

CHAPTER VI.

READY-MADE GARDENS—OPENING OUT—ENEMIES TO THE
TEA PLANT—OLD PLANTERS AND THEIR MODE OF WORK-
ING—GOVERNMENT OBSTRUCTION—VALUE OF LAND—
SELECTING SEED—THE LABOUR DIFFICULTY—CLEARING
THE JUNGLE—PLUCKING—HOEING—MANUFACTURING—
A DAY'S WORK—LAZINESS OF COOLIES—ROLLING BY
HAND AND MACHINERY—DESTRUCTION CAUSED BY
ANIMALS IN A GARDEN.

THROUGH the partial failure of a season's crop, either in point of price obtained at the sales or smallness of the output and consequent money embarrassments, or the owner being compelled to return home on account of ill-health, or a dissolution of partnership taking place, or death, or a hundred and one other possible events that may crop up, ready-made gardens occasionally come into the market; but these, unless there is something fundamentally wrong with them, command a large price, far too heavy an outlay for a man starting with but a limited capital to entertain a thought of. On the other hand, if the planter—and by planter I mean a man of practical experience—determines to open out for himself, the process is tedious, anxious work. Four years is a long time to wait before the capital sunk

begins to show any return, during the whole of which time it is all disbursements and no receipts. Then, too, unfortunately, during this lengthy period the planter cannot exist on air ; so, what with expenses of laying out a garden, added to cost of living, interest on capital, risk, etc., there are many speculations open which would seem to be of a more promising nature. When laying out a garden it is indispensable to first sit down and count the cost of it; for if at the end of two or three years the funds give out, money must be raised at a most extravagant rate of interest, and is difficult to obtain at any price, on a mortgage of the property ; an awful incumbrance for a young garden to have to contend against; besides, as too often happens, placing the agent who makes the advance in a position, at no distant date, to dictate his own terms. A small quantity of tea can be made the fourth year, but this will not suffice to pay working expenses, and had best not be reckoned upon in the banker's account.

The tea bush has many enemies, amongst which the most prominent are blight, red spider, bad drainage, too much sun or too much rain (both equally disastrous) and others. Bad blight or red spider has the effect of throwing back the plant and depriving the garden of two or three flushes, a serious consideration at the outset of the fifth year, when there are hopes of recouping, to some extent a portion of the former heavy outlays. With bad drainage there can be no hope of a successful future for any

garden. The drainage difficulty used to be surmounted by making all gardens on the side of a hill ; in fact, every one of the old gardens was made in this way, and it took many years before the possibility of growing tea on the plains dawned upon the somewhat dense minds of old planters. Nowadays men of good stamp and education are willing to embark in this rough business, but twenty or thirty years ago few gentlemen were interested in the actual business of tea planting, the honourable fraternity consisting, for the greater part, of professional gardeners, men sent out by garden proprietors or managers of companies, who argued that, because a man knew how to dig and delve in England, he must necessarily be able to cultivate tea in Assam. It is needless to remark that with such men to conduct an undertaking, not much brains were put into the management ; each generation was contented to follow exactly in the steps of the generation that had preceded it. Round Gowhatty, on the way up the Brahmapootra, are many standing instances of the unreasonableness of planting tea on steep hills, which here are studded with bushes in a deplorable state of non-cultivation ; vacancies are the rule, and not, as they ought to be, the exception. This latter term, by the way, applies to places where the bushes ought to stand, but, through negligence or some cause, have died out and never been replaced. After a heavy rainfall the mould on the side of a hill was washed down, leaving all the upper sides of the roots exposed. The expenses of working such a

garden were seriously augmented by the labour required to bank up the shrubs again; but now the fallacy of the old system is thoroughly appreciated, and men save money in consequence.

Formerly thousands of acres were carelessly put out, the seed in the first instance being any rubbish that could be obtained, and the distance when planted out between the rows absurdly wasteful; but again this is all altered. Men pay large prices for carefully selected seed; in fact, it was these large prices that prevented the old planters from buying, for in their day there was no necessity to be very careful about selected seed; anything in the shape of a tea bush was as good as a gold mine, and the early adventurers took no thought for the time, which was bound to arrive, when the acreage of tea in India would increase vastly, only the prolific plants would find favour, and prices must fall. To this increase should be added the recent severe and unexpected depression on all commerce, extending over a period of four or five years, affecting all classes of society. During the whole of this long period the market has been against the planter of Indian teas, both in price and in the quantity consumed; whereas the increased output and corresponding facilities for purchasing at cheaper rates were calculated in ordinary times to create a demand that would be proportionately great.

To show what high opinions were held of tea as a certain road to fortune in olden days, thus runs the story:—An enterprising planter sold a so-called

garden for two lacs of rupees. The negotiations were completed while the worthy proprietor was in England on a visit. At the time of the sale the garden was *in nubibus*, and consisted of a fine stretch of jungly land. A telegram to his manager to clear and put out at once anything that could with reason be called a tea plant, followed the handing over of the first instalment of purchase-money, and when in due course the unfortunate purchaser arrived in the East, he found his newly-acquired possession with about ten bushes to the acre: the rest had died out—so said the vendor. It is a pretty little tale of treachery, and has one advantage over most other stories—it is quite true.

