with them ropes, halters, noose threads, cattle ropes, door mats and mattresses are made. The twisting work is done by the adult males except those that cannot do other work, because it does not pay them and the women resort to it when they have no other work that pays better. This accounts for the manufacture of coir being commenced soon after the fields are planted and carried on during the monsoon months. Kóni near Coondapoor is a big centre for this industry. Malpe is another important centre where about 50,000 lbs. of it are made in the year, the price of the same being Rs. 60,000. Equally important is Tonse-West where the daily outturn in fibre is worth Rs. 250. The coir yarn rope and other articles are sold in local shandies and to export agents for being sent to Bombay and Mysore. A workman is able to earn about 5 annas a day; and all members of a family can engage themselves in this industry in addition to cultivation and fishing, and a husband, wife and two children can earn from 12 annas to a rupee a day.

There are tanneries in Manjéshwar. The actual workers are the Sámagáras corresponding to Tamil Chuckler and Telugu (Madigis) and their *modus operandi* is as follows:—

The hides are soaked for a period of one month in large earthen vats containing water to which chunam is added at the rate of 2 seers per hide. After the expiry of the above period, they are soaked in fresh water for three days in order to remove the chunam. They are then put into an earthen vessel filled with water and the leaves of the *Phyllanthus emblica*, in which they remain for twelve days. After this they

are removed and squeezed and replaced in the same vessel, where they are allowed to remain for about a month, after which period they are again removed, washed and squeezed. They are then sewn up and stuffed with the bark of *cashew*, *daddala* and *nerale* trees and hung up for a day; after this the stitching is removed, and the hides are washed and exposed to the sun to dry for a day, when they become fit for making sandals. Some of the hides rot in this process to such an extent as to become utterly unfit for use.

A man can make in a month 15 pairs of sandals out of 5 hides which cost him about Rs. 17-8-0, including the tanning charges at one rupee per hide. Each pair of sandals sells at Rs. 1-8-0, so that his net profits may be estimated at about Rs. 5 per mensem.

Shoe-making is one of the common cottage industries. Mangalore, Udipi, Kásaragód and other taluk centres have a good number of Chucklers and other leather workers who supply the demand for shoes of the urban and rural population. Beltangadi on the ghat road is also an important centre for shoe-making and about 25 families supply the people residing in the villages round about it and also sell their goods in the shandies. Fifty families in Mangalore town and 15 in Udipi make and sell sandals. The St. Joseph's Industrial School at Jeppu employs about 20 workmen who make fine belts, money-purses, leather-bags and shoes. There are also groups of workers in other places doing the same business. Tanned leather for making sandals is got from Manjéshwar or Mangalore and Kásaragód workers obtain their raw material from Cannanore. The Chucklers and other leather workers are a backward class except in Mangalore where they get their training in Mission institutions. The industry is declining in Beltangadi as the villagers owing to easy communications prefer to buy their requirements in towns where they are better made and sell cheaper.

Workers in wood including sawyers, carpenters and turners and basket makers numbered 14,748 in 1931, which is not surprising seeing that the district has a large area of reserved forest with much of workable timber and bamboo in it. The manufacture of articles from metal, wood and stone is almost entirely confined to the five artisan castes which are collectively known as Panchálas, though they themselves assume the appellation of Viswakarma or Viswa-Bráhma. These five castes are goldsmiths, brass and coppersmiths, blacksmiths, carpenters and masons.

Carpentry
and basket
and mat-
making.

The chief woodwork in South Kanara is the ordinary carpentry. The carpenters are chiefly engaged in making building materials and articles of furniture. The workers are

not confined to the artisan castes as in the case of gold and silver but a class of people known as Charódis as well as some Goanese carry on the profession to a greater extent than the Acháris or Viswa-Brahmana carpenters. The latter make carts and ploughs for the villagers besides such ordinary articles of furniture like tables, benches, chairs and almirahs. The village Acháris, however, are trying to migrate to towns in search of work as timber is not available to the same extent as it was formerly, so that this once rural industry is being gradually transferred to towns. A few villages like Beltangadi, however, contain a larger number of carpenters than is ordinarily the case. They work in groups as well as in family circles and earn about a rupee a day per adult. Jack, teak, blackwood, Teerva, Maruva and Nandi are the timber generally used. They get the supply from proprietors of estates who own depots or from private owners of forest lands. Individual carpenters are unable to purchase the wood required on account of their poverty and some of them therefore have taken to pith work and toys in villages and earn a precarious living.

There were in 1931 about 1,800 people who earned their living as sawyers of wood in this district. Most of these sawyers are not local people but immigrants from Malabar. The Malayali's skill in this line of work is well-known far beyond his own native district. They can be found even as far north as Vizagapatam. The workers earn about a rupee a day here and more in far off places.

Basket-mak-
ing.

6,515 persons returned themselves as basket-makers, mat-makers, thatchers and builders working with bamboo reeds or similar materials. Baskets are an agricultural and domestic necessity and basketry of some kind or other exists in all districts. Baskets are made of bamboos, rattan and wild creepers by people belonging to the Holeyá, Ranyadéva, Bellera and Koraga castes. The materials used are split into thin strips and interwoven into different sizes and shapes. Where any village cannot produce its own baskets it has to get it from other villages and the localization of the industry depends on a large scale upon the availability of raw material near it.

Cane, rod
and creeper
baskets.

In some portions of the taluks bordering on the Western Ghats, namely, Puttúr, Kárcal, and Coondapoor where canes are found in abundance, cane baskets are made and in places like Udipi and Mangalore such baskets are made out of rods and creepers called *Engeriga belu* which are found in the neighbouring jungles. Baskets made of the latter material are used for feeding cattle, storing grains and carrying articles from one place to another. Sivapúr, three miles from Hebri is one of the chief centres for this industry. Kárcal is another centre where rod and creeper baskets are made on a large scale by Koragas. These people also go for cooly work but

will revert to basket-making when they find no other employment. Men, women and children all join together and do this work. The rods and creepers are available in unreserved and kumaki lands and can be obtained free. While green, they are boiled and split into long pieces of ribs for making baskets. Thick rods are used for the ribs of the baskets and the finer strands are filled dexterously between them. A bill-hook and a stout knife for cutting and riving the creepers and shaping them are all the instruments used by the Koragas. A Koraga can make two baskets a day worth eight annas and these are sold to traders for export to other districts. Holeyas and Billavas are also other castes who make baskets.

