

Thirdly, to be successful a man must have business aptitude.

Fourthly, milk and its products undergo decomposition quickly and as such distance to which milk is transported is limited. Milk has to be pasteurised and requires cans for transport to any distance. Butter has not caught the fancy of the Indian consumer. We have to depend upon the European for its consumption as butter. It therefore restricts the places where dairy farms could be established; they must be within reach of large towns for the disposal of butter as well as of separated milk.

But the prospects of their introduction are fair although many people are ignorant of the success of such farms. They could be run on commercial lines with great profit and dairying is one of the cleanest industries known.

An Improved Sugarcane Mill and Jaggery making Furnace.*

Some of the old students will probably remember visiting the lands of M. R. Ry. R. Sivarama Ayyar, Avergal, B. A., B. L., of Ravanasamudram, Ambasamudram Taluk, Tinnevely District. He has an oil engine ($7\frac{1}{2}$ B. H. P.) and pump by means of which water is pumped on to a stretch of land which had previously been often left waste. Sugarcane is cultivated by tenants on part of this land. The cane is crushed in an iron three roller mill driven by the $7\frac{1}{2}$ B. H. P. engine, the juice is then pumped by means of a small centrifugal pump into the boiling pans. These have been built according to one of the earliest of Mr. Chatterton's plans. There are two sets of 3 pans, those in each set adjoining each other but each with a separate grate. Two fires in each set are maintained, and the smoke therefrom drawn under the third pan. The heat from this hardly suffices to boil down the juice in the third pan. Those who were at the exhibition will notice that this differs from Mr. Chatterton's latest furnace in the arrangement of the pans and fire grates. Mr. Sivarama Ayyar has kindly

*From the Director of Agriculture, Madras.

sent a detailed statement of his cost of working etc. which is of interest and is reproduced in full.

It will be noticed that the yield is put at 2 tons of jaggery an acre which is only average and ought, one would think, to be capable of improvement.

My thanks are due to Mr. Sivarama Ayyar for his figures.

Statement of Accounts.

I. Initial Expenses:—	Rs.	A.	P.
1. Crushing plant	450	0	0
2. Tube well	100	0	0
3. Shafting, etc.	100	0	0
4. 7½ B. H. P. Engine without the pump ...	1500	0	0
5. Engine Shed	400	0	0
6. Boiling and store rooms	500	0	0
7. Pans (6)	90	0	0
8. Miscellaneous	30	0	0
Total ...	3,170	0	0

II. Running Expenses:—

The Engine works for 125 days in a year, 90 in pumping and 35 in crushing canes.

1. The Driver is paid Rs. 120 for a year at Rs. 10 a month. His pay for the 35 days of crushing is 28 p. c. of 120 ...	33	9	7
2. 1½ tins of yellow oil for a day Rs. 2-4-0. Castor and coconut oils for a day 0-8-0; for 35 days at Rs. 2-12-0 a day ...	96	4	0
Total ...	129	13	7

III. Repairs and Renewals:—

1. Rollers had to be renewed after 5 years' work at Rs. 50 i. e. for a year ...	10	0	0
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2. Tube well may require about	...	1	0	0
3. Belts and shafting for a year	...	10	0	0
4. Pans have to be removed once in 3 years.. for a year	30	0	0
5. Miscellaneous items and repairs for the house vessels used.	... ..	10	0	0
6. Boiling and store rooms and 28% of the engine shed.	... ..	20	0	0
7. 28% of the charges for renewing parts of the engine.	... ..	3	0	0
Total		84	0	0

IV. Depreciation Charges and Interest :—

1. Crushing plant, tube well and shafting cost Rs. 650. Interest at 6% and depreci- ation at 5% i. e. 11%.	... ..	71	8	0
2. 28% of the engine=Rs. 420, Interest at 6% and depreciation at 7% i. e. 13%	... ..	54	9	7
3. 28% of the engine shed=112, Rooms—500. Total Rs. 612. Interest at 6% and depre- ciation at 2% i. e. 8%	... ..	48	15	4
Total		175	0	11

V. Crushing Charges :—

1. 6 pans require 4 men at 0-6-0 a day, for 35 days.	... ..	52	8	0
2 boys at 2 as. a day for 35 days	... ..	8	12	0
2. A Maistry at 8 as. do.	... ..	17	8	0
3. Canes are brought to the mill with some topplings and roots; for cutting them away before pressing the canes, 2 men at 0-4-0 a day for 35 days.	... ..	17	8	0