In the competition between the old and new gardens there can be only one result—the failure of the old gardens. A fair average to take per acre for old tea is four maunds (80 lbs. to the maund); for modern gardens seven or eight maunds would not be an excessive computation: one garden at Negreting made as much as fifteen maunds, but this, of course, is a rare exception. How is it possible, therefore, for old tea gardens to compete, with a chance of success, against new? The same amount of labour is required for the one as for the other; expenses are but slightly increased when the result attained is looked into.

At the present time of writing the non-existence of freehold tenure and inability to purchase outright a site suitable for a plantation, raises a serious obstacle to the development of enterprise amongst that section of men who would probably embark money in the

venture with a view to the future increased value of the property for those that come after them. Now as the law stands, the right of granting leases is vested in the Indian Government, to whom all applications have to be made, comparatively short terms only being granted. There are some freehold properties that were acquired years ago, but the number of gardens enjoying this advantage is but few. Sub-leases, or leases granted by any other than the recognised Government representative, always partake of a doubtful character, and great caution must be exercised at starting to secure a sound title. A fictitious value is set upon land that is, suppositionally, likely to be required by Government at some future date. This little joke is so well maintained that it is usual, on putting in an application, to find that that one particular spot is very dear to the heart of the powers that be; and I verily believe that the same would be the case with nine sites out of every ten. Even the poor planter, whose sole requirement is a piece of jungly ground, which the country can count by thousands of acres, and for which he is willing to pay a handsome price, cannot escape contact with red tapeism in some form or another.

The value of land depends upon the quality of its soil, the amount and kind of jungle growing upon it, the distance from the nearest station, accessibility to a high-road or river, etc. Rent at first is merely a nominal sum, on account of the land being valueless until it has been cleared, a costly process requiring

much labour. The greatest drawback in the system of acquiring land is the difficulty of obtaining a spot, selected at considerable trouble and expense. After much travelling about and time wasted in prospecting for a favourable locality in which to start a garden, and having at length found the desired spot, the applicant interviews the *mozadar*, and sends in his written application for a lease. Measurements are taken, and due notice is advertised of the intended letting. On an appointed day, at the nearest station, the lease is put up to be sold by auction to the highest bidder, such is the absurdly unfair system, and the man who has used his time, money, and experience in finding the spot, is placed on exactly the same footing as anyone else who likes to bid for it. Men living in the neighbourhood, if they object to the new arrival, or are churlishly disposed, can combine together to buy up the plot, even if they have no intention of making use of it. Thus the system works very harshly on those who, anxious to start as soon as possible, have neither time nor money to waste in finding places that other men may purchase over their heads.

Measurements are delightfully indefinite, as a rule, the actual dimensions and the Government plans are at total variance, the discrepancy amounting often to ten acres, more or less. In one case that I wot of, the planter had considerably the best of it. His application for 500 acres was considered, and the land marked out in an unusually slipshod

fashion : he now finds himself the proud holder of 700 acres, a slight mistake of over 200 acres having crept in somewhere.

The official description of the boundaries is also extremely ludicrous. A small jân, or watercourse that is continually shifting its position, will form one side ; a bor tree, where there are hundreds of these trees, will be another definite boundary ; the edge of the jungle—about as fixed a boundary as the sand-banks of the Brahmapootra, and always alterable by cutting down more jungle—will probably form the other two sides.

The timber on the property is the only really valuable part about it, and is of great importance to the planter when building his bungalow, tea-houses, lines for coolies' dwellings, and for making charcoal. It must always be borne in mind that for this latter purpose there should be fair-sized timber in the immediate vicinity ; imported charcoal is more expensive, crumbles on its travels, and is not carefully picked. Another necessity in choosing a site is to have good water, if possible, running near the bungalow. For drinking purposes, this is a *sine quâ non*, preventing epidemics amongst the coolies, and helping more than anything else to keep them in good health. Natural drainage should be kept in sight to save the expense and waste of time in cutting drains. Tea-houses, bungalow, and outhouses must lie tolerably high and close together, to enable the planter to get from bungalow to tea-house rapidly—an immense

advantage for looking sharply after coolies during the delicate firing process. If possible, select grass jungle, on account of the ease with which a clearance can be made, although there is more danger of fire, and the precaution of keeping a space of three or four hundred yards round the bungalow absolutely clear of jungle must be adopted.

On selecting seed for a garden—an essential part of planting that has certainly, up to the present, not been fully appreciated—depends that all-important probability, the planter's prospect of making it pay. Transporting seed from place to place has an injurious effect on its growing powers, and the farther the distance that it has to travel, the greater percentage of barren seeds result. Some that was sent from Assam to Ceylon resulted in a loss of 80 per cent., entirely unproductive; and there were, not without cause, grave complaints at this result.

When building tea-houses, an iron roof will be found better than thatch, which is dangerously liable to ignite. Iron-roofed houses are trying to the European constitution, but the latter article is not of much account in tea districts; things that are good for tea are bad for poor humanity.

