TABLE II.

Correlation between the monthly means of maximum temperatures—Agricultural College and Research Institute, Coimbatore.

Serial No.	Details of the correlations worked out	Corr. coeff. r.	Stand. Error S. E.	Corr. significant or not
1.	Between Jan. and Feb. ...	+0·2695	0·1651	No.
2.	,, Feb. and March ...	+0·3939	0·1576	Yes.
3.	,, March and April ...	+0·2286	0·1669	No.
4.	,, April and May ...	—0·0319	0·1714	No.
5.	,, May and June ...	+0·2296	0·1669	No.
6.	,, June and July ...	—0·0079	0·1715	No.
7.	,, July and August ...	+0·2757	0·1648	No.
8.	,, Aug. and Sept. ...	+0·2020	0·1680	No.
9.	,, Sept. and Oct. ...	+0·4639	0·1519	Yes.
10.	,, Oct. and Nov. ...	—0·1128	0·1704	No.
11.	,, Nov. and Dec. ...	—0·0212	0·1716	No.
12.	,, Dec. and Jan. ...	+0·1803	0·1687	No.

Gardenland cultivation around the Agricultural College, Coimbatore

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Nowhere else can we find such a sudden and spectacular improvement in the expansion of gardenland cultivation, i. e. farming under well irrigation, as in the Coimbatore district, in recent years. A large area under dry lands have been converted into gardenland by sinking new wells. Starting with a small nucleus gardenland holding, many have acquired, consolidated and enlarged their holdings. Neighbouring drylands have been purchased, often at high prices and added to their holdings. Old wells have been deepened and widened, if the water supply is promising. Investments of Rs. 5,000/- to Rs. 10,000/- per well is not quite uncommon in this district. It is the advent of cheap electricity from the Hydro Electric Power Scheme of Pykara, some fifteen years

ago, that has greatly accelerated the pace of gardenland cultivation. It has given a great fillip to the sinking of new wells, wherever underground water resources justify it, in addition to the deepening and widening of old wells, introduction of improved implements and machinery and the liberal application of manures.

This phenomenal development in such a short period is entirely due to the quick distribution of hydro electric power and the centre of all improvements has been the installation of electric motors and centrifugal pumps for irrigation purposes. It is wellnigh impossible to bring about these improvements in cultivation with bullock power alone. Wells in Coimbatore are deep and rocky the supply of water would usually go down during the summer. Even installations of oil engine pumps cannot be as handy as these electric motors, as these admit of shifting of the installation to temporary beds at different heights. This district is credited with having nearly fifty per cent of the electric motors in agriculture in the whole of Pykara Electricity Scheme and no persuasion was necessary, especially after World War II when the cost of bullocks and feeding stuffs went up enormously. In fact during the war and post-war periods, a large number of applications for the installation of electric motors had to be kept pending, owing to difficulties of getting transformers and electric materials. More and more deepening of wells in order to get a copious supply of water, affect the other wells of the neighbouring holdings with the result that many of these shallower wells in the course of time become derelict. This happens as underground water is devoid of any natural springs in this area. Such difficulty may be overcome by suitable legislation, directing payment of compensation for the loss incurred. Pumping with electric motors has taken off the very heavy strain on bullocks in lifting water from deep wells, resulting rapid deterioration of the animals. Now pairs do only ploughing, carting and other work on the farm and this has improved the condition of animals very much. This has also reduced the number of pairs required to be maintained on the farm, in addition to the reduction of areas devoted to the growing of fodder at the expense of food and commercial crops.

Incidentally this has induced the farmers to take up to improved methods of agriculture. Already improved tillage implements are being adopted in most of the farms. Several types of soil inverting iron ploughs are used in this district in the cultivation of gardenland crops. In the cultivation of cotton and also for sugarcane, the ridge plough is very commonly used for forming ridges as it is definitely cheaper than getting the work done with manual labour, at the rate of 8 to 10 men per acre. The bundformer is even more popular and economical in the cultivation of summer cholam and ragi cultivation in forming bunds or beds, thus saving a lot in labour costs. What would ordinarily cost by employing

20 men for 4 acres at a cost of Rs. 30/- can be easily done with one pair, one men with four more men to correct them on four acres a day costing in all about Rs. 10/-. The Junior Hoe is another useful implement used in the inter-cultivation of cotton for effective weeding. These implements facilitate quicker operations and cover a larger area and thus effect a large saving in manual labour.