Cane baskets made from rattan are not in proportion to the growth of cane in the district. The hill tribe known as Bhairavis living in villages near the Ghats and called also Malaikudais (a caste of Kanarese-speaking Adi-Drávidas) and a few Mahráttas of Coondapoor make these baskets which are used for removing earth and carrying fruits and vegetables. They also make baskets in rattan with lids, when they are disengaged from the work of cultivating their forest lands. They get the required cane from the Ghats, make the articles and hand them over to the forest contractor who allows them to take the canes free, for a price which is only half of what the latter gets for them in towns. Occasionally attempts were made to give the Koragas some training to enable them to make better articles and in greater varieties but such attempts have not so far been fruitful. A workman earns about five annas a day.

A rough kind of mat made of bamboos or reeds is used for protecting stocks of grain or to cover country carts. Those of a superior quality used for ceilings are imported from Malabar. They are made of a grass called *Dore* which grows in marshes by the side of rivers and from the leaves of a wild screw pine known as *Mundagi* in Kanarese which grows by the side of water-courses or field banks. They are also prepared from the leaves of a plant called *Ichalagida* which grows on hills in the north-eastern parts of Udipi. The leaves of the plants are dried and exposed to dew when they become pliable for work. The prickly edges are removed and the leaves are then split into thin strips after which they are soaked in water and woven into mats of different sizes. Many of the workers are women from different classes such as Holeyas, Kusas, Máppillas, Bants, Servegáras, goldsmiths and carpenters. Mundagi mats are made in Hebri and the surrounding villages of Kárkál taluk, and in parts of Udipi, Mangalore and Coondapoor taluks. Achári (carpenter and goldsmith) women weave them mostly and get the supply of raw material from the surrounding forest or from private hedges, the owners of which get one or two

Grass mats.

mats free per year from the weavers. The mats are generally 5 feet by $2\frac{1}{2}$ feet and a woman can ordinarily make two mats in three days working two to three hours a day. These mats are sold largely in Mangalore. From the same material mats of a softer variety can be made if the workers will take some more hours but they will not do so, being anxious to get what little they can as quickly as possible. The prices of mats vary according to size and quality from one to eight annas and a woman can earn about four annas a day.

A thick variety of sedge mats is made from stout sedge grass grown on the banks of the jungle streams by Kijikárus, about 15 families of them, in Melanthabettu and Bangádi villages near Beltangadi. The Kijikárus are agriculturists by profession and devote their spare time to mat manufacture. The grass is cut and used without drying it and riving the strands. The mats generally measure 6 feet by 3 feet and a workman requires ordinarily two to three days to make one and earn 10 to 12 annas.

Date mats.

Date mats are made in several villages in Udipi taluk and about a thousand families in them and 200 families in Hosúr alone are employed in this industry. The workers are mostly women and boys. They get the material from forest date trees which are plenty in this district, mostly stunted in growth because of the moist climate. The leaves are dried and stocked in summer for use in the rainy season, and plaited to the required length but with a narrow width of three inches; and a number of them are packed together lengthways to give the required width. The mats are sold in shandies or to traders who collect them for export. They are used for packing jaggery and tobacco and for spreading on the floor.

Manufacture of catechu.

This industry is peculiar to South Kanara and is carried on mainly in the Coondapoor taluk. Catechu is manufactured out of the tree called "Catechu tree" (*Acacia sundra*) which is of a moderately small size with bipinnate compound leaves. It is not cultivated, but grows naturally on all soils except those in which sand predominates, that on the laterite soil being the best. It is confined mostly to the villages north of the Wandse river and of the Shankaranárayana-Hosangady Road. It is rare in the other taluks of the district. The heartwood of catechu is said to be more durable than teakwood, but it is scarcely used for timber as the tree seldom grows straight or attains the dimensions necessary for yielding timber and as it is considered more valuable as yielding the "cutch" usually called catechu, which is obtained from its heartwood.

The ryots are not permitted to fell catechu trees except those standing on their own warg lands. The right of manufacturing catechu is vested in the Forest department, which

controls the cutting of the trees. The privilege of manufacturing catechu from the trees on Government lands was let out in previous years on contract, every tree to be felled being inspected and marked by the officer of the Forest Department to guard against indiscriminate felling by the contractors and to ensure the existence of mature trees in the next rotation in view to the continuity of operations. The contractor agreed to deliver to the department the quantity of catechu specified within the stated time and at the lowest price per ton. For this system of manufacturing catechu under contract was substituted from 1921 the sale of standing trees to contractors by auction or tender. During the last ten years 14,533 trees were sold for Rs. 47,522, the price of each tree coming to Rs. 3-4-3 on an average.

The following is a brief account of the mode of preparing catechu :—The catechu trees are felled and their branches and sapwood removed. The heartwood is then chopped into small chips about $1\frac{1}{2}$ inches by 1 inch in size. About $2\frac{1}{2}$ maunds of chips are put into an earthen pot containing a maund of water and boiled for three hours. When the active principle of catechu has separated from the chips, the decoction is strained into a trough placed at the foot of the still and immediately transferred to another vessel of which about half a dozen are placed on the ovens in a line. The chips once boiled are again mixed with the same quantity of water and again boiled. The process of boiling and straining is repeated four times and each time the decoction obtained is strained and transferred to the pot containing the former decoction. The decoction is itself boiled again for about 10 hours until it attains a dark-brown colour and becomes gummy. It is then discharged into an open shallow vessel and stirred by a ladle until it becomes semi-solid by oxidation, which it does in about five or six hours. It is made into balls, each of $1\frac{1}{2}$ inches in diameter. The balls are rolled in catechu ashes which prevents them from sticking to one another and to the hands of rollers in further rolling and hardening. The above preparation is said to produce 45 balls weighing $10\frac{1}{2}$ lbs. Here ends the work of the people—males and females of the Kudubi caste—engaged for the purpose. After receiving the balls from the Kudubis the contractor has to go through a further process of rubbing them five or six times for two or three days, heaping them up in an air-tight covering of ashes, in which state they are kept for three or four days and then giving them another rubbing after which they are spread out in the shade to dry. When dried these 45 balls weigh about 9 lbs.

