

Government of Madras.

EDUCATIONAL DEPARTMENT.

Recd.

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1912.

Enclosures

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G.O. No. 406, 11th May 1912.

DESPATCHED

Weaving industry.

Passing orders on the notes submitted by M.R. Ry. N. Subrahmanya Aiyar on his visits to the principal weaving centres in the Madras Presidency.

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GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

READ—the following papers :—

I

G.O. No. 2947, Revenue, dated 4th October 1911.

ABSTRACT.—Placing M.R.Ry. N. Subramania Aiyar on special duty to report on fly-shuttle looms at work in this Presidency.

II

Letter—from A. CHATTERTON, Esq., Superintendent of Industrial Education (on deputation).

To—the Secretary to Government, Revenue Department.

Dated—the 18th January 1912.

No.—229 G.

In reference to G.O. No. 2947, Revenue, dated 4th October 1911, I have the honour to forward the notes submitted to me by M.R.Ry. N. Subrahmanya Aiyar during the period he was on deputation. I have not asked him to submit any formal report as I consider that the notes present the result of his enquiries in a more convincing form than if they were condensed.

2. There is a good deal of scepticism both in this presidency and in other parts of India as to the value of the work which was carried on first in the School of Arts, then in a small factory in Madras and finally at the Salem Weaving Factory. Any one who takes the trouble to read these notes cannot, I think, fail to be impressed with the very considerable results that have been achieved among the weavers in the Coast districts to the north of Madras. From the tabular statements appended it will be seen that Mr. Subrahmanya Aiyar visited 89 villages and towns and actually counted 6,528 looms fitted with fly-shuttle slays and at the same time he estimates that in these villages there were about 9,010 looms not so fitted. The places selected were those in which it was known that the weavers had taken to the use of the fly-shuttle slay and it would appear that roughly 40 per cent. of the weavers have adopted the new method of plying the shuttle. The result of this change on the economic condition of the weavers is reported to be very satisfactory. The wages of an ordinary weaver are estimated at Rs. 7-8-0 a month whilst the man who plies the fly-shuttle is now able to earn at least Rs. 10 a month. The enquiries made by Mr. Subrahmanya Aiyar even in the districts he visited are by no means complete and it is certain that there are a much larger number of fly-shuttle looms in use than those he actually counted. It would probably be a conservative estimate to put down the number of fly-shuttle looms in use in the Coast districts at 10,000 and the monthly increase in the wages of the weavers at Rs. 25,000, or three lakhs of rupees a year. When so much progress has been made it is reasonable to enquire why there has not been a complete revolution in the method of weaving. This seems to be due to the fact that where fine counts are woven the advantage obtained from the use of the fly-shuttle is not so great as when the counts are coarser, say, from 60s downwards. Mr. Subrahmanya Aiyar estimates that the outturn of the fly-shuttle loom relative to that of the indigenous loom is nearly double with coarse counts such as 20s, more than 50 per cent. greater with medium counts such as 60s, and slightly less than 25 per cent. with finer counts ranging from 80s to 150s. These figures I think are correct; as also his statement that, when weaving what are locally termed 'kailis' but which are better known as Singapore lunghis, the increased output of the fly-shuttle loom is not so marked owing to the time lost in changing the shuttle.

3. Except in a Mission school at Ahmednagar I have never seen women working at the looms although I have visited a very large number of weavers' houses in most parts of the Presidency. It is therefore a somewhat noteworthy fact that with the introduction of fly-shuttle slays women are now learning to do weaving work and, though the figure is not given in the notes, Mr. Subrahmanya Aiyar informs me that he has seen at least 30 women so employed. I shall refer to this point again after discussing the question of introducing further improvements into the weaving industry.

4. The necessity for organization in the hand-loom weaving industry has long been recognised and its effect is very clearly seen in connection with the manufacture of kailis. This business was first started in Pedana about ten years ago and from thence it has spread all over the Kistna and Guntur districts and Mr. Subrahmanya Aiyar reports that about 90 per cent. of the fly-shuttle looms in the Kistna district are engaged in the manufacture of these cloths. They are made to the order of merchants in Madras and the weavers find a ready market for all that they can turn out provided they are up to the standard quality. The men engaged in this trade have no necessity to resort to the local money-lenders and they reap the full advantage of the increased outturn due to the use of fly-shuttle slays. In my own mind there is not the least doubt that the backward condition of the weaver is largely, if not entirely, due to the lack of organization for the disposal of the products of his labour. In the hands of the Baniya or the cloth merchant he can never expect more than a bare livelihood and is therefore entirely devoid of any inducement to make a change. Besides the trade in Ceylon and Singapore lunghis there is an export trade of about 10 lakhs of rupees a year in handkerchiefs and shawls which are exported to London and there sold by auction for re-export to the West Indies and the West Coast of Africa. The bulk of this trade is carried on in the Ceded districts and it would certainly be worth while investigating the condition of the weavers engaged therein. Everything seems to point to the fact that for any permanent amelioration in the condition of the weaver the first step is to get him out of the hands of the sowcar and provide him with an agency for marketing his goods on fair commercial terms. In the case of the export trade this has been done, but the difficulties in connection with the domestic trade seem to be almost insuperable. It is doubtful if any centralised agency could establish itself in face of the local opposition and in view of the very little support it would get from the weavers themselves.

5. Whilst the introduction of the fly-shuttle loom has improved the condition of the weavers it must be remembered that weaving is but the final stage of a series of operations for converting cotton yarn into fabrics. In coarse weaving the cost of the preliminary processes of warping and sizing is nearly equal to that of weaving, and even when dealing with the very finest fabrics the preliminary work represents fully 33 per cent. of the total cost of manufacture and it is probable that with the very primitive system of warping used along the East Coast the figures may even be higher. Mr. Subrahmanya Aiyar's notes clearly show that in respect to warping the East Coast weavers are a long way behind those of Salem, Madura and other large weaving centres to the south of Madras. Warping is mainly done by women who sit in front of a board covered with pegs, between which they stretch the yarn, a single thread at a time. The operation is nearly as laborious as when the warping is done in the open street on posts fixed in the ground. A warping mill will greatly reduce the labour and unquestionably the first problem which we must tackle in our efforts to further improve the condition of the weaver is how to get him to use a warping mill. I am not now prepared to make any definite suggestions in the matter as I think further enquiries are necessary; but I endorse the suggestions of Mr. Subrahmanya Aiyar contained in paragraph 48. A peripatetic demonstration weaving party seems likely to prove of some use in other parts of the Presidency if, as Mr. Subrahmanya Aiyar suggests, they should remain in each place a sufficiently long time to give a convincing demonstration to the weavers of the advantages of improved methods of work, but when it comes to introducing warping mills I am inclined to think that the only agency through which we shall be able to work will be the dealers who purchase the outturn of the weavers and who in some cases supply them with yarn for their manufactures. A single hand-warping mill will easily keep a dozen weavers at work and the difficulty about introducing any such improvement is to

secure the co-operation of a sufficient number of weavers. Where the warps are all of one character as in the Kailis trade, there should be no great difficulty, but where each weaver is working more or less according to his own fancy or to the orders of a Baniya the difficulties are likely to be great. However, the question has got to be faced and I would recommend the establishment of a warping mill in one of the centres, such as Pedana or Vettapalam, where fly-shuttle looms are now largely employed. The mill will prepare warps suitable for local use and will either have to buy yarn and sell warps to the weavers or will have to undertake to receive yarn from the weavers and convert it into warps, or finally it may act as an intermediary between the merchants who supply yarn to the weavers and take back their finished products. Obviously it wants a man with tact and experience to work this plant.

6. Attention may be drawn to the information given in the notes regarding the attempts to establish hand-loom weaving factories. The causes of failure are clearly set forth and are due (1) to the lack of technical knowledge on the part of the management, (2) to the inability of the directors to work harmoniously together and (3) to the dislike of the weavers themselves to being subject to discipline and control.

It must be admitted that the prospect of effecting any great change is not a very hopeful one and I think we must look to the operation of indirect measures, such as the spread of education, and to the pressure of general economic forces rather than to direct attempts to effect any great change in these matters. Our experience with the weavers of Salem does not encourage me at the present moment to advocate the establishment of a pioneer weaving factory. Even supposing it is desirable, the recent orders of the Secretary of State preclude any action in this direction. It seems to me perfectly certain that the effort must come from the locality, and the most I think we can do is to render every possible assistance in regard to technical matters to those who are still endeavouring to carry on the weaving industry on factory lines. By the use of warping mills, improved looms and improved apparatus such as bobbies and jacquards, a modern factory possesses enormous advantages over the individual weaver with his still primitive appliances. Failure seems to me to be due to absolute and complete lack of business experience combined with an entire absence of technical knowledge. In every case the enterprise seems to have depended upon an untrustworthy maistry who fleeced his employers and played ducks and drakes with their money. I am perfectly convinced that the only serious difficulty to be faced in connection with the establishment of these weaving factories is the weaver himself, and the first attempt might well be made among the weavers who belong to the Native Christian community. Whether there are many or few on the East Coast I have no knowledge, but in the Ceded districts there are large numbers of them, and a well organised Native Christian weaving shed seems by no means an impossibility and, if realised, will be a valuable object-lesson.

7. Warping mills are probably viewed with suspicion and distrust as this work now affords employment to a large number of women, but if, as reported by Mr. Subrahmanya Aiyar, women are also taking to weaving, this objection will entirely disappear. It is probable at first that women would not like working in a factory, but if the wages they could earn were good that objection would gradually disappear. Possibly separate weaving sheds for women will become popular, but on such a point as that it is impossible to forecast the course of events. It is hopeless to expect that the hand-loom weaver will ever be able to compete in the manufacture of such goods as mulls, jaconets and shirtings with the power-loom weaver, but he can produce the equivalents of these with much better wearing qualities, and a comparatively small reduction in the present range of prices will open out for the products of the hand-loom a very much larger market than now exists. For instance, the use of bordered cloths is greatly restricted because they are very expensive and people are forced to wear something that is cheaper, but if by the introduction of improved processes of manufacture the cost of hand-made bordered cloths were appreciably reduced the market for them would be greatly extended and there would be a corresponding diminution in the demand for imported piece-goods. It may be taken that the finer qualities of the work done in hand-looms represent a luxurious type of clothing regularly worn only by the wealthier classes and reserved for festive occasions by

those whose means do not permit them to make use of it every day. This explanation seems necessary lest the idea should become prevalent that we are trying to bring the hand-loom weaver into direct competition with the power-loom. This I regard as quite hopeless, but I think it is possible to materially reduce the cost of hand-woven fabrics and that on account of their superior wearing qualities they will displace a certain percentage of the piece-goods now imported or manufactured in India itself.

8. Attention should be drawn to the remarks upon the character of the weavers. I do not think that Mr. Subrahmanya Aiyar has in any way exaggerated the low standard of morality which prevails amongst them. Indeed it would be surprising if it were otherwise considering the unfavourable conditions under which they exist, and there is reason to hope that if their material surroundings can be improved and that if they can be provided with a better and less precarious livelihood some improvement will also be effected in their mental condition. In submitting proposals for the establishment of a weaving school at Madura I have dwelt upon this point and urged the necessity of providing more adequately for the education of the children of the community. If primary education is to be made compulsory by local option, the centres in which the greatest benefit from it is likely to accrue are those largely inhabited by the depressed artizan classes whose present degraded position is largely due to the operation of economic forces entirely beyond the range of their experience. They have suffered most from the commercial intercourse which has sprung up between India and the West and it is but reasonable that they should be the first objects of our solicitude in taking steps to introduce such a beneficent measure as compulsory primary education.

ENCLOSURE.

Reports of Weaving Assistant.