At the outset the question of labour is a stumbling-block of no small dimensions, in consequence of the expense of importing coolies from their own districts; for the Assamese, who are sparsely scattered over the country, are lazy and will not work, unless the rice crop fails, when they are compelled to turn to and

earn sufficient for their wants until the next season's crop. Kacharis are the only natives that can be relied upon for work, and they form the only bright side to the labour question. They travel in gangs of ten or twenty, from garden to garden, and will not take a job unless they are assured of being allowed to do at least a double day's work in one day. After a garden is got into good condition, and the work falls short, they will frequently pack up and move off to some other place, where their services are in demand. They are all powerful men and willing workers, and, more extraordinary still, fond of filthy lucre.

It can easily be understood that, with such difficulties to surmount, such work to be done, a manager of a tea garden must be a rather out of the ordinary sort of man. To be of any use he must be of strict integrity, in order to gain the confidence of his employers; sober, business-like, a good accountant, not easily ruffled, handy at carpentering and engineering, know something about soil, and have a smattering of information on all subjects; or, to put it concisely, he must be a veritable Jack-of-all-trades.

Now, as to the laying out, planting, plucking, hoeing, and other work in the planter's life, we had best begin at the opening out of a garden, and cut down our jungle. I shall try not to be tedious over the practical working of a garden, but all such details must be somewhat dry.

When the jungle has been cut down and disposed

of, there is splendid virgin soil ready to the clearer's hand, and it only requires working to bring forth its richness. The rugged beauty of dense jungle, twisted and interlaced in a perfect network of trees, ferns, creepers, and undergrowth; the variable tones of colour in the leaves, everywhere different in size and shape, from the broad grey-green leaf of the plantain to the silk-like threads of the multitudinous tiny grasses—the impenetrable intricacies of this vast mass of foliage, and the wonderful secrets of animal life that it contains, make the jungle a mysterious cause for wonderment to the lover of Nature in its wildest form. Clearing this for tea planting is a labour of great difficulty, and occupies much time when there is an insufficiency of labour. Few planters can find it in their hearts to tell off coolies for this kind of work. Two



A PLANTER.

growths of jungle must be mentioned—grass and wood. The former is easily cleared off by fire, but the latter is a more serious obstacle to dispose of. Gardens made on grass land have a great evil to contend against: during the first four or five years of their existence they are never exempt from

rapid growing jungle, which springs up with extraordinary rapidity.

The usual way of getting rid of timber jungle is to enter into a contract with Assamese to clear it at so much per acre. These men are accustomed to the work, and, having a contract, quickly get through their job; whereas a large party of coolies would have to be told off, to the detriment of the cultivation of the rest of the garden, in order to do what half the same number of Assamese can more readily accomplish. As the larger timber is cut down, unless the wood happens to be required for bungalow uprights or other building purposes (for which neem, teak, and the harder woods are always saved), charcoal pits are constructed here and there while the felling progresses. The labour of dragging huge trunks about is by this system economised, and at the same time they are got rid of. Charcoal is stored in go-downs, ready to be used in the tea-house for firing.

Going round a newly-cleared plot, and seeing the enormous waste of wood that cannot be avoided; for the soft-timbered trees are of no use either for building or charcoal; gigantic trees lying where they fell, to cumber the ground until ants and rot shall work their destruction; others rung halfway through, and threatening to topple over at the slightest suggestion of a wind, and a few with their tops cut clean away and fired round the roots, presenting a gaunt and desolate appearance—these sights make a new clearance anything but an enlivening scene. Trudging

over the ground, where creepers and roots have not been thoroughly turned in, can only be likened to a perambulation through a forest of man-traps : every creeper trips you up, and the stumps render the twisting of your ankle a momentarily occurrence. Add to these delights a sticky, heavy soil, that hampers your progress, and a walk through a new clearance is an event to be remembered, and afterwards avoided.



CLEARING THE GROUND.

If there is a weak spot in a planter's character—and surely he, to be like his fellow-men, must have his failing more or less developed—it will always be on the subject of nurseries for the seedlings, and a new clearance ; and the visitor may count himself lucky if he has not to tramp wearily in the manner that I have endeavoured to describe over many acres, all the while

feigning to be keenly interested in the sights that greet him, in reality heartily wishing himself well back in the bungalow, comfortably ensconced in an arm-chair. Every planter fondly imagines that there never has been such a nursery as his own, and his vanity at this period of his career is only just sufferable. Many trees cannot be left standing on account of the light



COOLIE HOEING.

and sun required by the tea plant. Shrubs grown under the shelter of a tree always run up coarsely and dark in colour.

After the ground is cleared, hoes are brought into requisition for turning up the soil, and burying what jungle may remain on the surface. The implement, supplied by the factory, has a blade about eight inches wide, with

a long handle, and in the hands of an irate coolie forms a very awkward weapon. Next to selecting the seed, good hoeing is the most important work, requiring more attention and regularity of arrangement than any of the other garden labours, since it continues without cessation throughout the year. There are two qualities of hoeing, light and deep; the first, as the word implies, is the less laborious kind, and consists of one chop with the hoe; deep

hoeing is two chops deep, and corresponds with our gardening method of trenching, two spades deep, in England. The deep hoeing nerrick averages about two-thirds of the light; and here occurs an opportunity for the coolie to shirk his work and get the better of his employer, for it is impossible, as the coolie well knows, to go over a large extent of ground and distinguish, by merely looking at it, which has been double hoed: a walking-stick plunged into the earth is about the handiest and most effective test. By dexterous manipulation the coolie cuts the top earth in such a way as to present the appearance of a good deep cut, and so saves that additional chop which he is supposed to have made. This artifice is most easily overlooked, and very hard to detect; but when found out, that coolie's next ten minutes are passed in a way not to be envied. Various forms of punishment—from a good thrashing to making him do two or three times the amount over again—are inflicted, but always with the same after-result, that if an opportunity presents itself he will invariably adopt all the devices of which he is master (and they are many) to shirk his work; a result, I regret to say, that is not entirely confined to the black labourer.

