

The Coorg Country

1. Geographical Features.

The Coorg country is formed by the summits and eastern declivities of the Western Ghats, which separate it on the south and west from the woody tracts of North Malabar (Wynád) and South Canara (Tulu); in the north and east it merges into the table-land of Mysore with the only partially, natural boundary of the rivers Kumáradhári, Hémávati and Kávéri. Its greatest length from north to south, from the river Hémávati to the Brahmagiris, extends over 60 and its greatest width from west to east, from Sampáji to Fraserpet, about 40 English miles. Geographically speaking, the whole country lies between north latitude $11^{\circ} 55'$ and $12^{\circ} 50'$, and east longitude $75^{\circ} 25'$ and $76^{\circ} 14'$. Its area comprises 1,585 square miles. Before the annexation of Coorg by the English, the limits of this little kingdom extended over a larger tract and included the two taluqs of Canara, Amra Sulya and Puttúr, comprising an area of about 580 square miles, which at the request of the inhabitants were separated from Coorg and added to the Collectorate of South Canara.

The present shape of Coorg, as represented on a map, is not unlike a baby's sock, a little contracted at the instep and with a loop at the top, by which it is suspended. In this situation the heel points north-west and the toe south-east, whilst the sole, heel and back seam are formed by the Ghats

and the whole length of the instep by the Mysore boundary. Compared with the gigantic extent of the Indian Peninsula, Coorg is but of baby's size, however large it may appear to its inhabitants.

As the Badaga people on the Nilagiris have been named Burghers, so is "Coorg" anglicised from Kodagu or Kodumale, a name which it has borne from the remotest ages and which in its meaning—"Steep mountains" graphically depicts the character of this remarkable alpine land.

2. General description of Coorg,

*its mountains and their formation, its rivers and their course,
its forests and their general flora and fauna.*

Aspect of Coorg. Standing on a bright November morning on the summit of the Brahmagiri near Tala-Kávéri, (tale *Kg.* head) the observer is filled with delight and admiration of the grand and picturesque view, that opens out before him. As far as the eye can reach to the north-west and south-east it beholds ridge after ridge of grassy or forest-clad hills, now gently sloping down in gentle wavy lines, now bold and abrupt, raising their steep summits into the clear, blue air. Kuduremukha-betta, the far seen landmark of the mariner, bursts into view from Canara; the Bettadapur and Chámundi hill in Mysore, the Wynád mountains of Malabar and Dodda-betta of the distant Nilagiris are clearly visible, and in the west at a distance of about 30 miles below the steep precipices of the Ghats the coast-line of North Malabar and South Canara, intersected by broad, bright, serpentine rivers and the dark-blue Indian Ocean with its sailing craft fascinate the spectator.

Coorg itself is covered by forest, save here and there where the clearing of a coffee plantation or ragi patch or the park-like open glades (*Báné*) with their beautiful green sward and varied foliage afford a charming variety to the landscape.

In vain, however, the eye searches for towns and villages, churches and castles or other indications of civilized life. Only here and there in nooks and corners, ensconced amongst groves and clusters of cultivated trees and betrayed by a wreath of smoke, can one discover the thatched houses of the Coorgs, who love a solitary abode near their fields.

The want of permanent sheets of water, such as extensive tanks or prominent rivers somewhat detracts from the picturesqueness of the landscape, but during a heavy mist or in the monsoon fancy may easily transform the whole country into innumerable islands emerging from a vast agitated sea.

The general appearance of the country varies considerably in the different districts. In the vicinity of Sómwárapet, in the north of Coorg, the hills are gently rounded alternating with sloping glades, interspersed with clumps of forest trees, resembling the finest park scenery in Europe. Near Mercara the hills are closer together and more abrupt, and the ravines deeper and more wild. Towards Fraserpet the country assumes the champaign character of the Mysore plateau, with scattered solitary hills. South of Mercara, in the direction of Virajpet, especially in Beppunád, Katiednád, the country is open, the woods are neither dense nor high, and beautiful grassy doures rise from extensive rice valleys.

The eastern frontier between the Kávéri and the Lakshmana-tírtha river exhibits an almost uninterrupted and impervious forest, inhabited in January, February and March by Kurumbers and Lumbánies and other wandering tribes.

Mountains and their Formation.—The most prominent ridge of mountains in Coorg as to height and extent, is that which culminates in the summits of the Ghats. It stretches in its main outline from Subramanya to the furthest point of the Brahmagiris over or upwards of 60 miles. Seen from the Western Coast near Cannanore the abrupt ascent with the

great height and varied configuration of the Ghats present a most grand and imposing spectacle.

The most conspicuous subdivisions of the Ghats are, in the south, the Brahmagiris or Marenád hills, which constitute a formidable natural barrier between Coorg and Wynád. Their height averages some 4,500 feet above the level of the sea. The highest peak of the Brahmagiris is the Brahmagiri hill-station, which towers several hundred feet above a beautiful table-land called Huyále-male (huyále *Kg.* swing) and overlooks the temple of Pemmeya at Tiranelli in Malabar in the deep valley of the Papanashe river and beyond it the extensive coffee plantations and high mountains of North Wynád. Further on, to the west, rise the Hanumán-betta, the Kadanga-male and the Perumále-male. The many spurs that branch off in all directions from the Brahmagiris over the whole of Kigatnád (kiri or ki *Kg.* low) (district of the lower Ghats) and on to the eastern elbow of the river Kávéri produce a ramification of narrow ridged hills, now ascending to almost solitary grandeur, like the Ambate-betta (ambate *Kg.* a kind of mango) near Virájpét, the Bittangala, the Hátur hill or Kundada-betta (kundu *Kg.* height) the Sidéshwara hill and Maukal-betta (mau *Can.* mango, kalloo *Can.* stone) now subsiding into the undulating slopes of the most eastern elevations, and enclosing innumerable paddy-fields, some of which are the most extensive in Coorg.

From the Perambádi-pass near Virájpét to the Todikána-pass, (todia *Kg.* plantain, kána *Kg.* forest) near the source of the Kávéri, the main chain of the Western Ghats extends in a north-westerly direction in almost a straight line of 30 miles in length. Towards the west it falls with great abruptness, the descent from the summit to the foot being generally from 3 to 5 miles, the first part of which is particularly steep. Behind Nalknád palace, the highest mountain of this range, Tadiandamól ("broad-based-hill", tadi *Kg.* broad, molu *Kg.*

hill) raises its gracefully shaped head over its majestic neighbours. Its height is 5,682 feet above the level of the sea, and as it has a central position in the whole range, the panorama commanded by such an elevation is grand beyond description. The ascent is easy, two-thirds of it may be achieved on horseback, and though the topmost portion is rather difficult the persevering climber is richly rewarded for his exertion when in the cool bracing air he stands on the narrow ledge of the giddy summit and gazes over the gloriously diversified highlands and lowlands at his feet.

About 6 miles to the south-east of Tadiandamól rises the Jómamale (jóma *Kg.* ox, male *Kg.* forest), the highest mountain in Katiednád. It is sacred to Maletambiran (Tambiran, a Malayalam god) and overlooks the Kodantora-pass. Two miles to the north-east of Tadiandamól there is another mountain giant, the Iggudappa-kundu (Iggu, a Malayalam god; appa, father; kundu, hill) near the Paditora (Padi, name of a village; tora, pass) and three miles further on the Pérur point and 4 miles still further the Srimangala point. The last notable mountain in the same range is the Brahmagiri in Tavunád (tavu *Kg.* descent, sunset, west) with the source of the river Kávéri.

At an acute angle upon this line the main chain of the Ghats is continued in a due easterly direction as the Benganá range (bengu, to stop) till, nearing Mercara, it makes a sudden turn to the north-west and forms with the latter the Sampáji valley which leads by a gradual slope into the low country of Canara. At the head of the valley and supported by a high ridge with steep abutments on its southern front the Mercara table-land is situated. This ridge branches off in two directions, one towards the south-eastern elbow of the Kávéri, culminating in the pointed peak of Núrokal-betta (núru *Can.* hundred, kallu *Can.* stone, betta hill) and the other, the Horur branch, (hora, outside; uru, town) due east in

a zigzag line towards Fraserpet with several rugged hills, the most remarkable of which is Kalluru-betta clothed with teak forest. The Núrokal and Benganáð range make up with the Western Ghats the watershed of the upper basin of the Kávéri, a valley, which between Mercara and Nalknáð is 15 English miles broad.

From the main chain of the Ghats and the Benganáð range, innumerable ridges jut out on either side. These are diminutive when compared with the parent stock; and they decrease in height as they recede, but have almost everywhere narrow summits and steep declivities.

The table-land of Mercara maintains throughout an average altitude of 3500 feet above the sea, and may be said to extend as far as Somawárpét, a distance of 20 miles, but on the east it slopes down towards the Kávéri which near Fraserpet is still at an elevation of 2720 feet above the sea. This plateau, crossed in all directions by minor hills and ridges, is bounded on the west by the continuation of the Ghats which culminate near the Bisly-pass in the Subrahmanya or Pushpagiri hill, 5548 feet above the sea level. This is a remarkable two-pointed hill of precipitous height and peculiar shape, and resembles, as seen from Mercara, a gigantic bullock hump. The ascent, which, on account of the precipices of the southern and western face of the hill, can only be effected by a circuitous route, is more difficult than that of Tadiandamól. Starting from Bhagati, at the base of the Pushpagiri, it is about 6 miles walking, the ascent taking a good walker 2 hours 40 minutes and the descent to the Hiridigadde of the village Bidehalli 2 hours. A dense jungle, dear to wild elephants, has to be penetrated, and the ascent is severe; but the summit commands an extensive prospect over Coorg, Canara and Mysore. There are on this hill numerous Hindu memorials in the shape of stone mounds. Within an enclosure there are

two rude stone structures, with the customary imprint of two feet (páda) of celestial origin!

Amongst the many ridges that branch off from the Subramanya range of the Ghats the most remarkable is that, which attains its greatest height in Kóte-betta, about 9 miles north of Mercara. Its elevation is over 5000 feet, and its base covers a very large extent of country. Its summit, which is divided into two peaks, one rather pointed—the Harangal-betta—and the other broad, forms a comparatively flat tableland, while its sides are clothed with forest, and innumerable cultivated valleys occupy the recesses. Close to the apex there are two reservoirs of water, one for the use of the Brahmins and one for the Coorgs, which all the year round retain a constant supply. Close to the summit on a spacious platform is a small temple of rough granite slabs dedicated to Shiva. This hill as well as the Núrokál-betta offer, on account of their height and central position, the finest general view of Coorg, and even to the lover of nature, familiar with mountain glories in Scotland, Switzerland or Italy, no more delightful excursion could be recommended than that to these hills.

From Kóte-betta to the north is another ridge running parallel with it, the Shanthalli hills, and beyond them is a bluff hill with almost a precipitous declivity on its western face—the Múkri-betta (múku, nose) with a fine coffee plantation at its base.

The last remarkable range, that extends from the northern frontier of Coorg down to the Kávéri almost due south, is the Yélusávira hills with the Málimbi and Kanangala peak. The former is distinguished by its beautifully conical shape which strikes the eye in every part of Coorg.

The Geological formation of the Coorg mountains is indicated by the sharply defined outline of the Western Ghats, a feature characteristic of granitic rocks. The constant action

of the stormy monsoon rains, however, followed by scorching east winds and a burning sun, has greatly affected the surface of the mountains, and a perpetual process of disintegration of the uppermost portions has imparted to them a somewhat rounded appearance, which does not occur, where the atmospheric influences are less severe, and the alternation of temperature less sudden.

The several members of the metamorphic class of rocks of which the Coorg mountains consist may be found in almost every mountain torrent. They are: granular and foliated or stratified granite (gneiss), which consists of quartz, felspar and mica; syenite, a rock of the appearance of ordinary granite, in which however hornblende is substituted for mica, and mica-schist, a slaty rock chiefly composed of mica and quartz sometimes with imbedded garnets. Near Mercara may be found clay-slate or argillaceous schist of coarse variety. This consists of silica and alumina, combined with a little iron, magnesia potash and carbon; crystalline limestone is present in the neighbourhood of Bellur near Fraserpet and supplies nearly all the requirements for building purposes in Coorg. Among this limestone, which is dug out from the ground in small earthy lumps like the kunkur in the N. W. Provinces and which is perhaps more properly termed magnesian limestone, nodules of magnesite are occasionally met with.

A ferruginous laterite, composed of silicate of alumina and oxyde of iron, appears sporadically in almost every part of Coorg.

The ingredients of all these rocks, which are subject to an unceasing process of decomposition, constitute the nature of the soil all over the country and, as a matter of course, on the predominance of the one or other or several of their constituting parts combined with other conditions depends as elsewhere the fertility or sterility of the ground.

Felspar is very common, and yields a rich soil. Veins of it are laid bare along the banks of the Ghat roads. In many places it is reduced to a white powder, the kaolin or porcelain clay, with which marketable chunam is adulterated. Mica is frequently seen, and here and there the roads glitter with its shining scales. After heavy showers the water channels along the sides of roads which had been metalled with syenite, appear covered with a sparkling blackish sand, the hornblende of the decomposed syenite. Common quartz occurs most frequently in small pieces of uncrystallic form. The considerable amount of carbonate of lime in the ashes of the Matti tree, (*Terminalia coriacea*) a tree largely distributed all over the eastern parts of Coorg, proves the presence of limestone in the soil of that region.

Mines there are none in Coorg, and it would appear, that except traces of iron in the shape of oxydes no metals exist. The gold ore, which a certain adventurer recently claimed to have discovered in Coorg, proved to be only mica embedded in quartz.

Rivers and their course. From the configuration of the country already described, it is evident, that the main drainage of Coorg is in an easterly direction towards the Bay of Bengal; while the mountain torrents of the western declivities of the Ghats flow into the Indian Ocean.

The Coorg rivers are not remarkable either for width or depth, but their water supply is everywhere abundant throughout the year. As their sources are high up in the mountains and their courses over steep declivities, the streams are impelled with great rapidity over generally very rocky beds; which render them almost wholly useless for navigation of any kind, and owing to the height of their banks and the unevenness of the country, few of them allow of artificial irrigation, but the rivulets are everywhere laid under contribution.

The minor streams vary only in size, which depends upon the length of their course, their general characteristics being the same. They swell with the freshes in the early part of June and flow with violent and boisterous rapidity till October, when they gradually subside in their normal dimensions.

The south-westerly monsoon floods the uplands of Coorg against which it partially breaks, with such a torrent of rain, that during its prevalence small rills, out of which a thirsty herd does not care to drink, are suddenly transformed into streams that are impassable for many days.