From Tunni, dated 4th November 1911.

Tunni, a Railway Station on the North-East line of the Madras and Southern Mahratta Railway near the Vizagapatam border, is the head-quarters of a Deputy Tahsildar in the Gōdāvari district. It is a union town, nearly a square mile in extent and contains a population of 9,051.

2. There are about 200 looms in Tunni not one of which is a fly-shuttle loom. But Payakaraopeta (Sarvasiddhi taluk, Vizagapatam district), less than two miles from it, contains three fly-shuttle looms out of a total of two hundred. The former are owned by a Devanga who got his first loom about 2½ years ago from Uppadai which has long been noted for its excellent weaving.

3. The fly-shuttle was first introduced into the Gōdāvari district by a Bogam man from Masulipatam. He first sold a dozen of them at Uppadai, Payakaraopeta, and other places, and expected that larger orders would follow. He was, however, disappointed and he therefore repaired to Payakaraopeta with 30 slays. He stayed there for nearly six months teaching the weavers how to use the fly-shuttle and allowed them six months' time to pay for the slays the price of which was fixed at Rs. 7 each. The earlier manufactures were of poor quality and did not find a ready sale. The cloth merchants began to deprecate the fly-shuttle products. The weavers were discouraged in consequence and returned the slays within the time allowed.

4. The Devanga who got the slay from Uppadai, however, boldly faced the initial difficulties and by the time a fresh stock was brought he was in a position to purchase two more. The cloth merchants now appreciate his cloths and the weaver intends putting up more looms.

5. The classes of goods woven are men's and women's cloths of very fine texture, the yarn usually used being 100s and higher counts. Only a few looms are used to weave 60s. Some of these fabrics are enriched with gold and silver threads and are sent out to the Gōdāvari district. The fly-shuttle man is able to turn out a larger quantity with 60s yarn than with 100s, the increase in the outturn being less than 25 per cent. with the latter, while with the former it is nearly 50 per cent. This, he states, is one of the reasons why the fly-shuttle has not been largely adopted. Of the 400 looms in the two places, only one is devoted to the manufacture of solid bordered cloths and one only to the making of Saris (women's cloths) with silk. There are a thousand looms in villages which lie within a distance of 12 miles from Tunni, but at no village is the fly-shuttle reported to have been adopted. The weavers here are in the hands of the sowcars. A few alone, about 25 families, work independently. The fly-shuttle weaver is paid according to the outturn by the sowcar who advances him the yarn.

6. There are no improvements in the preliminary processes. They use rice *kanjee* for 100s but to size 60s ragi is used. They make warps of 24 to 26 yards by means of rectangular wooden frames about 5 feet x 3 on which are fixed a number of pegs.

✓ 7. On one of the looms I found a warp which was unlike any that I had seen before. On enquiries I learned that the yarn which was equal to 150s had been spun at a village called Ponduru in the Vizagapatam district. The weaver paid Rs. 13 a lb. or Re. 1 for 3 tolas. The demand for cloths made of that yarn was quite insignificant, the only people ordering them being members of the Raja's family. The cloths cost four times as much as the ordinary ones and yet people purchase them and one or two who had used such cloths asserted that their life was six times that of ordinary cloths. It is reported that 500 houses are employed in Ponduru in spinning yarn and it is said that they turn out 4—worth of yarn every month. The raw material costs As. 8 and the balance Rs. 3-8-0 represents the wages of the women engaged in the work. The thread is called *pattū sālē nūlū** and is always spun by *sālē* women.

* Silk weaver's thread.

The fly-shuttle weaver here tells me that there are about 50 looms in Rajahmundry and that there is also a small factory of fly-shuttle looms. I am proceeding to Rajahmundry to-night. I have not been able to get either from the Revenue authorities or any other source any information about fly-shuttle looms in the Gōdāvari district. The only person who knows anything about it is the weaver who has been using the fly-shuttle. He says that he was at Masula and he estimates the number of fly-shuttle looms there to be over 1,000. Besides Rajahmundry number of villages in the Amalapuram taluk are reported to be using the fly-shuttle.

From Narasapur, dated 17th November 1911.

8. Since I submitted my first inspection report from Tunī, I have visited all the weaving villages in the Gōdāvari district where it was reported that fly-shuttles had been largely adopted. The taluks of Rajahmundry, Ramachandrapuram, Amalapuram and Nagaram, I have finished. In regard to Cocanada and Peddapur, however, I could not get reliable information and I therefore wrote to the Tahsildars of those taluks to enquire and let me have a rough idea as to whether anywhere in their taluks such looms were in use. I also wrote to the Tahsildars of certain taluks in the Vizagapatam district on the subject. A few have replied and so far no fly-shuttle looms are reported to be in use.

9. I append a statement of the places I visited, the number of fly-shuttle and ordinary looms in use in those places, their area and population as far as I could collect, the finest and the coarsest count woven, as also that more commonly used.

10. The fly-shuttle has been in use in the district for two years and all accounts show that the fly-shuttle slay first came from Bander (Masulipatam). In all the places where the fly-shuttle has been used to weave coarse cloths the number of such looms is steadily increasing and no difficulty of any kind is felt. In Nalatur (Ramachandrapuram taluk) the number of fly-shuttle looms is 110 and in Dulla (Rajahmundry taluk) the number is 151, whereas the ordinary looms in those places are 30 and 26 respectively. During the past six months alone as many as 35 have been introduced in each of those two villages. The weavers consider that the fly-shuttle is much easier to work and they expect that in a very short time not only will the few ordinary looms be altogether replaced, but that a greater number will be brought into use so that boys and women who cannot work with ease the country loom may satisfactorily use the fly-shuttle.

11. In regard to the finer yarn the fly-shuttle has not met with the same amount of success. To handle finer yarn one requires some skill and even more than skill, some experience and patience. In many villages the first failures have discouraged the men and the number has gradually fallen. There is, however, a village called Mori† in the Nagaram taluk where I

† In the Minutes of Consultation of Fort St. George of the 17th and 18th centuries "Morees" are mentioned as a class of goods exported to Europe. Probably they were the manufactures of the village Mori.

counted as many as 171 fly-shuttle looms. They are all working with counts above 80s. High class goods are turned out and the manufactures of that village and of Jagannapet, which is 15 miles from Mori, are better in quality than even those considered the best in the Southern districts. The average outturn on a fly-shuttle loom is 4 to 5 yards a day with 100s or 18 to 24 picks a minute against 15 to 20 picks on a country loom; with 130s it is 15 picks a minute against 13. The average earning of a country loom weaver will be Rs. 10 a month, while that of the fly-shuttle weaver will be Rs. 12 or Rs. 12-8-0. The cloths manufactured on fly-shuttle looms do not fetch the same price as those on the country looms, because the merchants say that they have not got the same imposing appearance. Whatever the truth may be, such of the purchasers that can make out which is which avail themselves of this circumstance and cut down the prices as much as they can and the weavers in consequence are handicapped a little. It is the same with coarser cloths also. The outturn with coarser cloths 20s to 40s is estimated to be 8 to 12 yards a day on the fly-shuttle according to the counts used against 4 to 6 on the country loom and the difference in price between the two manufactures will be 1 anna for every 6 yards. The earning of an average weaver of this class is estimated to be Rs. 6 to Rs. 8 and that of a fly-shuttle weaver of the same class Rs. 3 more.

12. In places where the fly-shuttle has largely been adopted the slays are made locally at a cost not exceeding Rs. 4 each including a shuttle, while the Masulipatam slay costs Rs. 2 more including freight and other charges. The weavers therefore do not consider the expenditure heavy and freely go in for the slay when they realize the advantages. Few weavers in these parts are addicted to drink, but the young and the old largely take opium. The middle-aged never take it. The weavers almost all of them are Devangas. Manufacturers of coarse cloths generally carry on their business independently. They buy the yarn in the open market, make cloths and take them for disposal to the weekly fairs close to their villages. They appear to find no difficulty in disposing of their goods. It is otherwise with finer cloths—some manufacture and sell the cloths themselves, others are engaged as coolies under richer weavers who carry on business independently or who acting as middlemen take advances from Baniyas and get cloths made by poorer weavers. Trade in finer cloths is fluctuating and depends on the season. Men without money have necessarily to depend on the Sowcars. The latter dictate their own terms. Taking advantage of their poverty, the Sowcars pay low wages and though at some risk collect goods during the greater part of the year when the trade is somewhat dull. A greater portion of this class of weavers are under the grip of the Sowcar though not to the extent to which men in Salem and other places in the south are subject.

13. *Warping and sizing appliances.*—Warping is done everywhere on the peg appliance. It is curious that warps of 20s are only 24 yards long, while those of 80s and 100s are made longer. No man in these parts has seen a warping frame like those in use in Salem or Madras. Their short warps greatly handicap their work. Further, there is unnecessary waste of time; for instance, two persons have to work 8 days with 60s and 15 days with 100s to warp the full lengths that can be had with a bundle, whereas the same work can be done in less than one-fourth the time on the warping mill. There is a warping mill in the Rajahmundry Factory and the weavers have been told to see and copy it. There is nothing peculiar about sizing. They make as good warps as can be had either in Salem or Kumbakonam. There are special men for sizing in large weaving centres, and these men do the sizing alone and never weave. Labour here being cheap, the cost of sizing is at least 50 per cent. less than in Salem and elsewhere in the south; similarly with weaving though not in the same proportion. The cloths in consequence can be had here cheaper.

14. (a) *Special features in certain weaving centres.*—In Mori a large number of looms are employed to weave cloths of 100s and 120s with borders of gold thread of simple patterns. Fly shuttle is used for the purpose, but a second person usually a boy or a girl is engaged to raise and lower the additional heads which are suspended from extra rods. A simple dobbie of 4 or 6 levers will do the work of the boy and the enterprising Mori people will not grudge to spend a few rupees on the appliance. In fact, when the suggestion was made to them three or four of them were anxious to have them.

(b) *Turbans.*—In Jagannapet there are as many as 25 looms making turbans, 3 yards broad, but the fly-shuttle has not been adopted yet.

(c) *Kavilis or lunghis.*—It was pleasing to note that in certain centres, especially in Dulla, where counts finer than 20s had never been attempted before certain looms were engaged in making Lunghis. This was begun quite recently and the fly-shuttle is used for the purpose.

From Masulipatam, dated 29th November 1911.

15. *Weaving Factory at Rajahmundry.*—This factory is owned by two individuals—one of whom is a Brahman and the other a Baniya. It was started in the year 1906 with the help of one Bangarusami who was got down from Karūr. For some time, i.e., till Bangaru left, the factory checks and towels alone were manufactured and the yarn was got out from Nagpur and Broach. Owing chiefly to the dishonesty of Bangaru and the inefficient management which consisted among other things in making goods for which there was hardly any demand, the proprietors lost heavily. For the disposal of goods manufactured in the factory they established an agency at Masula and the agent there cheated the factory to the extent of Rs. 2,500. Until six months ago it was a series of trials to the proprietors who by that time are reported to have lost something like Rs. 5,000. Undaunted, they steered through difficulties and their monthly balance sheet during the past six months shows a net profit of Rs. 100.

16. There are, in all, 18 looms, 9 of which are engaged in making cloths of silk-spun and indigenous; one or two of them weave mercerised cotton; three make cotton durries and two checks, the remaining looms not working. The indigenous silk is got out from Surat and Madras and is used either dyed or undyed. The dyeing work is carried on in the factory itself. The proprietors believe that their methods of dyeing are defective and are anxious to improve them. They want to introduce wool-weaving. They have secured samples of different varieties with quotations. They are anxious to make shawls and silk cloths with ornamental borders and for this they want a dobbie or preferably a jacquard. The value of goods manufactured in a month is estimated to be Rs. 1,200, and assuming that all the goods are sold wholesale with the usual 20 per cent. discount it will be Rs. 1,000. Raw materials which are mostly silk cost Rs. 700, contingencies and labour Rs. 200, and the balance of Rs. 100 represents the profit of which allowance should be made for interest on capital and depreciation.