When the women have worked round the garden and finished plucking the leaf, for there is nothing more to pluck, the bushes have to be left until such time as they shall be ready again for the nimble-fingered ones; meanwhile the women are not allowed

to eat the curry of idleness, but are put on to hoe or to transplanting. The hoeing nerrick varies according to the condition of ground and depth of cut required. For men twenty to twenty-five nulls; women, about half this; except in the case of a new clearance, where there is a great deal of heavy work, then ten nulls will be a good day's work for a man. Twenty-five null hoeing is of the lightest description,



CARRYING LEAF.

and is the mere loosening of the top of the earth to the depth of three or four inches. The number of flushes are very nearly regulated by the amount of cultivation bestowed, and "The more hoeing the quicker the flushes" is a well understood maxim. Jungle (by which is meant grass, weeds, etc.) develops so speedily during the rains, that a regular system of working round the garden has to be observed in order that each plant should in turn have its chance of being freed

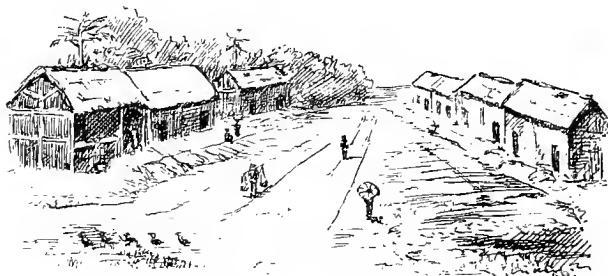
from jungle, that twines round and chokes it, and exercises a deleterious effect upon its growth. It is to facilitate rapidity in going round a garden when it is under-manned that light hoeing is employed.

After the soil has been deep hoed and is quite ready, transplanting from the nursery begins, for few

men sow the seed at stake. The nursery is made and carefully planted with seed on the first piece of ground that is cleared, so that by the time the remainder of the garden is ready to be planted out the seed has developed into a small plant, with strength enough to stand being transplanted. Holes are prepared at equal distances, into which the young plants are carefully transferred. The greatest caution is exercised in both taking them up and putting them in their new places, that the root shall be neither bent up nor injured in any way. For this work women and children are employed, as it is light but requires a gentle hand to pat down the earth around the young plant. It speedily accommodates itself to its new circumstances, and thrives wonderfully if the weather is at all propitious. A succession of hot days with no rain has a most disastrous effect on transplants: their heads droop and but a small percentage will be saved, which means that most of the work will have to be done over again. Once started, plenty of cultivation is the only thing required to keep the plant healthy, and it is left undisturbed for a couple of years to increase in size and strength. At the end of the second year, when the cold season has sent the sap down, the pruning knife dispossesses it of its long straggling top-shoots, and reduces it to a height of four feet; every plant is cut to the same level. The third year enables the planter to pluck lightly his first small crop. Year succeeds year, and the crop increases until the eighth or ninth

year, when the garden arrives at maturity, and yields as much as ever it will.

During the rains, the gong is beaten at five o'clock every morning, and again at six, thus allowing an hour for those who wish to have something to eat before commencing the labours of the day. In the cold weather the time for turning out is not so early; even the Eastern sun is lazier, and there is not so much work to get through. Few of the coolies take anything to eat until eleven o'clock, when they are rung in. The leaf plucked by the women is collected and



THE COOLIE LINES.

weighed, and most of the men have finished their allotted day's work by this time, so they retire to their huts to eat the morning meal and to pass the remainder of the day in a luxury of idleness. For the ensuing two or three hours there is perfect rest, except for the unfortunate coolies engaged in the tea-house; their work cannot be left, and as fast as the leaf is ready it must be fired off, else it would

be completely ruined. At two o'clock the women are turned out again to pluck, and those men who have not finished their hoeing have to return to complete their task. About six o'clock the gong sounds again, the leaf is brought in, weighed, and spread, and outdoor work is over for the day.

No change can be made in the tea-house work, which goes on steadily, and if there has been much leaf brought in the day before, firing will very frequently last from daybreak until well into the night, or small hours of the morning. But we are getting on too fast, and must hark back to the commencement of our work.

Over night the sirdars, or headmen of the garden, arrange the order of plucking for the morrow; first having received instructions from the sahib as to which portion of the garden he thinks ready to be plucked. Each sirdar has a certain number of men or women to look after, and for the hoeing or plucking of these he is responsible. His charges are occasionally very wilful, and pluck according to their own inclinations, instead of carrying out instructions, bringing in coarse leaf when fine only is required, and doing anything to fill their baskets and save a little trouble. A sirdar's mode of management is of the simplest. He parades up and down between the rows of tea bushes, armed with a small stick and the dignity that his position of authority gives him, in and out amongst his pluckers, yelling at the top of his voice, encouraging or swearing at them, and

always inciting them to make haste and get along faster (Che lao! che lao!). A sirdar attains his proud position through being one of the oldest and most trusted workers on the estate, or for having successfully recruited and brought up a party of coolies from his own country. They are held in respect by the rest of the coolies, for they have the ear of [the sahib, and have it in their power to make it decidedly



WOMAN PLUCKING.

uncomfortable for any individual who sets their authority at defiance.