Of the rivers that flow to the westward the *Barapole* (bare *Can.* empty, bare; pole or hole *Can.* river) is the most considerable. It rises with the *Lakshmana-tírta* and *Pápanáshe* on the same plateau of the Brahmagiri hills in Kiggatnád and flows for several miles in almost a straight line through a deep mountain gorge, where it is joined by a tributary that falls over a perpendicular rock of great height and forms a beautiful cascade near the Kudiál coffee estate. Near the Malayalam frontier the Barapole leaps into a chasm upwards of 200 feet deep, and forms a waterfall that, with the wild gloomy forest scenery around, is remarkably picturesque. Then for two miles this river runs along the Coorg frontier up to the point where the *Kallahole* (kallu *Can.* stone) descending through the Heggala-pass unites with it, when the combined streams enter Malabar and debouch near Chiracal into the sea. The Barapole receives the rainfall of 192 square miles, and is navigable from the sea to within 16 miles off the foot of the Ghats. Near Chávachári on the road to Cannanore it is spanned by a wooden bridge, resting on high stone pillars.

The next stream of importance is the *Nujikal* which drains the Sampáji valley, and follows the main road as far as Sulya, when it turns to the west, receives a tributary that originates on the western slopes of the Todicána-pass and Tala-Kávéri,

and falls, under the name of Basavani river, near Kasergóde, into the sea.

The *Kumáradhári* (Kumára Sans. son, god of war, the son of Shiva; dháre Sans. edge, stream) rises near the Subramanya hill and carries off but little of the Coorg waters. For some distance it forms the northern boundary along the Bisilu-pass (bisilu Can. heat). A number of tributaries from north and south swell its waters, the largest of them being the *Nétrávati* (nétra Sans. eye) which joins it near the village Uppinangadi (uppu Can. salt, angadi mart) and thenceforth gives its own name to the rest of the course of this fine river, which near Mangalore meets the sea. The *Nétrávati*, though useless for purposes of irrigation, is of considerable commercial value. Boats of large size are safely carried from Mangalore as far as Bantwal or Pánemangalur and smaller craft proceed even beyond Uppinangadi.

The chief of the Coorg rivers, both as to size and importance, is the *Kávéri*; considering the volume of water it gathers during a course of nearly 400 miles through Mysore, along Salem and Coimbatore through Trichinopoly to Tanjore, where it is almost lost in that garden of India; the *Kávéri* may well be included amongst the principal rivers of the Peninsula. It rises on the Brahmagiri at a place called Tala-Kávéri (tale Can. head) on the very verge of the Western Ghats, where they form a sharp angle with the Benganáð range. Another stream, the *Kánake*, starts close by and after a short run joins the *Kávéri* at the foot of the hill near the village Bhágamandala (bhágia Sans. wealth, felicity; mandala, region). At both places on the top and at the foot of the hill there are temples of great repute for sanctity among the Hindus, which are yearly resorted to by thousands of pilgrims from the adjoining countries. The *Kávéri* is, according to Brahminical legend, the holiest river in India. Even the holy goddess-Ganga resorts underground to the all purifying floods of the

Kávéri once a year in Tulámása (*tulá Sans.* the sign of Libra; *mása*, lunar month) i. e. October, November, to wash away the pollution, contracted from the crowds of sinners, who have bathed in her own waters.

The course of this fine river through Coorg is very tortuous, but below Bhágamandala its current with the exception of a few localities, where it traverses beds of granite rock, is generally tranquil. Its banks which are high and steep are usually formed of rich clay or mould and covered with luxuriant tropical vegetation. The bed over which it flows differs in various places, being alternately sandy, pebbly or rocky, but the latter feature is predominant. In the dry season it is fordable at almost all points, but there is always a good body of water, considering the vicinity of its source.

During the monsoon it rises to an impetuous torrent whose mud-stained waters roll with thundering velocity through its wide channel, floating down shrubs and trees from its crumbling banks and overflowing for a few days the adjoining country. During these freshes the river rises near Fraserpet, where it is spanned by a magnificent stone bridge 516 feet in length, to a height of 20 to 30 feet.

Descending through the great valley between Mercara and Nálkanád, the Kávéri makes a sudden turn near Siddhapur (*Siddha Sans.* a divine person) to the north and flows for 25 miles along the eastern frontier, being swollen in its course by several large tributaries. From the Tadiandamól it receives the Kakabe river which separates for some distance Padinálkanád from Katiednád. In Beppunád it is joined by the Kadanur river; and in Yeddenalkánád by the Kummahole.

The Muttáremutta collects the waters of the southern slope of the Mercara ridge, and the Chikkahole those of the valley of Horúrnúrokálnád. The Hóringi or Suvarnavati (*Suvarna Sans.* gold) with the Kakehole from Sómawarpet, the Chóvanhole from Shanthalli, the Mattapur and Hattehole

from Kóte-betta drain the whole northern plateau of Coorg and add an immense bulk of water to the Kávéri. Almost every one of these mountain streams forms in its descent over rocky beds cascades of great beauty. One near Mercara, the Jesse-fall (so called in honor of a daughter of the first chaplain of Mercara) is much admired and frequently visited by picnic parties. Some of the coffee estates along the Sampáji valley are notable for pleasing cataracts.

The rivers of Coorg which fall into the Kávéri beyond the province are Hémavati (héma *Sans.* gold) and the Lakshmanatirtha. The former rises near the Bhadra river, south of Westára in the Kadúr district of Mysore, and after passing Manjarábád, it forms for a few miles the northern boundary of Coorg and joins the Kávéri in the Yedatore taluk of Mysore near the village Tippúr. The Lakshmanatirtha with its tributaries the Kakotta and Kerehole drains nearly the whole of Kiggatnád. It rises in the forest, Munikádu, on the plateau of the Brahmagiris, and in its descent over an almost perpendicular mountain-wall forms a celebrated cataract, which by Brahminical priestcraft has been invested with sin-cleansing virtue, and is consequently visited at the Irpu játre by thousands of superstitious devotees. The banks of this river like those of the Kávéri are of clay or mould, steep, with a sandy bottom and shaded by dense forest or bamboo clumps.

Lakes, Tanks, Wells.—Throughout Coorg there is not a lake or tank of any size worth mentioning. In Kiggatnád only there are a few natural reservoirs, called Kolli, enclosed by a belt of small trees and containing water all the year round. A tank 3 miles north of Somawarpet is notable for its picturesque rock scenery and the legend connected with it, which does not however accord with the inscription written upon a stone on the western outlet of the tank. The writing runs thus: "The King Andany has ordered this tank to be built on Tuesday the tenth day of the month of Phál-

guna in the year Párthiva. This was written by Venkadasya Mallia Bomarsia at the time of Basawalinga Déva Rája Vodea.”

The legend is shortly this: “A merchant Malla Shetty of Yelusávirashíme vowed to build this tank. When it was finished, there was no water forthcoming. Animal sacrifices were suggested by the tank diggers and offered, but in vain. In this distress the goddess Ganga appeared and demanded the little finger of the Shetti. Unwilling to make this sacrifice, he offered the life of Akkony, his daughter-in-law instead, whose husband was away on a journey. Akkony agreed, took an affectionate leave of her child and parents, who were ignorant of her intentions, and amidst great solemnities she stepped into the tank, when Ganga made her appearance in rushing water. Akkony’s parents, hearing of the impending sacrifice, hastened to rescue their daughter, but she refused to leave the tank, uttered a curse upon her father and mother-in-law and disappeared in the rising water. She then appeared in a dream to her husband, who speedily returned home, and, on hearing what had happened, killed his parents, and with his child in his arms rushed to the tank and in despair threw himself into it, when both were graciously received by Ganga.”

Besides the small public tanks, there are only private wells, that yield, if dug deep enough, everywhere sweet and clear water; but it appears, that the natives of Coorg do not bestow enough attention on the great blessing of wholesome water, and are often satisfied with the muddy contents of a hole, carelessly dug by the side of their paddy-fields, though from their own experience they assert, that most of their diseases are owing to the bad quality of their drinking water.

Forests and their general flora and fauna.—In Coorg extensive forests clothe every mountain range almost up to the summit and bamboo jungles, cover the more level eastern districts,

interspersed with such trees, as are peculiar to these localities. The flora of Coorg is almost identical with that of Southern India. It is of course beyond the scope of this Gazetteer and equally beyond the knowledge of the compiler, to attempt anything like a full description of the Coorg flora; we can only glance at its distinguishing features and enumerate a few species, that are of practical value, reserving those which fall under the care of the agri-horticulturist for a special consideration.

The first collection of Coorg plants appears to have been made by Captains Munroe and Gough, who probably placed their collections at the disposal of the famous botanist Dr. Wight. Mr. Metz, a German missionary on the Nilagiris, also collected a good many plants about Mercara, which were afterwards distributed in Germany by Hohenacker and named by Miguel. In Major Heber Drury's book on "Useful Plants" and Dr. Bidie's "Timber Trees of India" (1862) much information is given about the principal timber trees in Coorg.

Looking upon Coorg with the eye of the forester, rather than that of the general botanist, the most superficial survey will not fail to discover invaluable treasures of timber trees and their produce, scattered all over the province. Small as the country is, there are nevertheless distinct tracts with trees peculiar to them. The two prominent zones are by the Coorgs called Male-kádu or Hill-forests and Kanive-kádu or Hillock-jungles (Kanive, a ridge between paddy-fields, hillock). Botanically they may perhaps be determined as evergreen and deciduous forests, the former clothing the Ghats, the latter the eastern hill-tracts.

All along the slopes of the Ghats the Poon spar—"Calophyllum augustifolium"—rules as king of the forest. When full grown, it is often upwards of 100 feet in height, its wood is clean, tough and elastic and there is perhaps no other tree so well suited in every respect for making ship's spars and

masts. By its side may be seen the black Dammer tree or (*Can.*) Dúppa-mara (*Canarium strictum*) which attains a great height and may be recognised at a distance by the peculiar red colour of its foliage. The resin obtained from this tree has a brilliant black lustre, when adhering to the ash colored bark, but when held up to the light, it is of a rich brownish yellow tint.

Another resin producing tree is the white Dammer tree (*Vateria indica*). When an incision is made into the bark of this tree and fire applied to it, the charred trunk yields an increased quantity of the fluid resin.

The *Calophyllum inophyllum* or Alexandrian Laurel supplies a fragrant resin, and from the seeds is extracted by pressure the Pinney oil of commerce.

The beautiful order *Guttifera* is also frequently represented by at least 2 species. The *Garcinia pictoria* yields a very superior kind of gamboge, and the other species an inferior sort. The gamboge is obtained from the fruit of the tree by pressure and maceration. A very common tree of the dense forest is the wild cinnamon (*Cinnamomum iners*) the bark of the branches of which is supposed to form part of the Cassia bark of commerce.

The following trees are noted for the excellence of their timber or other useful qualities: The Sampige—(Champak) *Michelia champaca*—with its beautiful and sweet scented flowers; the perfection of beauty in the poetical fancy of the Coorg bard, the Ebony—(*Diospyros ebenaster*) *Can.* Kari-mara, the Wood-oil tree (*Dipterocarpus laevis*), the Kanagala tree (*Dillenia pentagyna*), the Jack tree (*Artocarpus integrifolius*—*Can.* Halasina-mara). The Iron wood (*Mesua ferrea*) with large white fragrant flowers and very hard wood; the Indian Mahogany or White Cedar (*Cedrela toona*—*Can.* Bellandi-mara), the Red Cedar or Chittagong wood (*Chickrassia tabularis*), the timber of both trees is little inferior to Mahogany; the wild

Nutmeg (*Myristica*); the wild Cashew-nut (*Anacardium occidentale*—*Can.* Géru-mara); the Indian Gutta tree (*Isonandra acuminata*), a large tree with beautiful foliage and oil yielding nuts; the Bastard Sago (*Caryota urens*—*Can.* Beini-mara) from which an agreeable toddy is drawn while from the pith sago may be prepared; the Hog-plum tree (*Spondias mangifera*—*Can.* Ambatte-mara); the wild clove tree (*Eugenia*).

A most remarkable and truly majestic forest tree is the *Lepurandra Saccidora*, which deserves to be classed with Thomson's

“Lofty trees, to ancient song unknown,
The noble sons of potent heat and floods
Prone-rushing from the clouds.”

It flowers in October in very peculiar catkins, something like a common mulberry. The fruit is in size and shape like a small fig, covered with a beautiful purple coloured down. The Coorgs manufacture very curious sacks from the bark. A branch is cut corresponding to the length and diameter of the sack wanted. It is soaked a little and then beaten with clubs until the liber separates from the wood. This done, the sack formed of the bark is turned inside out and pulled down close to the extremity, where the wood is cut off leaving a thin piece to form the bottom of the sack. These sacks were formerly much used for carrying rice, some of them may be seen in the Mysore Museum. Very different in size, but of far greater importance than the sack tree, is the Poison-nut tree,—“*Strychnos nux vomica*”—which may be found near it. The wood of this tree is hard and durable, its leaves oval and glossy; the small greenish white flowers appear in February; the fruit is of the size of an orange and in its white harmless pulp are embedded many round flat seeds, from which the powerful poison “Strychnine” is obtained. On open sunny woodsides grow *Lobelia nicotianifolia*, a stout annual plant with showy white flowers in terminal racemes,

and the Brambles: *Rubus Lasiocarpus* or country raspberry, *R. Rugosus* a scandent, prickly shrub and *R. Wallichiana* which yields a delicious fruit. The *Conocephalus nivens* appears here in great abundance, and proves a troublesome weed on some coffee plantations. Its stem yields a beautiful fibre much resembling that of the Rhea or China grass plant.

The forests in the Ghat region are so dense and tangled by thorny underwood and creepers, that they can only be penetrated by beaten paths and under the guidance of one familiar with their formidable mazes. The many densely shaded mountain rills and torrents are generally lined with a great variety of ferns, prominent amongst which is the stately *Tree fern*. In other places delicate reeds (*Wotte*) stud the more humid banks of streams. Stout ratans with terrible spines and slender flagelli lashing the air to keep, as it were, intruders at a distance, climb in all directions and surmount with their feathery leaves the highest trees. Favored by the constantly moist atmosphere the stems of many of the trees are speckled with lichens or covered with rare orchids, mosses, and other parasites especially the Mandali-parasite with its large glossy leaves, irregularly cut on one half of the limb. Festoons of wild pepper and gigantic creepers, which again support the more slender herbaceous vines of *Convolvulus*, *Thimbergia*, *Ipomoea*, &c. stretch from tree to tree in the most fantastic interlacings and gorgeously decorate the grand timber trees verdant with their foliage and many nued flowers.

The soil, almost everywhere covered with a humid rich stratum of vegetable mould, highly favors the growth of moisture-loving plants, such as the Indian Arrowroot (*Curcuma augustifolia*), the long rooted Turmeric (*Curcuma longa*), the Wild Ginger (*Zingiber cassumunar*) and especially the highly valued Cardamom.

Wherever the hills are denuded of forest, they are clothed

with a dense coarse grass, which at times greatly impedes their ascent. As the western forests are left and the eastern districts approached, many of the trees just enumerated are still met with, but added thereto others more characteristic of a drier climate. On entering into the more open country, there are found upon the grassy glades (Báné) smaller trees and shrubs, disposed with an artless grace, that the landscape gardener in vain seeks to imitate. Here spring and summer, in sweet embrace, hold perpetual sway, and the very air, so cool and fresh, seems imbued with life and health.