The manufacture of catechu is carried on from about the end of November–December to the middle of March. It is confined to a jungle tribe called “Kudubis” who speak a

dialect of Konkani and are said to have migrated into the district from Goa when it came under the sway of the Portuguese in the sixteenth century. When the Kudubi is engaged in the manufacture of catechu, he makes the site of the stills his home, the Kudubi woman being as much essential for the work as the Kudubi man. The work of the male ends when he has felled the trees and cut the heartwood into chips, all the rest of the process until the catechu balls are delivered to the contractor falling to the share of the female. The Kudubi gets from Re. 1 to Re. 1-4-0 for every 100 balls manufactured or Rs. 40-0-0 to Rs. 50 for every 4,000 balls which is generally the unit of account between the contractor and the Kudubi. The manufacture of catechu gives employment to nearly fifty or sixty families of Kudubis and the average monthly income of a family amounts to Rs. 8.

On an average about 15 stills consisting of 5 pots and 4 stills each with 2 pots will work at a time.

The cost of manufacturing 100 balls (25 lbs.) of cutch is Rs. 1-12-0. The present market wholesale rate is Rs. 125 per candy (20 maunds) of cutch.

The following is a report on the analysis of samples of catechu made by the Biochemist, Forest Research Institute, Dehra Dun :—

	PER CENT.
Catechin	9·5
Tannin	66·4
Non-Tane	7·5
Org. matter insoluble in water ...	0·3
Mineral matter (ash)	1·8
Moisture	14·5

The catechu manufactured in South Kanara is chiefly sold in Bombay and Mysore where it is eaten with *pan* (betel leaf). Catechu is a powerful astringent and is used in medicine, and administered to women immediately after confinement. It is used as a dye stuff for tanning leather, canvas, and lines and fishing nets. In South India it is used for treating and dyeing sliced arecanut.

In 1930 a small quantity of cutch (17 quarters and 21 lbs. of cutch) of which 10 quarters and 14 lbs. in the shape of balls and 7 quarters and 7 lbs. in the shape of cakes was prepared departmentally, scrupulous cleanliness being insisted upon in the preparation. The cost of production of this quantity of cutch at Mangalore was Rs. 60. Samples of these were sent to the Imperial Institute, London, for the valuation and advice as to marketing. The report received from the Imperial Institute, London, shows that no business can be done in London in this commodity as its price is considered high.

There are several clever and industrious workers in metal among the Roman Catholic Christians of Kanara and they formed the majority of the 1,217 metal workers in the district. From this number are excluded 2,017 village Hindu blacksmiths who reside in the villages and make agricultural implements for the farmers in rural areas.

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Metal work.

Gold and silver are used for little else but the manufacture of jewels. The workers in these metals are known by different names such as Akkasális, Sónars, Ponnasettis and Thattáns. The ornaments are made to order as a rule on the supply of the raw material required, the rate of wages varying according to the skill and labour required. A goldsmith of ordinary skill can earn from twelve annas to one rupee a day. The ornaments made for the local people have nothing specially striking about them; these seem to be plain and are for that reason specially liked now in other districts which accounts for the number of goldsmiths from South Kanara emigrating to them. Madras, for instance, has a number of Mangaloreans actually employed as jewellers. There were 4,761 makers of jewellery and ornaments in the district of whom 312 were in Mangalore town.

Silver and gold.

Curiously enough South Kanara shows a partiality for copperware as Kumbakonam and Trichinopoly do for brassware. It is said here that copper is a superior metal to brass and that old vessels would fetch half their price when they become unserviceable which is not so in the case of articles made of brass. The Goanese Roman Catholic Christians who are workers in copper seem to prefer this metal and do not know how to work in brass or bell-metal and the preference for copper vessels by the residents of the district is said to be due to this circumstance. Many Christians from Goa have settled in the more important villages and towns and opened a number of small factories where copper utensils, *kudams*, *handas* and *chembus*, etc., are made. They purchase copper in big sheets which are imported by merchants especially from Bombay. These hardy and enterprising men have also emigrated to big villages in this and even to other districts in groups and work in small factories there. Coondapoor, Brahmawár, Udipi, Kárcal, Mangalore, Bantvál, Puttúr and Kásaragód are large centres in this district where groups of these workmen have settled and opened this line of business. A workman can, on an average, earn a rupee a day and in a few places like Udipi they are paid monthly about Rs. 20 by their employers, in addition to free-boarding. The finished articles are sold in shops run by the workmen themselves or by their common employer. They are also sold at festivals and shandies. There is a large demand for these vessels from the rural population as clay pots are not readily available locally as in other districts and even when found are not so durable and economical in the

Copper.

long run. The industry is gradually assuming large proportions because of increasing demand.

BRASS.

Brass articles are not generally made on a large scale anywhere in the district except at Udipi and Bantvál. At Udipi, the industry is of recent origin. Brass *chembus* and plates are also sold in small numbers in the copper-vessel shops at Bantvál. The workmen at Udipi are all Konkaneese, except one who is a Brahmin. About ten workmen there also make cash-chests, boxes, suit-cases, trunks, jewellery boxes and cradles with brass sheets. Each workman can earn about a rupee a day at Udipi and in Bantvál about 10 annas. The pilgrim population buy these brass articles at Udipi. Brass sheets are obtained by the workmen from Mangalore and Udipi merchants who get them from Bombay.

Bell-metal.