Early in the morning, after the second gong has rung out the coolies, the women, provided with baskets in which to put the leaf, are marshalled by the sirdars, and directly they have been all got together, are conducted to the part of the garden that is to be plucked. By the time that eleven o'clock comes round, if there is a good flush on the bushes, it is no

unusual thing for them to bring ten seers of leaf each (a seer weighs two pounds)—no light weight to carry about on a hot day.

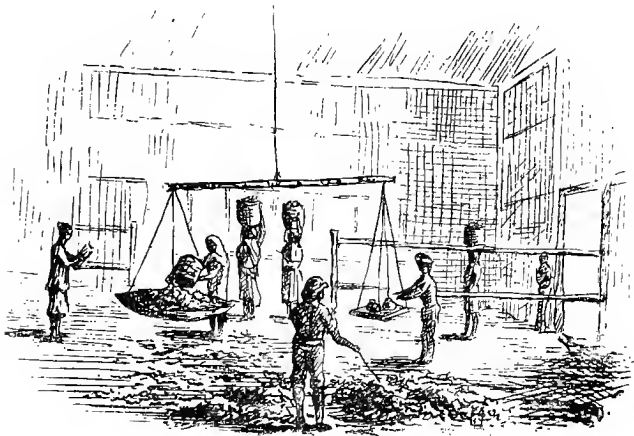
The process of plucking is not nearly so easy as it looks : the plant requires delicate handling, and the knack takes some time to acquire ; the difference between an old hand and a beginner is transparent in the quantity and quality of leaf brought to scale. In plucking, the shoots are nipped off by catching the leaves between the forefinger and thumb, then with a quick dexterous turn of the wrist, they are taken off quite clean. If my reader has observed the new growth of a laurel, where it springs out from between the old dark green leaves, he will be able to form a fairly good idea of the appearance presented by a flush on the tea plant. Generally the tip and two or three leaves are taken, if fairly soft ; the lowest leaf down the stem being so nipped off that its stalk is left adhering to the main stem, and it is between these two that the new shoot forms, producing in from twelve to fifteen days another flush. A great mistake is made by eager planters in heavy plucking at the commencement of a season. The result of this treatment is to procure very fine teas in quality, pretty to look at when manufactured, and tasty when infused, but limited in quantity ; and when the usual period for heavy plucking and a large return ought to have arrived, the plant, weakened by the strain put upon it too early in the season, cannot respond, and is thrown back, remaining during the better part of the year in

a sickly condition. For every ounce of tea made at the beginning of a backward season pounds are lost later on, but it is the laudable ambition of every manager, especially if he is newly appointed, to out-do last year's crop, and in order to accomplish this it is advisable, so he falsely argues, to set to work directly the plants show signs of flushing.

Both men and women are lazy, and require a great deal of looking after. Hot days are conducive to this spirit of idleness, and many small parties of coolies have to be routed out from under the grateful shade of the nearest tree, where they are to be found stowed away, enjoying the rest from toil. The arrangement that women should be plucking in one part of the garden, and men hoeing in another, is the best. At times of pressing necessity—as, for instance, when there is a full flush all over the garden, and it must be all got off as soon as possible (for if left the leaf hardens)—or when the ground takes a larger number of hoeings than can be accomplished by the ordinary set day's work, *ticca pice* (additional wages) are paid as an inducement for both men and women to work. Sometimes even the prospects of an increase to their incomes will not allure these people, so curiously are they constituted ; and the only answer to the question, ‘Why won't you work for this money?’ will be, “Sahib, I have already earned my mother's pay, and that is quite enough to feed me. Why should I put myself out to work for more money that I do not require?” A native troubles not about the future,

for he can always obtain employment, and if the worst comes, his people will support his declining days.

After the leaf has been brought in and weighed, it is thinly spread over bamboo frames, covered with closely-meshed wire netting, each about forty inches by thirty—a nice handy size—and left on racks in a



WEIGHING THE LEAF.

well-ventilated house, and here it goes through the first process of manufacture, viz., withering. This is done in order to render the leaf soft and supple before it is rolled; otherwise, when heavy pressure was put upon it, the leaf, instead of twisting up in one whole roll, would be powdered into tiny fragments. A large amount of space is taken up by this process, sometimes twice as much space being occupied as

would be required on ordinary occasions. These exceptions are, for instance, after heavy rain, or when coarse leaf has been brought in, and it is necessary to spread thinly to facilitate the air circulation round the leaf. Withering will, under usual circumstances, take from ten to twenty hours, occasionally even longer. After rain the process is greatly hindered by the amount of moisture that has to be



