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Village Administration. The administration of the village is carried on by the Village establishment consisting of a Village Munsiff, a Karnam, two Thalayaris and two Vettis. The Thalayaris function as the Village Police as well. There is a Civil Panchayat court consisting of seven members which settles civil disputes up to Rs. 50. Besides, there is a local Post Office and the mails are carried by a runner. There is the usual contact of the villagers with higher authorities such as Tahsildar, Police Inspector and Agricultural Officers who often visit the place. Recently the place has become the scene of rife between two rival factions among Goundars. Major criminal and civil disputes are settled in the courts.

Economic deterioration seems to have set in and this is clearly indicated by the number of the ruined houses. The whole of *Paracheri* is vacant now, the inhabitants having migrated. With the improvement in the cotton market there is a possibility of sinking more wells in the lower slopes of the dry-lands and increasing the area under intensive cultivation, and with the increased growth of Cambodia cotton, there are possibilities for improving the industrial resources of this village.

Recent Changes in Horticultural Practices *

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In the course of his lecture Mr. Gandhi spoke at length on the propagation and the most modern cultural methods for fruit trees as practised in different fruit growing countries of the world. Regarding the propagation of woody dicotyledons, he said that while making a stem cutting the basal cut need not necessarily be close below a bud; but very often inter-nodal basal cuts give better results and the close-below-bud cut is only desirable in case of stems which already possess pre-formed root initials in or near the nodal region.

The present practice of layering end branches of large orchard trees by tongue, ring or bending methods as practised in India is wasteful. A ground nursery could be more advantageously established of young trees closely planted in rows and these could be bent flat on the ground. The young shoots arising from the horizontally laid main trunk and branches could be rooted by mounting earth around their bases after they have made a six inch growth. Plants that root with difficulty could be made to root by etiolating these layer shoots before they break from their buds. This is effected by excluding light from the buds during the earlier stages of their growth by means of covering them with a layer of soil. The young shoots thus develop in the dark and push their way through the soil above. Such shoots are etiolated at their base and develop a satisfactory root system. The rooted shoots could be annually removed in the propagating season except one or two vigorous shoots at the base of the trunk which could be again used to lay flat for producing next year's crop of rooted shoots. This method of etiolating layer shoots has been perfected and commercially adopted in England by the Fruit Research Station at East Malling.

* Abstract of the lecture delivered on October 12, 1934.

Note. The lecturer just returned to India after two years' absence in Europe, United States of America, Dutch East Indies and the Far East.

The most recent advance in grafting difficult evergreen trees like mango and rubber is budding by the modified Forkert method (developed by the Java Department of Horticulture) which consists in making a transverse incision in the bark of the stock as far as the cambium after which the bark over a length of 1½ inches and a width of ⅓ inch is pulled down in several strips. From the strips of bark torn loose, two thirds are cut off and the ends trimmed. A shield-shaped bud with no wood adhering is then inserted and bound up with raffia fibre. By this method 80 to 100 per cent success is claimed and no other practice of grafting the mango is in vogue in Java. The lecturer felt very sanguine over developing a similar practice for the propagation of mango for South Indian conditions as the operation of budding is so much simpler, quicker and more economical than any other method of grafting.

In all other citrus growing countries except India, the budding of oranges is done with scion buds *attached* underneath with their wood. In India the traditional practice has been to invariably *remove* the wood and use the bud with the bark only. Considerable time and energy could be saved by *budding with wood* if careful study is made of the kind of bud to be used and the season of budding.

The lecturer then dealt with the most interesting subject of stock and scion relationship and pointed out that the question about the standardization of root stocks has been altogether neglected in India and the highly varying sizes of our orchard trees is partly due to the influence of the seedling on which the scion is grafted. If the ever-varying seedling stock were avoided and methods like layering by etiolation could be adopted to propagate the stocks vegetatively, troubles such as dwarfing, sterility and susceptibility to diseases of the orchard trees could be done away with.

In the case of standardizing root stocks of the citrus and the mango, the problem of propagating them vegetatively becomes simpler due to high percentage of apogamy exhibited by seeds of many citrus varieties in India and the varieties of *Mangifera indica* found in the Philippines and Java. The poly-embryonic Philippine mangoes could be advantageously introduced in India for serving as standardized stocks for grafting the mono-embryonic Indian types and the citrus stocks could be very easily standardized by removing a few variant seedlings (result of normal fertilization) from amongst the many apogamic seedlings in the nursery beds. Very valuable work is being done in the University of California on the standardization of citrus stocks.