17. Besides the 18 looms in the factory, there are at present in the town only six fly-shuttle slays working with coarse counts. For some years the number of looms—fly-shuttle and ordinary—has been steadily going down and the following is the reason. Roughly, the number of male members of the weaver caste in the town may be estimated at 1,500, 75 per cent. of these have now given up the weaving profession. Of these again 75 per cent. are employed in the several aluminium factories and rice mills. It would appear that most of the factory hands (aluminium) are Devangas. It is reported that before the advent of the aluminium factories there were nearly 1,000 looms. The weavers can earn about Rs. 8 to Rs. 10 a month if they follow their profession, but in an aluminium factory they can earn not less than Rs. 15 after a few years' service. In a town like Rajahmundry where there is enough demand for unskilled labour, the number of indigenous looms will further go down as the weavers will be drawn to less responsible but none the less paying avocations. Likewise in the town of Amalapuram, members of the weaver caste are employed in other walks of life.

18. The appliance used in the factory are all up-to-date. The looms are frame looms and the looms used to weave silk cloths are fitted with take-up motions which have been copied from a sample purchased from our department. They have been made locally at a cost of Rs. 8 each; the shuttle have rollers and are locally made, but I understand that the roller shuttles will be given up altogether as they often get out of order. They have a warping mill which can make warps of 96 yards. They have a beaming frame also. Silk warps generally do not require sizing and if any warp threads should be weak, slight brushing with water in which some gum has been dissolved will make the warp sufficiently strong. In the Rajahmundry factory the warp was being regularly sized on the loom just as a cotton warp would be treated. The mistake has been pointed out and they are now trying our methods. The adoption of wire beads, the use of raw hide pickers and the introduction of springs to regulate the tension of the warp are some of the several improvements that may be effected and the proprietors are eager to carry out the suggestions. Of the several factories started in these places this alone has survived and the proprietors have now learnt to manage their concern though at a heavy cost.

From Masulipatam, dated 30th November 1911.

19. Having visited the weaving centres in the Gōdāvari district except Uppadai near Pitapur about which I have not received any information yet from the Deputy Tahsildar to whom I wrote more than a fortnight ago, I came to the Kistna district and the first place I visited was Narasapur. Appended is a list of the places visited since my last inspection report.

20. In the Gōdāvari district the most common manufactures are grey-goods. Unlike in the south, men and women wear similar cloths be they white or coloured, but, white is more common, specially in the Gōdāvari district. The cloths are generally plain and have no ornamental borders. Gold threads are sometimes used for borders but nowhere is silk used. The difference between men's and women's cloths lies in the length and perhaps in the texture also, the women using finer cloths.

Coming to Narasapur, I found a very large number in fact the whole lot of looms employed in weaving coloured goods. Almost the whole of the coloured yarn is imported and the more popular colours are green, marine blue and Turkey red.

21. Of all the weavers I have hitherto seen the Narasapur men are most impoverished and hopelessly indebted to sowcars. During my visit to the weavers' houses I was shown a Muhammadan's house in which some country looms were reported to be working. I asked my guide whether any Muhammadans in that town had taken to weaving. In answering my question in the negative he traced the history of the small weaver colony said to be attached to the Muhammadan's residence. One or two weavers, I was told, had taken loans of a few rupees from the Muhammadan which they could not repay within the stipulated time. The money-lender with intent to enlist in his service the male as well as the female members of the family held out various threats and in the end attained his desired object.

A weaver beggar on being questioned why he gave up his profession remarked that the original home of his castemen was somewhere in the Nizam's territory and that they were brought to Narasapur during the time of the Dutch. They were then in a prosperous condition.

*The British occupied Madhavapalaiyam in 1677 and maintained the factory there for 150 years.

Some time after the British occupied* the place, there was no export of textile fabrics, and no work for weavers. (The manufacture of cloths similar to those made at Narasapur was commenced at Lancashire about the year 1832). The beggar further said that continued starvation for years has made the weavers sickly and weak so that they are now unfit for any hard work.

There can be no doubt that the weavers of Narasapur which was the original home of the famous "Madapollam cloths"† have suffered considerably, but that they have not taken to agriculture or other pursuits during these trying periods only betrays their inertness.

† Derived from the word Madhavapalaiyam, the name of that portion in Narasapur town which was originally inhabited by weavers.

22. The introduction of the fly-shuttle in Narasapur is of quite recent date. At the time of my inspection there were 40 fly-shuttle slays among a total number of 112. The fly-shuttle is now catching on rapidly and it is certain that in a month's time the number will double itself. As everywhere else in this part of the presidency, the fly-shuttle is much liked in Narasapur also. Fly-shuttle slays in Narasapur cost between Rs. 2-8-0 and Rs. 3-4-0 each.

23. There are four classes of weavers, in Narasapur:—No. (1) They carry on the business independently, but they are a very small number. No. (2) They work as coolies and are paid according to the outturn. The payment of cooly is either in the shape of money or it is yarn equal in quality and quantity to the total yarn taken up by the finished goods. No. (3) They are paid monthly wages. No. (4) They are people who have taken large advances from sowcars and are bound to sell the manufactured articles to them at rates fixed by the money-lender. Nos. (3) and (4) form a large proportion and are the worst sufferers. A co-operative weavers union will be a very useful organisation in such a centre but the chances of forming such a union seem to be very remote. There are three castes of weavers *Devangas*, *Karnabakthals* and *Sālēs* and among them there is more dissension than union. The weavers are not able to gauge the demand and adjust their manufactures accordingly. During the greater part of the year their ordinary manufactures do not command a ready sale. Such of them as are under the thumb of the middleman complain that they are required to manufacture all sorts of cloths and that the remuneration offered is not worth the trouble and expense involved in changing the harness to suit different widths and thicknesses. The manufacture of Kailis is still unknown to them. What is immediately required in the place is a central agency for business purposes and I shall dwell upon this question in my final report.

24. Besides weaving, there is dyeing and printing. There* are now 50 dyers' houses but only 30 families continue their original occupation. At Rustambada a place $1\frac{1}{2}$ miles from Narasapur there are 20 more dyers' houses. Attached to this report is a short account of the weaving factory at Narasapur which will show, how concerns started and managed without expert advice come to grief.

25. *Palcole* (*Palakollu*) is a place of some importance. It is largely inhabited by wealthy Komatis whose occupation is trade and money-lending. It is the centre for the distribution of yarn to weaving villages within a radius of nearly 25 miles. At the weekly fair at Palcole, it is estimated that transactions of about Rs. 50,000 are carried on. There is trade in yarn alone to the extent of Rs. 10,000 a week. Trade in foreign cloths amounts to Rs. 10,000; sales of local manufactures amount to another 8,000 of which one half will be turbans. Weavers living in Palcole and its vicinity never suffer for want of work or on account of any difficulty in the disposal of goods. Some of the richer weavers carry on their trade in turbans independently. The majority of weavers are engaged by traders to do their work, and as the trade in turbans is lucrative, the merchants eager to secure the services of as many men as may be available give liberal advances. These turbans which are made of 20s. to 40s. are exported to Dharwar, Satara and Poona in the Bombay Presidency and Akola and Amraoti in the Central Provinces. To weave these turbans, the fly-shuttle is not used. The weavers have been told that the fly-shuttle can be used to its greatest advantage in the weaving of broad cloths like turbans and that with coarser counts there will be no difficulty whatever.† I learn from the yarn merchants in Palcole that in the taluks of Bhimavaram and Tanuku the yarn most consumed is 20s. and 40s. In Viravasaram and its neighbourhood 6's. yarn is largely used for making tapes. The demand for finer yarn about 80s. comes from Mori, Bandarulanka, Jagannapeta, all in the Gōdāvari district.

26. *Ellore*.—In a village called Pattabada within two miles from Ellore there are 76 weavers' houses and 129 looms of which 88 are fly-shuttle. This is the first place in my tour where I found the Kaili woven on a large scale. (From Ellore downwards I find that the nearer the village is to Madras the larger is the scale on which this class of goods is manufactured). Of the 88 fly-shuttle looms 41 are employed to weave Kailis. The rest are employed in the manufacture of men's and women's cloths of counts above 80s. either grey or coloured. The weavers are in a fairly good condition.

In Ellore town itself there are 26 looms and all of them are employed to weave 20s. and 40s. The weavers of Ellore are *Sālēs* and I find that *Sālēs* as a rule are less skilled than *Devangas* and with but a few exceptions they weave coarse cloths. *Devangas* make it a rule as far as possible to borrow within their own community and if large amounts are required one or two alone of the community borrow money from sowcars and distribute it among others.

27. The warping in the above places is done exactly in the same way as it is done in the Gōdāvari district. In sizing, there is no specialization as in some of the villages in the Gōdāvari district where fine yarn is largely handled. The warps moreover are shorter here than in the Gōdāvari district.

* Note.—The portion of the town inhabited by the dyers is called Vathakanipettai, which literally means the place of dyers. Close to their quarters are two wells the water of which is considered to be best suited for Turkey red.

28. I shall in my next report deal with the history of the origin and growth of the fly-shuttle in the Kistna district. I shall also deal in greater detail with the trade in Kailis as carried on in these parts.

From Pedanna, dated 4th December 1911.

29. *Narasapur weaving factory.*—The factory started work about the end of 1905 with two fly-shuttle frame looms and two Hattersley looms. In less than six months two more fly-shuttle looms were added and a warping machine (probably Hattersley's) was introduced. By this time, a limited liability company was formed with a capital of Rs. 3,000 made up of 300 shares of Rs. 10 each. In 1907 ten more frame looms were added so that the total number of fly-shuttle frame looms amounted to 14. In 1908 the capital was raised to Rs. 15,000 of which nearly Rs. 10,000 was paid up. In 1909 the factory was removed to a thatched shed put up on a site purchased by the company. A retired revenue inspector anxious to take the management of the whole business in his own hands invested a lot of his own money on a building which should have cost him nearly Rs. 4,000. As soon as the building was ready he got out a dozen power looms and a steam engine of 3 H.P. to run them. Eager to equip his factory with up-to-date appliances he ordered a slasher sizing machine also. Those of the subscribers that did not approve of the Revenue Inspector's action were ready to sell their shares and the Revenue Inspector was equally keen to purchase them. All the money that the gentleman could command was thus spent on machinery and buildings. For a few months there was some little work and during this time, maistries on salaries of Rs. 30 and Rs. 50 were entertained. In spite of the costly maistries, the products were not good and could not command a ready sale. The Revenue Inspector found after some time that all the money he had, had been spent, and he could not find funds for the purchase of yarn and of fuel for the engine. The factory has not been working for nearly a year and the machines have all been left uncared for. The 14 fly-shuttle looms ceased work soon after the power looms were purchased and the latter could not be worked for want of funds among other things. Such is the history of the Narasapur Factory whose fate many other factories in the Northern Circars started without expert advice, have shared.

From Masulipatam, dated 5th December 1911.