The important places for bell-metal work are Kásaragód, Udipi, Bantvál and Angalli. Bell-metal is largely used for making household utensils such as tumblers, goglets, basins and jugs. Tumblers and drinking vessels are specialities at Kásaragód. A group of nine workmen make bell-metal plates at Angalli. In Udipi small drinking vessels are made in three places. Except at Kásaragód, the workmen are again all Goanese Christians; and at Kásaragód they are chiefly Tulu Acháris. Bell-metal is obtained by mixing copper and tin in the proportion of four to one and melting the mixture in crucibles. For making plates, the molten material is cast into small circular discs which are heated and hammered till they come to the proper size. The rough portions are then scraped with pieces of iron and then polished on laths. The process of manufacture of drinking vessels and jugs and kujas is as follows: The moulds are made of clay and dried and coated with wax to the thickness of the articles required and again left to dry well. They are then covered with clay and left to dry again, a hole being made in them so as to allow the wax to flow out when heated. After this has been done the molten metal is poured in. The moulds are then broken and the articles taken out and polished. A workman earns about 12 annas a day and at Kásaragód and Udipi about 2,000 seers of bell-metal vessels are made excluding the large imports from Malabar, Madura and Kumbakonam. The industry is only of recent origin and there is every possibility of its growing in importance. Workers in this metal are called Kanchgúras and they earn as much as the coppersmiths.

Stone
workers.

A grinding stone made of granite is an article peculiar to South Kanara. It is a semi-circular, oval-shaped block with an oval bottom and a round hole in the middle of the circle. It has another oval-shaped block within and lying with one end so shaped as to fit in the hole in the larger block. These two

together make what is known as the grinding stone of the district which is used for grinding curry stuff, rice, wheat, etc. The price of the stone varies from Rs. 1-8-0 to Rs. 4. A grinding stone of an ordinary size takes about four days to make and brings the worker an average of twelve annas a day. Mill stones for pounding rice are also made of granite. A class of people called Kallukuttis used to make such articles formerly, but the industry is now taken up by other castes as well. Mile stones, slabs for temple door-frames, idols and other figures for temple purposes, are also all made of granite.

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In two villages in Kárkal taluk (Kárávi and Kutlúru) utensils from soap-stone are made by a few blacksmiths. They make big and small vessels for storing grain, cooking and cake-making. About 20 people belonging to 8 families do this work in addition to agriculture. The stones required are quarried in patta lands on payment of two annas a day to the pattadar. A man can make articles worth about 8 annas a day, working 7 hours, but the tract being malarial he does not work regularly. Articles worth about Rs. 2,000 are made every year on an average. The vessels have no speciality about them. They are sold in villages and shandies. The demand for them is due to their not being as brittle as earthen nor as costly as metal-wares. They last for some time if carefully handled and are besides acid-proof. All the utensils made find ready sales in the district itself.

Soap-stone
vessels.

A large variety of articles, chiefly agricultural implements, is made from iron. The blacksmiths who make them are for the most part of the Kamnára caste. Iron is purchased in the local bazaars and manufactured into different articles. Those who want any iron things, supply the blacksmith with the required quantity of iron and he is paid a fixed rate per article. In Baidúr of Coondapoor taluk three Acháris make knives, locks and muzzle-loaders. This is the hereditary occupation of the family in which three brothers are the chief workers. In one month they produce articles worth Rs. 100. For a knife or a lock it takes a day and a half and for a muzzle-loader a month. A pen-knife costs from 8 annas to Rs. 1-8-0 and country locks from 12 annas to Rs. 1-4-0. A muzzle-loader costs from Rs. 40 to Rs. 70. The workers earn about a rupee a day working 10 hours a day. They get the raw material required, iron and brass, from Mangalore and wood locally. Local people have a special bias for these knives and locks which are similar to machine-made articles as they believe the former are stronger and more durable than imported ones.

Iron.

There were (in 1931) 4,671 actual workers and working dependants on people with ceramics as a subsidiary occupation, that is the manufacture of pottery, tiles and bricks.

Ceramics.
Pottery.

Unlike other districts there are not potters in every village in South Kanara and the people can get their supplies of pots from only a few villages in the district or from shandies and bazaars in towns. Ordinary pottery of the country needs no description; but in Uppinangadi a superior kind of pottery is manufactured by a caste of people known as Kanarese Kumbáras, as distinguished from Tulu-speaking Kumbaras. The former caste is not found in other parts of the district, though there are two or three families of them in Perdúr, Udipi taluk. The Uppinangadi pottery is made from Perdúr clay powdered or mixed with water and strained and is superior in quality to other local varieties. The clay is poured into a pit, where it is left to dry for a month by which time it becomes quite dry. It is then removed, powdered, moistened and made into balls which are placed upon the potter's wheel and fashioned into various kinds of vessels including vases, goglets, jars, jugs, pots, teapots and cups and saucers. The vessels are then dried in the shade for a week after which they are baked for two days and then they become ready for sale. They have a glazed appearance and are sometimes beautifully ornamented. The poorer classes use the ordinary earthen vessels on account of their cheapness. Nekráji in Kásaragód taluk is another village where pots similar to the Uppinangadi ones are made, though not with so much polish. The potters work in family groups, the women assisting in getting the clay, cleaning it of hard things and making them into a consistent mass. Each potter can make pots worth 12 annas in a day and in Nekraji alone Rs. 20,000 worth of earthenware are made in a year. In Uppinangadi the quantity made is much less, though the workmen are industrious and keep a large stock. It is the pottery of Nekráji that is sold in most shandies and bazaars in all taluk headquarters. The industry is kept up as there is a constant demand for these articles in the towns and villages.

Tiles.

The district is noted for a fine kind of yellow clay from which tiles are made. Its availability near the chief centres of manufacture is the chief reason for the growth of the industry in them. There were actually 4,731 brick and tile burners and potters in the district of whom 556 were in Mangalore town which contains several tile factories. The ordinary country tiles are made by potters from ordinary clay, but there has been a fall in the demand for them with the large production of machine-made tiles from the numerous tile factories in the district. These find favour with the inhabitants on account of their lightness, size and durability. The Basel Mission was the first to start the tile industry on a factory basis and the growth of the industry has been greatly helped by the availability of suitable clay in abundance in fields on or near

the banks of rivers (with facilities for bringing them by boats to the factories), cheap labour and a local supply of firewood. Some thousands of labourers are employed in these factories, and the output per annum is now valued at several crores of rupees. The chief markets for the tiles are Colombo, Cochin, Tellicherry, Máhe, North Kanara, Goa, Bombay, Karachi, Kathiawar, Coorg and Mysore. All kinds of roofing, ceiling and flooring tiles are made along with various other forms of terra-cotta work. There are now several tile works owned by private individuals and firms in various parts of the district, more especially on the coastal towns and villages situated on or at the mouths of rivers and canals. Bricks are also made in these factories on a large scale and also pottery of a superior kind in a few selected places.

