

CHAPTER V

AGRICULTURE

GENERAL The Dinajpur district is a triangular tract of country, roughly resembling England and Wales in shape, with the acute angle towards the north. It is situated in the Gangetic plain between the Himalayas and the Ganges. Its most northerly point is some 25 miles from the hills. The country slopes gently from north to south and the general trend of the rivers is in the same direction. In the northern half of the district the soil is light ash coloured sandy loam changing gradually as one proceeds south to a stiff clay of similar colour. The former goes by the name of *pali*, is very retentive of moisture and is capable of producing two crops; the latter is known as *khlar* and ordinarily bears but a single crop. In the southern or *Khlar* area isolated patches of the lighter soil are to be found here and there, especially on both sides of some of the larger rivers like the Atrai. This indicates that this sandy loam had its origin in the sand and silt deposited by the rivers when they overflowed their banks. This is hardly true *pali* but is rather soil in a transition stage with a larger proportion of sand in its composition than the older *pali*. *Chora* or *baliya*, as it is sometimes

called, is perhaps a better name for it. Nowadays the beds of most of the rivers are deep and wide and the deposit of sand or silt by floods is no longer a factor to be reckoned with seriously over the greater part of the district. In the lower reaches of the Nagar, Punarbhaba, and Mahananda, however, owing to the lowness of the river banks floods are of yearly occurrence and large stretches of country are on this account given up to jungle or bear only occasional crops of boro or spring rice, which is reaped just before the rivers rise. The *khlar* or clay land grows as a rule only one crop in the year, winter rice. On rare occasions when the rice crop fails attempts are made to take a second crop of mustard from it, but such attempts are not attended with much success. In the *pali* tracts two crops are or may be grown. Common rotations are autumn rice followed by mustard, and jute followed by winter rice or pulse. In the extreme south of the district the Barind, described in a previous chapter, makes its appearance. The higher ground in this tract is generally barren and little attempt is made to cultivate it, though with time and determination this can be done successfully. The low ground is a stiff clay of reddish colour and is excellent winter rice land, though, like the *khlar* area, it does not lend itself to the cultivation of any other crop.

There are at the present day no embankments of any importance in the district though some traces of earlier works of this nature may be seen here and there. The most noticeable of these is a long straight embankment called the Mukdam Band, running from Gajal on the Malda border to Raiganj. This embankment dates from Muhammadan times. Its object was partly to keep out the water of the Nagar river, which almost annually overflows its banks and renders many thousands of acres unculturable, and partly to serve as a highway through the low-lying country on the south-western border. How far it was originally successful as an embankment it is hard to say, but in recent times it had become breached in many places and the flood-water passed freely through it. During the scarcity which prevailed in the district in 1908-09, a considerable portion of it was raised and repaired rather on account of its utility as a road than with the idea of protection against floods. This embankment is now in places some 20 feet high by 30 to 40 feet broad at the base.

**EMBANK-
MENTS**

RAINFALL

Notwithstanding the rise in importance of jute in recent years, rice is still by far the most important crop, covering as it does 998,700 acres or 79.6 per cent of the net cropped area. Dinajpur is, indeed, one of the chief rice-growing districts of the province. The principal crops are winter rice (*haimantik*), autumn rice (*bhadoi*), jute, and rape and mustard. The remarks of Mr. O' Malley on winter and autumn rice in his Gazetteer of the Chittagong district may appropriately be quoted here as they are equally applicable to Dinajpur. "Winter rice is usually sown in July and August, transplanted in August and September, and reaped in December. The critical period for this crop is the transplantation season, when copious rain is required; but at the end of September and in October rain is also urgently necessary to swell the grain. For the autumn rice crop (*bhadoi*) ploughing commences with the pre-monsoon showers which fall in March and April; and the crop is sown in May, some weeks before the regular monsoon rains commence. For a successful crop there should be some rain in March, April and May, and the monsoon should commence in June with moderate showers, with frequent intervals of fine weather to permit of weeding operations, and to enable the young seedlings to put forth a vigorous growth before the heavy rainfall which usually follows in July. Excessive rain in May and June is extremely injurious to the young crop. During July and August the rainfall should be heavy, but with intervals of rain at this time in order that it may be able to throw out shoots, and in order that the grain may fill out. Want of rain in August in on this account very harmful to the prospects of the crop. The autumn paddy crop is mostly reaped by the middle of September, and, except where it is sown late, it is not influenced by the character of the rainfall after the middle of September." Jute is commonly sown at the end of April or beginning of May. A great deal depends on the weather conditions at sowing time. If there is an insufficiency of moisture at this season the crop will not germinate, while, on the other hand, if moisture is in excess the young seedlings are liable to be drowned out before they have strength to resist partial or total submersion. During May and the early part of June jute thrives under much the same conditions as does *bhadoi* rice. By the end of June it has made good growth and from thence onwards moderate floods do little harm provided