30. Since I submitted my last report I have visited the villages mentioned in the accompanying list. It will be seen from that list as well as from the one submitted with my previous report that the total number of fly-shuttle looms in the villages that have so far been inspected in the Kistna district, excluding those that previously belonged to Gōdāvari is 1,596 while the number of ordinary looms is only 236. In the Gōdāvari district on the other hand (*vide* my report of the 17th November) the proportion of fly-shuttle to ordinary looms in villages where the former has been adopted, is one of the former to two of the latter. There are again several villages in this district where the fly-shuttle has not been introduced at all. It was an uncommon thing to find in that district ten or more looms in one village whereas in Kistna 20 or 30 was an ordinary number. Further, in the Kistna district, there are few villages which have not adopted the fly-shuttle. Why then should there be so much difference between two adjoining districts? It is not because the Gōdāvari weavers are more conservative and less enterprising nor is it because it is not yet time for the fly-shuttle to spread to the Gōdāvari district from the place where it commenced in the Northern Circars. But it is, in my opinion, due largely to the fact that the Gōdāvari weavers make as a rule finer cloths. Greater skill and experience are required to adapt the fly-shuttle to the weaving of finer counts. The earlier manufactures of finer goods are necessarily of bad quality and do not command a ready sale. This circumstance discourages in no small measure the weavers, the majority of whom depend for their living on their daily earnings. They can ill afford to gain the necessary experience even though at a small risk. Such of them as have some money and are enthusiastic do not mind the first failures and persevere till they succeed. The present use of the fly-shuttle for weaving high class goods, is due to such men. In the Gōdāvari district cloths of counts from 80s to 200s are generally made while in the Kistna, except at Chinthakundapalem which is a part of Masulipatam, the highest number woven is 60s. Even this 60s began to be woven after the introduction of the Kavili (Lunghi) manufacture. More than 90 per cent. of the present manufactures in the Kistna district are Kailis and the rest are 20s and 40s which formed the staple manufacture before the introduction of the Kavili. There is yet another reason why the Gōdāvari weavers have not so largely adopted the fly-shuttle. Though the fly-shuttle loom gives a greater outturn than the ordinary loom, with the finer yarn the increase in outturn is not so great as with the coarse yarn.

31. I shall now deal with the history of the development of the fly-shuttle in the Northern Circars. In August 1905, soon after the boycott movement in Bengal, a monster meeting of the inhabitants of Masulipatam was arranged at the Robertson Square where it was resolved among other things that foreign goods should be avoided as much as possible. The weaver population was told that improved appliances were available by means of which twice their usual outturn could be had. There was at that time, a weaving school at Vettapalam in Bapatla taluk of the Guntūr district which was managed by the District Board of Kistna as a branch of the Board

Technical school at Bezwada. The Superintendent of the latter school was Mr. T. K. T. Viraraghavachariyar, an Engineer student who, before he joined the Bezwada school, was an Industrial Assistant under Mr. Chatterton, then Officer in charge of the School of Arts and Inspector of Technical schools. The weaving school was opened in September 1904 and Mr. T. K. T. Viraraghavachari who, as an Assistant in the School of Arts, had opportunities of observing and learning the improved methods of weaving then carried on in the School of Arts, was placed in charge of the Vettapalam weaving school also. At the instance of M.R.Ry. Rao Bahadur Venkatappiah Garu, then Vice-President of the District Board, permission was given to Mr. Viraraghavachari to arrange for a demonstration in Bandar of the working of the fly-shuttle loom. Accordingly, a frame loom and a pit fly-shuttle slay were brought from the Vettapalam school and were worked by a weaver from the same school. After a few days' demonstration at Bandar, the looms were removed to Pedana, a village five miles away. The demonstration there continued for a month and those of the weavers that wanted to sit at the loom and see for themselves how it worked were allowed to do so. Having been personally convinced of the advantages of the fly-shuttle, they immediately purchased three slays. The number gradually increased as experience was gained. Three frame looms were subsequently made at the expense of the National Fund and Industrial Association and presented to the weavers. A fourth loom was made at the expense of Mr. Venkatappiah. What became of the three looms presented by the National Fund, nobody could tell, but the one made for Mr. Venkatappiah was returned to him. I made enquiries as to why the frame loom was not adopted and I was told that the chief reason was its prohibitive cost. One or two who were prepared to incur the expenditure found that they had not received sufficient instruction to work the loom satisfactorily. The question of the proper tension of the warp was one of the difficulties which they could not overcome for want of sufficient training. As the slay itself was a decided improvement, the weavers did not care to devote attention to a more costly appliance though they admitted that the frame loom gave a slightly greater outturn.

32. *Pedana* is a village containing 983 houses of which more than half belong to weavers. I counted 717 looms of which 612 are flyshuttle slays and all except 25 are employed to weave "Kailis." During the months of September, October and November, however, a few of the looms ordinarily employed to weave Kailis will be devoted to the manufacture of Hyderabad Cheras referred to in one of my previous reports. The weavers of this village candidly admit that their condition has been very much improved after the introduction of the fly-shuttle. They will ever be grateful to those responsible for its introduction. Such a glowing account of the fly-shuttle I have not heard from any other place. This village is the centre from which the fly-shuttle spread to other villages and towns. The weavers admit that the lowest amount that a small family now earns is Rs. 15 a month. The few country looms that still remain in use are intended to give work to the old and the sickly who cannot satisfactorily handle the fly-shuttle. There is also no doubt that the number of working looms has increased after the introduction of the fly-shuttle, for a greater number of boys and women are said to be engaged in actual weaving. Be the outturn on the fly-shuttle loom the same as or more than that on the country loom, the old conservative weavers say "the fly-shuttle is far easier to work."

33. *Makers of fly-shuttle slays.*—The first slay makers were three in number and they were men trained in the Bezwada Institute under Mr. Viraraghavachari. One of them was the Bogum man referred to in my Tuni report as the person responsible for the first introduction of the fly-shuttle into the Gōdāvari district. During the earlier years, these men made a lot of money and the slays were then sold for Rs. 7 and Rs. 8 each. In two years the selling price came down to Rs. 4 and at present the price of a slay ranges from Rs. 1-12-0 to Rs. 3-4-0. A slay maker that I met at Pedana complained that on account of the daily increasing number of competitors they are now losing money over the business. Outside demand has considerably diminished as each village has learnt to supply its own requirements. No man prospers at the present time on account of the absurd competition.

34. *Loom Accessories.*—Except two brass reeds, one of which had been presented by some swadeshi enthusiast, all the reeds and healds are country made. Those that have used the brass reeds are not much impressed with their advantages. Without exception, shuttles are used without rollers as it has been found from long experience that plain shuttles are more convenient. Shuttles are made locally and sold for As. 4 to As. 8 each. Pirns made of tin are used instead of the old reed ones.

35. *Warping.*—The longest warp is only 24 yards long and the kaili warp is only 9 yards made into 18 after separation. The old peg appliance alone is used for warping. It was reported to me that nearly two years ago a warping mill was brought to Bandar by a swadeshi propagandist, who, however, did not know to work it himself. The weavers had then some doubt as to whether warps made on this frame could be separated and their lengths doubled. They however were unable to get any information and the warping mill was never thought of again. The weavers of Pedana and of Bandar would very much like to have this appliance set up in their respective places. Many a weaver at Pedana asked me if there was no simpler and cheaper method of sizing. At the National College at Masulipatam I found an old horizontal warping frame not at present serviceable as several parts had been broken. I learnt that it was never used in Masulipatam and that it was presented to the National College by some

defunct factory. There are no special men in these villages for sizing as in Bandaralauka and Jagannapet. Warps for kailis are made only 9 yards long which when doubled after sizing, will be sufficient to weave 2 pieces. It is said in Pedana that kailis made with longer warps are inferior in quality. I cannot however see the force of this remark.

36. In several villages where cloths of 20s and 30s were woven I observed that the yarn before sizing was usually soaked in water in which some powdered gravel was left to stand long or in a decoction of *Acacia Arabica* and I was told that the object in so treating the yarn was to give it strength and a good appearance.

37. *Business in Kailis*—This business was first started in Pedana nearly ten years ago by a Devanga from Madras. From Pedana it spread to other places in the district. Kailis or Lunghis as they are called are 9 yards a piece with 29" width. They are exported to Penang and Singapore through agents in Madras. There are local sub-agents. The business is carried on in one of the following ways:—

(1) The agents purchase in the open market for ready cash, those that are brought to them for sale by men who carry on their work independently;

(2) The agents advance money to a few chosen weavers who, acting as middlemen, distribute the advance among several individual weavers. Such individual weavers are bound to work only for those from whom advances have been taken. Small advances are either in the shape of money or yarn. If it is yarn, it is sold to the workmen at current prices and the manufactured articles are taken back at some fixed rates.

(3) The yarn is the agents' and labour charges alone are paid. Some of this class take advances and some do not.

Ready made kailis are purchased by middlemen at rates varying from Rs. 3-12-0 to Rs. 4-2-0 a piece. Where the yarn has been supplied to the weaver, the cooly is usually Rs. 1-6-0 a piece to those who have taken advances and Rs. 1-8-0 to others. The middleman pays Rs. 1-2-0 to the individual weaver and takes As. 4 for himself. He also makes a profit of another As. 4 before the piece goes to the agents' hands, but his profit varies from As. 4 to As. 8 with different places and on conditions. During recent years, the number of sub-agents or middlemen has considerably increased. Besides weavers, Brahmans, Baniyas, Mahammadans, and others have now taken to this work. The competition is very keen and each middleman is anxious to secure the services of as many weavers as he can. Weavers taking advantage of this circumstance borrow money from more than one person. In addition to their wages, the workmen manage to earn something by dishonestly appropriating a portion of the yarn given them. For example, 8 laddies are given to make one piece, the weavers use six or six and a half laddies and appropriate the rest to themselves. The middleman and the weaver among themselves spoil the good name of the agents and the trade. The middleman tries to pay the weaver as low a wage as possible. The workman wants to appropriate to his use as much as he can, out of the eight laddies given him. (The weight of a piece should ordinarily be not less than 60 tolas, but the weight of the present products is hardly 54 tolas.) Then again, such of the yarn as is required to be dyed locally is not satisfactorily treated. This unsatisfactory state of affairs is all due to the undesirable competition. New agents instead of securing new fields indiscreetly rush to places where agencies have long before been established and not only do they harm others but also harm themselves. If this unsatisfactory competition continues long, agents and weavers alike are doomed to suffer.

Not a few have expressed their sincere conviction that but for the Kaili business they should long ago have been washed away.

38. In this report I have not dealt with the weaving of wool carried on in Masulipatam or with the Palampores, as they are outside the scope of the present enquiry. For the same reason, in dealing with Ellore I have not said anything about the jute or wool manufactures that are carried on, on a large scale in that place.

From Madras, dated 5th January.

39. My last report I submitted from Masulipatam on the 4th December. On the 5th I visited Kaja, a village in the Divi taluk, of the Kistna district, and on the 6th I returned to Madras. On the morning of the 14th, I again started on tour. Appended is a statement containing the names of villages which (except those that bear the asterisk) were visited by me since the 14th. The latter could not be inspected personally for want of time, but the particulars regarding them shown in the statement were furnished by village officers and verified by me by enquiries from other sources. The total number of slays in these ten villages is only 355, while those personally counted by me in other villages number 3,701.

40. Of the places mentioned by the Hon'ble Mr. P. Tyagaraya Chettiar, except an insignificant village called Gunipad which I could not easily get at during this season, I inspected all the villages, though at some of them I could find only a small number of fly-shuttle slays. In the districts I have visited there are still a very large number of weaving villages that have not been inspected on account of shortness of time, but no village or town of importance has been omitted. I think at Venkatagiri and its suburbs, the number of looms actually

at work should be more than what I counted. Being a zamindari village, there were no Government village officers who could take me to each weaver's house and I did the best I could with a Union servant. The weavers would not give correct information nor could we get access into all the rooms in the house. I believe, and the local reports confirm my belief, that there should be at least 100 more fly-shuttle slays in those places.