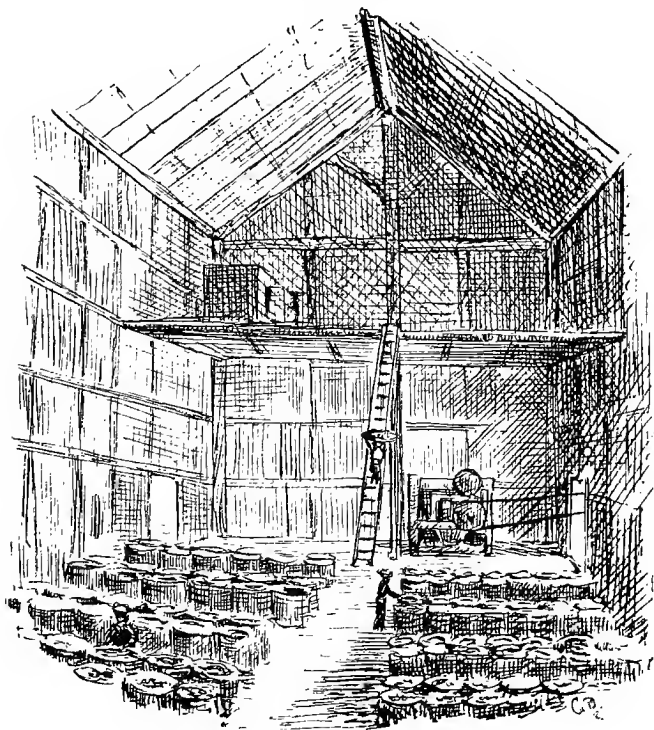
WITHERING HOUSE.

got rid of before withering can commence, rapid evaporation being affected by the condition of atmosphere, temperature, etc. Careful watch has to be kept to prevent over-withering, when the leaf turns a reddish brown, much to the detriment of the tea

that it will make.

The leaf being ready, it is carried in large wicker baskets from the withering to the tea-house, there to undergo its next process, rolling. The interior of a tea-house is simple, rough and unadorned; sometimes the walls are lime-washed, but this is tending towards the luxurious; the fittings consist of the rolling machine, dhools and large tin-lined chest for storing tea. Perhaps if the house is high enough a second story (or chung, as it is locally designated) is erected, composed of bamboos, on which, if the leaf has been

brought in wet, the process of withering is hurried along, with the assistance of the great heat given off from the dhools. A rolling machine is an expensive



TEA-HOUSE.

item for a garden, and figures badly in the capital account, but when at the end of a season a balance is struck between the cost of coolie, or, better still, Assamese, labour and the outlay on a machine it

will require no demonstration to prove that a machine pays for itself in a very short time. It is a willing labourer that does the work as efficiently and ten times more quickly, an incalculable benefit if there is a large supply of leaf in the withering house waiting to be rolled and spoiling by the keeping.

The costliest part of getting machinery sent out from England is the transport between Calcutta and Assam: curiously enough the freight between these points is higher than between Calcutta and England, rather an illogical fact, seeing that one is a seventh or eighth part of the distance of the other.

To facilitate rolling, several patents have been taken out. The best known and most universally adopted are Mr. Jackson's machines. Mr. Jackson was himself a planter of large experience before he commenced engineering, and his knowledge of the requirements for this branch of tea-making has enabled him to construct a machine that meets every wish. Other machines by Mr. Kinman—who, I believe, is also an old planter—have been brought out, and are largely used in a good many gardens, their owners doing all their work with them, and desiring no better. Much depends on the machine that a man is accustomed to use, and opinions will be found to be fairly divided between the two rolling machine makers, every planter swearing by the machine that he is possessed of.

Lately a small, but at the same time most important, change has crept into machinery for tea-

making, the use of as little iron as possible on the plates which come into direct contact with the leaf during the process of rolling, on account of the discoloration which follows. Even heads of iron bolts that screw together the timbers of the rolling table are sunk as deeply as the thickness of wood permits, and covered over. Long experience has proved that the less metal used in tea manufacturing, the better the result obtained; and now that tea fetches such ridiculously low prices, every attention that is consistent with rapidity of working, must be given to the minutest details, to enable the producer to set before the consumer an article with as few defects in it as practicable.

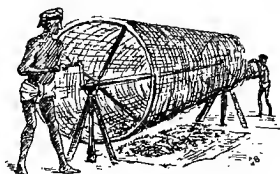
Should a machine unhappily break down in the midst of a heavy season, an occurrence that will happen with the customary perverseness of things, recourse has to be taken to the old method, and rolling has to be performed by hand, for which purpose a large band of coolies have to be taken away from important garden work. It is not until an accident of this sort happens that the change from the old interminable, never-ending drudgery of hand rolling to the rapid machine work is appreciated from the pleasing comparison. A certain amount of finishing of the rough leaf is still done by hand; there will always be a little coarse stuff left over, not enough to fill up the machine again, that must be done in this way.

According to the capacity of the machine, so much

withered leaf is emptied into it, the wheels revolve, and in a few minutes the rolled leaf is turned out, ready for the next process-fermenting.