that the plants are not submerged for so long a period that they begin to throw out adventitious roots, which injuriously affect the fibre. Early jute is reaped in July to August and late jute in August to September. At harvest time a large supply of water in the rivers and Khals is essential so that the process of retting, for which plenty of fairly clean water is required, may be carried out without hindrance. Rape and mustard, which are cold weather crops, require comparatively little rain. They are sown at the end of October or beginning of November on *Pali* lands, which usually have already borne a crop of autumn rice, and which have been ploughed in August and September immediately after the first crop was cut. A little rain in November greatly encourages the growth of the crop. If it gets this it can do without rain till well into January when another inch or two is required to swell the grain. The average period of growth of the crop is about three months and it is reaped from February to March.

IRRIGATION

Irrigation as an agricultural practice can scarcely under normal circumstances be said to exist. The channels of the rivers and streams are too deep to lend themselves readily to this practice and irrigation channels and wells are unknown. The people too are averse to the trouble involved. They can hardly be blamed for this as in normal years the rainfall is plentiful enough and irrigation is unnecessary. In dry years some attempt is made, especially in the southern part of the district, to utilise tanks for purposes of irrigation, the water being raised either by triangular mat baskets (*chhenai*) swung by two men from ropes tied at the corners, or by hollowed out tree trunks with a weight at one end (*jat*) which are forced down into the water and allowed to spring up so that a stream of water is projected from the weighted end.

LEVELS

Although in the Dinajpur district the general appearance of the country outside the Barind tracts is flat, it must not be imagined that the level is everywhere the same. Every rice plain has a natural slope in one direction or another which enables the surplus rain water to drain off. To quote again Mr. O'Malley: "The question of levels is a most important one in determining the relative fertility of rice fields in a country of abundant rainfall the level of each plain is disturbed by a number of obstacles to the drainage, such as raised village sites, embanked roads, tank banks,

etc. The general effect of the variety of levels found in every rice plain is to fertilise the lower at the expense of the higher fields; for the silt, composed to a great extent of light particles of organic matter, is held in solution as long as the rain water is in motion and is only deposited when the water lies stagnant. Every man's desire is to hold back the water in his own field, and to compel it to discharge its silt there; and with this object each field is surrounded by a small embankment (*ail*) in order to retain the water in a stagnant condition. But during heavy rains the water must be let out, or, even if no opening is made in the embankment, the water tops it. In this way the bulk of the rain water with its rich silt finds its way to the lowest levels of each small saucer-shaped depression, taking with it the silt which it has collected from all the higher fields over which it has passed. It follows, therefore, that the lower the field, the more fertile it is. There is another consideration also in favour of the lowest fields, *viz.*, that they need less embanking in order to retain the water, and therefore cost less to cultivate. A large exception to this general rule occurs in the case of swamps. They are produced by underground springs which cause an unhealthy accumulation of sub-surface water, which rots vegetation. In such a swamp the higher fields are naturally the best."

WILD ANIMALS

Up to comparatively recent times considerable damage to crops was caused by wild buffalo, deer and pig. Nowadays the two former may be said to be extinct, while the latter only survive in diminished numbers in a few localities and do little harm. Jungle fowl, another enemy of the farmer, which used to be common enough, have now disappeared, but parrots and small birds still cause a certain amount of damage. The *machans* or bamboo platforms, set up in the fields for watching the crops, which are such a feature in some districts, are rarely seen, as the crop do not require to be watched. Besides small birds, rats cause some injury especially to the rice crop, cutting off the ears and storing them in under-ground granaries. There is, however, no record of a plague of rats, a phenomenon well known in the districts on the eastern seaboard.