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Of oil-pressers and sellers, there were 2,560 in 1931, Oil-pressing. excluding the non-working dependants. Oil is generally expressed from dried coconuts called *kobri* and to a limited extent from gingelly seed, both kinds of oil being used for culinary purposes as well as for bathing. Coconuts are removed from the shell, well dried and then cut into thin slices, which are put into the mill for extracting oil. Gingelly seed is cleaned, dried and thrown into the mill. Oil is also extracted from the seeds of certain plants by boiling them in earthen pots and used for lamps. The lights are not bright and it is only the poorer classes of people that use them. The heavy wooden mills or *ghanis* in which the bulk of the coconut and gingelly oils in use are pressed is made from the trunks of large trees, either tamarind or jack, which is hollowed into the form of a mortar and planted on a raised piece of ground. In this a big pole works as a pestle round and round, being drawn by men or bullocks yoked to a projecting spear. These mills are worked only when there is work and at other times lie idle, for people have begun to use for their lamps kerosene oil which is cheaper and emits a more bright light in preference to these vegetable oils. Some ghani-owners charge 4 annas for every 100 coconuts and 12 annas for each *mura* of gingelly seeds crushed in their mills, but in most places, the oilman gets the *punac* or cake to himself in return for extracting oil from the stuff, with in a few cases a small share in the oil. The oil cake is used as food for cattle or as manure for the fields. In addition to the *ghanis*, a few machines for extracting oil have been established in the district. These are not big enough to come under the Factory Act. Rotary mills made by a local engineering firm are installed in these mills. The entire output of coconut and gingelly oil is consumed locally. The area under coconut is roughly 48,000 acres and copra from Cochin and Colombo is also imported into the district for crushing.

Next in order of classification come the industries relating to food and drink in which 17,226 people were employed. Among them, toddy-drawers and sellers were numerically the largest community. These number 12,445 excluding non-working dependants on the workers. 1.3 per cent of the population were the workers in the professions relating to the preparation and sale of foodstuffs. The ubiquitous petty shop-keeper is found in every village and in towns and big villages the milk, buttermilk, curd and ghee sellers exist in sufficient numbers to supply these necessary and important items in the food of the people, while the smaller villagers and those living in their own estates in out-of-the way places make their own butter-milk and ghee at home. There are more women than men workers among the latter, but they have not been specially classified and enumerated. Though only a few women run petty shops, they take charge of the shops of their male relatives when the latter go out to buy their stock at the weekly fairs or in towns. Toddy-drawers are drawn from the castes of Billavas and Halepaiks who correspond to the Tiyyas of Malabar and the Shanars of Tinnevely. Toddy is drawn from the coconut, palmyra and sago palm, the two latter yielding more than the former. A man can on an average tap from 15 to 20 trees a day and his daily income from this source ranges from 4 to 8 annas. The tree-tappers and toddy-drawers are all males, while among the sellers are found a few women.

From toddy is also manufactured jaggery and the work is confined to toddy-drawers who get the toddy for this purpose in lime-coated pots and boil the toddy and convert it to jaggery. About 100 quarts of toddy are capable of yielding three-fourths of a maund of jaggery. Jaggery is also obtained from the sugarcane which was grown on about 3,700 acres of land in the district in 1934. Its manufacture is more or less a cottage industry, there being only two concerns in the district crushing cane with power-driven mills and making jaggery therefrom. The season commences in November and lasts till the end of February. The ryots grow the sugarcane and generally crush it in country-made mills and obtain the jaggery by boiling the juice in iron pans. Sugarcane grown on 25 cents of land will ordinarily yield quarter of a ton of jaggery. All the jaggery produced in the district is consumed locally. Early in 1934, the department of Industries staged a demonstration of the manufacture of cane-sugar by the centrifugal process. It is yet to be seen how far the demonstration is going to help the conservative ryot of South Kanara in shedding his prejudice against any modification of his time-honoured methods of work.

Of manufacturers of tobacco there were only 867, mostly males. They are makers of cheroots and beedies and are found only in the towns. Grain parchers and friers totalled 1,481, half of them women, and they fried grains and gram in the towns and sent them to the village shandies for sale. There is no village shop which does not contain these dainties, for the village children and even adults seem to enjoy them and would like to munch them as they trudge homeward from shandies to make them forget the tedium of walking.

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Tobacco.
Fried grain.

The preparation and sale of coffee constitute the chief means of livelihood of more than a thousand persons mostly in Mangalore town where there are five coffee-curing works which among them deal with most of the coffee grown on the Western Ghats in Coorg and Mysore. The average quantity of coffee exported annually from Mangalore amounts to over 100,000 cwts. Coffee on arrival at the works is first dried in the sun, then mechanically shelled, winnowed, graded and packed ready for export. Coffee curing is only seasonal work, beginning in December and continuing till the middle of May, that is a week or two before the starting of the south-west monsoon. About 2,000 coolies, mostly women, are employed during the season in these five large works, besides a number of others in smaller concerns.

Coffee-
curing.

There are several firms engaged in the frying and preparation of cashewnuts for the market. The industry was started in Mangalore only in 1925-26 and several firms have taken it up and the demand for the product is so great from foreign markets that raw cashewnuts are now brought from East Africa to Mangalore to supplement local supplies. The raw nuts are first roasted in iron pans in open hearths and afterwards cooled and shelled by manual labour. The kernels are sorted, graded, and packed in 25 lb. capacity tins under patent processes. The chief market for the nuts is the United States of America where they are used as a food product. Some thousands of people, mainly women, are employed in this industry and several million pounds of cashewnut are exported annually from Mangalore; but this is said to be only a quarter of the potential market for such products in the United States of America. A large extension of cashew cultivation is therefore likely to occur in this district in future. During the frying season, looking out from any eminence like the Court or the Edya hill towards the north, south and east, one would see large clouds of dark smoke rising up to the skies in very many places and would imagine that houses and trees were on fire, until assured that in those places numbers of men and women are engaged in frying cashewnuts for the market. Cashew arrack is one of the bye-products of the nuts and the people (especially the Roman Catholic Christians) seem to have a

Cashewnut
industry.

partiality for this beverage which they would even distil illicitly in defiance of the law; it is said that it has great medicinal virtues especially if used by women prior to or after confinement. Government is now trying to supply cashew arrack to the public through their licensed vendors.