41. The fact that "mara maggam" meaning machine looms would be taxed, was common to all weavers of all villages. Though the object of the enquiry was explained to them they had their own suspicions in the matter. (Other local names for the fly-shuttle are 1. Visai maggam (*i.e.*, looms having some ingenious mechanism), 2. Company maggam, 3. Seermam maggam = European loom.)

42. I shall divide the looms according to the classes of goods woven:—

- (1) Looms engaged in weaving coarse cloths—up to 40s.
- (2) " " medium cloths—60 to 70s.
- (3) " " fine " 80s and above.

(1) Cherala, Perala, and Iburpalayam in Bapatla taluk, Tenali in Tenali taluk, Mangalagiri in Guntur taluk, Phiringipuram in Narasaraopet taluk, and Battiprolu, Addipallu, and Ilavaram in Repalli taluk, are all places in the Guntur district where nothing but coarse cloths are woven. Except at Cherala, Perala, Battiprolu and Addepalli, only rough dhotis and cheras of 20s and lower counts are woven, and the fly-shuttle has been freely adopted for the purpose. (At Phiringipuram the longest warp is only 12 yards long, the weaving of which is but a day's work. The wage for the piece is 7 annas which includes the warping and sizing expenses of 2 annas.) At Cherala, Perala, Battiprolu and Addepalli, on the other hand, the most common are coloured goods of 40s yarn—popularly known as Hyderabad urumals. The ground of these cloths is always coloured and simple designs of various patterns are worked in the body, by means of weft threads which are so dyed that portions of them which go to form the pattern are unaffected by the dye-bath. By a proper arrangement of warp threads and a corresponding arrangement of weft threads some cloths are so woven that their borders appear solid. The fly-shuttle is not of much avail for weaving this class of goods and it is why a comparatively small number is in use in those villages. The process of weaving is necessarily very slow, the shuttle has to be thrown slowly and the weft thread so manipulated that its several parts dyed and undyed rest in their proper places. I am sorry I could not procure a sample of this cloth. A sowcar who promised to sell a small sample piece subsequently changed his mind and said that unless I was prepared to purchase a pair of cheras costing nearly Rs. 20 I could not get it. It is probable that he suspected that I wanted the sample for the purpose of copying. Besides Hyderabad urumals strictly so called there are other urumals—all coloured—called Dasta urumals which are in large demand among the Muhammadans of the Northern Circars and of Madras. The other manufactures which are coloured Cheras of check pattern and grey dhotis of 20s and 30s are locally consumed.

The business in Cherala and Perala is ever brisk. Weavers are never known to suffer for want of work. Throughout the year they are employed by some capitalist weaver or other. The Hyderabad merchants have got about ten commission agents in Cherala and Jandirpet. Some of them are Muhammadans, some Baniyas, and others weavers. For every hundred rupees worth of goods purchased, the commission agents take Re. 1-6-0 from the capitalist weaver. What commission they get from merchants, I was not able to ascertain. At the villages of Cherala, Perala and Jandirpet which form the Cherala union, the volume of trade in yarn and textiles is very large being nearly twenty lakhs a year. The yarn required in these villages for making the Hyderabad cloths is all dyed in Cherala. It is said that there are nearly 400 houses engaged in dyeing of which nearly half are Baniyas'. A large quantity of dyed yarn is sent out to other districts. The Hyderabad urumals and other coloured cloths made at Cherala and Perala are heavily weighted with oil.

At Perala, a rich Padmasali named Guddanti Kottaya Chetti has got a neat little weaving shed in which he has arranged a number of fly-shuttle frame looms. I found three Ahmednagar looms of the old type, two Madras frame looms, one turban loom, besides three fly-shuttle slays and a warping mill. The turban loom was purchased from the Vettapalam school and the rest of the plant from the Kistna Swedeshi Industrial Company at Bezvada now defunct. At the time of my visit only one fly-shuttle loom was working and I was given to understand that the Ahmednagar looms and the warping mill were never worked, and that the turban loom which was doing some satisfactory work was not then working for lack of orders.

(2) *Cloths of 60s.*—They are mostly coloured goods and are (1) kailis or lunghis, (2) sailas, (3) muttus and (4) Madras handkerchiefs called in the vernacular Pattai mark. Of these varieties, the Madras handkerchiefs are the most difficult to make. They require very close setting as the picks should average 120 to the inch. Among the villages I visited Arni in the Chingleput district and Sularpet in the Nellore district are the only two places where they are manufactured. The fly-shuttle was tried for weaving these goods, but as the cloths woven were of poor quality and did not fetch proper prices, it was given up. The following statement will

give an idea of the sizes of the various classes of goods, of the yarn required and of the labour involved, to weave each class :—

Description of goods.	Length of piece.	Breadth.	Quantity of yarn required for warp.	Quantity required for weft.	Wages for a piece.
	YARDS.	INCHES.	HANKS.	HANKS.	RS. A. P.
Madras handkerchiefs = Pattai mark	8	36	33	48	2 4 0
Kaili	9	29	39	39	1 8 0
Sailas	10	42	50	62	1 12 0
Muttus	9	27	27	44	1 12 0

In the list attached to this report the classes of goods woven in each village have been shown in the remarks column. Business in these classes of goods is carried on everywhere on almost the same lines.

(3) *Cloths of 80s and higher counts.*—Kosampet and Arni in the Chingleput district and eight villages in the Nellore district (Nos. 16, 19, 20 and 28 to 32 in the list) are places where cloths of higher counts are woven.

Kosampet.—Seventy-five per cent. of the looms in this village are employed to weave cloths of 80s and 100s counts and the remaining 25 per cent. are engaged in weaving sailas and kailis. About 10 per cent. of the finer goods go to Malabar and the rest to Madras.

Arni.—Only a very small number of looms are now employed to weave cloths of 100s and higher counts, the major portion being devoted to the manufacture of coloured goods. The muslins of Arni once so celebrated have now entirely ceased to be made. A piece of 20 yards was last made a few years ago for one of the Industrial Exhibitions. It was the work of several months and was priced Rs. 80. Though the price has since been considerably reduced I understand that it has not been sold yet. In those early days when fine muslins were made the yarn was spun by hand by Telugu Parayas. About two and a half years ago a Devanga by name Kumbala Ramiah Chetti started a factory with 20 fly-shuttle looms, but was soon obliged to close it on account of labour difficulties. The weavers of Arni appeared to me to be a specially indolent class addicted to excessive drink. I went to the place in the evening and I could not find many men sober. Of all weavers, the Arni men alone complained that work on the fly-shuttle loom was taxing as the greater outturn necessarily involved greater exertion. The number of fly-shuttle looms in Arni has considerably decreased of late.

In Patur, Ellaiapalaiyam and other villages in the Nellore district where finer counts are woven, the cloths are made to the order of sowcars in Nellore town who give the required quantity of yarn and pay for labour. (In Nellore town itself there are very few weaver families but some considerable work is carried on in the dyeing of yarn and of finished goods chiefly the latter.) The wage for weaving 36 yards of 100s is usually Rs. 5 which includes warping and sizing charges. Weavers here find no difficulty in the use of the fly-shuttle. Though they do not find any appreciable difference in the outturn they prefer the fly-shuttle on account of its comparative cheapness and ease. 130s is the finest yarn used on the fly-shuttle loom.

At Venkatagiri town, one portion is entirely devoted to the manufacture of fine cloths and there, a very few fly-shuttle slays are in use but, in the portion where mostly lunghis are made, a large number of fly-shuttle slays are employed.

43. *Factories in the Nellore district.*—A factory at Nellore started in the year 1907 by K. Subbiah with 20 looms and another at Buchireddipalayam started with about the same number, were soon closed owing to intrigues among the shareholders and incapacity to manage the weavers. There is, however, at present, in the Nellore town, a small factory called the National Stores Weaving Factory started in the year 1908 by one N. Krishnaswami Rao. There are 12 looms at work one of them being a frame loom. The proprietor says that the factory is not paying owing chiefly to the frequent troubles that he has with his workmen.

44. *Warping and sizing.*—In all the places mentioned in the list only the old peg appliances are in use for warping. The few warping mills introduced in one or two places were never put to use as the purchasers did not learn how to work them. The methods of sizing adopted in the villages of Vettapalem, Cherala, Perala and adjoining villages are different from those in vogue in other places. Instead of rice kanji they use a porridge prepared out of a kind of onion called in Telugu *kasigaddalu*, Tamil *nari venkayam*. Sizing onions can be had in large quantities in those villages and half an anna worth of this material will be sufficient to size from 24 to 30 yards, while the rice required to size the same length will cost two annas. Except at Arani and Sulerpet, weavers do the sizing work everywhere but at those two places they consider it beneath their dignity to do that work and employ a different set of people who are generally Palli, Muhammadans and fishermen. There again are places where men other than caste weavers are engaged in weaving.

45. *Peddapuram, Uppadai and Kottapalli* (in the Gōdāvari district).—I am dealing with these three places separately, as they are very important centres of weaving which have earned a reputation for years past. In dealing with the finer manufactures of the Gōdāvari district, I have stated in one of my previous reports that they are better in quality than even those considered the best in the southern districts. It is no wonder that they are so, for, in early days the fine cloths used in the south would appear to have come from the Kalinga country (Northern Circars). In Tamil literature the word "Kalingam" often occurs to denote cloths—specially those of fine texture.

(1) *Peddapuram*—is noted for its silk turbans. There are a dozen looms making these turbans. Raw silk is generally used either dyed or undyed. Green, red and rose are common colours. Silk weavers carry on their business independently. Cloth weavers on the other hand take advances from sowcars and make cloths to order. Most of the goods are coloured and the weavers themselves are the dyers. There are four looms in Peddapuram devoted to the manufacture of bordered cloths and two fly-shuttle looms are now in use on which 80s are woven.

A few families at Peddapuram are engaged in making tapes for cots. It takes a week to weave tapes weighing two visses. The finished product (2 visses) sells at Rs. 3-8-0. The material costs Rs. 3 and annas eight represents the wages of the women employed in the work for a week.

The weaving and dyeing establishment, Peddapuram.—Such was the name of a factory started three years ago by two enterprising young men with the help of a Karur weaver named Bangaruswami. Twenty looms were locally made and some of them were fitted with take-up motions. Two or three of the looms had lever arrangements for weaving checks of different patterns. There were also three fly-shuttle slays and a warping mill. The concern was worked for only a few months when quarrels arose among the partners and the workmen taking advantage of it, continued to swallow as much of the materials as they could. The factory suddenly stopped work as it sustained a heavy loss. The whole plant with a number of brass reeds is now lying idle. One of the proprietors whom I happened to meet looked so dejected that no suggestions from me for the improvement of the concern were received with enthusiasm.

(2) *Uppadai and Kottapalli.*—The two villages are situated within a distance of six furlongs of each other. There are roughly 400 looms in Uppadai and 200 at Kottapalli. At the latter place, more than 50 looms are always employed to weave 200s. It is rarely that yarns of counts lower than 100s are woven in these two villages. The Kottapalli cloths are also called Uppadai cloths and they are sent out to all parts of the Presidency and to Bombay and Calcutta. The speciality here is that cloths woven elsewhere by one man are woven by two persons sitting at one loom, and it is considered that cloths so woven have a better texture. They also say that the quantity of cloths woven by two persons on one loom is greater than the total quantity made by two persons on two different looms within the same time. Another peculiarity with the cloths of Uppadai and Kottapalli is, that warp threads for a foot on each side of them are always finer than those in the middle. There are five fly-shuttle slays at work in the two places. Weavers here want cloths of 100s and higher counts to be of open weave (72 picks to the inch) and they cannot get this done with the fly-shuttle. Another difficulty they say, is, that cloths with borders of gold cannot be woven. These two difficulties can easily be got over, but the root objection seems to be that the weaver finds it taxing to sit singly on a loom and do the work that was hitherto done by two individuals, in an easy going manner.