PRINCIPAL CROPS

The Principal crops in order of importance are (1) winter rice (*haimantik*), (2) autumn rice (*bhadoi*), (3) jute, (4) rape and mustard, (5) sugarcane, (6) cold weather crops such as pulses, tobacco and vegetables.

Winter rice is by far the most important crop and **RICE** covers some 68.7 per cent of the net cropped area. Autumn rice, though comparatively unimportant, is nevertheless grown on a considerable scale. Some 10 per cent of the net cropped area is sown with this. *Boro* or summer rice is only grown on a very small scale, though in abnormal years when the winter rice crop has been a poor one a good deal of land is put under this crop in order to supply the deficiency of food-grains, at it is reaped in May. Dr. Buchanan Hamilton, who a hundred years ago made an exhaustive study of the agriculture of the district, recorded some very interesting remarks on the different varieties of rice grown which may aptly be quoted here. "One kind, called *Boro* by the natives, ripens in the hot weather of spring and is cultivated only in small quantities, chiefly in inundated lands, where there are marshes and old water-courses, that preserved a small quantity of water throughout the year; sometimes a dam is made across the water-course at the end of the rainy season, and its upper part forms a reservoir filled with water, which is let gradually out to supply the rice which is planted in the lower part which has been drained in order to admit of cultivation. In other parts small quantities of this rice cultivated on the sides of old tanks that are partly filled up and the water is thrown up on the rice by a simple machine. In times of scarcity many poor people engage in this kind of cultivation which gives them a temporary supply of food at the dearest season. In other years less attention is bestowed on it for the grain is very coarse and the produce small, so that it would ill repay the labour. It is always transplanted, and its straw can seldom be saved. The grain is almost always consumed by those who have raised it.

(2) Next follows the summer rice, called in the district *Bhaduyi*, and reckoned to be only of one kind. The grain is used almost entirely by the labourers on the farm and is seldom sold. It is said that it will not keep for more than a year. It is reckoned very heavy and indigestible for those who are not hardened by labour; very considerable quantities however are raised, as where two crops of rice are taken in the year, or where a crop of rice is to be followed by wheat, barley, oilseeds, or most kinds of pulse, this is the only kind that can be cultivated. In some places the pulse called *Thakuri* is sown along with this rice and ripens a month after it is cut. This does not prevent the field giving

a winter crop of anything except rice. It is generally sown broadcast and, unless it is followed by a winter crop of rice, does not require that the field in which it is sown should be reduced to an absolute level. In a few places, however, it is transplanted and is then a month later in coming to maturity, so that it cannot be followed by another crop of rice; but this does not prevent its being followed by any other crop, and the quality of the grain is rather superior to that which has been sown broadcast." About winter rice he says: "The coarsest kinds are those which grow in very low land, that is deeply inundated. They are sown broadcast in spring and require a long time to come to maturity. Sometimes they are sown intermixed with summer rice, as I have before mentioned; but this practice is confined to a small extent of ground in the vicinity of the Nagar river. These kinds are little better than summer rice. These coarse rices do not keep well and are generally consumed by the labourers on the farm These rices are the common food of the poor. Somewhat finer is a numerous tribe of rices, which are transplanted into land rather higher than the former, and are not preceded by a summer crop of rice, but in a free soil they are generally followed by a crop of pulse, which is sown amongst the growing corn and flowers soon after it has been cut: but when the rice is cut early, the field is ploughed afterwards and sown with the pulse..... The straw is not very good for cattle, but is used. As it is very rank about a foot only, near the top, is cut with the grain, and the stems are afterwards cut for fuel or thatch. The rice, like all the transplanted kinds, keeps well, even when cleared. It is reckoned better and lighter after the first year and continues in perfection for three years. Next follow a great number of winter rices, which are of rather a fine quality, and are transplanted into high fields, generally as a second crop, especially where the soil is free. Sometimes, however, the summer crop is omitted and at other times in a very rich soil, a third crop (generally of peas) is produced. These kinds of rice are particularly valuable, as their straw is almost the only tolerable fodder that is procurable." The above is still a tolerable description of the chief varieties of rice grown in the district at the present day, it being understood that by summer rice he means *bhadoi* or autumn rice. His statement that this particular variety is of only one kind may have been correct in his day, but nowadays several