Heavy manuring is a characteristic of this type of cultivation in the Coimbatore district. Application of municipal compost and tank silt from nearby tanks to increase the fertility of the soil is a common practice, in addition to the application of cattle manure from their own farmsteads. Application at the rate of 100 to 200 cartloads per acre is not unusual. Such heavy manuring is done once a year for the cereal crop that is grown first. Chemical manures are rarely used for manuring round the college for gardenlands.

A readiness to try new and improved strains of millets and cotton evolved by the department is another notable feature among these ryots. Strains are so selected to suit the rotations followed by them without much overlapping of crops. The larger gardenland owners have an effective command over labour; the wages paid are not higher than the market rate nor the hours of work smaller. The labourers are even prepared to work a little longer or receive slightly lower wages in these bigger farms, in view the continuity of work which the farm provides throughout the year. This is possible in diversified farming on large blocks of gardenland. Permanant farm servants are alloted more responsible work and are given free quarters in the farm, with sundry perquisites on festive occasions.

The common rotation followed is growing of two or three crops in a year. The cropping is so adjusted to have two cereal crops, one for cattle and the other for human beings and one money crop. The climatic conditions in the district are also such as to facilitate such rotations. Unprecedented increases in prices after war, have not only made these ryots rich, but also have enabled many of them to save up something for the future. The main cultivating classes are the Kammava naickers and Vellala gownders who are closely in touch with agriculture, in spite of their other avocatious. Some of the land-holders earn large incomes from non-agricultural sources also and are able to invest in purchasing, consolidating and enlarging their holdings. Such an expansion of area under gardenlands would not have happened but for the keen interest in investing their money on land to get better returns by various improved methods.

A number of holdings around the college were enquired into, to find out their earnings during the year and their approximate income and expenditure are tabulated below :—

Table showing Income and expenditure per acre of cultivation of three holdings

	Holding No. 1 11 acres - one pair 2 permanent coolies 11 acres Ragi and 11 acres Cotton	Holding No. 2 6 acres - and 1 acre wetlands. 2 pairs and 3 permanent coolies. 3 acres Ragi and 3 acres Cholam and 6 acres Cotton	Holding No. 3. 11 acres and 1½ pairs and 2½ permanent coolies Ragi 5 acres and Cholam 5 acres and Cotton 10 acres
Expenditure			
Ragi	227	187	172
Cholam	...	110	127
Cotton	69	66	62
	Total 296	363	361
Income			
Ragi	296	265	292
Cholam	...	363	362
Cotton	860	625	730
	Total 1156	1253	1384
Less cost of maintenance of pairs and permanent coolies per acre owned.	190	356	173
Nett income ...	670	534	850
	Average ...	685/-	

Note :— Holding No. 2 has additional income by sale of milk and milk products. About Rs. 350/- per year from one acre of paddy is also obtained by holdings No. 2 and 3. Maintenance of pairs is worked at the rate of Rs. 2—8—0 per day and the yield is valued at the controled rates. Depreciation on the capital investment is not included.

Holdings around the college are managed entirely by the members of the family. New methods of cultivation are sought after and practised in a manner that would strike any student of agriculture with amazement. On an average a cultivator gets about Rs. 685/- from three crops grown in one acre of land. As this is quite a substantial amount it is no surprise to see that the gardenland cultivator is often very much better off than his neighbouring dryland or wetland cultivator. They generally maintain a higher standard of living. The prosperous state of the gardenland areas of Coimbatore is obviously due primarily to the fact that the farmer has an assured and copious supply of water all through the year for growing a variety of crops and it is this which has induced the Government of Madras to launch out on the well-subsidy scheme for digging more wells and thereby improve crop production.