The aromatic Jasmine with its pure white flowers, the Coorg Rose in its rustic simplicity, the Gloriosa superba with its flaming corolla, the Melastoma malabathricum with its strange looking ribbed leaves and splendid mauve coloured flowers, the Coorg Lilac (Callicarpa Wallichiana) with its small red cymes of flowers, and the Adisia humilis with translucent rose coloured flowers, that look as if they had been cut out of a rare cornelian; these and many other flowering shrubs and herbs greet the eye here.

As we approach the Coorg houses, we come upon groves of Orange, Lime, Guava (Psidium pyrifera), Rose-apple (Jambosa vulgaris), Pomegranate, and clumps of Plantain trees, all of which thrive remarkably well. The Bastard Sago is much esteemed for its toddy and the Areca palm occasionally keeps its company, and their foliage, blended with the dense crown of the stately mango or jack tree, forms a beautiful back ground to the large paddy flats below.

We enter now upon the eastern or bamboo district of Coorg called Kanawé-kádu. The character of this district is indicated by the prevalence of large clumps of bamboo, interspersed with Blackwood, Matti, Hony, Teak, Sandal and other trees. Whoever had the good luck of seeing a Coorg bamboo jungle a few years ago when in its full vigour of growth, cannot have failed to be struck with the elegance and

beauty of its general appearance. Captain Basil Hall, who in 1813 entered Coorg from Mysore by way of Siddhapur and Virájpet, thus vividly describes his first impression of a pure bamboo jungle. "It seemed as if I were travelling among the clustered columns of some enormous and enchanted Gothic cathedral. The ground extended on all sides as smooth and flat and clear of underwood as if the whole had been paved with grave stones. From this level surface rose on every hand and, as far as the eye could penetrate into the forest, immense symmetrical clusters of bamboo, varying in diameter at their base from six feet to twenty or thirty, as I ascertained by actual measurement. For about 8 or 10 feet from the ground each of these clusters or columns preserved a form nearly cylindrical, after which they began gradually to swell outwards, each bamboo assuming for itself a graceful curve and rising to the height some of 60, some of 80 and some even of 100 feet in the air, the extreme end being at times horizontal or even drooping gently over, like the tips of the feathers in the Prince of Wales' plume. These gorgeous clusters stood at a distance of 15 or 20 yards from one another and, being totally free from the interruption of brushwood, could be distinguished at a great distance—more than a mile certainly, in every direction, forming under the influence of an active imagination naves and transepts, aisles and choirs, such as none but a Gothic architect ever dared to conceive"

A view so grand would now, however, be sought for in vain. The whole of the Coorg bamboo jungles are in a state of decay after the periodical seeding during the last few years. This is a remarkable phenomenon, asserted by the natives, to take place once every 50 or 60 years, though not everywhere at the same time. In the north-east of Coorg the general seeding took place in 1860, and in the south-west in 1866 and 67, so that there is hardly a green bamboo left

in these jungles, but it is said, that on the western slopes of the Ghats the bamboos are still alive and in vigorous health.

The Coorgs have a Canarese proverb:

“Arvattu warushake ondu katta,
Yeppattu warushake ondu yette.”

which means:

“Once in 60 years the bamboos will decay,
Once in 70 years a famine may hold sway.”

Lieutenant Connor in his “Coorg Survey” states it as a curious fact, that in 1817 in the whole of the district of Wynád there was scarcely a bamboo clump to be seen, that was not dead, dying or in blossom. Clumps of all ages growing contiguous to or far apart from each other were in the same condition. The same thing happened again there, as well as in Coorg, during the last few years, which occurrence would prove conclusively, that the bamboos, growing from seed and multiplying their reeds from the roots like the grasses, live for a period of about 50 years, when the whole clump with old and young reeds produces flowers and seeds and dies off the same year. From the seed a new progeny springs up, which grows very fast, but not, as has been supposed, to its whole length in one season. This is only true of such shoots as spring up from the main clump, after it has nearly reached maturity, which requires a growth of 12 years. These shoots, being armed at their extremity by a sharp, smooth hornlike cone, and without any lateral branches, force their way through the intricate mass of the parent reeds and contribute to the density, stability and stateliness of the whole clump, which may contain from 50 to 200 reeds. The several reeds are from 5 to 8 inches in diameter, jointed at every 12 or 15 inches, and hollow between the joints where thorny threepartite branches are alternately attached, of which the middle ones are strongest and make good walking sticks. The branches are repeatedly subdivided and present with their

delicate light green foliage of linear lanceolate leaves a most graceful feathery appearance. When in blossom the bamboo is leafless and the extremities are covered with flowers like one large compound panicle. The seed is in size and appearance like oats or small paddy. It is eaten by the poorer classes, but considered unwholesome. The birds and rats, however, revel in the feast of plenty. The water into which bamboo seed has largely fallen is said to be particularly noxious.

The cutting of bamboo, is a difficult task that is rarely well done by any other than those expert jungle people, the Yerawas and Kurumbas. For the purpose of cutting a single reed they manage to climb over the lower thorny mass to where the reeds branch out freely about 10 or 15 feet above the ground and cut them at that height. To level the whole clump, the Yerawa has to cut the stem of each bamboo below and above his head, removing each piece from the thorny embrace of the rest; he thus boldly advances into the clump, and the further he progresses in his work the greater is the danger of the whole clump suddenly giving way at the slightest breeze and crushing the unfortunate intruder.

There are several kinds of bamboo, the one described is, however, the most common. The reeds of another kind are much smaller and solid and are known by the name of Male-bamboos.

One of the handsomest trees in the eastern jungles is the *Blackwood* or *Dalbergia latifolia* with a stem of 2 or 3 feet in diameter and 60 to 80 feet in height. It is one of the most valuable timber trees in India and little, if at all, inferior to the South American Rosewood, which it closely resembles in many particulars. Near neighbours of Blackwood are *Matti* and *Hony*. The *Matti* or *Terminalia coriacea* is remarkable for its excellent timber, and is easily recognised by its thick ash-coloured bark, cracked into small tablets like the scales

of a crocodile. Under the knotty swellings of the bark of the Matti tree small quantities of water are hidden, which the lynx-eyed Kuruba readily discovers in his jungle-wanderings during the hot season and from which providential fountains he draws a thirst-quenching draft. The *Hony* or Kino tree (*Pterocarpus marsupium*) yields an excellent yellowish timber fit for exposure and a valuable brownish gum, the kino, which oozes out from the wounded stem. Chunam brought in contact with it turns bright yellow.

Teak or *Tectonia grandis* occupies a distinct girdle along the eastern boundary of Coorg, within the basin of the Lakshmanatirtha and in Nanjarápatna and Yélusávirashíme taluq; but, with the exception of the Amali-topu in Kiggatnád, the teak forests in Coorg are neither so dense, nor so stately as those in Burmah, where trees of enormous size and height are found. The large and strongly nerved leaves, rough above, whitish and downy beneath, and the numerous white flowers in terminal branches on the high and many branched trunk, mark the beauty and strength of the tree. Both for house and ship building teak is the best of woods, easily worked and almost indestructible by climate or insects owing to its oily nature. Coorg teak is of most excellent quality, oily and free of heart-shake. It is a Government monopoly and sold from wood-yards at the rate of 12 Annas per cubic foot.

In close proximity to teak and in an equally limited tract of dry and elevated slopes grows the *White Sandal-wood*, (*Santalum album*) scattered between other trees and on cultivated land. It is rather a small tree of a more or less crooked stem, but its spreading branches with tiny, light-green leaves and yellow or purple coloured small flowers give it an elegant appearance and a marked feature in the landscape. The wood is close-grained and hard, especially the duramen or heart-wood, which for these qualities and for its agreeable scent is highly prized and employed for ornamental boxes,

card cases, paper cutters, fans, walking sticks, etc. which are made chiefly in Nuggur and North Canara. Sandal-wood is also a Government monopoly and is collected at an expense of one eighth of the value of the wood, trees when from 16 to 40 years old according to the nature of the soil, where grown, are cut down; the best yield a billet of 5 inches square and 4 or 5 feet long. The wood fetches at the public auctions periodically held by Government at the coties or wood stores, from 70 to 98 Rupees per candy of 550 avoirdupois, and is generally exported to Bombay. Natives distinguish 3 kinds according to colour: the "red sandal" (sriganda) which is the most highly scented, the "yellow sandal" (arasana ganda), and the "white sandal" (bili ganda) which possesses but a faint aroma and is least prized. The chips are burnt as perfume, or reduced to powder which enters into the composition for marking the foreheads of natives. The roots, containing the greatest amount of the essential oil, are chiefly used for its production. It is heavier than water and yields an excellent perfume. The sandal tree is propagated from seed and suckers, springing up from the roots.

A stately though not very valuable tree all over these parts of the country is the *Wild Mango tree*, which towers with its lofty crown far above its humbler neighbours. But the giant of these jungles is the *Ajini* or *Wild Jack tree* (*Artocarpus hirsuta*), the timber of which is most useful for house and ship building. The rosy-tinted, smooth-barked *Ben-teak* or *Nandi* (*Lagerstroemia parviflora*) is reputed for its excellent timber.

A splendid jungle tree, when in flower in February and March, is the *Red Cotton tree* or *Bombax Malabaricum* a very large specimen, stands in front of the Anandapur Mission Church. Its flowers are large and of a deep red colour, and the many seeded capsules contain a silky cotton, which is employed for stuffing pillows and mattresses. The staple is

so short as to render this so-called cotton commercially valueless. The wood is soft and spongy and of little value. Another red cotton tree of smaller size and with a prickly trunk is the *Salmalia Malabarica* (*Can. Mulu yelava*). The Dindul or "*Conocarpus latifolius*" is a fine timber tree and very frequent in the deciduous jungles. The heart-wood is of a chocolate colour and exceedingly durable. The Kurubas use it for axe-handles. When burning it emits an intense and sustained heat and is therefore highly prized for lime kilns and distilleries. The *Hedde-mara* or "*Nauclea cordifolia*" yields a beautiful close-grained wood resembling box; but it cannot withstand exposure to damp. Its small yellow flowers appear in November and December. The "*Rottleria tinctoria*" furnishes an orange dye—the kapela ranga. The *Soap-nut tree* (*sapindus*) which is here rather common, produces a small fruit, the pulp of which is saponaceous and used by the natives for washing. For marking their cotton clothes the pure black acrid juice of the shell of the "marking nut" is used; it is the fruit of a tree about 50 feet high, the *Semercarpas Anacardium*. The native ink is chiefly manufactured with the fruit or galls of the *Alali-mara* and sulphate of iron. This tree, the *Terminalia chebula*, yields excellent galls produced by insects puncturing the tender leaves. The astringent nuts bruised and mixed with molasses and chunam produce a very strong mortar. They are also largely used for tannin purposes.

On the outskirts of bamboo jungles the *Indian Coral tree* (*Erythrina Indica*) with its brilliant scarlet flowers may be frequently found; its soft wood is much used for toys. On account of its prickly bark the branches make good fences, and where the betel vine is cultivated this tree offers an excellent support. A very pretty tree with spreading pinnate foliage and gooseberry like seeds is the *Nelli-kai-mara* or "*Emblica Officinalis*." The fruit though hard is welcome to many for its thirst assuaging properties. Sometimes it is

preserved in sugar. The Bastard Teak (*Butea frondosa*), though common, is a very beautiful tree when in flower. Its scarlet flowers dye cotton yellow, and from the bark when cut a gum "Palas-kino" is obtained. A fragrant resin called "Kundricum" is furnished by the Gugula-mara (*Boswellia glabra*) an erect tall tree covered with greenish ash-coloured bark.

On the table-land of Mercara the Kake-mara or the Coorg laburnum (*Cathartocarpus fistula*) is particularly conspicuous in April and May by its beautiful long pendulous racemes of yellow flowers. Its long cylindric legumes of dark brown colour and nearly 2 feet in length contain a mucilaginous pulp, which is a valuable laxative when mixed with Cassia. On the same plateau is found the American Aloe (*Agave Americana*) with its high flower stem and long thick leaves, which might be turned into excellent fibre, but beyond a few experiments no manufacture is carried on. The plant serves for making fences only. It has been superseded, however, by the Lantana shrub (*Lantana Aculeata*), which within a few years has spread over the whole of Coorg. Its square stem and branches are prickly, its ovate leaves when bruised have a strong smell of black currants, and its orange coloured flowers are more or less in blossom throughout the year, and the shrub when kept within proper bounds makes an excellent fence. But this plant whose vitality is most obstinate, threatens to overrun many a tract of land in Coorg and elsewhere that might be far more profitably occupied. The recognised necessity of shading exposed coffee plantations has brought to notice a tree, chiefly distinguished for its quick growth and shady crown—the *Charcoal tree* (*Sponea Wightii*) It springs up spontaneously on every new clearing after the burn and mostly so in the eastern districts. Its wood produces a fine charcoal and its bark an excellent fibre. For beauty of shape and foliage the solitary *Nela-mávina-mara*

(*Xanthochymus pictorius?*) forms a striking contrast to the former. Its branches commence near the ground, and covered with elongated dark green glossy leaves form as they ascend a gently inclined cone. The fruit of the size of an orange and beautifully yellow is rather acid, but it is eagerly sought after and eaten by the natives.

A graceful vegetable beauty of a different character is presented to view by the *Bilwára tree* (*Mimosa*) which with its spreading airy crown of tiny pinnate leaves and small white fragrant flowers is a graceful jungle ornament. The wood is very hard and strong. Near banks of streams and water courses the Coldera bush or *Fragrant Screwpine* (*Pandanus odoratissimus*) is commonly found and much used for making mats and umbrellas. In many arid places in the east and north of Coorg the *Dwarf date palm* (*Phoenix farinifera*) nearly monopolizes the ground. Its leaves are made into mats and baskets and from the small stem a farinaceous substance is prepared for food. A hillock of date palms before the hot season in January presents the appearance of, what we hope may be a thing of the past, a bored coffee estate.

At Fraserpet in the compound of the Coorg Superintendent's Bungalow there are a few trees of the valuable *Divi-divi* or Shumach tree (*Caesalpinia Coriaria*). It is a small umbrageous tree and would do very well for coffee-shading, and its incurved oblong pods contain about 50 per cent of tannin, the price of which varies in Europe from £ 8 to £ 13 a ton, so that its cultivation might pay as a commercial enterprise.

Thus these eastern jungles contain a number of useful trees. I would now add a few trees, growing in the open, but thriving remarkably well in Coorg, viz: the several representatives of the *Ficus* tribe, especially the Banian tree (*Ficus Indica*), of which there are some beautiful specimens near

Fraserpet to which the elegant lines of Southey so truly apply:—

“It was a goodly sight to see
That venerable tree.
For over the lawn irregularly spread,
Fifty straight columns propt its lofty head;
And many a long depending shoot,
Seeking to strike its root,
Straight like a plummet, grew towards the ground,
Some on the lower boughs, which crost their way,
Fixing their bearded fibres, round and round,
Some to the passing wind at times, with sway
Of gentle motion swang.
Others of younger growth, unmoved, were hung
Like stone drops from the cavern’s fretted height.
Beneath was smooth and fair to sight,
Nor weeds nor briars deformed the natural floor
And through the leaf-cope which bower’d it over
Came gleams of checkered light.
So like a temple did it seem, that there
A pious heart’s first impulse would be prayer.”