Fermentation commences immediately after rolling has finished, and is conducted (or perhaps, more correctly speaking, I ought to say, conducts itself) in the following way. The leaf is collected from the machine and spread in thin layers on mats, and turned over from time to time. Exposure to the air does the rest. The leaf ferments, and during the process a change of colour ensues. First the bright green disappears, which is replaced by a greenish yellow, then follows a dirty yellow, succeeded quickly by a bright copper colour. At this stage, according to most accepted authorities on the subject, the leaf is ready for firing; but about this great differences of opinion prevail, and there has been many a wordy war. Some maintain that the early greenish yellow period of fermentation is the best, and that tea made from leaf of this colour is more pungent; but each planter fancies that his own views are the best, and it is only by the price that his teas fetch in the open market that his faith in his own mode of manufacture can be at all shaken. Really, everything depends on the quality of the leaf, and no hard and fast rules can be laid down for guidance. The coarser and harder kinds of China tea will require more withering, more rolling, and more fermenting, to procure the requisite colour; whereas the soft, large-leaved indigenous or hybrid plant is easier to work.

Directly the process of fermentation has arrived at the particular point required, the leaf is lightly spread on bamboo trays, to be fired. The dhools, on which the bamboo trays are placed, are a kind of rough oven, ranged round the tea-house in rows, standing two feet high and close together, except where a pathway between each double row allows room for a man to pass up and turn the leaf over. Dhools are built circular in shape, of twisted bamboo, bedaubed inside and out with a composition of mud, which quickly hardens. They are fixed to the ground, and a charcoal fire is lighted in the centre of the space occupied by the dhool, while the tray containing the spread-out leaf is placed on the top. By this arrangement the heat is pretty nearly equally diffused over the whole surface of the tray.



REVOLVING SIEVE.

Some planters, after the rolling is finished and before fermentation commences, pass the leaf through a sieve. This machine is home-made, and consists of belts of *bêt*, a species of rattan, twisted round and round long strips of split bamboo, arranged to form a ground work, round which to intertwine the flexible *bêt*. A large circular sieve is thus formed, wider at one end than at the other, and with larger spaces between the bamboos at the wide end than at the small. An axle is run up the centre of this contrivance, on one end of which is fixed a handle, the

whole thing being mounted on rough bearings, to allow the sieve to revolve. Leaf taken from the rolling machine is passed through the sieve while it rotates, with the result that the finer leaf is separated. This can only be done on a very rough scale, but the machine answers all the purposes required of it.

Among the men engaged in tea-firing, a system of continual change week by week is often compulsory, although there is serious fault to be found with this arrangement, seeing that (putting aside all considerations of the ill-effects wrought upon the coolie by continually living in the hottest part of the tea-house, without a change to outdoor work, in order to recuperate his relaxed condition), an enormous inconvenience arises in having to teach a number of coolies the same work over and over again. Just as they are becoming proficient in tea-making, they have to return to their hoes, and by the time that it comes round to their turn again for tea-house work their hand has lost its cunning. Larger pay is an inducement to a few to stick to tea-house work, and a party of these industrious workers will be told off for duty, one half of the number taking three days a week inside and four days out, and *vice versa*. None of the imported coolies could stand seven consecutive days at this trying labour. Even at their best Bengalis cannot compare as tea-makers with Assamese, all of whom seem to be born adepts at the industry. It is real economy, if it can be effected, to secure the services

of two or three Assamese in the tea-house, and pay them twice as much as an ordinary coolie, for they are well worth the money. They understand what is required, work well, and seem to stand the heat better.

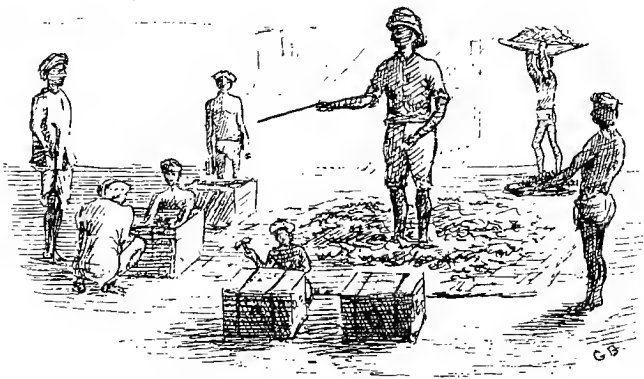
Charcoal must be carefully selected before use in tea-firing, otherwise the bad bits smoke and impart an unpleasant flavour to the leaf on the tray above. The heat in the house after the dhools have been alight some time is terribly trying, the thermometer usually ranging between 110° and 130° Fahr. Entering a tea-house, some little practice is required to be able at a glance round to detect the particular dhool that is smoking or burning. Coming from the outside (I was nearly writing "fresh" air, but that would not be in strict accordance with my love of veracity), the smell of burnt tea is apparent at once. Awful difficulties are experienced with Bengalis before driving into their dense brains the idea that the leaf must be constantly turned over, so that every portion shall get the benefit of the fire. If not carefully looked after they will leave the tea to its fate; and if one dhool of burnt tea, by some mischance, escapes the lynx-eyed planter, and is allowed to be mixed with the rest, the labours of many days are irrevocably damaged for the Calcutta market.