varieties of it are commonly grown. He mentions a large number of kinds of winter rice, but I have omitted them as the names used are many of them not in use at the present day. The chief varieties of autumn and winter rice now grown in the district are :—

- (1) Autumn rice : *Duni, Jama, Gorbai, Sani*, all white varieties, of which the first two are the most grown, and *Niluji*, a red variety, not very largely grown.
- (2) Winter rice : *Kataribhog, Daudkhani, Dighalsaru, Darika sail*, all fine white rices, of which the first two are well known and appreciated throughout the province.

Coarser varieties of winter rice are *Indra-sail, Kalam, Pani sail, Supandari, Chenga, Gajalgari, Malsira*. The four first are white and the three last red varieties. *Gajalgari* is much used for making *khai* or fried rice. Autumn rice is principally grown throughout the Thakurgaon subdivision and in the thanas of Raiganj, Nawabganj and the outpost Hemtabad in the Sadar subdivision. Winter rice is the principal crop throughout the Balurghat subdivision and in the Kotwali, Bansihari and Parbatipur thanas in the Sadar subdivision. *Boro* rice is grown to a small extent in Porsha and Gangarampur thanas.

In the case of all rice crops the land must be well prepared by ploughing. The number of ploughings necessary depends on the nature of the soil. A heavy soil requires more ploughings than a light one. Each ploughing is a double ploughing, *i.e.*, once lengthwise and then at right angles, and every double ploughing is followed by one or more ladderings with a ladder or *moyi* to break the clods and produce a fine tilth. The system of cultivation followed for broadcast autumn and broadcast winter rice is also somewhat different to that adopted for transplanted rice. In the former case the land is twice harrowed with what is called a *bida*, once when the crop is some 4 inches high and once when it has attained a height of about 8 or 9 inches. The object of this is to loosen the soil, and to destroy weeds and superfluous plants of rice, so that the crop may come up in regular clumps almost as if it had been transplanted. Both autumn rice and broadcast winter rice are sown about the same time, *i.e.*, at the end of April or beginning of May and

get two weedings about the end of May and the third week of June. In the case of transplanted rice, the seedlings thickly on high land, generally near the homestead, about the same time that broadcast rice is sown. The seed bed is reduced to a very fine tilth by ploughing and laddering and is generally manured with cowdung. The seeds of the finer varieties of winter paddy are first soaked in water till they sprout and then sown in the seed bed about a month before transplanting, the surface of the seed bed being puddled by the application of water. If the rain water is not sufficient for the purpose, irrigation is resorted to. The fields in which the seedlings are to be transplanted usually get two double ploughings at intervals of about a week or fortnight. The second double ploughing reduces the land to a puddle and the seedlings are then transplanted in clumps of 3 or 4 roots at a time. Sometimes if transplanting is done late in the season as many as 5 or 6 seedlings are planted in a clump. Two inches to a foot of water on the land is necessary for successful transplanting, the water being retained by the small embankments or *ails* by which every rice plot is surrounded.

The date for transplanting winter rice varies according to the nature of the land and the character of the season. Low lands are generally transplanted first about the end of June, and the higher lands as the water rises and makes transplanting on them possible, but if the rainfall is short or long delayed transplanting may be carried on till the middle of September.