(*The Curse of Kehama, Book 13.*)

The *Rippal* (*Ficus religiosa*) is likewise a large tree and found nearly in every temple in Coorg, but growing best in the drier districts. This tree proves most destructive to neglected buildings; when once rooted in crevices, nothing can withstand its progress. More common than both preceding trees is the *Atti-mara* or “*Ficus glomerata*” with fruit much like the common fig and which is eaten by the natives. The *Indian Caoutchouc tree* “*Ficus elastica*” also occurs and is not only a useful but highly ornamental tree. The milky juice obtained from incisions into the bark is exposed to the air, when the *Caoutchouc* or elastic substance spontaneously separates, leaving a foetid whey-coloured liquid.

Almost a stranger to Coorg and growing only in several places along the Kávéri between Fraserpet and Sómawarpet,

is the *Tamaind tree* (*Tamarindus Indica*) which Government has reserved and partly made over without tax to certain Brahmins in Ramaswamy Kanawé, partly formed out on yearly rent. It is a stately tree and yields a dense shade, under which however, many plants do not grow and natives do not like to sleep.

It would lead me too far to enter upon a description of the many shrubs, herbs and grasses of these jungles. Suffice it to say, that there are many and very beautiful ones, but most of them are annually swept away by the periodical fires, the purifying messengers of nature, that run through every jungle from February to April. These fires once established in the high coarse hill-grass rush madly in their onward career to the very tops of the mountains, and beautiful is the sight at night of these distant serpentine lines of flame extending over whole ranges of hills.

Coorg is rich in ferns and as these elegant plants will always attract the lover of nature, it may perhaps prove acceptable, if I append a list of such, as have been collected about Mercara and identified according to Major Beddon's work on Ferns by an enthusiastic admirer of these humble productions of nature:—

Alphabetical list of Coorg ferns.

Names.	Where to be found.
<i>Acrophorus immersus</i>	On trees and at the foot of trees, near Ball-practice ground, Falls, etc. common.
<i>Acrophorus pulcher</i>	On trees and rocks; near Ball-practice ground; abundant almost anywhere.
<i>Adiantum capillus veneris</i>	In a wall close to the Fort.
Do. <i>candatum</i>	Near Ramaswamy Kanawé.
Do. <i>hispidulum</i>	Near Ball-practice ground, 3rd milestone, Sunti-coppalu Road.

Names.	Where to be found.
<i>Adiantum lunulatum</i>	Common everywhere.
<i>Alsophila glabra</i>	Road to Falls.
<i>Alsophila latebrosa</i>	Road to Falls, (common tree fern.)
<i>Angiopteris evecta</i>	Road to Falls, common in all moist places.
<i>Aspidium polymorphum</i>	Road to Falls, abundant in a deep kadanga.
<i>Aspidium contractum</i>	Same place as former one, also in a lane near 3rd milestone, Sunticoppalu Road.
<i>Asplenium contiguum</i>	On trees, between 1st and 2nd milestone, Mangalore Ghat.
Do. <i>falcatum</i>	On trees, Sapper Lines, Road to Falls.
Do. <i>formosum</i>	On trees, in a deep ditch near Race-course.
Do. <i>furcatum</i>	On trees, near Ball-practice ground; common.
Do. <i>heterocarpum</i>	In a kadanga on Road to Falls, in moist shady ravines.
Do. <i>planicaule</i>	Very common, on trees.
Do. <i>resectum</i>	Near 3rd milestone, Sunticoppalu Road in a ravine, also on Road to Falls.
Do. <i>trapeziforme</i>	Near 3rd milestone, Sunticoppalu Road, and in a ravine near Race-course.
<i>Athyrium Hohenackerianum</i>	Abundant on all banks during the monsoon.
<i>Blechnum Orientale</i>	Common everywhere.
<i>Botrychium virginicum</i>	On trees, at the foot of Prospect Point Hill on Road to Kadle-kádu.
Do. <i>Subcarnosum</i>	Road connecting Cannanore and Mangalore at Loudon Valley Estate.
<i>Ceratopteris thalictroides</i>	In a swamp in Muctoom Sahib's Estate, Nalkanád Road, 3 miles from Mercara.
<i>Cheilanthes farinosa</i>	Very common (silver fern).
Do. <i>tenuifolia</i>	3 miles out on Nalkanád Road, also Rajah's seat, generally in dry places.
<i>Davallia bullata</i>	5 miles out on Nalkanád Road, on road connecting Cannanore and Mangalore Ghats, grows on trees, pretty common.
Do. <i>teanifolia</i>	Common everywhere.
<i>Disladium dilatatum</i>	On Road to Falls.
Do. <i>lasiopteris</i>	On Road to Falls; near Ball-practice ground.

Names.	Where to be found.
<i>Diplazium polypodioides</i>	Between 1st and 2nd milestone Mangalore Ghat; quite a tree fern.
<i>Do. sylvaticum</i>	On Road to Falls.
<i>Drymaria quercifolia</i>	4 miles out on Nalkanád Road on trees.
<i>Gleichenia dichotoma</i>	Very common.
<i>Goniopteris prolifera</i>	Fish river, Kadur-kádu Estate.
<i>Gymnogramma leptophylla</i>	Near 1st milestone Mangalore Ghat. On a bank on Road passing Government School.
<i>Gymnopteris Feei</i>	Muctoom Sahib's Estate, Nalkanád Road; on rocks, trees.
<i>Hemionitis cordata</i>	Very common on Santicoppalu Road.
<i>Lastrea aristata</i>	Common on Road to Falls.
<i>Do. cochleata</i>	One of the very commonest ferns.
<i>Do. falciloba</i>	Very common.
<i>Do. hirtipes</i>	Near Nalkanád palace.
<i>Do. membraniifolia</i>	Muctoom Sahib's Estate, Nalkanád Road.
<i>Do. ochthodes</i>	Very common.
<i>Do. sparsa</i>	Near Ball-practice ground; on Road to Falls.
<i>Lygodium scandens</i>	In a swamp 3 miles out on Nalkanád Road; 4 miles down Cannanore Ghat.
<i>Microlepia polypodioides</i>	In a ravine near 3rd milestone Mangalore Ghat.
<i>Nephrodium abruptum</i>	Muctoom Sahib's Estate. Nalkanád Road.
<i>Do. molle</i>	Very common.
<i>Do. propinquum</i>	Muctoom Sahib's Estate; also Anandapur "Kembu Kolli" Estate.
<i>Do. terminans</i>	Abundant on Nalkanád Road.
<i>Do. unitum</i>	Muctoom Sahib's Estate.
<i>Nephrolepis exaltata</i>	A common wayside fern, in moist places.
<i>Do. tuberosa</i>	Near Rajah's seat; common.
<i>Niphobolus porosus</i>	Nalkanád Road on trees; rather common.
<i>Oleandra nerüiformis</i>	On Nalkanád Road; on Road connecting Cannanore and Mangalore Ghats; on trees.
<i>Ophioglossum reticulatum</i>	On Ball-practice ground and in the Fort.
<i>Do. previpes</i>	Near Kaden-kádu on banks of Fish river.
<i>Osmunda regalis</i>	Abundant on banks of Fish river.
<i>Pleocnemia aristata</i>	Two miles beyond Murnad bungalow.
<i>Pleopeltis irioides</i>	On trees and in bamboo clumps, Nalkanád Road.

Names.	Where to be found.
<i>Pleopeltis membranacia</i>	3rd milestone Mangalore Ghat; abundant in moist, shady places, on trees.
Do. <i>oxyloba</i>	Abundant, on trees.
Do. <i>phymatodes</i>	On trees.
Do. <i>wightiana</i>	Very common.
<i>Paecilopteris contaminans</i>	Falls
Do. <i>terminans</i>	Falls.
<i>Polybotrya appendiculata</i>	In ravines near May-male Estate; also Sómawarpet Road.
Do. <i>aspleniifolia</i>	Falls.
<i>Polypodium ornatum</i>	3rd milestone Mangalore Ghat; on Road to Falls.
Do. <i>regulosum</i>	Banks of stream near Post-Office; near Falls, etc. common.
<i>Pteris aquilina</i>	The commonest fern in Coorg.
Do. <i>cretica</i>	On Road to Falls, abundant.
Do. <i>geraniifolia</i>	Near 3rd milestone Santicoppalu Road; also near Ball-practice ground.
Do. <i>longifolia</i>	Abundant in and about the Fort.
Do. <i>pellucens</i>	Near Nalkanád; also near May-male Estate, Belta-male Estate.
Do. <i>pellucida</i>	Common in all jungles about Mercara.
Do. <i>quadriaurita</i>	Very common.
<i>Do. argentea and rubronerva</i>	Varieties, both abundant especially the latter.
<i>Sagenia coadunata</i>	Very common.
<i>Schizoloma ensifolium</i>	At the top of the Falls, very abundant and handsome.
Do. <i>heterophyllum</i>	On Road to Falls; near Sapper Lines.
Do. <i>nitens</i>	Muctoom Sahib's Estate; has not been met with anywhere else as yet.
<i>Trichomanes flicula</i>	On trees near 3rd milestone Santicoppalu Ghat; Nalkanád Road.
Do. <i>rigidum</i>	On the Bank of the stream that forms the Falls.
<i>Vittaria elongata</i>	On trees, Nalkanád Road about 4 miles out on the right hand side.

To facilitate reference to the vegetable products of Coorg jungle trees and plants, they are here enumerated under the classification of

a. *Gums*. (soluble in water)—They are obtained from the cashew-nut tree (*Anacardium occidentale*), the Ambate-mara or hog-plum (*Spondias mangifera*), the Atti-mara (*Ficus glomerata*), the Gambali-mara, the Halumatti-mara, the jack tree (*Artocarpus hirsutus*), the elephant or wood-apple tree (*Feronia elephantum*), the bastard teak (*Butea frondosa*) and the Babul tree (*Acacia Arabica*).

b. *Caoutchouc*—or elastic gum is supplied by “*Ficus elastica*” and “*Isonandra acuminata*”.

c. *Gum-resins*—the produce of *Garcinia pictoria* (gamboge), *Pterocarpus marsupium* (kino), *Boswellia glabra* (kundricum), *Odina wodier* (odina gum), Neem tree and *Bombax Malabaricum*.

d. *Oleo-resins*—obtained from the *Canarium strictum* (black dammer), *Shorea robusta* (rál), *Vateria Indica* (Indian copal), *Dipterocarpus laevis* (wood-oil), *Calophyllum Inophyllum* and *Terminalia coreacea*.

e. *Oils*—extracted from the seeds of the Neem tree, the Alexandrian laurel, the Powali, the Nirala and the Kákorate tree.

f. *Fibres*—obtained from the Kóli, Antupurle, and Bendémara, the Indian fig, pippal, banyan and red wooded fig tree (*Ficus racemosa*), the variegated American aloe, the long aloe (*Agave vivipera*), the Indian hemp (*Crotalaria Juncea*), the bow-string hemp (*Sanseviera zeilanica*). The plantain (*musa paradisiaca* and *textilis*), the paddy straw (*Oriza sativa*), the mat-rush (*Cyperus textilis*), the broom grass (*Aristida setacea*), the cotton plant (*Gossypium Herbaceum*), the silk-cotton tree (*Bombax Pentandrum*), the *Conocephalus nivens*, the *Sponia Wightii* or Charcoal tree,

the *Nerium grandiflorum* and the *Isora corylifolia* or sham hazel.

g. Tannin—the produce of the bark of the Babool tree, the Neem tree, the *Bauhinia variegata*, the *Buchanania latifolia*, the *Hymenodyction excelsum*, of the pod of the Divi-divi tree (*Caesalpinia Coriaria*), and of the nut of the Alalimara (*Terminalia Chebula*).

h. Dyes—*Red*, obtained from the *Rottleria tinctoria*, the Indian madder (*Hedyotis umbellata*), Indian mulberry (*Morinda citrifolia*) the red sandal (*Pterocarpus Santalinus*). *Yellow*, from the bastard teak (*Butea frondosa*), the gamboge tree (*Garcinia pictoria*), the *Xanthochymus pictorius* and the *Berberis tinctoria*.

i. Saponaceous matter—yielded by the bark of the Babool tree, the pods of *Mimosa saponaria* and the fruit of the Soapnut tree (*Sapindus*).

General fauna of Coorg—It may be easily imagined, that a country, so well watered and wooded and with a vegetation abounding in nourishing produce, will sustain a great variety of animal life. This was still more the case ere the resounding axe of the planter and the still more frequent echo of the sportman's rifle have disturbed the animals' secluded abodes and driven them to remoter regions.

A brief grouping of the more prominent representatives of animal life in Coorg will be all that can be attempted within the small space allotted to the subject. Descending in the scale of zoological classification, it is the monkey tribe, that first claims our attention and there are 3 species for inspection: the black, the grey and the brown monkey. The black monkey or "Wanderoo" (*Silenus veter. Linn*)—*Kg. Karingóde*—is rather scarce and only found in the Male-kádu or Ghat forests. It has greyish whiskers, chest and belly, and is of small size. Its intelligent look and playful disposition render it a favorite with the natives, but like other monkeys,

it is an unsavoury pet, and its capricious and vindictive temper, when getting old, render it a dangerous playmate for children.

The grey or Hanumán monkey (*Semnopithecus entellus*, Duff)—*Kg. Kóde*—prefers a more open country and does not shun the neighbourhood of native dwellings, where there are Upali trees of the fruit of which it is very fond. Troops of them may sometimes be seen on an open glade near a large tree, gambolling unmindful of the passing by of a native, but quickly disappearing in the dense foliage on the appearance of a European, chattering all the while with their little ones, whose frightened expression is pitiful, clinging to their sides. This monkey is considerably larger than the former species and has a long tail, which is of service in gymnastic feats on slender branches. Its face is bare and rather reddish. It is more docile than the black monkey, but when big more vindictive and dangerous. A case happened in Mercara, where one of these monkeys attacked a baby in its cradle and might have killed it, but for the timely arrival of the parents.

The brown monkey—*Kg. Mucha*—is only found in the Mále-kádu and eagerly hunted by the Coorgs, who eat its flesh roasted and in curry, and consider it a great delicacy. A soup made of its flesh is given to sick and weakly people. When full grown, this monkey is in a sitting posture about two feet high; it has a long tail, a light grey face and chest. It is never kept as a pet by natives. Of the skin of all the three named species the Coorgs make their tom toms or drums.

A little animal of the Lemur kind is the slender *Loris* (*Loris gracilis*. Linn). The Coorgs call them Chínge-kúli or devils of the Chínge or soapnut shrub which grows all over the central and northern plateau of Coorg. Its silent and slow gait, its thin limbs, its closely set and large protruding eyes and pointed visage are enough to frighten on a sudden en-

counter any one, who has been attracted by its peculiar noise. It is covered with a light brown woolly fur, whitish beneath, and lives chiefly on fruits, but is not frequently met with. When unobserved, it moves about the tree in a lively manner, but quickly escapes on being noticed.