Animal food.

Of persons who provide and sell animal food, fishermen are numerically the most important. There were 11,059 persons employed in catching and selling fish. The workers were mostly men, women only assisting in the sale of fish. The Mogers, Múkkuvans and many Máppillas have taken to fishing as their profession, as also the Mahrátti-speaking Khárvis.

Fish-curing

Next to fishing the most important industry is fish-curing. Though it is an ancient industry, the methods in use are crude and primitive and susceptible of great improvement in regard to the flavour, appearance, cleanliness and keeping quality of the products. There are at present 20 fish-curing yards in the district of which 18 are public and are open throughout the year and two are private and are opened only in the season. The chief indigenous curing practised was to salt fish without proper cleaning, and dress in the insanitary vessels, often a worn-out canoe, over night with salt or a mixture of salt and old smelly brine left over from previous curing operations and to sun dry them on the ground the next day. Long and patient endeavour to ascertain improvements in methods that are inexpensive to adopt has been made by the Fisheries department particularly at its experimental station at Tánúr in Malabar. To introduce the improved methods ascertained by the Fisheries department in the public fish-curing yards, Malpe and Mangalore yards were taken over by them from the Salt department in 1919. In 1924 on the bifurcation of the old Salt and Abkari departments all the yards in the district were transferred to the control of the Fisheries department. Improved methods of curing fish on approved hygienic lines are being gradually introduced in the yards, but progress has been necessarily slow owing to the abject poverty and innate conservatism of the curers. With patience and perseverance, these obstacles are being overcome and even now there is a notable improvement in the methods as well as in the quality of the products of these yards. White Tuticorin salt, the finest manufactured in the Presidency, is transported and supplied to the fish-curing yards though more expensive than the dirty Bombay salt generally consumed in the district with its high admixture of mud. The better quality of the cured fish resulting from the use of white salt has so increased the profitable trade with the high priced market in Ceylon, that curers are now disinclined to revert to the cheap Bombay salt. The thatched ill-ventilated curing sheds with sandy floor, and the objectionable insanitary curing vessels (old canoes) reeking

with the effluvia of fish cured year after year are steadily being replaced by properly constructed sheds with tiled roof, lattice sides for proper ventilation, cement floors and vats of approved design with drains and brine pits for the collection and prompt removal of waste brine and washings. Out of 352 curers 318 have reconstructed their sheds on the type design with the help of Government loans without interest.

Statement of fish cured and salt issued in the fish-curing yards of South Kanara district for the last five years.

Year.	Total quantity of fresh fish brought to the yards.		Total quantity of cured fish taken out of the yards.		Salt issued in maunds.	
	MDS.	SRS.	MDS.	SRS.	MDS.	SRS.
1930-31	233,183	19	143,959	22	39,906	34
1931-32	369,887	14	233,573	31	66,184	18
1932-33	363,412	35	224,486	27	61,234	5
1933-34	388,221	3	249,878	25	66,266	27
1934-35	384,132	3	252,966	5	69,366	14
Total ...	1,733,836	34	1,104,834	30	302,953	18
Average of last five years.	347,767		220,973		60,591	

The district has also to its credit the establishment of the first fish refrigeration factory in India. Packing fish in ice for transport to interior markets was the only form of refrigeration known in India till an enterprising fisherman of Malpe sought the advice and assistance of the Fisheries department and erected a modern fish refrigeration factory. He worked the factory from 1928 to 1932. As the plant (1/2 ton) was too small for his purpose, he sold the plant and is endeavouring to form a limited company for constructing a large factory.

Next to fish-curing the manufacture of fish oil and guano is the most important industry connected with fisheries. Sardine and Mackerel are caught in such large abundance in favourable seasons that over and above their use as fresh and cured fish for edible purposes, the major portion of the catches is converted into manure and oil. Prior to 1908 when the Fisheries department commenced its research on the manufacture of these products, the amount of oil and guano produced was very small and its quality poor. The accepted indigenous method was to obtain the oil by allowing the Sardine to rot in dirty canoes or other receptacles. After decanting the oil the rotten fish was thrown into the sea and wasted. Similarly the Sardine or Mackerel when abundant, were spread on the sea sand for conversion into manure. This wasted large quantities of valuable oil and the resultant manure consisted of putrefied fish which had an undesirably high percentage of oil and sand. The researches of the department

Fish oil and guano.

showed that a simple inexpensive plant was sufficient to separate the oil and manure profitably. The plant and its use was demonstrated to small capitalists from 1910 to 1919 who rapidly copied the methods. There are now 457 oil and guano factories in the district out of the 647 which formerly existed in the west coast on the model of the Government factory at Tánúr. They produce in a favourable year 12,000 tons of oil and 32,000 tons of guano worth Rs. 36 lakhs. On an average the manufacture amounts to 880 tons of oil and 6,900 tons of guano a year.

Fishery
schools.

In order to improve the fishing industry and the communities dependent upon it, the department has started fishery schools in which elementary education with a strong fisheries bias, including an elementary knowledge of pisciculture, the science of fish life, the wealth of the sea, weather conditions and navigation, is imparted, so as to suit the environment and actual requirements of fisher children. To train teachers for this special kind of work, a Fisheries Training Institute was started at Calicut in the year 1919. Since 1917 when the educational work among fishermen started 13 fisheries schools in fishing villages have been opened in the district, 3 in Coondapoor taluk, 5 in Udipi taluk, 2 in Mangalore taluk and 3 in Kásaragód taluk. Seven hundred and forty-five boys and 246 girls were on the rolls in 1934-35.

Butchers and
hunters.