JUTE

Ninety-two thousand acres were reported as being under jute in the year 1909-10. There has been a marked increase in the cultivation of this staple in recent years, though it has been well known in the district for over a century. Buchanan Hamilton speaks of it as the fibre in general use in his day for making cordage, gunny bags, and even coarse cloth. It appears however that up till comparatively recent times it was only grown for local consumption as Major Sherwill, the Revenue Surveyor, mentions it as quite one of the less important crops. Nowadays a considerable quantity is exported. Something has already been said of the seasons for sowing and reaping this crop and of the weather conditions most suitable to its growth. Jute is grown on *pali* lands, the soil of which is comparatively loose and light. It generally receives some four weedings at

intervals of about a fortnight, during the months of May and June. The process of retting to extract the fibre from the plant is interesting and may be briefly described. After harvesting the stems are tied into bundles and placed in the water of a stream or backwater to rot. The bundles are weighted with clods of earth or pieces of plantain-stem so that they may be completely submerged. If the water is fairly clean a better quality of fibre may be looked for than if muddy water is used. After the stems have been in the water for about a fortnight the bark or fibre which has become loosened is stripped off them and washed and the stems are thrown aside to be used as firewood or for purposes of fencing when dry. After washing, the fibre is dried and is then ready for sale or export. Jute is principally grown in the Thakurgaon subdivision and also in parts of the Kotwali and Raiganj thanas and in the Chirirbandar outpost.

The only important oilseeds are rape and mustard. **OILSEEDS** These are grown on some 90,000 acres. They are a cold weather crop and are grown on high lands especially along the banks of rivers and near homesteads. The principal thanas where this crop is grown are Raiganj, Ranisankoil and Kaliyaganj.

Sugarcane occupies an area of 25,000 acres. **SUGARCANE** The principal varieties, *kheri* and *mugi*, are thin-stemmed, the former red and the latter green. The canes of both are hard and resistant to white-ants and jackals. The time of planting is March or April and of harvesting January or February, that is to say, the period of growth is about 11 months. The ground should be high and capable of retaining moisture. Irrigation is required when the cuttings are beginning to take root, and cowdung manure is freely used. The canes are planted in rows about 3 feet apart. As the crop attains its full growth it is the general custom to tie the tops together in bunches so as to keep the canes upright and prevent their being broken by storms. Although the canes now grown in the district are almost exclusively of the thin hard stemmed varieties, it is interesting to note that in the year 1840 the soft thick stemmed Otaheitean and Bourbon canes were introduced into the district by a Mr. J. W. Payter, Ijaradar of the principal Government Khas Mahals. These varieties, yielding as they did a much larger percentage of sugar, were much appreciated and quickly spread all over the district,

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but in the year 1857-58 they were attacked by what appears to have been the Red-rot disease of sugarcane and in a year or so they had completely died out and have not been re-introduced since. Sugarcane is chiefly grown in the Birganj, Pirganj, Nawabganj and Patnitola thanas and in the Khansama outpost.

TOBACCO

Tobacco occupies an area of 9,800 acres and is grown principally in the Parbatipur and Birganj thanas, though small plots of it are to be found in almost every village. It is cultivated almost exclusively for local consumption and little of it is exported. It is grown on high ground and the soil is heavily manured. The quality of the tobacco produced is inferior.

CHILLIES

Chillies are an important crop in the Kaliyaganj thana. The seed is sown in seed beds in October and transplanted in November. Before transplanting, the surface of the land is reduced to a fine tilth by laddering and the seedlings are planted in parallel furrows. They are watered at the time of planting. The chillies ripen in April and are plucked by women and children. Plucking continues till the end of May. After being dried the chillies are sold in the local markets or exported. They are a very profitable crop to grow and there is a great demand for them, especially in the eastern districts of the province.

OTHER CROPS

The only other crops worthy of mention are pluses. Of these the most important are *thakuri*, *arahar* and *mattar*. Birganj, Ranisankoil, Raiganj, and Kaliyaganj are the thanas in which they are principally grown. *Thakuri* and *mattar* are sometimes sown in the standing winter rice about the end of October and ripen after the rice is cut, but the general practice of turning the cattle and goats loose to graze over the face of the country immediately after the winter rice is cut restricts this practice to a great extent and indeed acts as a serious check on the growing of such cold weather crops generally.

AGRICULTURAL STATISTICS

A little less than half the area of the district is cultivated. Of the balance 500,000 acres, including the area covered by rivers, *bils* and private *sal* forests, are not available for cultivation, 237,030 acres is culturable waste other than fallow, while current fallows amount to 505,080 acres. It is thus apparent that there is still considerable room for expansion of cultivation.