Affinity between stock and scion is another important factor and many varieties which do not unite well directly could be successfully grafted by means of "sandwiching" or "double grafting" which consists in using a piece of stem of a third individual as intermediate between the conflicting stock and the scion. Many overgrowths and undergrowths above and below bud joints of citrus trunks could be avoided by careful study of stock and scion congeniality. The degree of congeniality is correlated in considerable measure with the degree of genetic relationship between the two types united. Very recent work in England, California (U. S. A.) and Japan on the stock and scion relationship goes to prove that the scion has considerable quantitative influence on the root system of the stock, but there is a very sharp difference of opinion whether the scion is able to influence the stock qualitatively and change the nature of the root system of the stock after its own kinds.

In parts of the Philippines which are subject to typhoons, young mango trees are bent horizontally on the ground and the trunk allowed to root at several places. The branches creep close to the ground and the crown appears elliptical in form.

In California (U. S. A.) many unfruitful citrus trees are made fruitful by ringing their trunks by giving knife edge cuts and many-shy bearing grape vine varieties are made to bear luxuriant crops by adopting the cane pruning system.

The mango is forced to fruit out of season in the Philippines In the mango district near Manilla the mangoes are annually forced into fruiting for the Manilla market. The forcing is done by burning brush on the ground beneath the mango trees in a cone shaped enclosure of bamboo matting, with a tall chimney ending in the top of the tree. Thus the tree is "smoked" heavily day and night for a week. Thereafter light fires are made morning and evening for about a month till the trees come into bloom. The mango trees can be forced to fruit any time of the year by this method provided there is bright weather during the flowering, for rain invariably destroys the flowers.

Speaking on the cultivation and irrigation of orchards the lecturer said that the problems were closely related with the root system of the fruit tree and the drainage of the sub-soil.

It is doubtful if the cultivation of the surface conserves moisture or increases root aeration. The crop yields are not increased simply by reason of stirring the surface of the soil.

The main purposes of cultivation are: to remove weed competition, to facilitate irrigation or to aid in the absorption of water to incorporate manures and to control pests.

Organic manures and cover crops are essential for successful orcharding under Indian conditions.

It is possible to reclaim boggy, low-lying areas and grow fruit trees in highly retentive clay soils if the Chinese method of 'Island cultivation' were adopted. The Chinese method of cultivating fruit trees and vegetables in rice lands, comprises a system of canals. dikes, raised beds and ditches providing for irrigation as well as drainage.

Breeding Bull Service for Cattle Improvement.

Rao Bahadur K. G. Srinivasa Mudaliyar, Avl., President, The Tanjore District Co-operative Manure Society, Ltd. Nidamangalam writes:—

In January 1933 the Agricultural Bank, Nidamangalam lent a Buffalo breeding bull to the Co-operative Manure Society, Nidamangalam service.

From 8—1—33 to 30—6—33 the statement of receipts and charges of the breeding bull service runs thus:—

RECEIPTS	Rs.	As.	Ps.	CHARGES	Rs.	As.	Ps.
1. Service fees	81	5	0	1. Straw	7	4	9
2. Manure sold	3	12	0	2. Green fodder	2	12	6
3. Gunny sold	0	5	0	3. Cotton seed	23	6	0
				4. Rice bran	3	11	6
				5. Medicine, oil etc.	3	12	3
				6. Wages of attendant	41	1	0
				7. Nose string	0	5	6
				8. Note book	0	5	6
				9. Batta	2	8	0
				10. Profit			
				½ to Nidamangalam Agl. . Bank.	0	1	6
				½ to Manure Society.	0	1	6
	85	6	0		85	6	0

About 92 buffaloes have been served in the above period. For each service a fee of as. 14 is collected.

From 1—7—33 to 25—5—34 the Receipts and Charges run thus:—

RECEIPTS	Rs.	As.	Ps.		CHARGES	Rs.	As	Ps.
1. Service fees	105	14	0	1.	Wages of attendant	55	8	0
2. Gunny sold	0	11	0	2.	Cotton seeds	35	7	0
3. Manure sold	6	11	6	3	Straw	12	10	0
4. Agricultural Bank				4.	Rice bran	5	5	3
(Received for feeding charges)	18	10	6	5	Green fodder	1	1	0
				6.	Nose string etc.	1	1	0
				7.	Castor oil	0	7	0
				8.	T. A. for attendant (for the sale of the Bull)	3	4	0
				9.	Agricultural Bank (Amount refunded)	17	3	9
	131	15	0			131	15	0

About 121 buffaloes have been served during this period.