46. How the flyshuttle came to be adopted in the villages above named is a question that should be considered next.

With the exception of Arani, Kosampet and Sulerpet which are so close to Madras and of Phiringipuram in the untur district, all the places mentioned in the list use, what the weavers popularly call "Bandar" loom. Living close to Madras, the Arani and Sulerpet men naturally learnt the fly-shuttle from their Madras neighbours. As for Phiringipuram, it would appear that two weavers were sent to Madras to study the fly-shuttle by a Roman Catholic Missionary at Thalacheru and after some months' stay they returned to their village with a few fly-shuttle slays which they purchased in Madras for Rs. 12 each. In regard to the "Bandar" loom I have explained in detail in my last report how a student of the Vettapalam weaving school was taken to Bandar and Pedana to demonstrate to the weavers there the working of the fly-shuttle and how thereafter it caught on in that part of the Presidency. I have also stated that the few men who began the manufacture of slays after a demand arose for them, had been trained in the Bezvada Technical institute of which the Vettapalam school was a branch.

There is clear and ample proof that the adoption of the fly-shuttle on the East Coast is the result of the work of the Vettapalam school. Under the circumstances it looks anomalous that even Vettapalam weavers should say that the fly-shuttle first came from Bandar and call their slay a "Bandar" slay.

The following facts will, I am sure, sufficiently explain the anomaly.

It is well known that the artisans, as a class, are conservative and slow to change their old methods and that the weavers among them are more so than others. Whatever good work, a school may do, unless a local person of influence reputed to possess a knowledge of things and having a high character is so large-minded as to explain it to the ignorant weaver and commend

it to his good sense, the chances of its appealing to his conservative mind is remote. Such a man was not available at Vettapalam and the Union Chairman in whose house the school was located was unfortunately unpopular among the villagers. Mr. Viraraghavachariyar, Superintendent of the Bezwada Institute, could not do very much by his fortnightly inspections and the maistry in whose hands the daily working of the school was left was illiterate and inexperienced. Without going into details, it might be said that the popular impression for a long time after the school was started, was that the school was a concern of the union chairman and not an institution for imparting instruction. Such being the case at Vettapalam, a proper gentleman was forthcoming at Masulipatam in the person of M.R.Ry. Rao Bahadur Puranam Venkatappiah Pantulu, a leading wakil of the place in whose words people had implicit confidence. He was then Vice-President of the Kistna District Board and in that capacity arranged for the demonstration by a weaver of Vettapalam school, of the working of a fly-shuttle slay brought from that school. This demonstration proved effective as has been pointed out in my previous report. Another circumstance which, I think might account for the fly-shuttle slay being called "Bandar" slay was, that at the Vettapalam school practical instruction in the use of the fly-shuttle was alone given. No slays were manufactured in the school and all the slays that were sent out were made at Bandar by men trained in Bezwada Institute.

I venture to think that the facts above set forth, will leave no doubt in the minds of the people as to the source from which the fly-shuttle originated on the East Coast districts.

47. It has been shown that the fly-shuttle is very popular on the East Coast and that the number of such slays is steadily increasing. The condition of weavers has also considerably improved since its introduction as will be seen from the fact that while an ordinary weaver earns Rs. 7-8-0 a month on an average the fly-shuttle weaver earns Rs. 10 or 33½ per cent. more. To sum up, the advantages of the fly-shuttle over the country loom are:—

(1) The fly-shuttle slay is cheaper than the country slay. The former costs Rs. 3 to 4 while a good country slay costs more than Rs. 10.

(2) The fly-shuttle gives a greater outturn. It is very difficult to say how much increase there is in the outturn. It varies with the different counts of yarn used and with the experience and skill of the weaver. In 100s for instance, it was reported to me in one place that the increase was hardly 10 per cent. while in another place it was said to be nearly 35 per cent. Roughly, one might say that the outturn is nearly double with coarse counts, such as 20s, more than 50 per cent. with medium counts such as 60s when only one shuttle is required to be used and less than 50 per cent. when a change of shuttle is necessary as in weaving Kailis and slightly less than 25 per cent. with finer counts such as 100s.

(3) The fly-shuttle slay is easier to work, as will be evident from the fact that a larger number of women and boys are now employed in weaving.

48. The next question to be considered is, what improvements are necessary in the appliances now in use and how to carry them out.

The improvements which are immediately necessary are—

(1) The introduction of some sort of warping mill in places where the fly-shuttle has been adopted. The old rectangular frames with pegs should at once be replaced, setting free a number of women now engaged in the work, to attend to other kinds of work.

(2) The use of the fly-shuttle for weaving broad cloths like turbans. One man can do the work now done by two and the other will be free to do any other work.

(3) The introduction of dobbies for weaving simple designs. At present an extra hand—a boy or a girl—is engaged to raise and lower the extra healds necessary for the pattern which are suspended underneath some rods. This extra hand will be available for other work should the dobbie come into use.

(4) The introduction of the Jacquard machine to weave complicated patterns, and

(5) the introduction of the frame loom wherever it is profitable.

From my experience of Kollegal in regard to the adoption of Jacquard machines and from the fact that the Bandar and Pedana weavers speedily adopted the fly-shuttle when it was taken to their houses and demonstrated, I am firmly of opinion that the only way to convince weavers of the efficiency of any new appliance is by demonstrating it at their very homes. A demonstration party of a few well-trained weavers with an experienced superintendent at the head should be organised and they should visit all the important centres of weaving with the necessary appliances.

One central weaving place might be selected for each district, where the party should stay sufficiently long—for several months if need be—and when the work in that district is over it might move on to another district. Apart from the central weaving school which, it is in contemplation to start in Madura, no other smaller schools will be necessary as the demonstration party will be a sort of itinerant school. Two or three such parties might be necessary for the whole Presidency.

49. The next question to be considered is whether the adoption of improved appliances will alone suffice to improve the material condition of the weavers.

A large majority of the working weavers are at present paupers. They have no money to purchase the materials for making cloths, and they therefore take advances either in the shape of yarn or of money from sowcars. If such men should introduce costly appliances like the warping mill or the Jacquard, they must necessarily seek the help of the sowcar and it is more than doubtful if the workmen would be benefited in that case. That the weavers are the worse for taking advances, small or large, is a matter of common knowledge though, in different localities and with different classes of goods, the suffering may be greater or less. Co-operative weavers' unions are certainly desirable as they would eventually tend to free the workmen from the grip of the sowcars but they are not easy to accomplish. The weavers are an ignorant class and they cannot easily appreciate the advantages of such institutions. There is no union in certain localities among the weavers of the same caste and where they happen to belong to different castes want of union is greater. Opposition from the sowcars is another and more important factor that would make the task very difficult. However, an experiment might be made in that direction in one or two places.

50. The question of the disposal of finished goods then comes in for consideration. With Kailis and Sailas there is no difficulty nor with the large manufactures of Cherala and Perala nor again with coarse cloths made of 20s and lower counts. The real difficulty comes in with finer cloths. The places where such cloths are manufactured are villages in the old Godavari district and a large part of the Nellore district. Some villages have a greater number of looms than are necessary to meet the requirements of those and adjoining villages while others have a fewer number. Then again, the total manufactures of two or more adjoining districts are sometimes greater than the existing demand. Weavers have not the prudence to see that imported goods are replacing the country-made goods and to change their manufactures to suit the current demand. A central business agency at a convenient locality is therefore necessary in each district to gauge the present requirements and get cloths made accordingly and distribute them. Co-operative weavers' unions can arrange to do this work if they can be successfully started.

51. Material improvement of a people is to a large extent dependent on their moral improvement. It is well known that weavers have a very low standard of morality. Very often men who deal with them such as the merchants and the middlemen are also responsible for their depraved condition. There should be an understanding among the merchants not to enter into absurd competitions and interfere with one another in the management of their respective business. In regard to the weavers themselves there is no hope in the grown-up men. The younger generation should be given compulsory elementary education and this might be done in night schools.

STATEMENT A.

Serial number.	Name of the town or village.	Name of the district in which town or village is situated.	Name of the taluk.	Number of fly-shuttles.	Number of ordinary looms.	Area of the village or town.	Population of the village or town.	Counts used on the fly-shuttle.			Remarks.
								Highest.	Coarsest.	More common.	
1	Mandapeta	Godavari district.	Ramachandrapuram.	7	About 200	9,546	1,430	100	40	60 & 80	Only 5 looms are now in use.
2	Nelatore	Do.	Do.	110	40	25	1,430	40	20	20	All grey dhotis.
3	Vallur	Do.	Do.	35	15	55	2,303	..	..	..	..
4	Veeravaram	Do.	Do.	20	21	40	2,445	..	..	..	..
5	Dulla	Do.	Rajahmundry.	151	26	34	2,757	60	20	20	Three Kalli looms.
6	Moramanda	Do.	Do.	30	6	39	2,331	40	20	20	..
7	Amalapuram	Do.	Do.	* 5	50	140	12,615	100	80	80	..
8	Marapalli	Do.	Do.	4	21	..	770	120	80	80	..
9	Bandaralanka	Do.	Do.	36	204	39.43	3,725	120	80	100 & 120	150-s is the highest. Five fly-shuttle looms weaving 120-s of simple designs.
10	Vilasavalli	Do.	Do.	26	57	18.46	1,640	80	40	40	..
11	Thatbaramudi	Do.	Do.	3	31	35.94	2,614	+ 150	80	100	..
12	Mori	Do.	Razole (Nagar).	171	99	23	3,482	120	80	100	Five different patterns of simple design for borders on fly-shuttle.
13	Malikipuram	Do.	Do.	8	22	..	1,672	80	60	80	200-s highest on country loom.
14	Jagannaspeta	Do.	Do.	16	About 400	..	..	100	80	100	country loom, 40 turban looms weaving 130 to 150.
15	Sivakode	Do.	Do.	17	23	..	3,405	80	20	20 to 40	..
16	Magalinduru	Do.	Do.	9	20	41.73	2,474	..	..	..	..
17	Chintalapalli	Do.	Do.	12	50	29.14	3,062	80	40	80 & 100	150-s highest.
			Total	660	1,275						

* None now in use.

+ 200-s is the highest number woven on a country loom.

† Reported on by village officers through the Tahsil'ar.

Note. — Besides the 660 fly-shuttle looms which were actually counted, it is understood, that there are from 100 to 150 slays scattered over several villages which are far from each other and are situated several miles away from either the nearest railway station or places which I have visited.

STATEMENT B.