4.	2 boys at 2 as. a day (each), one for stacking the canes near the plant and another to hand over the canes to the person at the plant.	8	12	0
5.	A grown up boy at the plant at as. 3 a day for 35 days to press the canes ...	6	9	0
6.	3 boys at the other side of the plant, one to remove the megass as coming out of the plant and two to take them to the drying ground at 2 as each....	13	2	0
7.	A fireman at 5 as. a day.	10	15	0
8.	2 women to bring the fuel and megass to the firemen at 2 as. 6 pies each a day. ...	10	15	0
9.	Fuel at Rs. 2-4-0 a day.	78	12	0
	Total ...	225	5	0

VI.	Harvesting and carrying the canes from the fields to the Mill at an average cost of 2 as. per thulam of jaggery for 2100 thulams or 1750 maunds.	262	8	0
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The total cost is:

1.	Running Expenses	129	13	7
2.	Repairs and renewals	84	0	0
3.	Depreciation and interest	175	0	0
4.	Crushing charges.	225	5	0
	Total ...	614	2	7

This sum or Rs. 614—2—7 is spent by the landholder. The harvesting charges of Rs. 262—8—0 are borne by the tenants

As the total extent cultivated is 10 acres the landlord's expense on one acre is Rs. 61—6—8 and the tenant's expense on one acre is Rs. 26—4—0.

In ascertaining the income per acre, it has to be borne in mind that $12\frac{1}{2}$ per cent of the standing crops are required for the seeds of the next crop. So $87\frac{1}{2}$ per cent of the canes alone are available for crushing and out of this $87\frac{1}{2}$ per cent about 210 thulams of jaggery are had. At the rate of Rs. 1-10-0 per thulam or Rs. 39 per candy they can be sold for Rs. 341-4-0. Canes growing on $12\frac{1}{2}$ cents are generally valued at Rs. 30 or Rs. 240 per acre. The total income is Rs. 371-4-0. The landlord's share is 60 per cent and the tenant's 40 per cent.

The gross income of the landlord=Rs. 222-12-0.

The tenant's income (gross) is

(1) by jaggery	Rs. 118-8-0.
(2) by canes	„ 30-0-0.
	148-8-0.

Cost of cultivation.

1. 4 ploughings at Rs. 1-4-0 each	Rs.	5	0	0
2. Work at the ridges round the field	...	0	8	0
3. Cost of manure and cartage	...	15	0	0
4. Ridging and furrowing the fields, spreading manure and planting the seeds.	...	6	4	0
5. Weeding with small spades (twice)	...	4	0	0
6. Digging and raising the furrows by throwing soil	... ..	4	0	0
7. Dressing manure to the crops in September-October,	... ..	2	8	0
8. Covering the dressed manure with soil by spading.	... ..	5	0	0
9. Cost of manure with cartage...	...	10	0	0
10. Fencing.	... ..	2	0	0
11. Watering and watching.	... ..	6	0	0
12. Levelling the sugarcane ground for the next paddy cultivation.	5	0	0
		65	4	0

Add to this :

(1) the harvesting cost.	26	4	0
(2) seeds (sets).	30	0	0
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	121	8	0
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The tenant's gross income was found to be	Rs. 148	8	0
His net income for an acre	27	0	0
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The landlord's gross income was found to be	222	12	0
His charges	61	6	8
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His net income per acre	161	5	4
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R. SIVARAMA AYYAR,

Landholder.

Ravanasamudram, Tinnevely District.

Diploma Day.

Principal's Speech. The present occasion, marks a rather more definite stage than is customary on such occasions. We are closing the old course of 3 years and awarding Diplomas to the last batch of students who have been successful under that curriculum. We are simultaneously presenting the new "Certificates of Proficiency" to the first batch of students successful under the New Short Course. This is the short course of two years, from which selections will be made for the further $1\frac{1}{4}$ years necessary for the attainment of the Diploma under the new rules. The final examination for the Diploma will in future, be held in December of each year, so that this is the first, and I am glad to think, the last time when both examinations will coincide. The change has thrown a good deal of extra work on the shoulders of my section, which will be evident from the fact that in the old course, Agriculture proper was largely taught towards the end of the course, while in the new, it is largely in the beginning. The change it need hardly be said, has and will more largely yet, increase the scope of the utility of the College. The numbers at present in residence, nearly 100, are greater than they have ever been before, and have