There appear to be but two species of *Bats* (*vespertilio*), which are however very common in Coorg houses and temples and on the sago and plantain tree. Their flesh is considered very strengthening, and in cases, where Europeans would give cod liver oil to a delicate child, the Coorgs administer a roasted bat.

Of the *Carnivora* there are many representatives foremost the *Royal tiger* (*felis tigris*) which in former days was much more numerous all over Coorg; but even now it is not scarce, though he seldom attacks man. The large game of the jungles and the herds of cattle roaming about satisfy his appetite. During the reign of the Coorg Rajahs there were annual tiger hunts and Linga Rajah seldom killed fewer than there were days in the year. He was fond of these animals and kept some about his palace as pets. An amusing story about these royal pets is told by Captain Basil Hall, who visited this prince in 1813: "On returning" he writes, "to the great square in the centre of the building (new palace in Mercara) we found 3 chairs placed for us on Turkey carpet, spread on the ground in the open air. The Rajah took a seat and made me come beside him, after placing his son, a nice little boy, nine or ten years of age, on my right hand. This young fellow was gaily dressed with a large overspreading turban. A dark circle about the tenth of an inch broad, was painted round each of his eyes, which gave him a strange staring look; and on his cheeks, brow and chin were placed small black marks, or beautiful spots about twice as large as the head or dot of a note in music.

"The whole area of the court was now begirt with soldiers,

each holding as high as his face, an immense billhook or knife, the blade of which near the extremity could not be less than three inches wide and diminishing gradually towards the hilt. This formidable instrument, well known in Indian warfare under the name of the "Coorg knife", is often used as a sword, and when handled by men, who are not afraid to close with their antagonist, is said to be a most efficient weapon.

"On a signal given by the Rajah a folding door was thrown open on one side of the court, and in stalked two immense royal tigers, held by several men on each side by long ropes, attached to collars round the animals' necks. These beasts appeared very tractable, for they allowed themselves to be led very close to us. I confess, I did not much like this degree of propinquity and eyed the slender cordage with some professional anxiety. Meanwhile the Rajah and his son and the officers of the household appeared quite unconcerned, though the tigers passed within a few yards of them, and, as it seemed to me, might easily have broken loose.

"What degree of training these animals had undergone, I know not, but after a little while, the Rajah, probably to increase the surprise of his guest, directed the men to let go the ropes and to fall back. There we sat in the midst of the open court with a couple of full sized tigers in our company, and nothing on earth to prevent their munching us all up! The well fed and well bred beasts, however, merely lounged about, rubbed their noses together and then tumbling on the ground, rolled about like a couple of kittens at play. I could, however, detect the Rajah spying at me out of the corner of his eye and half smiling at the success of his trick. After a time the men were recalled and the tigers dragged off.

"A pair of lionesses and two furious looking buffaloes were then introduced, but nothing could be more innocent or more respectful to the Rajah and his son. Like Falstaff, in-

deed, they seemed to have an instinctive knowledge of the true prince. Yet for all this, I caught myself several times edging my chair back a little bit and looking out for a clear place to escape, as the monsters stalked up and down the court, and once or twice actually touched the edge of our carpet with their feet. On these occasions, that part of the circle of guards which stood behind us advanced just so far as to bring our chairs on the outside of their ring and to place themselves between the beasts and us. On clapping their hands and flourishing their knives the lionesses and other beasts moved a little further off, after which the guards again dropped to the rear. Still this seemed rather a poor protection; at least I had my recollection so full of the rapid motions of the same class of animals, which I have seen baited at Mysore, that I could discover nothing which need have prevented the lionesses from whipping off the heads of the Rajah and the heir apparent, or at all events, that of their guest, who having no particular claims to the throne of Coorg, could reckon on none of the benefits of instinctive respect.

“The Rajah gave orders for half a dozen tiger’s cubs about eight months old, and as many puppy dogs to be set to play before us on the carpet, while a full grown royal tiger was at the same time dragged forward and pitted against a bear for a real battle in the open court. Any thing more disproportionate or absurd cannot be conceived than this match; and so, perhaps, the poor brutes thought, for fight they would not, although both of them were well thumped and forced against each other by the attendants. At length a brilliant thought struck the Rajah. ‘Tie them together!’ exclaimed his majesty; and accordingly the rope which was fastened to the tiger’s collar was hitched to the belly band of the bear. Neither party liked this. The tiger roared and the bear growled while the Rajah and his son laughed and clapped their hands in ecstasy at their own good joke. Of course the guards and

courtiers joined in the mirth and the whole quadrangle rang with mixed shouts of the soldiers, the growl of the bear and the roar of the tiger. Of all the parties in this singular concert, the tiger appeared to be the most discomposed. His eye flashed fire, his tail waved from flank to flank in the most ominous style. I thought at one time, this was to turn out no laughing matter; for, if the angry animal, when at length he lost all patience, had taken a direction towards us, he might have demolished the dynasty of Wadeer, or at least made a vacancy for an officer in his Britannic Majesty's Navy. Fortunately he chose exactly the opposite course, and running furiously across the court, made a flying leap right into one of the low windows of what the Rajah called his English drawing room. The glass and framework of the window were of course dashed to pieces in a moment and the pianos, pictures and book cases must have soon shared the same fate, had not the tiger's progress been checked by the weight of the wretched bear, which hung outside, half way between the window sill and the ground, somewhat after the fashion of the golden fleece over a mercer's door. The tiger we could no longer see, but we could hear him smashing the furniture at a great rate. He was afterwards secured and sent to the rear."

After a successful hunt for a tiger, the natives form a procession and carry the carcass with the band of tomtoms to the mandu or village green. The heroes of the day are the man who shot the beast and he who first touched its tail, a feat which used to be rewarded by the Rajah with the present of a silver bangle. The carcass is then raised on a wooden frame, and according to time-honored Coorg fashion, the lucky sportsman is to be wedded to the departed soul of the tiger and may thenceforth wear the honorable gala-mishi or grand mustachio in Rajah's fashion. In May last such a ceremony took place in Mercara on the occasion of

C. Cariappah, the Subadar of the taluq, having shot a tiger. Under a screen, on a wedding chair, his face towards the carcass sat the hero of the day, clothed in Coorg warrior costume and covered with flower wreaths and gold ornaments. Behind him stood his armour-bearers, in front the sacred house lamp on a heap of rice, poured into a brass dish. First each member of his house, men, women and children, then all his friends, one by one, stepped up to the bridegroom; strewed a handful of rice from the brass dish over his head, gave him from a brass vessel a sip of milk to drink and in making obeisance, dropped a silver coin into his lap. This money is given with a view to defray the impending expenditure on a sumptuous dinner, given to the whole company. A Coorg dance round the tiger concludes the tamásh and the night wears away with singing and feasting.

Government has now fixed a reward of Rupees five for the destruction of a tiger and Rupees three for that of a cheeta; but the un mutilated skin with the claws has to be delivered to the Sirkar. The height of the tiger varies from 3 to 4 and his length from 6 to 7 feet to which 3 feet may be added for the length of the tail. His weight is from 250 to 400 lbs.

Sometimes one sees children with the ornament of 2 tiger's claws, joined together by silver or gold and suspended round the neck. This charm is supposed to keep off the evil eye. The age of a tiger is said to be ascertained by the number of lobes of his liver, one lobe being added every year!

The cheeta (*Can. kiruba*) or panther is more common than the tiger. It is a very destructive beast to smaller domestic animals. In his depredations he is a coward, chiefly attacking his prey by night and fleeing man, if unmolested. Upon the destruction of a cheeta by a Coorg, the same festivities, as on the tiger hunt, take place, but there is less honour to the sportsman. The skin of the cheeta is spotted with

black roundish spots. It is 2½ or 3 feet high and 4 feet long from the tip of the nose to the root of the tail.

The tiger-cat (*Can. huli-bekku*) is a cheeta in miniature and its sleek, glossy, speckled fur renders it a very beautiful animal. It is about 3 feet long and 15 inches high; it is destructive to fowls. The Holeyas eat it.

The black jungle-cat (*kabbekku*), of the size of a house-cat, but with pointed muzzle, is very common; it lives chiefly on the fruit of the wild fig tree and sago palm. The Coorgs are fond of its flesh. Similar to this in form, but different in colour is the civet-cat (*punugina bekku*) which yields a peculiar musky secretion.

The hyæna (*katte kiruba*) is very seldom seen. Of the dog-family there is, besides the Pariah, the wild dog (*Can. kennai*). In resemblance it approaches nearest the wolf. It is a powerful and dangerous brute, remarkable for the strength of its neck and jaws. Its colour is reddish brown, and in size it is like a Pariah dog, whose barking it imitates. It is seldom seen alone but in packs of 10 to 20, and thus united they will attack any beast of the forest, even the tiger. They are swift and never fail in catching what they once give chase to; on coming up with their game, they seize the animal from behind or in front, immediately destroying the eyes and having once fixed themselves, they maintain their position, sucking the blood of their unfortunate victim and never quitting their hold, till it has fallen from pain and fatigue. The samber and other deer are the principal animals they prey upon. Remarkable for his peculiar and piercing yell in moonlight nights is the jackal, so common over the whole of India. Besides feeding on small game and poultry, he is not averse to carrion of any kind. The jackal is no favourite of the planters, for he pilfers a great deal of ripe cherry-coffee; but is honest enough to deposit the beans, which are considered all the better for their transmigration through his body!

The fact is, that, as the jackal eats only the ripest berries, the beans are naturally of a good quality.

The mongoose or Ichneumon Múngos (*Viverra mungo* *Can. kira*)—is frequently found on the bānes, where it is seen running from one copse to another. Its elongated, slender body with pearly, ash-grey fur and thick long tail, its pointed head and bright eyes and its rapid movements give it a pretty appearance, and, but for its wanton depredations amongst the poultry, it might become a useful pet, as it destroys rats and snakes. The natives say that after its struggle with a poisonous snake, it takes recourse to the Nágadále (*Ruta*, *Rue*) the leaves of which act as an antidote.

Black bears (*Can. karadi*) are found in Marenád on the Pushpagiri, Kóte-betta and Kálur-betta, where there are colonies of beehives, for Master Bruin is very fond of honey. His flesh is not eaten, but pieces of his skin are attached to the necks of horses and cows, to keep off the evil eye.

On the wooded banks of the Hatti and Shóran-hole and elsewhere there are small colonies of a species of otter-hound, which the natives call Nírunái or water-dog (*Lutra Nair* *Cuv.*) The animal is deep reddish brown on the back, lightest on the sides and below, lives in artificial burrows and subsists on fish, which it catches with great skill. It is eaten by the Yerawas.

Mice and *rats* there are more of in Coorg, than the farmer and house-owner would wish. The musk-rat betrays itself by its piercing shriek, but has a safeguard in its strong smell against its pursuing enemies. Great havoc has been done on some coffee plantations by the bamboo-rat (*Golunda Ellioti*) which is gregarious and for want of jungle-food often attacks in great numbers the coffee shrub, selecting the tender and succulent shoots and, to get at them, cutting off the primaries near the stem. Most wary of traps of any kind, this destructive animal is difficult to deal with. The field-rat (*Can.*

kádili) is of a brownish colour; in its provident care against the rainy season it commits great damage to the ripening paddy-fields and stores considerable quantities of grain in its subterraneous burrows, to the great satisfaction, however, of the lynxeyed Wotter (tank digger) who searches after the little granary and carries away in triumph the owner and its property for his own meal. A formidable rat for its destructive burrowing habits is the Bandicoot (*Mus bandicota Can. Heggana*). It grows to the size of a sucking pig, is of a blackish colour and lives near houses. To protect their rice against these enemies, the Coorgs store their grain in enclosures, called pattáya, which are raised 2 feet from the ground with an open space all round. It undermines walls and causes buildings to tumble down. Its flesh is eaten by the Holeyas, Kurubas and Yerawas.

Of squirrels there are 4 species: the striped, the grey, the red and the flying squirrel. The first species (*Tamias striatus*) is very common in the open and warmer districts of Coorg, especially in Fraserpet, where it familiarly runs along the thatched roofs of the European bungalows and amuses their inmates with its little squeak. It is a pretty tiny creature; with its tail it measures about 9 inches. Its body is of a greyish colour, whitish below and 3 brown longitudinal stripes and 2 white ones on the upper parts. In Hindoo fable, this little animal is said to have been rewarded by Ráma for its services in constructing his bridge over the sea to Ceylon. Passing his hand over its back he said: "Shábás" (well done) and behold, it was marked with indelible streaks!

The grey squirrel is somewhat larger than the former, without stripes, and lives on trees. The red squirrel (*Sciurus maximus, Can. kenjari*) is a remarkably lively and handsome animal, when enjoying its native liberty. In length over two feet, of which its bushy tail measures half, it surpasses its European cousin in size and beauty. All that can be

seen of its body from above is of a dark chocolate colour deepening into black along the centre of its back and tail, while the under parts are of a pale yellowish brown. When young, it is easily tamed and proves an amusing pet, but it tries its sharp teeth on most substances, that come within its power, and too confiding children, when ruffling its temper, may suffer harm. The Kurubas, who know the trees of the forest as familiarly as a police man the streets and houses of his beat, catch these squirrels by means of nets which they fix to branches that are in the track of the animals.

The grey flying squirrel or flying cat (*Pteromys*) has become better known since the destruction of so many forests, when hundreds of the harmless little animals were caught or shot. It is crepuscular in its habits and, unless disturbed, very rarely seen. Its home is in the holes of trees and it lives entirely on fruit, especially that of the wild sago palm, the toddy of which it is very fond of too. Strictly speaking, it cannot be said to fly, but is endowed with a furry membrane between the fore and hind limbs which enables it, when stretched out, to take leaps of almost incredible extent, sometimes 100 yards through which it passes with the swiftness of an arrow. In its flying mode of progression it moves invariably downwards, when it runs up a new tree and takes another leap, which is well sustained owing to the extreme lightness of the animal. The flying membrane or parachute cannot be contracted, but is merely a lateral prolongation of the skin and therefore also covered with hair. The squirrel is of a dark grey colour with a black line down its face, which, with its prominent black eyes and grey nose, give it a peculiarly fiendish look, and it bites severely. Its fur is very soft and might be turned to good use. The flesh of all the 4 species of squirrels is eaten by the natives.

The common hare (*Can. mola*) is found chiefly in the open country, where long grass grows. The natives of all

classes are fond of its flesh and the poor animal is pursued on all sides by man and beast. It is caught in nets and traps. Rabbits thrive very well and are frequently kept in houses.

There is one kind of porcupine (*Can. mullu-handi* i. e. thorny pig) which like the mongoose lives on shrubby Báne land, and is hunted for its flesh by smoking it out of its holes or by shooting it. The quills are thrown away; for the natives believe, that, if kept in the house, their presence will occasion quarrels amongst the inmates. In the Ghats one may occasionally observe the destructive operations amongst the out-hills of the Badgereit or scaly ant-eater (*Manis pendadactyla*, *Can. chippina-bekku* i. e. scaly cat). Its flesh is eaten and its scales are used as the supports of fiddle and harp strings.