Serial number.	Name of the town or village.	Name of the district in which the town or village is situated.	Name of the taluk.	Number of fly-shuttles.	Number of ordinary looms.	Area of the village or town.	Population of the village or town.	Counts used on the fly-shuttle.			Remarks.
								Finest.	Coarsest.	More common.	
1	Narasapur	Kistna Do.	Narasapur	40	112	..	9,795	80	40	60 and 80	..
2	Rustambada	Do.	Do.	* 3	20	..	6,152	40	20	20	* 12 more slays were purchased just on the day of my inspection.
3	Palcole	Do.	Do.	5	About 200	..	12,953	80	60	80	200 slays highest on country loom.
4	Duggalur	Do.	Bhimavaram	26	200	20.85	2,245	80	40	60	50 turban looms, weaving 40 to 60.
5	Penumannehili	Do.	Narasapur	6	10	27	1,377	80	40	40	Salis-grey dhotis and chera.
6	Ellore	Do.	Ellore	26	158	..	37,819	40	20	20	120 slays highest on a country loom, 41 Kalli looms.
7	Pathabada	Do.	Do.	88	41	..	..	100	40	60	200 slays highest.
8	Sanivarepet	Do.	Do.	23	26	..	3,498	100	80	80 and 100	80 looms, Kallis 12-20 slays by salis 112 fine dhotis and cheras.
9	Masulipatam	Do.	Masulipatam	198	6	..	42,123	100	40	60 and 80	78 Kallis.
10	Challapalli	Do.	Divi	89	7	..	4,046	60	20	60	Coarse dhotis and a few Kallis.
11	Pedapronu	Do.	Do.	5	2	..	1,198	60	20	20	All salis.
12	Gantasaala	Do.	Do.	86	9	56.80	5,412	..	..	..	Almost all Kallis.
13	Devarikota	Do.	Do.	14	1	39	894	..	..	..	..
14	Gantasalapalayam	Do.	Do.	7	6	..	..	..	..	..	..
15	Thadayipalli	Do.	Do.	20	7	18.40	1,722	60	40	60	..
16	Kodali	Do.	Do.	20	7	..	..	..	..	..	..
			Total	635	805						

STATEMENT C.

Serial number.	Name of the town or village.	Name of the district in which the town or village is situated.	Name of the taluk.	Number of fly-shuttles.	Number of ordinary looms.	Area of the village or town.	Population of the village or town.	Counts used on the fly-shuttle.			Remarks.
								Highest.	Coarsest.	More common.	
1	Pedana	Kistna	Masulipatam	612	105	..	5,787	60	20	60	692 looms kailis.
2	Kappaldhoti	Do.	Do.	118	27	22 acres.	764	..	..	..	{ 134 kailis. 11-20 salis. 45 kailis. 15-20 salis.
3	Kappaldhotipalayam	Do.	Do.	38	22	4 "	..	..	..	..	Mostly kailis.
4	Mallavolu	Do.	Do.	61	10	75.78	2,798	..	..	..	rest
5	Idugupalli	Do.	Do.	43	4	15	..	..	..	..	
6	Polavaram	Do.	Do.	124	9	17	1,809	..	..	..	
7	Rayavaram	Do.	Do.	168	15	35	1,842	..	..	..	
8	Kotha pet	Do.	Do.	13	11	5	..	..	..	..	
	Total			1,177	204						

STATEMENT D.

Serial number.	Name of the town or village.	Name of the district in which the town or village is situated.	Name of the taluk.	Number of fly-shuttles.	Number of ordinary looms.	Area of the village or town.	Population of the village or town.	Finest counts woven on the fly-shuttle loom.	Coarsest counts woven.	Yarn more largely used.	Remarks.
1	Kaja	Kistna	Divi	63	12	52 acres.	4,424	60	40	60	Kailis.
2	Kroor	Do.	Do.	8	11	..	2,887	60	40	60	Do.
3	Arani	Chingleput	Ponneri	35	About 700	95.70	4,573	100	40	60	Kailis, sailas, M. Harker-chiefs and dhotis.
4	Kosampet	Do.	Trivellore	127	73	..	..	100	60	80	Dhotis and a few kailis.
5	Aruguthurai	Do.	Ponneri	3	17	..	380	60	40	60	Kailis.
6	Mangalam	Do.	Do.	2	38	..	3,036	60	40	60	Do.
7	Sulurpet	Nellore	Polur Division	1 frame 25	About 300	..	..	60	40	60	M.H.C. Kailis, Sailas mutius and a very few dhotis.
8	Gudur	Do.	Gudur	8	1	..	8,298	60	40	60	Kailis.
9	Chennur	Do.	Do.	152	21	49.88	4,459	60	40	60	Do.
10	Vindur	Do.	Do.	31	2	19.2	2,434	60	40	60	Do.
11	Gudali	Do.	Do.	39	12	18	1,130	60	40	60	Do.
12	Gumipad	Do.	Do.	16	6	12.64	1,579	60	40	60	Do.
13	Metta	Do.	Do.	36	9	20	898	60	40	60	Do.
14	Rettapalli	Do.	Do.	24	4	13	..	60	40	60	Do.
15	Saidapuram	Do.	Repur	14	5	22.25	686	60	40	60	Do.
16	Venkatagiri	Do.	Venkatagiri Division	84	137	..	11,721	(a) 100	60	100	Dhotis and kailis.
17	Bangarupet	Do.	Do.	109	93	..	1,076	60	40	60	Kailis.
18	Manilapet	Do.	Do.	154	17	..	37,128	60	40	100	Do.
19	Nellore	Do.	Nellore	61 frame.	..	..	..	100	40	100	Very few weaver families in Nellore town.
20	Narayanareddipet	Do.	Do.	64	33	..	..	80	40	80	Dhotis, grey and a few kailis.
21	Indurupet	Do.	Do.	34	20	..	5,006	60	40	60	Kailis.
22	Narasapuram	Do.	Do.	27	19	..	..	60	40	60	Do.
23	Mayipad	Do.	Do.	68	60	..	2,274	60	40	60	Do.
24	Kovur	Do.	Kovur	186	16	65.55	6,862	60	40	60	Do.
25	Inamadu	Do.	Do.	84	67	26.97	2,836	60	40	60	Do.
26	Leguntapad	Do.	Do.	5	5	..	1,064	60	40	60	Do.
27	Vegur	Do.	Do.	47	9	15.32	3,191	60	40	60	Do.
28	Gangaram	Do.	Do.	28	1	..	746	120	100	100	Grey dhotis.
29	Darmaramadugu	Do.	Do.	2	2	..	2,562	120	100	100	Do.
30	Patur	Do.	Do.	92	17	22.9	2,326	120	70	100	Do.
31	Buchireddipalayam	Do.	Do.	90	43	..	..	100	60	100	Grey dhotis and kailis.
32	Ellalapalayam	Do.	Do.	44	5	29.75	3,344	130	100	100	All dhotis.
	Vettapalam	Guntur district.	Bapatla	331	208	..	6,032	60	40	60	Kailis—a few dhotis and cheras.
33	Desaipattai	Do.	Do.	182	30	..	..	60	40	60	Kailis.
	Dantampet and Aurndepatnam	Do.	Do.	41	23	..	..	60	40	60	Do.
	Nainapalli	Do.	Do.	39	61	..	2,902	60	40	60	Do.
	Ravudupet	Do.	Do.	149	43	..	1,644	60	40	60	Do.
	Ravanapet	Do.	Do.	75	32	..	..	60	40	60	Do.

(a) 180 is the finest yarn used in Venkatagiri.

Statement D—cont.

Serial number.	Name of the town or village.	Name of the district in which the town or village is situated.	Name of the taluk.	Number of fly-shuttles.	Number of ordinary looms.	Area of the village or town.	Population of the village or town.	Finest counts woven on the fly-shuttle loom.	Coarsest counts woven.	Yarn more largely used.	Remarks.
34	Pandalapalli	Guntur	Bapatla	370	91	Acres.	3,458	60	40	60	Kailis and sailas.
35	Jandirpet	Do.	Do.	305	442	38-39	12,565	60	20	40	Hyderabad urumals, kailis and sailas.
36	Cherala	Do.	Do.	18	612	..	..	40	20	40	Hyderabad urumals.
37	Perala	Do.	Do.	106	920	25-56	6,053	40	20	40	Do.
38	Iburpalayam	Do.	Do.	135	202	..	4,571	40	20	40	20's grey goods mostly.
39	Tenali	Do.	Tenali	20	about 160	..	18,195	40	20	40	Do.
40	Battiprolu	Do.	Repalli	39	218	1 square mile.	3,979	40	20	40	A few Hyderabad urumals.
41	Addepalli	Do.	Do.	4	175	..	3,845	40	20	40	Do.
42	Ilavaram	Do.	Do.	137	151	..	8,747	40	20	40	20's grey and coloured goods.
43	Mangalagiri	Do.	Guntur	204	410	..	..	40	20	40	20's grey goods.
44	Uppaluru	Kistna district.	Bozavada	46	..	..	..	40	20	20	Silk cloths and coloured
45	Phiranghipuram	Guntur.	Narasaraopet	191	13	51.7	4,362	100	80	80	cheras and dhobis.
46	Peddapuram	Godavari	Peddapuram	2	about 600	..	15,436	120	100	120	200's highest on the
47	Uppadai	Do.	Pithapuram division.	2	400	..	..	120	100	120	country loom and no
48	Kottapalli	Do.	Do.	4	200	..	..	120	100	120	counts lower than 100's woven.
			Total	4,056	6,726						

Note—Number of looms personally counted
Number reported on by village officers 3,701 355

Order—No. 406, Educational, dated 11th May 1912.

The Government have perused with interest the notes by the Weaving Assistant, M.R. Ry. N. Subrahmanya Aiyar, during his visits to the principal weaving centres in this Presidency, and Mr. Chatterton's comments thereon. The notes deal with the number of fly-shuttle looms at work in the places visited and the economic condition of the weavers who have taken to the use of the fly-shuttle slay. In the 89 villages and towns in the Godavari, Kistna, Chingleput, Nellore and Guntur districts visited by the weaving assistant 6,528 looms were fitted with fly-shuttle slays out of an estimated total of over 15,500. Roughly speaking 40 per cent. of the weavers appear to have adopted the fly-shuttle, with as a result an average increase in their earnings of about 33 per cent.

2. The Government agree generally with Mr. Chatterton's remarks and suggestions for the improvement of the condition of the weavers. For the present the Superintendent of Industrial Education will be requested to submit detailed proposals for the exhibition of a warping mill and the organization of a peripatetic instruction party to demonstrate to the weavers the advantages of improved methods of work and appliances. The Government agree with Mr. Chatterton as to the inadvisability of establishing a weaving factory at present.

3. Among the recommendations made for improving the condition of the weavers is the provision of adequate facilities for the education of their children. Compulsory education of these children is at present out of the question, but the Director of Public Instruction will be requested to report whether any special facilities can and should be provided for their education.

(True Extract.)

T. E. MOIR,
Ag. Secretary to Government.

To the Director of Public Instruction.
,, A. Chatterton, Esq.
,, the Honorary Secretaries, National Fund and Industrial Association.
,, the Revenue Department.
,, the Financial Department.
Editors' Table.

EDUCATIONAL DEPARTMENT.

NOTES CONNECTED WITH G.O. No. 406, EDUCATIONAL, DATED
11TH MAY 1912.

[SUBJECT.—*Inspection notes submitted by N. Subramanya Aiyar, Weaving Assistant,
on the hand-loom at work in this Presidency.*]

REVENUE DEPARTMENT.

From A. Chatterton, Esq., dated 18th January 1912, No. 229-G.

In April 1911, the National Fund and Industrial Association, Madras, requested that a census of fly-shuttle looms might be taken under the orders of Government to discover the localities where they have not been introduced. In G.O. No. 2947, dated 4th October 1911, N. Subramanya Aiyar, Weaving Assistant under the Superintendent of Industrial Education, was placed on deputation in the Revenue Department for two months from 1st November 1911 to visit all the large centres of weaving in this Presidency where fly-shuttle looms are reported to have been largely adopted and to report on the number of such looms actually at work and upon the efficiency of the appliances in use. He was also asked to report in what directions a further advance could be made and to collect information as to the effect on the economic condition of the weavers, of the introduction of the fly-shuttle loom. Mr. Chatterton now submits with remarks the inspection notes submitted by Subramanya Aiyar during the period he was on deputation. A perusal of Mr. Chatterton's remarks on pages 2 to 5 of current-file is solicited.