There were only 29 butchers in the district of whom 13 were in Mangalore, which shows that the consumption of meat by the ordinary population is not enough to keep a butcher in regular employment. Thirty hunters for a district with such a large forest area is a poor return; apparently there are several people who follow hunting as a pastime but they would not admit that as an occupation even as subsidiary to some main occupation.

Printing
presses.

There are about 20 printing presses of some size in the district employing about 600 people. Four of them come under the Factory Act and give work to 300 persons. The census returns give 436 persons as printers of whom 230 are in Mangalore town alone, and the returns are only approximate as several printers must have had other avocations and preferred to omit any reference to printing even as a subsidiary occupation. The Basel Mission and the Jesuit Mission own presses of their own and a large amount of work is turned out in both of them. Attached to these presses are book-binding establishments in which a number of people are employed. These businesses appear to be worked at considerable profit. Among the newspapers and magazines published in the district are the *Navayuga*, *Swadéshabhimáni*, *Kantirava*—all Kanarese weeklies, and a few fortnightly, monthly and quarterly journals dealing with political, religious and social subjects.

14,277 persons were employed in the transport services. Of these boat-owners, bargemen and their employees numbered 3,626. With a long sea-board and great facilities for fishing and with a few ports of importance and no harbours close to the beach, boat-owning and rowing has naturally given work to a large number of the population. On transport services by road were employed 9,864 which included labourers employed on roads and bridges and those on motor and other vehicles. The extension of the railway line to Mangalore gives work to about 500 men in various capacities from pointsman to permanent-way inspector and porter to station-master. There has been a large expansion in transport services and motor cars and buses have multiplied largely, so that it is now easy to go from one end of the district to the other in a few hours. One of the biggest motor bus organization in South India is the Canara Public Conveyance Company with headquarters at Mangalore which owns a fleet of about 200 cars and buses and has an efficient system of service extending into Mysore, Coorg, North Kanara and Malabar and possesses one of the best-equipped motor workshops in the West Coast, entirely run by the enterprising Konkaneese middle-class people.

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Transport
services.

42,983 people were returned as engaged in some trade or other, either as workers or as working dependants or as people who have taken to it as a subsidiary occupation. There were 1,330 people working as bankers, or their agents and servants; 1,521 as traders in piecegoods, wool, cotton, silk and other textiles, 3,838 as hotel, café and restaurant keepers and their servants. Trade in sweetmeats, sugar and spices and in dairy products absorbed 10,749 of the population and this is the largest for any district in the Presidency. Apparently the people of the district have a pronounced partiality for sugared and spiced articles of food which they buy from the numerous bazaars and wayside stalls on the road-sides. Udipi Brahmins' restaurants are becoming increasingly popular in other districts and threaten to oust the Malabar Brahmins' hotels there. Places so far away as Rájahmundry and Amalápuram possess these Udipi hotels, and where the Palghat Pattar has not yet dared to enter the Udipi Rao has gone and opened a successful business. It may be that they are better cooks than the local votaries of the art, but there is no denying the fact that the Udipi man has learnt quickly what will suit the Tamilians' and Andhras' tastes and has lost no time in pandering to them and in setting up a successful business in the latter's own place, which goes much to enhance the reputation of the Kanarese Brahmin for enterprise.

Trading.

The census returns of 1931 showed that 22,941 persons were actual workers under the class known as "Public Administration and the liberal arts." Of these 684 were in

Administra-
tion and the
liberal arts.

the police force, 3,839 were village officers and servants and peons in offices. The priesthood supported 2,883 persons and the subsidiary services connected with religion 3,253 individuals. There were 556 persons connected with law, either as certified lawyers or as their clerks or agents. There were 2,176 men devoted to medicine of whom more than half were unregistered practitioners of the allopathic or indigenous systems of medicine and there were about 300 midwives or dhais and nurses. Teaching afforded subsistence to 6,775 persons including teachers of all kinds and clerks and servants connected with schools. 1,243 returned their occupation as astrology, casting horoscopes and fortune-telling, 2,066 as musicians, actors and dancers or employees of places of entertainment.

324,772 individuals were returned as persons living on their income. Among these come 547 pensioners, and 284,072 domestic servants. The last figure may seem large, but considering that the houses in the district are isolated, there is need for one or more domestic servants for each house that can afford this luxury, there being 244,232 inhabited houses in the district.

Manure
manufacture.

There are two concerns manufacturing fertilizers, by mixing fish-guano, oil-cakes and chemical manures such as sulphate of ammonia and super-phosphates in suitable proportions and powdering them in disintegrators. The manure thus manufactured is sold to the coffee plantations in Coorg and Mysore. Messrs. Peirce, Leslie & Co., also manufacture and supply bone-meal to the same consumers.

Saw-milling
industry.

There is one saw-mill in this district, the Sri Lakshmi Mills, Kásaragód. It is at present engaged mostly in manufacturing packing cases for cashewnut factories.

Rice-mills.

There are three small rice-mills in the district. The work is seasonal and during the monsoon no work is done in the mills.

Soap
industry.

There are 10 small soap factories in this district the biggest of them employing 8 to 10 men. Most of these work only at intervals when the price of oil is low. The average quantity of soap manufactured in all the soap factories in a year is probably about 125 to 130 tons, and this is sold locally.

General
engineering.

There are two general engineering works, viz., the St. Joseph's Industrial Workshops and the Commonwealth Trust Engineering Works. The former has a big foundry and machine shop. Structural work, general repairs to machinery, repairs to motor cars, spray painting and electric welding are all carried on, as also manufacture of tile making machinery and iron rotary oil-mills. The adjoining workshops are engaged in the manufacture of footwear, and statues and other articles

of plaster of paris, clay, marble, etc. The statues, mostly of a religious nature, are in considerable demand particularly from Roman Catholics. The Institute is managed by the Roman Catholic Mission and about 170 men and boys are employed in its several departments. The Commonwealth Trust Engineering Works employs over 40 workmen and has a foundry and machine shop. The work executed by this concern is chiefly on account of the various establishments, e.g., tile factories, weaving establishments and hosiery works, under the same control. This concern also specializes in the manufacture of various sizes and patterns of very good quality steel safes.