Homebred horses there are none in Coorg, except those wretched Tats, which are kept by Mussulman residents for carrying loads; but "Young Coorg" is fond of smart Pegu ponies or the powerful Kandahar horses. The damp monsoon climate is, however, not conducive to the health of well bred horses, especially new arrivals from a drier country. The Pegu pony is best suited both to the climate and hilly country. The washerman's donkey and the hybrid goat stand the climate equally well, but sheep do not thrive, except in the eastern districts. The long continued rains and the droughts during March and April which are incidental in these months, are unfavourable to the breeding of horned cattle; but, with proper housing and with an economical saving of the decaying grass, that is annually swept away by the jungle fires, and that should be stored up as hay for stall feeding, the Coorg cattle might be greatly improved. Little care, if any, seems to be bestowed upon the selection of bulls for breeding purposes; beasts of every description and age run promiscuously in the herd, and as there is no check by separating inferior bulls or emasculating them, the progeny must deteriorate. In the Kanawe districts, cattle of the finest des-

cription might be reared on sound farming principles. As it is, the cattle of Coorg are of a mediocre breed, better in the north and east, worse in the centre and south-west. The Coorgs procure their cattle partly from Mysore, partly from the annual fair at Subramanya. The ryots have generally too great a number of them, to which they cannot properly attend, and it is not to be wondered, that there is almost annually a great mortality amongst the cattle from what the Coorgs call *dodda róga* i. e. great disease, the cattle refusing food and being frequently purged, *gantlu-kattu* i. e. throat swelling disease and the *kálu-jwara* or foot-sore disease. The increasing coffee cultivation of late years has somewhat limited the pasturage and the constant cattle trespass on coffee plantations is a cause of much vexation and loss, both to planters and ryots. The Coorgs, like other Hindoos, hold the cow sacred; it is a sort of sentimental veneration for the animal which ploughs the fields and, motherlike, gives milk; but does not prevent them from inflicting cruelty upon the sacred beast by ill use, neglect and starvation. The slaughter of kine within the limits of the Coorg Province was distinctly prohibited by General Fraser on the assumption of the administration in the following terms:

To

Lieutenant C. F. Le HARDY,

Superintendent of Coorg.

Sir,

Having ascertained, that it is highly offensive to the religious feelings of the people of Coorg, that cows or bullocks should be killed for the purpose of being used as an article of food, I request, that you will be so good as to prohibit this

practice throughout the whole district by any person whether European or native.

J. S. FRASER, *Lt. Col.*
and Commissioner.

Mercara, 16th January 1835.

Whether the sanction of the Government of India was obtained to this prohibition is not apparent, but the Coorgs have always, up to this time, regarded it as binding on the British Government; and, under these circumstances, we must await the dissipation by education of existing prejudices on the subject on the part of the people.

Not venerated like the cow is the bison (*Can. kádi; Bos cavifrons*) which is killed by the Coorgs without hesitation; its flesh, however, is only eaten by the lowest classes. It lives in herds throughout the thickest forests and in the highest hills, especially in Marenád and Hormalnád. The male stands nearly 6 feet high at the shoulder, but disproportionately low behind, and reaches the length of 9 feet from nose to root of tail; the tail itself is almost 3 feet long. Its hump is rather small. When young, the colour of the bison is of a dark reddish hue, which changes with age into a greyish black, the belly, legs as far as the knee-joint, breast and face being, however, of a dirty, whitish tinge. The whole body, especially the dewlap, is covered with long hair and the eyes are of a light blue colour. The horns are short and thick at the base, but gradually become thinner, leaving the tips small and sharp; they are remarkable for the symmetry of their curvature, take a fine polish and the fortunate sportsman may be proud of the trophy. The hide, which is very thick, is used for covering shields. Naturally timid and of retiring habits, preferring shady woods to open glades, except in the cooler parts of the day, the bison, when alarmed or wounded, charges headlong with mad fury his imaginary or

real foes, never turning to bay, as long as he has moving space before him. Bison shooting is a favourite sport, both amongst Coorgs and Europeans.

The domesticated buffalo (*Can.* male: kóna; female: yemme) thrives very well in Coorg, but the existing breed is an inferior one; however, some Gaulikas from Dharwar have lately introduced a much larger and more powerful kind which will gradually improve the native stock. Buffaloes are more numerous in the woody districts especially in Kiggatnád and wherever there is marshy land, which is most congenial to their amphibious habits, as they delight during the hot hours of the day in seeking refuge against heat and flies in stagnant pools, where they wallow with supreme gusto with only their noses above water. Buffaloes are a treasure to the farmer; their strength qualifies them for the plough, for the threshing floor and for carrying burdens; they yield more manure and twice the quantity of milk of a common cow and of a far richer kind. With such a list of good qualities one may feel inclined to overlook the extreme ugliness of the beast. It is a bulky, clumsy animal of a greyish colour, with long, annulated horns, lying generally on the back of its thick-set neck; its stupid, motionless look, combined with its gurgling bellow, render its presence unwelcome, though it has nothing of the vicious temper of the hill buffaloes of the Todas.

Of the deer-tribe there are several representatives in Coorg: the samber, spotted deer and jungle-sheep.

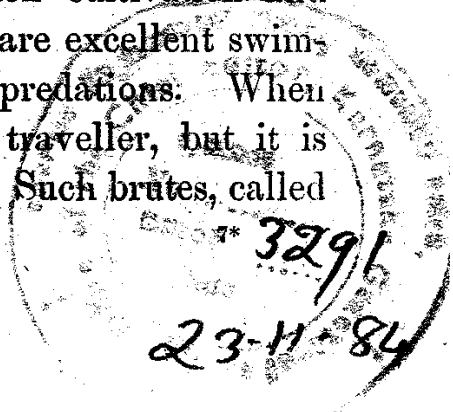
The samber or elk, (*Rusa Aristotelis*; *Can.* kadave) is a fine large animal with antlers of great size, resembling those of the stag. It is more frequent in the great mountain forests. It is not gregarious and ruts and drops its horns in spring. The spotted deer (*Axis maculata*; *Can.* sárga) haunts thick jungles in the vicinity of water. It is timid mild and easily domesticated, an elegant pet whilst young, but becomes rather mischievous with age, as it not only butts at children, but

eagerly devours any paper within reach. The female has no horns and is smaller than the male, which reaches a height at the shoulder of 2 feet 6 or 8 inches. The skin is at all times of a rich fawn colour, spotted with white. In almost every Coorg house one finds some horns of the spotted deer, fixed to the walls for hanging clothes on.

The most delicate and beautiful of the deer-tribe is the jungle-sheep—*Can. kuringi*—which somewhat resembles an antelope. It is about 18 inches high, with short horns, a little twisted, their roots for the first inch and a half being enveloped in hair. Its colour is fawn, lighter towards the belly, its legs are very thin, but in speed it is like the passing wind. Its graceful form, mild, bright eye and harmless habits make it an interesting little pet, but it does not long survive its captivity. The flesh of all the deer-tribe is highly esteemed by the natives.

The common pig and the wild hog abound, and their flesh is preferred by the Coorgs to all other meat. Both kinds thrive very well, but the former is not bred with any care and its unsavoury habits do not recommend its flesh for European consumption. What the goat is to the Mussulman, the pig is to the Coorg!

The largest of the Coorg Mammalia is the elephant (áne), but it is so well known, that it needs no particular description. The Coorg elephants are as large and powerful as any others of Southern India. They are gregarious, keeping in droves of 15 to 30, under a leader who directs their movements. They inhabit indiscriminately all the woody parts, but particularly those towards the eastern boundary. They are ferocious and mischievous, destroying garden cultivation and crops of paddy and sugarcane. As they are excellent swimmers, the Kávéri is no barrier to their depredations. When met in droves, they seldom attack the traveller, but it is dangerous to encounter a single elephant. Such brutes, called



“Rogues”, are supposed to have been driven from the herd, to which they dare not return, and in consequence become furious in the highest degree.

Elephants in Coorg are caught in pits, covered over with a slight framework to conceal them and placed across the paths which the animals frequent. It is however no easy matter to beguile the sagacious creatures into this kind of trap. If caught young they are easily tamed, but when of maturer age, a year and sometimes two are necessary to bring them into subjection. There are now no tame elephants kept in Coorg, but the Rajahs used to maintain many. Wild elephants are now far less numerous and the periodical elephant hunts less productive, though the Coorgs like true highlanders are as eager for sport as ever. The indiscriminate slaughter of these useful beasts has however been forbidden by Government, and they are now only caught alive.

There is a granite slab in the Superintendent's Cutcherry in Mercara with an engraved record of a grand elephant hunt in the beginning of the reign of the late Rajah, which may well excite the jealous astonishment of modern Nimrods. The facts divested of oriental flourish are simply these: In 1822 the ryots complained of the great destruction of their fields and houses, caused by numerous herds of elephants, when the Rajah, “recollecting that it was the duty of a king to destroy the wicked and assist the helpless,” resolved upon a wholesale destruction of the beasts and within 38 days he killed with his own hand 233 elephants and his soldiers caught 181 alive! Well may he exclaim in conclusion: “Is this not a great wonder, that men caught elephants alive, as if they were mice, and killed herds of them by using their seven weapons with the destructive force of roaring thunder?”

The *Ornithologist* not less than the Botanist finds in Coorg a fruitful field for his researches, for birds of almost every tribe are plentiful throughout the country. The Mysore Museum

already exhibits a goodly number of these, and through the kindness of Dr. Oswald, I have been furnished with a classified list of 30 birds, collected last year in Coorg, but of course there are many more, that are common to Southern India. One would think that, during the heavy south-west monsoon, animal life in the open could scarcely exist, yet hardly does the sun break through the rainy clouds when all around there is life and joy amongst the feathered tribe. They seem to anticipate that happy time, when after the monsoon, in sunny October and November, they pay, dressed in their finest plumage, courtship to their spouses, and warbling and singing, are busy all day long, for the comfort of their expected offspring.

The following survey is arranged according to Mr. Vigor's classification of birds:—Amongst the birds of prey (*Raptores*) the high soaring *Vulture* (*Vultur Indicus*) (*Kg. adiya paddu*), with wings turned obliquely upwards, stands foremost, both for his size and utility, as public scavenger of animal carcasses in which occupation he is assisted by the Pariah dog and the crow. Occasionally a solitary eagle (*Kg. paddu*) may be seen in the mountains; a fine specimen of the golden eagle (*Aquila chrysaetos*) came into my possession a few years ago; whilst on a mountain slope he was struggling on the ground with a large horned owl, both were caught alive. This eagle was a fine bird, in sitting posture 15 inches high; with outstretched wings 4 feet 5 inches; the upper part of the head and neck light buff, of a light brown and grey down the chest and dark brown, nearly black, on the back, and the wings tinged with brighter spots. The brilliant eye, with its brownish yellow iris and wary look, gave the bird an air of intelligence and its formidable curved and pointed bill and horny talons kept the inquisitive at a respectful distance. He managed to free himself from his chain and escaped.

The Garuda or *Brahmany kite* (*Haliastur Indus*) is more

frequently seen. His plumage is very handsome, glossy white the head, neck and breast, and beautifully brown the back, wings and tail. In Hindoo mythology it is Vishnu's vehicle and therefore held in high veneration by the natives. He is a useful bird as he devours noxious reptiles, but sometimes he also carries away an unguarded chicken. The *Pariah kite* (*Milvus Govinda*) is very common and easily recognised by its greyish, brown speckled plumage and short shrill screech whilst soaring over its domain in small circles. He is the scavenger of animal refuse thrown from the cookroom, but preys chiefly on reptiles, which he carries off with a swoop, and devours flying. The sparrow hawk (*Accipiter nisus*), the Kestrel-falcon (*Tinnunculus alandarius*), the Sultan and the perigrine falcon (*Falco peregrinator* and *peregrinus*) are not unfrequently seen from the hill tops, soaring over the forests in pursuit of their winged prey. The Rajahs used the larger kind of falcon, the *Kembakki* (red bird) for hunting. The swiftness and majestic flight of the falcon is proverbial with the Coorg bards, who sing of the departed hero: "Like the falcon in the sky, thou wast roaming here on earth." In the eagle-fight we have already been introduced to the *Great Owl* (*Bubo maximus*; *Can. guma*); but there is also a smaller kind, which on house tops in nightly solitude often disturbs and frightens with its moaning cry: "Waugh O! Waugh O!" the sleeping inmates, by whom the owl is greatly dreaded. My keeping one as a pet some years ago was regarded by the Coorgs with grave apprehension and, afterwards, when I was laid up with jungle fever, the cause was ascribed to the presence of the ominous bird.

The *Insessores* or Perchers are largely represented in each of the five tribes. Amongst the *Fissirostres* there is the gregarious *Bee-eater* (merops) of both a larger and a smaller green variety. They prey upon insects like the swallows, of which there are also several species found in Coorg. The *Goat-*

sucker (*Caprimulgus Asiaticus*) in its modest greyish-black plumage is often observed in twilight along hedges or in abandoned buildings. Its flight is short and noiseless. Amongst the beautiful Tragonidae there is the *Harpactus fasciatus* or Malabar Trogon, a solitary bird of splendid plumage, that delights in the stillness of the forest, where it seizes the fitting insects on the wing. Remarkable for the gaudy brilliancy of its light blue plumage is the Indian roller or blue Jay (*Coracias Indicus*). It is frequently seen on jungle clearings or coffee estates perched on a solitary dry tree, where it freely surveys its hunting ground and discerns with wary look any approaching danger. It is difficult to get at, though it may be seen all the year round. Nearly allied to the jay are the Kingfishers. Of these brilliant birds, which are rather common along streams and paddy-fields we have three species: the brown headed (*Halcyon leucocephalus*), the white breasted (*H. Smyrnensis*) and the common Indian kingfisher (*Alcedo Bengalensis*; *Kg. mingotti*—fishcatcher). Their habits are similar; they live on small fishes such as stickle-backs and minnows; perched immovably upon some overhanging twig, they watch for a passing fish, upon which they suddenly dart with their long sharp bill, and kill and eat it. Their flight is very swift. They lay their round white eggs in holes of banks.

Amongst the *Scansores* or Climbers foremost are the parrots, which are very numerous in Coorg, especially in bamboo jungles. They are remarkable for their beautiful colours, their climbing skill, their powerful bill, their fleshy tongue and their power of imitating the human voice; they are therefore great pets with natives and Europeans. The large green species (*Palæornis torgatus*; *Kg. mále-gini*) with a rose coloured ring round its neck, is for its docility and power of imitation most valued. There is also the blue winged Parroquet (*Palæornis columboides*), the blue headed

parroquet (*P. cynocephalus*) and a pretty dwarf parrot, the Indian Lorikeet (*Loriculus Vernalis*).

The melancholy stillness of the forests is often interrupted by the "tap, tap, tap" of the woodpeckers, of which there are several species; the commonest is the one with rufous, speckled plumage and red crest (*Micropternus Gularis*), more scarce is the great black woodpecker (*Mulleripicus Hodgsoni*; *Kg. Marakotta-pakki*) chiefly found in Kiggatnád. The whole plumage is deep black, except the upper part, which, in the male, is of a lively red. In its pursuit of insects under the bark or in holes of trees, it ascends with great rapidity in a screw line, and its tap, tap seems to answer more the purpose of disturbing the hidden insects, which it catches in their precipitous flight, than to peck a hole into the tree. The female deposits 2 or 3 white eggs in the hollows of old trees. The flight of the woodpecker is short and generally only from tree to tree.