The society has extended the service of the bull to all the villages lying within 10 miles radius. The following account books were maintained.

1. Receipt Book.
2. Cash Book.
3. General Ledger.
4. Service Register
and 5. Voucher File.

In the Service Register the age of the animal, the owner of the animal, whether the buffalo has been served or not and other items of interest will be found. The bull earned its maintenance. The society did not receive any maintenance grant from the government. The net loss to the Agricultural Bank is about Rs. 23/- though the benefit achieved by the ryots is very encouraging. 213 good calves have been produced. Converting this into money value about Rs. 1000/- have been gained by those who took advantage of this service. The average calf is valued at Rs. 5. The calf produced by the breeding bull is worth Rs. 10/- So the economic benefit is Rs. 1000/-. Profit is not the criterion in a Co-operative Society but the benefit is taken into account.

Though the Tanjore Dt. Co-operative Manure Society is in a good financial condition its work for the last four years was not encouraging. Acute depression prevailed. Members had no purchasing power and the Society worked at a loss of Rs 40—13—0 during the year 1933—34.

Two important achievements of the Nidamangalam Manure Society during the last four years of depression are its breeding bull service for cattle improvement and the organisation of a Co-operative Loan and Sale Society as adjunct to the Manure Society. This is the only non-credit agricultural society that has survived similar non-credit societies and which is doing good work. The society is in a good financial condition. Its financial particulars on this date (9—5—35) are as follows.

ASSETS

	Rs.	As.	Ps.
1. Shares in the financing bank	300	0	0
2. Paid up share capital of the members	1155	2	9
3. Share capital in Central Co-op. Printing Works	16	6	0
4. Reserve Fund	1207	0	0

5.	Savings deposit in the Central Bank				488	0 0
6.	Do. in the Post Office				20	0 0
7.	Value of stock on hand					
	Bone meal	226	8 0			
	Gunnies	5	13 0			
	Meston ploughs and Triangular harrows	20	4 0			
					252	9 0
8.	Furniture				35	0 0
				Cash Balance.	75	12 11
				Total.	3549	14 8

LIABILITIES

Paid up share capital of the members	1155	2	9

The Nidamangalam Co-operative Loan & Sale Society Ltd., No. T. 793.

One of the resolutions passed at the Agricultural Co-operative Conference held on 28—10—27 under the presidency of Mr. Anstead the then Director of Agriculture runs thus: "That a Co-operative Loan and Sale Society be organised as an adjunct to the Tanjore District Co-operative Manure Society Ltd., Nidamangalam"

In accordance with that resolution Rai Sahib A. Seturama Iyer organised a loan sale society on 29—11—34 which was registered on 11—2—35 and started its operations on 13—2—35. Nidamangalam being a place of agricultural and paddy trade importance with first class godowns attached to the various rice mills, which have been of late lying idle, is suitably situated for the location of the loan and sale society. In these days of agricultural and trade depression the plight of the agriculturists is very miserable. After meeting the Government kist, even the cost of cultivation is not realised. For meeting the Government demand in January, February, March and April they have to sell the produce at a very low price. For meeting their family expenses, they are obliged to sell their produce at a low price since they have no purchasing power. To sell the produce of the members to the best advantage and to advance loans to members on the security of their produce the above loan and sale society commenced its work on 13—2—35.

The capital of the society for the present is Rs. 10,000/- made up of 1000 shares of Rs. 10/- each. Every member shall take at least one share but no member shall take more than 50 shares. The maximum borrowing power of the society is fixed at 15 times the paid up share capital and reserve fund.

The entire capital required will have to be met from borrowings from the Central Bank. The Central Bank need entertain no fear as the securities will always be kept under their own custody and subject to such conditions as the Bank dictates. The individual maximum borrowing power is fixed at Rs. 6000/-. The members are also made eligible to borrow at the same proportion which exists between the Central Bank and the society. The jurisdiction of the society is confined to the Nidamangalam-Registration sub-district except the villages of the Nannilam taluk. The financing bank lends to the society at 5½ % and the society lends to the members at 6½ % with a margin of 1 %. No loan shall be given exceeding 75% of the market value of the produce pledged by the borrowing member.