An accurate estimate of the rate at which cultivation in the district has extended is impossible, as the cultivated area has never been properly ascertained. The Revenue Survey of 1861-63 took no account of cultivate area and the figures given in the annual reports are more or less guess work. It is probable that between the beginning of the last century and the time of the Revenue Survey there was little progress made in this direction as the Revenue Surveyor speaks of large tracts being covered with dense tree and grass jungle infested with wild animals. After the famine of 1873-74 prices of food-grains began to rise and agriculture at once began to assume a more attractive aspect. As the local cultivators were ill suited to the hard work involved in clearing heavy jungle, the manager of a Wards estate made the experiment of importing Santals from the Santal Parganas. The experiment was attended with such success that many zamindars imitated his example and since then these settlers have been migrating into the district in ever increasing numbers, with the result that these extensive jungle tracts have to a great extent been brought under cultivation, and the cultivated area of the district has been increased by about one-third. It must not be supposed that these Santal settlers retain possession of all the jungle lands they have cleared. The general practice is for the zamindar to settle the lands to be cleared with them for a period of years at a very low rent. At the expiry of the period, the lands having been brought under cultivation and having greatly gone up in value in consequence, the rent is raised to the level of that of similar lands in the neighbourhood, whereupon the Santals promptly move on to some other spot where uncultivated waste lands are to be had, while the native Bengali cultivators take their place.

There has up to date been little or no advance in the direction of improvement in agricultural practice. The reason is partly the universal one in India, the ignorance and conservatism of the cultivators, which renders them so slow to adopt any new crop or method of cultivation, and partly the fact that there has been no systematic effort made to teach them anything new. The attempt made by Mr. Payter in the first half of the last century to introduce improved varieties of sugarcane into the district and the ultimate failure of the experiment has already been described. About 1890 Raja Syama Shankar Ray of Teota tried the experi-

EXTENSION OF CULTIVATION

IMPROVEMENTS IN AGRICULTURAL PRACTICE

ment of growing rhea fibre at Joyganj in Khansama outpost, but for want of a proper decorticator the experiment proved a failure. The enterprising zamindar incurred a loss of some Rs. 20,000. The only agricultural improvement, if such it can be called, which has really succeeded in the district is the substitution of the iron sugarcane mill for the primitive wooden machine, with the result that a much larger percentage of juice than before is obtained from the canes. These mills were introduced some 15 or 20 years ago by Messrs. Renwick and Co., a Calcutta engineering firm. To-day this firm has many depots in the district. The mills are not sold to the cultivators but hired for the season, and after use are returned to the depot, where they are cleaned and repaired, ready for the next season. Loans under the Land Improvement Loans Act have seldom been granted. In 1897 one such loan of about Rs. 1,000 was granted to a landholder for excavating a tank. In the scarcity of 1908-09 a sum of Rs. 28,000 was given out under this Act to a number of landholders all over the district. Of this Rs. 24,000 was for re-excavation of tanks while Rs. 4,000 was spent by one landholder on making an embankment with a sluice gate to bring a considerable area of low-lying inundated land under cultivation. This latter work is perhaps the only one which can be called an agricultural improvement in the strict sense of the term. Its effect has so far been most beneficial.

**FRUITS AND
VEGETABLES**

The principal cultivated fruits are plantains, mangoes, jack fruit and pineapples. Of plantains there are many varieties, some such as the *chini champa* and *malbhog*, being particularly popular and well flavoured. This fruit is grown near every homestead and is an important article in the diet of the people and a necessary part of offerings to gods and in all religious ceremonies. Mango trees are common but generally little trouble is taken in their cultivation and the fruit is ill flavoured and stringy. In the neighbourhood of Dinajpur town and in the Raiganj and Ranisankoil thanas better kinds of mangoes are to be found. The best varieties are the *gopalbhog*, *fuzli* and *lamba bhaduri*. Jack fruit are almost as common in every village as plantains. They need practically no cultivation and bear heavily. Probably for this reason they, like the plantain, have little market value, though the fruit is freely eaten by all classes. Pineapples are very generally cultivated but are rather poor.