A number of borings for drinking water have been put down in Mangalore town by the Municipality and by private concerns, the deepest being 373 feet. Owing to the heavy monsoon, irrigation works do not exist in this district and so borings are not needed for irrigation purposes.

The botanical name of this plant is *Vateria Indica*. It is known in Malayalam as "Pinay-maram" and in Kanarese as "Dúpa-maram." The trees are found in abundance in the Western Ghats in South Kanara district and they are also planted as avenue trees. The resin of the tree otherwise called white Dammar is collected in the usual way by incising the trunks. It is only slightly soluble in alcohol, but dissolves at once in turpentine. Like Copal it is chiefly used for making varnish. In South Kanara the oil extracted from the seeds is used for lamps and for flavouring food. It is also used as a medicine in cases of rheumatism. The wood is used for making small boats. The tree flowers in the months of February and March and seeds are obtained from May to July.

The Government Trades School, Mangalore, which is the only Government institution in the district under the control of the Industries Department was started in 1929. It provides instruction in wood-work and engineering trades. The classes consist of a part-time mechanics' course of five years duration and a full time wood-workers' course extending over a period of two years. A two-years' course in electric-wiring for the benefit of practical wiremen was also temporarily instituted, but, as a measure of retrenchment the course is now held in abeyance and it is proposed to revive it as soon as possible. Admission to the mechanics course is ordinarily restricted to *bona fide* apprentices and workmen who are engaged in the trade they wish to study. No fee is charged for tuition. Students who successfully complete the courses are awarded certificates. A Board of Visitors consisting of a few officials and influential local non-officials has been constituted to advise the department with regard to the conduct of the school. The school is growing in popularity and it is hoped that it will eventually be permanently established.

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Well-boring.

Dúpa-oil
industry.

Industrial
education.

The Commonwealth Trust Engineering Works, Mangalore, conduct works classes for the benefit of a small number of their own apprentices. The lads in attendance receive instruction in mechanical drawing and the theory of their trades. The classes are recognized by the department and a grant-in-aid is made towards their maintenance.

There are also workshops owned and managed by the Roman Catholic Mission and conducted as unrecognized industrial schools. The St. Joseph's Male Asylum Industries at Kankanádi provide instruction for a few boys in the wood-working and metal-working trades, shoe-making and sculpture, while the Female Asylum Industries provide instruction for girls in lace, embroidery and hosiery work.

River and
railway
traffic.

The advent of the railway for about 60 miles in the south of the district has led to an expansion of trade in traffic in and about that region. The line runs along the whole of the coast line to the south of Mangalore and ends there. There has been a steady increase in passenger traffic from the date of the opening of the line in 1906-07. It was 491,000 in 1911 (from which alone figures are available) and had nearly doubled in 1932-33. Goods traffic exceeded 2,000,000 maunds yearly between 1912-1917 but dropped to 1.3 millions in 1922-23 and rose again until it topped the two million mark between 1928 and 1933. In the early stages the railway had to offer a temporary reduction in rates to compete with several forms of traffic, especially the country boat. The chief articles of export are arecanut, pepper from the Kumari villages, and tobacco from the coastal villages. These are sent to Mangalore for sale and for export. Dried-fish and tiles are largely exported from Kásaragód and Mangalore. The former goes mostly to Ceylon but the disappearance lately of fish shoals off the coast has depressed the trade in dried-fish, fish-manure and fish-oil resulting in many of the small fish-curing yards and guano factories found along the coast being ruined. In spite of the fact that sufficient paddy is raised in the district for local use, we find that rice is also imported by rail from Malabar and by road from Mysore and Coorg. Imported rice is purchased by the people for their consumption because it is cheaper than the local rice. The only oil-mill in Mangalore, Sri Krishna Oil Mills, imports a considerable amount of copra from Malabar for extracting oil. There is a large import of salt, and kerosene oil also comes in in a considerable quantity. The astonishing increase in the import of petroleum is a fair index of the remarkable rise and advance in motor traffic. Though the rivers are navigable only near the coast, a considerable amount of produce is conveyed by small country craft to the sea-port towns. It is, however, not possible to

give accurately the volume of exports and imports by land in South Kanara.

There are seven recognized ports in the district, namely, Mangalore, Hangarkatta, Coondapoor, Kásaragód, Malpe, Baindúr and Mulki; the last two are open only to the *Pattamars* or country craft which sail up and down the coast while the others are frequently visited as well by steam-ships, except of course during the stormy and monsoon months. Mangalore is easily the most important port among them. The following table shows the marked expansion in sea-borne trade in the last 24 years * 1909 to 1933 :—

I. Exports.

	Coasting.	Foreign.	Total.
	RS.	RS.	RS.
1909 to 1912 (average) ...	66,42,433	71,29,362	1,37,71,795
1930 to 1933 (average) ...	94,37,111	1,29,08,520	2,23,45,631

II. Imports.

1909 to 1912 (average) ...	65,44,637	4,50,866	69,95,503
1930 to 1933 (average) ...	1,04,58,368	8,09,458	1,12,67,826

The important articles of export are coffee, arecanut, bricks and tiles and fruits and vegetables. Cashewnut comes under "all other articles" and is exported in large quantities to America. While the value of exported tiles, bricks, coffee and arecanut has doubled, that of pepper and cardamom has increased to as much as seven times, pepper being responsible for most of this increase. In imports there is a large volume of coasting trade and apart from provisions and piece-goods, imported articles include agricultural implements and manures.

The situation of Mangalore port is an ideal one. On the shores of the Arabian Sea and within easy reach by sea from Bombay on the north and Cochin and Calicut on the south, it is the only important port for Coorg and Mysore and is connected with those territories by a number of excellent roads through passes in the Western Ghats. Coffee, paddy, rice and arecanut come in a steady stream into Mangalore from Coorg and Mysore. Two big rivers, the Gulpúr river and the Nétráyati which meet at Mangalore in a wide and busy salt water lagoon convey the produce and provisions by boats to and from the interior of the district. The port is also connected with Malabar and the southern districts by rail. It has attracted a large population of educated and enlightened people and there are in it several

The port of
Mangalore.

* These figures are taken from the Re-settlement Scheme Report at page 13 of B.P. No. 85, Press, dated 3rd July 1934.