The Cuckoo-family is represented by the black cuckoo (*Endynamys Orientalis*) and the red winged crested cuckoo (*Coccytes coromandus*) both of which are suspected of parasitic habits regarding the disposal of their eggs.

Of the tribe *Tenuirostres* or Suctorial birds there is the purple honey-sucker (*Arachnechtra currucaria*), a beautiful little bird, glittering like a humming bird with metallic lustre, as it flutters over the flowers, whose nectar it sucks with its thin long bill. The Indian hoopoe (*Upupa Ceylonensis*) is an active elegant bird with an arched crest upon the head of a ruddy buff colour, terminating in black. When in search of food, it emits a sound resembling the word hoop, hoop, hence its name. During the monsoon it retreats to a drier district.

The tribe *Dentirostres* has also its representatives in the Malabar Woodshrike (*Tephrodornis sylvicola*) which resembles a falcon both in form and habits; the black headed

Cuckoo-shrike, the orange Minivet (*Pericrotus flammens*), the large raked-tailed Drongo and the Paradise Flycatcher (*Tchitreia Paradise*; *Kg. Núkare-bála*=ribbon tail) which is most elegant in form and plumage. Its dark brown body is ornamented by a greenish black crest on the head and two pure white lateral tail feathers, which, when the bird flies along in wavy curves from bush to bush, present a most graceful appearance.

The *Thrushes* (*Merulidae*) delight both with their sweet song and their pretty plumage. There is the Malabar whistling thrush (*Myiophonus Horsfieldi*), the blue headed chat thrush (*Orocetes cinclorhyncus*) and the white winged ground thrush (*Geocichla cyanotus*).

The Neilgherry Blackbird (*Merula simillima*) goes here under the native name of *Bhímarája* or the Coorg nightingale, so sweet and powerful is its song. An interesting bird of this family is the southern Simitar Babbler, and distinguished for the beauty of its golden plumage, is the Black-naped Indian Oriole (*Oriolus Indicus*). The common Bulbul (*Pycnonotus pygæus*) may be found throughout the year. When pursued, it leads the intruder away from its nest by its short flight to other bushes. It sings very sweetly and its crimson and black crest look very pretty. The Tailor-bird (*Orthotomus*) is called by the Coorgs "*Gíjapakki*," in imitation of its sharp cutting cry, which is like the noise of saw-filing and by its frequent repetition, as painful to the nerves. It is common about gardens and groves of trees, and celebrated for the artificial construction of its nest. I have one before me. Three leaves of the guava tree are by many stitches skilfully drawn together, and give throughout their length cover to the nest, the full upper half of one leaf forms a curved roof, completely protecting the entrance. It is a very active little bird, and, whilst hopping about, jerks up its tail, beating time to its piercing cry. It leaves Coorg during

the south-west monsoon. Of similar habits is the Wren (*Prinia*; *Kg.* Chirulichita) of which there are several species. The southern yellow Tit (*Machlolophus Jerdoni*) and the Indian White-eye (*Zosterops*) are also found, the latter in great abundance, likewise the Wagtails (*Motacilla*), which are often seen along reaped paddy-fields feeding among cattle on various insects. The Coorgs call them Bálátimoni (Bála tail, áta play) which coincides with the English name, indicating their peculiar habit of wagging their tails.

Amongst the tribe of *Coriostres* the first place is taken by the most impudent of birds, the common Crow (*Corvus splendens*; *Can.* kági). In Coorg it is less abundant than in the low country. Less frequent is the pretty rufous Tree Crow, or common Indian Magpie (*Dendrocitta rufa*), which is found in jungles. It is fond of the fruit of the banyan and its cry is like that of the raked-tailed Drongo (*Edolius Malabaricus*) which frequents coffee estates in the bamboo-district. The well known Mynahs, especially the common mynah and the grey headed species (*Temenuchus Malabaricus*) are very common, less so the southern Hill-Mynah (*Eulabes religiosa*). They roost in numerous flocks and feed on berries and grain of various kinds. They also keep company with grazing cattle, feeding on the insects which are disturbed by their footsteps. They are remarkable for their power of repeating words and sentences, of imitating laughing, coughing and sneezing. To Europeans a pleasing acquaintance of the "Old Country" is the "House-Sparrow" (*Passer domesticus*; *Kg.* mane-pakki=house-bird) which is here as numerous, clamorous and amorous as at home! The yellow necked or Jungle Sparrow (*Passer flavicollis*) frequents light jungles and chirps exactly like the house-sparrow. The Weaver-bird or bottle-nested Sparrow (*Ploceus Baya*) is more numerous towards Mysore, but after the monsoon, when the paddy gets ripe, it may be often seen about Mercara in considerable flocks. which

perched on a tree keep up a continual chirping. Its pending retort-shaped nest, which is over a foot in length, is woven of long fine grass. The entrance is from below and formed by the two inches wide neck of the retort, the main body of the nest is laterally compressed and divided by an open partition wall into 2 compartments, of which the lower one is occupied by the hatching bird that lays 2 or 3 white little eggs.

There are several species of larks rather common in Coorg. They have much the same plumage and habits as our European warbling lark, and are sometimes caged by the natives.

One of the largest birds here is the Hornbill (*Buceros cavatus*; *Kg.* Malérapa, malé forest, arapa sound, i. e. the forest resounding bird). It is upwards of 4 feet in length; black on the belly, chin, wings and back, with one band across the tail, the rest of which is white, as also the neck and parts of the wing. The curved, large bill, which now lies before me and which belonged to a male bird, is vermilion above, with a black central line, and yellowish on the sides, the lower mandible is whitish and the base below the eye black. On the upper mandible there is an extraordinary prominence of vermilion colour, 4 inches broad and $8\frac{1}{2}$ inches long, terminating behind in a black curvature and the concave front uniting its dip with the ridge of the beak, so that the two sides rise to a narrow ledge 2 inches above the true bill, from which they are distinguished by a black triangular stripe. The appendage looks as if 2 horizontal horns were superadded to the bill, which from point to gape is in a straight line $11\frac{1}{2}$ inches in length, and from point to the end of the protuberance I measured $16\frac{1}{2}$ inches. The Coorgs make powder flasks of its hollow bill and the quills they use for writing. The noise of its wings, when flying, is very loud and its progress is so slow, that a man can follow it. In its prey it is omnivorous.

Of the third order of birds, the *Rasores* or *Scrapers*, Coorg can make a goodly show with a variety of Pigeons, of which the blue pigeon—*Kg. tórapakki*—is the most common, but the green and the yellow pigeon and the ring-dove are not scarce in the forests. The Peacock (*Pavo cristatus*; *Kg. meilu*) with its shrill morning call, and the timid jungle fowl (*Gallus Sonneratii*; *Kg. kádgóli*) with its self-betraying “cockadoodle doo” are numerous in bamboo jungles, especially during the last few years of bamboo seeding. Both species together with the Woodcock and the common Partridge (*Perdix cinerea*; *Kg. ganjalakki*) and the Quail (*Coturnix*) are at the time of the ragi crop frequently brought to Mercara for sale by a class of jungle people who are most expert in catching these birds, the voices of which they very cleverly imitate. In the neighbourhood of Subramanya peacocks may not be killed, as they are believed to be the vehicles of the god residing there. The neck-feathers of the jungle cock are much valued for their beauty, each being marked by roundish hornlike plates of various shades of yellow. The Coorgs keep these as trophies, as the Indian does his hairy scalp. The single feathers are turned into artificial flies, to fishes the most attractive bait, and consequently highly prized and dearly paid for by the devotee of “the gentle art.” The Crow-pheasant or common Coucal (*Centropus rufipennis*), distinguished by its cinnamon brown wings, long tail and crow-like head, is very frequently seen on bamboo land, where it hides itself in the dense clumps, uttering as it slowly flies away a deep note like a monkey. It feeds on insects and small reptiles and is eaten by the natives.

A few representatives of the fourth order of birds, the *Grallatores* or *Waders* are: the Egret (*Egretta flavirostris*; *Kg. balya-póle* = great crane) which towards the end of the monsoon is frequently seen stalking along paddy-fields or streams in search of prey. It is white as snow, about 3 feet high with

long yellow legs and straight yellow bill. It keeps in small flocks. The little green Heron (*Butstrides Javanicus*; *Kg.* kiru-póle = small crane), the Indian Waterhen (*Gallinula*) and the Plover or Peevit (*Kg.* uppu-títe, imitating its cry) are found in marshy places, likewise the Snipe (*Gallinago stenura*; *Kg.* bandu-koneya = mud squatter) whose flesh is in great estimation with the Coorgs and Europeans; also the green Sandpiper (*Aclitis Ochropus*) may occasionally be seen.

As there are no large tanks in Coorg, few of the *Natatores* or *swimming birds* are to be found. There is only the Wild Duck or Teal of a larger and smaller species, which the Coorgs call Kóku and Yerande-pakki; the latter dive under the water, as soon as they observe a hunter and remain submerged for a long time. Geese and Turkeys are kept domesticated, but the cold and wet monsoon weather does not agree with turkeys.

A rapid glance over the remaining portion of the Coorg Fauna will be arrested by but a few species of general interest. The *Reptiles* are represented by two kinds of Tortoises, a variety of Lizards, Snakes and Frogs.

The *Tortoises* are found in paddy-fields and small tanks. The shell of one in my possession is 11 inches long and 7 inches broad, but of a bony nature, unfit for ornamental use. Since the devastations of the coffee-borer common Lizards, Bloodsuckers, and Chameleons, all of them insect-feeders, have become of greater importance to the agriculturist. Alligators are occasionally seen in the Káveri, especially near Rámaswámy Kanawé. Last year one of 9 feet in length was caught in Beppunad with a woman's nose-ring and a silver bracelet in his stomach.

Snakes are rather plentiful in Coorg, but the subject has not yet received sufficient attention, to enable me to give the correct name of the different species. Classifying them as poisonous and harmless snakes, the native name may at least

serve to lead the curious upon the right track. The Cobra di capella or Hood Snake (*Naia tripudians*; *Kg.* *Nalla pámbu* = good snake, in the sense of Eumenides?) is more frequent in the bamboo than in the mále district, and often takes possession of an out-hill for its habitation, but also deserted huts and the thick thatch of out-houses are its favourite haunts. It is kept and worshipped in demon temples and sometimes in rooms to guard treasure. In a specimen 5 feet long just examined, the hood which is formed by the expanded skin of the neck, when the snake is excited, measured 7 inches in length and $4\frac{1}{2}$ in breadth. It is whitish in front and black on the lower part of the back, shading off into brown and white towards the flattened head; in the middle of the hood there is a peculiar mark resembling a pair of spectacles with the bridge downward, the frame being white and the space of the imaginary glasses black. Before an attack the cobra half raises its coiled body into a graceful curve, dilates its hood and swaying to and fro, its bifid tongue quivering all the while, it keeps its victim spell bound with its fiendish brilliant eyes, till it darts forward and hissing inflicts its deadly wound. In spite of the most strenuous exertions of science, combined with benevolence, no infallible remedy has yet been discovered against the bite of the cobra, and all the boasted native charms have proved worthless, though snake charmers have by their knowledge of the habits of the cobra and by the influence of the melancholy strain of their rude flageolet acquired a great power over the reptile.

The number of the poison fangs of this and all other venomous snakes, is but two, one in front of each side of the upper jaw, and they lie flat along the roof of the serpent's mouth, whilst at rest. The fangs are curved inside and as sharp as the finest needle, yet they are hollow and their root is in direct communication with the venom ducts behind them. In biting the same muscle that raises the fangs compresses

the venom ducts and by the force of the actual bite a drop of the venom is injected through the channel of the fangs into the tiny wound and in a few minutes the whole system of the victim is poisoned and inevitable death ensues. Varieties of the cobra with hood and mark are the Pillandi-murga and the kád-murga, the former is greyish white and 1 to 1½ foot long, the latter is dark brown; their bite is less poisonous. The Kare-náda (black snake) with white marks about the throat, is 8 or 10 feet long and very rapid in its movements. It is found in dense forests and is sometimes washed down by the mountain torrents. Its bite causes death within half an hour. The late Rajah is said to have ascertained the power of the venom by experimenting upon sheep and buffaloes. The bite of the Patte-kolaka produces festering sores over the body; the Coorgs string the bones of this snake together and wear them as a charm against sores or swelling of the glands. There are three kinds of Cardamom-snakes: the green, the black and the grey Mandoli or Kumme-pámbu or Kurudu-mandoli which during the day are in a state of torpor, but active at night. On this account the natives term them "blind snakes"; they are often trodden upon by the cardamom cultivators, but a certain charm is said to render the poison innocuous. The kádu-bale and kére-bale muri or the jungle and tank Bracelet-snakes have white rings round their dark body, which become visible when the snakes are irritated. They are from 4 to 6 feet in length. The Pachi-balli-murga is dangerous to cattle whilst grazing.

Amongst the innocuous snakes the largest is the Peram-pámbu (big snake) or Rock-snake, a kind of Boa constrictor, which grows to a length of 12 to 15 feet and has in thickness the girth of a man's thigh. It even devours spotted deer and, after the monsoon, is often shot by Coorgs in the cardamom jungles. Next in size is the Black-tank or Rat-snake

(*Kg. karingere*) which catches mice and small reptiles. It frequently lives upon the thatched roofs of native houses and its flesh is eaten by the lower classes. Remarkable for its beauty and graceful evolutions is the green Whip-snake (*Kg. pache-pámbu*), which is commonly seen in shrubs. In native opinion it enjoys the imaginary purity and sanctity of the Brahmin and its skin is said to get blistered by the very shadow of man, falling upon it! An extraordinary forest-snake is the *Kánam-pámbu*, which is said to have a crest upon its head like a cock. The one foot long *Ira-tale* or two-headed snake is considered as capable of progressing equally well forwards or backwards, being gifted with a head at either end of its body. The flying snake or *Páram-pámbu* is very thin, of a brownish black colour and 18 inches long. Equally thin, but shorter is the *Elat-áni-murgu* or writing-stile-snake, which is black with white spots. Other harmless snakes are: the *Billulli*, the *Niru-kuduma*, the *Túra-pámbu* or cane-snake, etc.

The *Batrachians*, or the family of *Frogs*, fill the air with their croaking concert before the monsoon and during the occasional breaks, prognosticating impending rain. There is the large bull-frog, which makes itself heard at night, the common brown frog, which chiefly infests paddy-fields and tanks, and a small green frog, that lives on shrubs and trees; but all of them are feeders on insects, which they catch very cleverly. Toads, very ugly and very large, are found wherever there is a convenient hiding place on damp ground.