There seems to be only one variety grown, a small reddish coloured pine, which varies in size according to the care taken with its cultivation. Large pineapples fetch a very good price, but it is not easy to get them. Other cultivated fruits are pummelos, *papiyas*, and *litchis*, of which a few trees may be found here and there in the gardens of the well-to-do. Amongst wild fruits found in the district may be mentioned the tamarind, *boir*, *jam*, *bael*; these fruits are common enough and may often be found growing near villages. The fruit of the first two is eaten cooked with curry or as a chutney; while that of the last two is eaten raw. Coconut and betelnut trees are to be found in the district but they bear little or no fruit. Date trees grow wild in considerable numbers in the southern portion of the district, especially in the thanas of Porsha and Gangarampur, but the fruit is worthless and is not eaten. These date-palms are commonly tapped for toddy, which is drunk unfermented. The palmyra plam or *tal* is most commonly found in the thanas of Porsha, Gangarampur and Itahar. The toddy obtained from this tree is generally drunk after fermentation though sometimes it is taken unfermented. Except in the bazars, every homestead or *bari* has its garden where a large variety of vegetables are grown for home consumption. The principal vegetables grown for the market are brinjal (*baigun*), potato, sweet potato (*sakarkand*), radish (*mula*), a small arum (*Kachu*) and various kinds of cucumbers, gourds, and pumpkins. Brinjals are especially fine and in the Porsha thana specimens 2 seers in weight are common. Turmeric and onions are grown to some extent and beans (*Sim*) and *dantasag*, a kind of spinach, are produced for home consumption. *Patasag*, a variety of jute, is used by the lower classes as a vegetable, being eaten young.

The local breed of cattle resembles that in most other parts of the province, being small and stunted. No attempt at systematic breeding is made. There is hardly a good bull in the district, and the sires are the immature uncastrated males running with the herds. The necessity of reserving grazing areas and for growing fodder crops has never been seriously considered. The whole question of cattle breeding has in fact been hitherto ignored. The local cattle, owing to their small size, are unfit for anything but ploughing and are also very poor milkers, a seer of milk per diem being a fair average yield of milk for a cow. The reason why the

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necessity for improving the local breed of cattle has never apparently come home to the people is that large numbers of fine cart bullocks are annually brought to the big fairs or *melas* from Behar and up-country and sold to local merchants, traders, and professional carters. The people are thus saved the trouble of breeding their own cart bullocks, while for ploughing purposes they are content with the small animals locally available.

The buffaloes found in the district are generally imported and not bred locally. They are smallish animals of the Behar type and very inferior to the fine buffaloes of the Brahmaputra Valley. They are sometimes used for carting and Santal settlers make use of them for ploughing also. Milch buffaloes are kept in small numbers in the low-lying country on the lower reaches of the western portion of the Ranisankoil thana. Goats of a small short-legged type are to be found in every village. They rarely grow to any size. In the cold weather flocks of large castrated goats are imported from Behar and find a ready sale for eating purposes.

POULTRY

The local poultry are of a small type and belong to no particular breed. They are not bred for the market to any extent nor is there any trade worthy of the name in eggs or poultry. In Kaliyaganj thana fairly good ducks may be procured.

VETERINARY RELIEF

Dinajpur does not suffer very much from cattle disease. In the year 1909-10 one outbreak of rinderpest and two of foot-and-mouth disease were reported, but the mortality does not appear to have been heavy. The number of inoculations for rinderpest performed during the year was 100 only. Veterinary relief is afforded at a veterinary dispensary at Dinajpur at which in 1909-10, 5 equines, 15 bovines and 4 other animals were treated as in-patients and 51 equines, 221 bovines and 67 other animals as out-patients. The numbers are very small, but, as the Veterinary Assistant has to spend part of his time in touring, the attendance at the dispensary and hospital is bound to suffer during his absence. In the same year, besides the inoculations for rinderpest, the Veterinary Assistant during his tours in the mofussil treated 873 animals for contagious, and 539 for non-contagious, diseases.