but variations must take place according to district and elevation. Propagation is from seed only. The seed is rather larger than a hazel nut, with a thicker and darker shell and per­fectly spherical shape. When ripe (about the month of November) the seeds arc placed a few inches apart in carefully prepared nurseries, which are watered, shaded and weeded till the regular rains of May and June admit of the shading being removed. The seedlings should then be 6 ins. to 8 ins. high and ready to plant out in the fields. These are prepared by cutting down and burning the jungle, which is afterwards hoed, lined and staked in parallel rows running both ways. The intervals of planting vary, but 4½ ft. by 4½ ft. is a very common distance. Pits 15 ins. to 18 ins. deep are dug for each plant, and refilled loosely—then the seed­lings arc carefully placed in them. With favourable weather they should be 15 ins. to 18 ins. high by the end of the first year. Some­times the plants arc grown in the nursery for a whole year or more and put out during the cold weather. After two years’ growth the bushes should be 4 to 6 ft. high. 'Γhey are then cut down to about 8 ins. and are allowed to grow again up to 2 or 3 ft. before, towards the end of their third year, being plucked regularly. The object of this cutting down is to cause the bushes to spread out and cover the ground area usually allowed to each plant, *i.e.* about 20 sq. ft. The yield in the third year is small, probably less than ½ oz. finished tea per bush. At 7 to 10 years old, when in full bearing, 4 to 5 oz. would be considered a good return. The annual production per acre from matured plants was in 1906 in the prin­cipal producing districts of India :—

Darjeeling 317 lb

Assam 402 „

Travancore 452 "

Sylhet 515 "

Cachar 542 "

Dooars 569 "

Individual estates of large area gave as much as 1280 lb per acre. In Ceylon the average yield per acre was 440 lb, but there are verified records of 996 lb per acre within the year from an estate of 458 acres. On the same property an area of 100 acres gave 1100 lb per acre on the average over a period of 18 years.

Cultivation in the northern parts of India is done by digging over the soil—locally termed hoeing—once in the winter quarter and six times in the nine months of the harvesting season. To keep an estate clean and in good cultivation it re­quires to be gone over every six weeks. The labourers being barefooted, a spade is useless, so a “ khodalee ” or hoe (much like a very heavy and long-bladed garden Dutch hoe) is used. It is raised well over the head and dropped forcibly into the ground, then pulled towards the wielder to turn over the soil. In southern India and Ceylon clean hand-weeding is the method of cultivation, almost no hoeing being done. In northern India the plucking season begins in April. During the first flush *(i.e.* the breaking out of young green shoots after pruning and the rest of winter) the bush is encouraged to grow by leaving 3 or 4 fully developed leaves after removing the tip of the shoot. It takes about 6 weeks to remove entirely the whole of the first and succeeding flushes, going round the estate once a week. In the second flush two leaves only are left. In the third and fourth flushes only one large leaf, and after that—say during October, November and part of December— no soft leaf growth is left that can be harvested in good order. In northern India, where the weather in the winter months is cold and dry, growth practically ceases, and then the whole area is pruned and cut down to about 16 ins. high all over, but in Travancore and Ceylon it grows continuously and is only pruned when found expedient at intervals of 15 months to 2 years. In certain cases of high- lying estates, where the growth is slow, it is allowed to run 3 years from pruning. The finest teas are produced at high elevations in Darjeeling and Ceylon and in the plains of Assam, but the quality from individual estates varies much from season to season, and even from week to week. There are at times marked differences between the produce of adjoining estates, with apparently identical con­ditions of soil and situation. Tea grows and thrives from about sea-level in the tropics to 7000 ft. in more temperate conditions. The life of a well-cared-for bush has been estimated at 50 years, in spite of its numerous enemies. Those include mites, termites (or white ants), thread blight, grey blight, caterpillars (naked or in bags) and caterpillars armed with stinging hairs to protect them, and borers, red and black, some of which eat the core out of the wood, while others content themselves with eating only the bark.

During recent years in India a new development has taken place in planting tea upon what are termed “ bheels,”—lands resembling to a great extent the peat bogs of Ireland and Scotland. When opened up by an elaborate and complete system of drainage, they have been found to possess the power of producing enormously heavy yields, and it is from such estates that the greatest yields in India have come.

In Ceylon, and to some extent in India, the careful and syste­matic application of chemical manures, compounded on scientific lines, has been found to increase largely the yield of leaf, and much interplanting of nitrogen-producing growths has been done with a view to restoring to the soil the most necessary constituents.