The fired tea has now assumed the appearance that it presents on our breakfast tables in England: a blue-black with a quantity of little silvery white threads mixed with it. These thread-like shoots are finest pekoe—the most valuable portion of the tea

Red leaf—of which there will always be a small proportion, however carefully the manufacture may have been conducted—is picked out, and the whole of the day's tea is weighed, and stored away in a capacious tin-lined box, there to remain until there is a sufficient quantity to pick, pack, and send away. Suppose this time to have arrived. Women are set to work (for all this portion of the work is done by females) to sort out the rough leaf from the fine, and the red leaf from both; the tea is then passed through various sized wire sieves, and quality and quantity are afterwards noted on the outside of the box that carries it, or by some private mark, for future reference. Nearly all the tea-chests used in Assam are made in Burmah: each piece is numbered, and then tied in a flat parcel for convenience of transit. When put together at the factory they look much nicer, and are in the end cheaper, than the home-made article; for cutting timber, unless a saw-mill with plenty of suitable wood is at hand, does not pay.

Now comes the last stage of all in our account of the tea manufacture—packing. Boxes, lined with sheet-lead, are weighed and placed ready in the tea-house; all the tea that is about to be packed is re-fired over tremendously hot dhools, in order to get rid of any moisture that may be retained, and which on the voyage would probably spoil the whole chest, causing it to go musty. While it is still hot it is put into the chests, shaken down (pressing it down with the hands would reduce it to powder), and weighed;

then the lead lining is soldered down as rapidly as possible, the weight of the box and net weight stamped on the outside, lid nailed down, the garden's private mark, together with number of the break, put in a conspicuous place, and our tea is ready for its journey. The whole business is done with a smartness unusual to the native ; but the sahib's presence, watch in hand, personally surveying the busy scene,

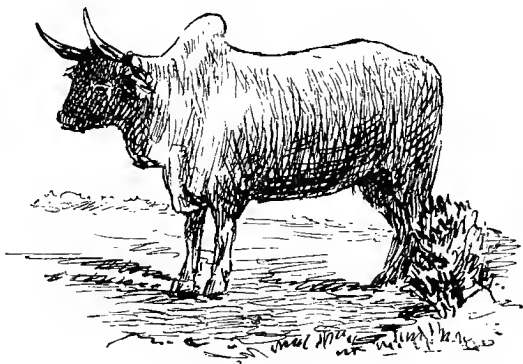


PACKING TEA.

and exciting the coolies with promises of a reward to the men who pack the quickest, stimulates them to increased exertions.

Each bullock ghari will take for shipment seven or eight chests to the river, where they await the first steamer going down stream. During the rains there is frequent difficulty in securing a sufficient

number of gharis to take away the tea, for the ordinary supply of the garden is utterly inefficient at this busy period to dispose of all the chests, and ticca (or hired) gharis are speedily snapped up. Factories situated close to an arm or tributary of the Brahmapootra are at this time in a capital situation, and can put their tea on a small flat and float the whole thing down to the main stream, at much less expense than



ASSAM BULL.

others who have not the advantages of a waterway.

Among the many inconveniences that surround the planter, and are calculated to sour his temper, is the damage caused to tea bushes by cows and ponies. Blight is a visitation that no human power can foresee or resist, but ponies and cows are wanderers let loose from the nearest habitations, and can be dealt with. For many years it was customary to catch all cows, horses, buffalo, etc., found straying about the garden

and (acting under a *lex non scripta*) put them in the pound, where they remained until claimed by their owners, on whom, as a warning, a small fine (four or eight annas) was imposed. Private pounds are now illegal, unless duly authorised by the nearest assistant commissioner, and all stray animals are driven to the Government pound. The trouble that this causes, the pound being probably twenty or thirty miles distant, the loss of the services of two coolies to act as drovers for two or three days, the hatred and malice that is borne against you all round your district for taking such action, does not compensate for the pleasure of depriving an Assamese ryot of his own, and putting him to the trouble of going in search of his missing property. On the road a party of Assamese will meet their animals being driven away to the nearest station, to be placed in durance vile; then with many entreaties and by payment of fines they will regain them, leaving the unclaimed cows to continue their weary tramp. What these wretched, half-starved brutes manage to find to eat in a tea garden is a mystery, for as fast as the jungle grows up, it is promptly hoed into the ground again. They greatly damage the plants by rubbing their irritable bodies against the branches, or vary the monotony with a fight, during which the bushes are trampled down and rushed through, crushing down the young growth and unfitting the plant for yielding for a lengthened period. Coolies own many cows and ponies, and are chief offenders in the damage done to a garden.

Buffalo are also trespassers to be prosecuted; fortunately they are scarcer than cows and ponies. but such clumsy, awkward brutes do not help to improve the condition of a plantation. Young nurseries are the chief sufferers after an incursion of these animals: their great flat feet tread down two or three young plants at each step, and in one night incalculable harm can be effected. Instead of pounding them, a good plan is to make them work for their living, and when their owners come to claim them, impose a heavy fine in addition. A capital revenge was taken by my partner for depredations committed. A few buffalo were found straggling about the garden, which he promptly impounded. About this time he was building a tea-house, and there was a difficulty in procuring good thatch, and some doubt on his mind of the ability of the Bengalis to thatch his house properly; so being a man of many resources, when the owners of the buffalo turned up, they were politely but firmly informed that the only possible way of getting back their property was to thatch the tea-house; a proposition at which they at first demurred: but finding that my friend meant exactly what he had said, there was no way out of it but to set to work and do it. Thus we had our house well thatched, and they had their animals restored, a most satisfactory arrangement, I hope, to all parties concerned.