2. Subramanya Aiyar visited 89 villages and towns in Gōdāvari, Kistna, Chingleput, Nellore and Guntūr where fly-shuttle looms are largely in use and actually counted 6,528 looms fitted with fly-shuttle slays. He estimates that in these villages there were about 9,010 looms not so fitted. Roughly 40 per cent. of the weavers have adopted the fly-shuttle. The result of this change in the economic condition of the weavers is reported to be very satisfactory, as will be seen from the fact that a man who plies the fly-shuttle is able to earn at least Rs. 10 a month while an ordinary weaver earns only Rs. 7-8-0. Mr. Chatterton points out that where fine counts are woven, the advantage obtained from the use of the fly-shuttle is not so great as when the counts are coarser. It is on this account that there has not been a complete revolution in the method of weaving.

3. Mr. Chatterton considers that for any permanent amelioration in the condition of the weaver, the first step is to get him out of the hands of the sowcar and provide him with an agency for marketing his goods on fair commercial terms but doubts whether any centralised agency could establish itself in face of the local opposition and in view of the very little support it would get from the weavers themselves.

4. Subramanya Aiyar has made the following suggestions for the improvement in the appliances now in use:—

- (1) the introduction of some sort of warping mill in places where the fly-shuttle has been adopted;
 - (2) the use of the fly-shuttle for weaving broad cloths like turbans;
 - (3) the introduction of dobbies for weaving simple designs;
 - (4) the introduction of the jacquard machine to weave complicated patterns;
- and
- (5) the introduction of the frame loom wherever it is profitable.

Subramanya Aiyar says that the only way to convince weavers of the efficiency of any new appliance is by demonstrating it at their homes and suggests that a demonstration party of a few well-trained weavers with an experienced Superintendent at the head should be organised and they should visit all the important centres of weaving with the necessary appliances. Mr. Chatterton endorses the suggestions of Subramanya Aiyar.

5. Mr. Chatterton considers that a peripatetic demonstration weaving party is likely to prove of some use in other parts of the Presidency. In December 1910, he reported * that no system of peripatetic instruction could be devised which would be of any value. He recommends the establishment of a warping mill in one of the centres, such as Pedana or Vettapalam where fly-shuttle looms are now largely employed. The question is one for consideration in the Educational Department.

6. Mr. Chatterton considers that the causes of failure in the attempts to establish hand-loom weaving factories are—(1) the lack of technical knowledge on the part of the management, (2) the inability of the directors to work harmoniously together, and (3) the dislike of the weavers themselves to being subject to discipline and control. He says that the only serious difficulty to be faced in connection with the establishment of these weaving factories is the weaver himself and that the first attempt might well be made among the weavers who belong to the Native Christian community. He recommends that in the Ceded districts a well organised Native Christian weaving shed should be established. This suggestion also is for consideration in the Educational Department.

7. Lastly, Mr. Chatterton considers that if the material surroundings of the weavers can be improved and if they can be provided with a better and less precarious livelihood, some improvement will be effected in their mental condition. He recommends that if primary education is to be made compulsory by local option, the depressed artizan classes should receive the first attention. This is also a point for consideration in the Educational Department.

8. There do not appear to be any points on which action has to be taken in the Revenue Department. Submitted that the papers may be transferred to the Educational Department.

S.R.G.—2-2-12.

V.P.—12-2-12.

The file is entirely for Educational, I think, but perhaps we might ask that a copy of Mr. Chatterton's letter and the expert's notes should go to the Registrar of Co-operative Societies for information.

J. T. GWYNN—15-2-12.

Will Educational accept transfer? At present we do not seem to have anything to do with this subject.

A. G. CARDEW—19-2-12.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

It is submitted that this department may accept the transfer. The policy laid down by the Secretary of State in the matter of Industrial education is mentioned in Page 18, G.O. No. 3446, Revenue, dated 27th October 1910. paragraph 7 of his Despatch No. 50, Revenue, dated 29th July 1910, that

"State funds may be expended upon 'familiarising the people with such improvements in the methods of production as 'modern science and the practice of European countries can suggest.' In a weaving school, the indigenous hand-loom, it is stated, can be improved and the advantage of the improvement demonstrated.

2. Mr. Chatterton's suggestions are—

(1) the establishment of a warping mill in one of the centres where fly-shuttle looms are largely employed. The demonstration of the advantages of this mill would seem not to contravene the orders of the Secretary of State.

(2) the establishment of a weaving shed in some place in the Ceded districts for the benefit of the Native Christian weavers there. Restricted to the mere giving of instruction in improved methods of weaving, the question of the establishment of a weaving shed, or rather a weaving school, is a matter for consideration in this department.

3. The question of compulsory education of the artizan classes referred to in paragraph 7 of the Revenue Department notes also concerns this Department.

R.S.—4-3-12.

Educational accept the transfer.

To the Revenue Department.

L. DAVIDSON—5-3-12.

Transferred.

REVENUE DEPARTMENT.

To the Educational Department.

EDUCATIONAL DEPARTMENT.

Please see paragraphs 5 to 7 of the Revenue Department note on pages 1 and 2 *supra*. It is for consideration whether the Government should approve the suggestions—

(1) to organise a system of peripatetic instruction in improved methods of hand-weaving,

(2) to establish a warping mill in Pedana or Vettapalam where fly-shuttle looms are largely employed, and

(3) to establish in the Ceded districts a well-organized weaving-shed for the Indian Christian weavers;

and if so, whether the Superintendent of Industrial Education may be requested to

* The Imperial grant for popular education includes provision of Rs. 12,000 for "Technical and Industrial Education" page 3 of G.O. No. 204, Educational, dated 2nd March 1912. submit detailed proposals in these respects with an estimate * of the cost involved.

2. Compulsory education of weavers referred to in paragraph 7 of Revenue note is out of the question. The Government are against compulsory education on principle. It may, however, be considered whether provision may not be made for giving free elementary education to the children of weavers who cannot afford to pay fees. The Director of Public Instruction may be consulted on this point.

Cf. paragraph 4 (a) of India's letter on page 2 of G.O. No. 204, Educational, dated 2nd March 1912.

T.K.—4-4-12.

C. RAMANUJACHARI—9-4-12.

I am not clear that Mr. Chatterton means to recommend the immediate establishment of a well-organized Indian Christian weaving-shed in the Ceded districts, as the office-notes imply. On the contrary in paragraph 6 of his letter he writes—

"Our experience with the weavers of Salem does not encourage me at the present moment to advocate the establishment of a pioneer weaving factory. Even 'supposing it is desirable, the recent orders of the Secretary of State preclude any 'action in this direction.'

The question of compulsory education for weavers is of course not practical politics but the Director of Public Instruction may be asked if any special facilities can and should be provided for their education.

The establishment of a warping mill preferably at Pedana and the organization of a peripatetic instruction party may form the subject of a call for detailed proposals as suggested in the office-note.

L. DAVIDSON—12-4-12.

The paper is an interesting one and I think it should go to the Editors' Table.

At present I do not think we should take up the question of a Christian weaving factory in the Ceded districts, but I would call at once for detailed proposals for the exhibition of a warping mill and the organization of a moving instruction party on the shuttle loon weaving. It seems very likely that such measures may have a very good effect.

M. H[AMMICK]—19-4-12.

A draft is submitted for approval. If approved, it may be sent to the Revenue and Financial Departments for acceptance.

T.K.—24-4-12.

T. E. MOIR—26-4-12.

To the Revenue Department.

REVENUE DEPARTMENT.

Accepted in Revenue.

J. T. GWYNN—29-4-12.

To the Financial Department.

FINANCIAL DEPARTMENT.

The proposals are—

(a) to ask the Superintendent of Industrial Education to submit detailed proposals for the exhibition of a warping mill and the organization of a peripatetic instruction party to demonstrate to weavers the advantages of improved methods of work and appliances, and

(b) to ask the Director of Public Instruction to report whether any special facilities can and should be provided for the education of the children of weavers.

Definite information as to the cost involved will be available only when the detailed proposals are received.

2. Item (a).—There seems to be no objection to expenditure being incurred from State funds on account of this item, with reference to paragraph 7 of the Secretary of State's Despatch No. 50, Revenue, dated 29th July 1910, on pages 17-18 of G.O. No. 3446, Revenue, dated 27th October 1910. In regard to the utility of the expenditure, however, attention is solicited to the Hon'ble Mr. Chatterton's letter on page 3 of G.O. Nos. 4153-59, dated 26th December 1910.

3. The expenditure during 1912-13, if any, may be met from the lump additional grant of 4 lakhs made by the Government of India under the head "22. EDUCATION" in the current year's budget.
[The recurring coronation grant of 8 lakhs includes a provision for Technical and Industrial Education—paragraph 6, page 3 of G.O. No. 204, Educational, dated 2nd March 1912.]

4. The draft order which proposes to call for detailed proposals may, it is submitted, be accepted.

C.P.K.—4-5-12.

V.G.K.—6-5-12.

C. REILLY—6-5-12.

A. G. CARDEW—7-5-12.

H. A. S[UART]—8-5-12.

To the Educational Department.

A. G. CARDEW—9-5-12.

EDUCATIONAL DEPARTMENT.

Issue.

T. E. MOIR—11-5-12.

[G.O. No. 406, Educational, dated 11th May 1912.]

G.O.No.2947-Rev., dated 4th October 1911.

C.No.

from the Supt. of Industrial Education, No.229-G, d/18-1-12

ORDER:
P.S.

406 of 11-5-12

Page 4-20 CF

To be placed on E.T.

Page 1-4 CF

on page 1
Para 2 of the notes
on page 1

Page 1 CF

The Government have perused with interest the notes by the Weaving Assistant, M.R.Ry. N.Subrahmanya Aiyar, ^{during} on his visits to the ^{principal} large ^{centres} centres of weaving in this Presidency, and Mr.Chatterton's comments thereon.

The notes deal with the number of fly-shuttle looms at work in the places visited and the economic condition of the weavers who have taken to the use of the fly-shuttle slay. In the 89 villages and towns in the Godavari, Kistna, Chingleput, Nellore and Guntur districts visited by the weaving assistant 6,528 looms were

fitted with fly-shuttle slays ^{out of an} estimated total of 15,500. 9,010 looms were not. Roughly speaking

40 per cent. of the weavers appear to have adopted the fly-shuttle, ^{with a} and the ^{result an average} a result an average ^{increase in} increase in wage-earning power of those who fly. ^{their earnings of abt 33 per cent.} their earnings of abt 33 per cent. the fly-shuttle seems to have increased 33 per cent.

2. The Government ^{agree} approve ^{with Mr Chatterton's} with Mr Chatterton's ^{views} views generally the suggestions made for the improvement of the condition of

the

Para: 5 page 2-3 C.F.

Para: 8 page 4 C.F.

To the D.P.I.

A. Chatterton, Esq.

The Hony. Secretaries, National
Fund and Industrial Association,

The Revenue Department.

The Financial Department.

E. J.

25/6/12

2.

For the present

the weavers, and the Superintendent
of Industrial Education will be re-
quested to submit detailed proposals
for the exhibition of a warping mill
and the organization of a peripatetic
instruction party to demonstrate to
the weavers the advantages of improved
methods of work and appliances. The
Government agree ~~entirely~~ with
Mr. Chatterton ^{as to} ~~about~~ the inadvisability
of establishing ^a ~~any~~ weaving factory
at present.

^{During the}
3. Another recommendation made
^{in principle in the committee}
for the ~~amelioration~~ of the weavers is
the provision of adequate facilities
for the education of their children.
Compulsory education of these children
^{at present}
is out of the question but the Director
of Public Instruction will be requested
to report whether any special facilities
can and should be provided for their
education.

7.H.
25-4-12

26-4-12

ORDINARY.

PREFERENCE.

URGENT (a).

Educational
LOCAL AND MUNICIPAL DEPARTMENT.

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