In the early days an attempt was made to copy the Chinese methods, and the various processes were manual. Now, from the plucking stage onwards, almost everything is done by machinery. During the season of yield the flushes arc plucked every 7 to 10 days, and, as a rule, in India the opening bud and two leaves below it are plucked. To take more than this would be considered coarse and less would be fine plucking. These arc of course quite immature, the longest rarely being one inch in length. The lower leaves on the young shoots are too old and hard to manufacture into tea. The plucking is done by women and children, and is now practically the only part of the work where the tea is touched by hand. The plucking season continues in some districts of India till December. As they are plucked, the green leaves are thrown into baskets, and twice daily the pluckings arc taken into the factory. They are then spread out thinly on trays or racks made of bamboo, canvas or wire netting, under cover, for some 18 or 30 hours (according to the temporary weather con­ditions) to wither, after which they are in a soft, flaccid condition ready for rolling. On a successful wither the amount of the tea ferment or enzyme is dependent. The object of rolling is to crush the leaves and to break their cells so as to liberate the juices. The leaves are passed repeatedly through a machine driven by steam or other power giving a rotary motion, the operation occupying about 40 to 60 minutes. The next process is familiarly termed fermentation, but is really an oxidation of the leaves. Should the leaf be intended to be cured as green tea, the fermenting process is omitted and some other processes applied, but in India very little green tea is manufactured. Many people still cherish the antiquated belief that black and green teas are grown upon different varieties of the tea-plant, which is quite a mistake, the difference being merely one of preparation. After being rolled, the leaves are spread out in layers of 1 to 2 ins. thick in a cool house, and left to undergo the chemical action resulting from their condition. This process is checked after from 2 to 3 hours, according to climatic conditions. A further brief rolling to close up the open leaves is followed by the first firing, which is effected by subjecting the leaves to the gradual action of hot air up to a temperature of 240° F. Various applica­tions of the same system arc in use, but the most popular is to place the leaves on trays of wire network in a high temperature for about twenty minutes, after which they are firm and crisp. Up to this point of the manufacture the leaf has been in the stalk, the leaves and bud being unseparated. They are now broken apart and sorted by mechanical sifters into the various grades or qualities, which are described as Orange Pekoe, Pekoe, Pekoe Souchong and Souchong, each of which names represents approximately the leaf-bud and the three lower leaves. In addition to these four classes, out of each are sifted all the smaller fragments of leaf broken in the process of manufacture, which are termed *Broken* Orange Pekoe, &c. These broken grades are frequently objected to by the consumer, under the impression that they are inferior in quality, but in the opinion of experts, the more the leaf is broken up, the better is the liquor upon infusion. Upon completion of the sifting, the tea is again fired, and while warm it is packed tightly into lead-lined chests, and the lead covers completely soldered over it, so that it may be kept perfectly air-tight until required for use.

The machinery in use is very varied in character, and it has been evolved principally by practical planters of a mechanical turn. Many estate superintendents have begun their careers as engineers, and it is not unusual for a large estate, or group of estates, to have one member of the European staff who is a qualified engineer. The motive power is generally a steam engine, but the greater economy and facility of oil engines have led to their fairly wide adoption. Where water power is available, turbines of a variety of types are in use. The machines to be driven are air­fans, rollers, roll-breakers, sifters, cutters and packers, and there are besides numerous types of driers or desiccators. The names associated with the most successful and widely used machines are those of the Messrs Jackson (makers, Marshalls of Gainsborough) and Mr S. C. Davidson, of the Sirocco Works, Belfast. The pro­duction of the empty boxes for packing, called chests or half-chests, is in itself a large industry. The heavy old-fashioned country-made packages are rapidly being replaced by light-tared boxes made from several thicknesses of veneer pressed closely together, most of which come from Russia.

A production temporarily in excess of the world’s demand of several years ago, led to the offering of bonuses for the production in India and Ceylon of green teas, with a view to lessening the black tea output. The methods adopted were successful, and after some vicissitudes a satisfactory business has been established, especially with the United States of America and Canada. The methods of producing this tea are not so complicated as those followed in China and Japan. The principal difference from the manner described of making black tea lies in the omission of the withering and fermenting, and the substitution for those of a steaming or panning process. The effect of either is to destroy the possibility of fermentation by subjecting the leaf, as soon as it is plucked, to a brief period of great heat. This completely destroys