The river *Kávéri* and its affluents and the small native tanks and even the paddy-field rills are well stocked with a great variety of *Fishes*, which are caught by every class of natives, who have leisure for and take pleasure in the sport. Shooting, angling, netting, basketing and poisoning with *Cocculus Indicus* are the usual methods of fishing. For the following remarks I am chiefly indebted to Dr. Nash's list of

14 Coorg fishes and Colonel Puckle's "Memorandum" on Fishes about Bangalore.

The queen of Coorg fishes in size and quality is the *Lady-Fish*, *Callichrous* (*Silurus*) *chekra* H. B. or *Bále-mínu* as the Coorgs call it, on account of its resemblance in whiteness and smoothness to the inside of the plantain-tree-bark. They distinguish 3 kinds of decreasing size: the *Patna-bále*, the *Bále* and the *Kincha-bále*. Next in size and excellence of its flesh is the *Black Cat-Fish*, *Clarias magur* H. B.—*Kg.* *Kulla-bare?*—of a dark green colour approaching to blakish purple on the back and fading to a greenish white; it is chiefly reared in tanks, spawns in the mud and is full of eggs in April, May and June.

Similar in appearance and size is the *Black Murl*—*Ophiocephalus striatus*—*Kg.* *Bare-mínu*. It lives in muddy tanks, guards its young till they are about 2 inches long, before which they may be seen swimming in two lines above their parent. It grows up to 2 feet in length and is of a dull brownish green on the sides, darker on the back and whitish beneath. The *Painted Murl*—*Ophiocephalus marulius* H. B. (*Kg.* *Kávéri-bare?*) is a very handsomely marked fish of 4 feet in length; upon the darkish grey ground there are white markings like flowers, hence its name "Flower Murl". It is found in the *Kávéri* and other deep river pools. They spawn in April and May.

The *Black Dhok* (*Ophiocephalus gachua* H. B.) grows to within one foot in length and is commonly found in clear tanks. Its colour is greyish green with irregular herring bone bands of lighter colour. The anal and dorsal fins are dark grey, the edges being tipped with the light green belly colour, but the pectoral fins are dull orange and strongly marked with dark grey dotted bars.

The *Painted Dhok* is like the former in shape, size and colour, but the head is handsomely mottled and banded and 9

or 10 distinct blotched bands below and 8 or 9 dark coloured bands above them run along the sides of the body. The lower jaw is marked on each side by 4 black dots.

The *Stone Loach* (*Nemacheilus striatus*. Day; *Kg.* Pálavari?) is found in sandy and stony river bottoms, where they lie hidden until disturbed or rising for air, when they quickly come to the surface and as speedily return. It is a small fish; its silvery sides and yellowish brown back are dotted with black. There is a well defined dot at the base of the caudal fin, which gives at the first glance the appearance of the little fish having an eye at each end. If well dressed it is fair eating.

The *Manincha* or Malanchi-mínu (slimy fish) is a kind of Eel, that grows to a length of 6 feet and is perhaps identical with the *Murana maculata*. Its flesh is very good eating and highly esteemed by the natives for its medicinal qualities against piles.

The *Indian Trout* (*Garra Jerdoni*. Day; *Kg.* Pandi-mínu i. e. Pig-fish) may be found in all the mountain nullahs; it is about 6 inches long, its head and neck are thick like those of a pig, hence its name. Its colour is a mottled green and grey. It has a suctorial dish under the chin, by which it can attach itself to rocks.

The *Carp or Roach* (*Puntius*) occurs in several varieties all of which are esteemed good eating.

The *Banded Gold-fin* (*Barilius cocsa*) is an exceedingly pretty fish about 5 inches long and found only in shallow running streams. The back is greyish blue, with 8 or 9 lateral darker bands, the sides are silvery with blue reflections and fading to white below.

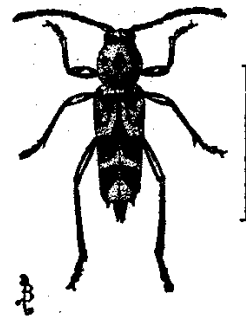
The *Silver-fish* (*Chella cultellus*) is of about the same size as the former, handsomely shaped and covered with brilliant, silvery scales, which are easily rubbed off.

From August till November the flooded paddy-fields give

shelter to numerous little fishes from half an inch to 4 inches in length, the smallest is the bitter Keipe, next the Kumbalakotte, the Koile, the Ponakani and the Avari. They are eagerly caught by the natives who are very fond of fish curry.

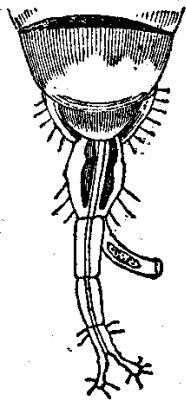
The shells, which I have been able to collect in Coorg comprise the following: 3 species of the Genus *Unio*, 2 species of the Genus *Helix*, the Genus *Melania*, the Genus *Paludina*, the *Cyrena Malaccensis* and the *Cyclophorus excellens*. The *Helicidae* are eaten by the natives.

With the termination of the monsoon the insect world, in its varied and often brilliant array, asserts its dominion in the sunny air, the reinvigorated vegetation, on the placid waters and the warm ground. Then is the time for the entomologist to enrich his collection with fresh specimens of the different insect forms, and certainly Coorg offers a rich reward to the enthusiastic lover of nature. A small collection of Coorg Beetles, sent to a German entomologist, was highly appreciated for the variety and beauty of its species. Almost every family of the *Coleoptera* has its numerous representatives and even a glance over them all, were I able to enumerate them, would be too much for the patience of the reader. Passing over the beautiful family of the *Cicindelidae* or Sand-runners and the still more brilliant *Buprestidae* and *Elateridae*, the powerful family of the *Scarabaeidae* with the giant Stag-beetle (*Lucanus Malabarius*) over 3 inches in length and with light brown elytra; our attention will be arrested by the formidable looking *Cerambycidae* or Long-horns, for amongst this family we find the contemptible and yet terrible little enemy of the coffee planters in Coorg and Southern India generally: the Coffee-Borer (*Clytus Coffeophagus* or *Xylotrechus quadrupes*) of which our woodcut gives a very good representation. The



The Coffee-Borer-beetle
(*Xylotrechus quadrupes*)
slightly enlarged.

full grown beetle is about three quarters of an inch long and the male is considerably smaller; both have an elongated cylindrical body and are equally marked. The head is small and depressed; the eyes are large and brilliant with a small whitish indentation near the root of the antenna, which are of moderate length, filiform, eleven jointed and pointed at the tip, the first joint being thicker and the second shorter than the rest. The mandibles are short, strong and incurved. The prothorax is slightly oval, nearly as broad as long, covered with greyish green minute hairs and marked by three black roundish spots, the middle one being four times larger than those on the sides. The elytra are thin but horny, long and slightly tapering; on a black ground there are three symmetrically curved, greenish, transverse lines and a perpendicular one at the base forming on the left wing with the first curve the letter **y**. The last pair of legs are particularly long and indicate by their strong light brown femora considerable walking and jumping powers; the other joints are black and the tarsi armed with bifid claws. The beetles are most numerous directly after the monsoon, but many stragglers appear all the year round. They are diurnal in their habits, not gregarious or migratory and unaffected by light at night.



The telescopic
Ovipositor, highly
magnified.

They are generally quiescent during the cool hours of the day, reposing on the bark of the coffee stem or under the leaves, but the warm sunshine calls forth their full activity. The female beetle is more plentiful and constantly busy with depositing her eggs on the sunny side of the stem alongside and into the natural fissures of the bark. As the beetle moves over the stem, the ovipositor which is a telescopic tube is in constant activity, sweeping like the finest hair-brush over and into every little cavity, and with unerring instinct she stops at the proper place and

securely fastens one or several eggs; but it is difficult to say how many altogether, perhaps not over 100. The beetle does not attack the tree and dies after a fortnight. The ova, just perceptible to the naked eye and in groups of 3 to 8 appear under the microscope whitish, elongated and pointed at the top and are so securely hidden, that they become visible only on removing part of the corky layers of the bark. The ova gradually enlarge till after 12 or 15 days the white membrane bursts and the young grub of the size of a maggot begins to exercise its mandibles, eating its way into the juicy part of the soft bark and gradually into the hard wood of the tree. It is in this state of the larva that the insect has its longest existence of about 9 months and commits such fearful havoc. The full grown larva is about three-fourths to one inch in length, broadest at the head and tapering behind; of a pale yellow or whitish colour and fleshy appearance. The body consists of eleven segments, has no legs, but some of the abdominal rings have small tubercles on the back, which aid the insect in moving forward. The head is hard, flattened above, of a brown colour and armed with powerful mandibles, with which it reduces the wood to a fine powder for its food and, having passed it through its body, the glutinous powder is accumulated behind and so closely packed, that the tunnel is completely filled up and inaccessible from without. The first working of the larva in and under the bark leaves an unmistakable trace behind in a clearly defined swelling of the wounded bark, which sometimes cracks along the course of the larva. With the growth of the larva the tunnel also enlarges and its progress is in a most irregular manner winding up and down the tree and penetrating to the very end of the tap root, but though there may be as many as 20 or 30 larvæ at a time in one tree, their tunnels do neither coalesce, nor do they emerge on its surface. When near its transformation into the pupa state, the larva turns towards the bark

and often makes a clear horizontal sweep round the alburnum, so that the tree must die and snaps off at the least touch. This last operation of the borer accounts for the sudden sickly change in a tree, seeming shortly before to be in perfect health and frequently occurs shortly after the March and April showers, succeeding a period of very dry weather. The flow of sap in the reinvigorated tree may also induce the larva to turn towards the bark, for, contrary to other boring insects, the Coffee-xylotrechus revels in the most juicy green-wood and dies in a dry stem. In its last lodgement the pupa occupies a spacious cell, prepared by the larva and separated from the outside by merely the bark or a thin layer of wood. The pupa is yellowish white like the larva exhibiting the outlines of the future beetle shining through the covering membrane. In this quiescent state, the head towards the bark, the pupa remains for about two months in its dark chamber, when it emerges from its pupa covering, matures its beetle nature and with its powerful jaws eats its way through the bark, where afterwards a small round hole will indicate its departure, to perpetrate its pernicious work on an extended scale by a numerous progeny. The whole existence of the coffee borer from the egg to the death of the beetle does not exceed 12 months. Its presence in a coffee tree becomes apparent by the sickly look of the tree, the older leaves of which become yellow and the young shoots peculiarly twisted. The formed coffee berries do not ripen and fall off with the leaves and the tree dries up or lingers in a sickly, unfertile condition. Its destructive operations are not confined to particular localities, but spread almost all over the coffee growing districts in Southern India, and the devastations and consequent loss on many coffee estates are the more lamentable, the less chance there is of finding an immediate and reliable remedy. The insect, which is no doubt indigenous, has through various collateral causes, real and hypo-

thetical, such as: the destruction of forests, abnormal seasons, dying of bamboos, disturbance of the balance in the local fauna etc. increased to an enormous extent, so as to render its presence a pest to coffee cultivation since the year 1865, a pest which spread to an alarming degree all over the Province. The removal and destruction of far gone trees, the scraping, rubbing and washing with acids healthy ones, to remove or destroy the ova, the shading in dry localities with permanent shade trees such as the charcoal and jack trees, proper cultivation—these and others are the remedial and preventive measures, recommended by practical agriculturists and also by the Commissioner, whom the Government deputed to investigate this important subject.

A beetle, neither notorious for destructive habits nor particularly useful, but interesting on account of the brilliant phenomenon it affords, when swarming in myriads on trees and shrubs during the warm April and May nights, is the *Fire-fly* (*Lampyris splendidula*; *Kg.* Minambulu i. e. glittering insect). It is not peculiar to Coorg, but in abundance and brilliancy no where else seen like here. A thunder storm, succeeded by a rich shower, has closed a sultry day. The sun has set unobserved. The western sky is overhung with clouds. In the cloudless east, the full moon rises slowly. The air perfectly pellucid, the stars glittering in fresh glory; not a breath of wind; all still. You turn from the broad red orb of the rising moon to the host of golden stars on the deep azure, from them to the massive banks of clouds, lit up here by faint lightnings, there by the pale beams of the moon their bold edges fringed with silver, and wonder at the beauties of the world above, where on the dark blue depths of heaven light seems to vie with light in the illumination of the vast dome, built by the unseen Master. Now, as by magic, a curtain of clouds is drawn over this glorious view above; but a scene of strange beauty is spread below. Shrub

and bush and tree, as far as the eye can reach, burn with fairy light. The ground, the air, teem with lustre, every leaf seems to have its own enchanting lamp. The valley at your feet, the wooded hills at your right and left, the dark distant forest, all are lit up and gleam in ever varying splendour, as if every departed star had sent a representative to bear his part in this nightly illumination of the dark earth. Whence all at once these innumerable lights? No sound is heard, silently all these shining throngs pass before you in fantastic confusion. Look at this bush, that tree! Myriads of fiery sparks brighten up with phosphoric glare through the labyrinth of leaves and branches; a moment and they vanish. Now they flash up brighter than ever, as if this world of magic lustre was animated by pulsations keeping regular time. You sit and look, and think you could sit all night beholding the fairy scene!

Among the membrane winged Insects (Hymenoptera) we must pay a grateful tribute to the *Honey-bee*, for the Coorg honey is plentiful and of an excellent flavour. Some bees build their hives in hollow trees (Tude-jénu) some in rocks (Hed-jénu) others on shrubs (Kólu-jénu), they are most frequently found in Surlabi-muttu-nád, in Yeddava-nád, Gaddi-nád, Mudikéri-nád and Kiggat-nád, where I saw a rock called Tembare, on which from 200 to 300 beehives are to be found. In the forests on some trees, especially the Gony-mara, there are from 100 to 200 hives. A jungle tribe, the Jénu-kurubas, gather the honey in the month of June. Having hit upon a hive in a hollow tree, they tie a bamboo, the short cut branches of which form a convenient ladder, to the tree during the day time and at night, provided with a basket attached to a long rope and lined with leaves, they climb up with a strongly smoking torch which they hold near the hive. The alarmed and half stunned bees fly away and their honeycombs are removed and let down in the basket. Whilst thus eng-

aged, the Kurubas have a peculiar song, made for the occasion and expressing their feigned sympathy with the spoliated bees, so rudely disturbed of their nightly rest. The Kurubas sell the honey at $2\frac{1}{2}$ seers for the rupee. The wax has to be delivered for a pittance to the contractor of jungle produce, who as Government agent is alone entitled to sell it at the rate of $2\frac{1}{2}$ annas per seer of 24 rupees weight.

Wasp and Hornet-nests, suspended from trees like inverted cabbage-heads, are frequently met with in jungles and are better left alone, for their inmates attack any intruder with painful stings. Small and large Ants of a black and red colour are very numerous and maintain the ferocious character of the family, pursuing the disturber of the domicile of their bustling community and inflicting severe bites upon the unfortunate victim. They play an important part in the cleansing and purifying department of the economy of nature. Their structures, domestic economy and transport operations of objects many times larger than their own bodies, excite admiration.

Of the numerous and most beautiful family of *Lepidoptera* or *Butterflies* and *Moths* Coorg presents a goodly show, but though fine collections of them have been made, their classification is still uncompleted. With the close of the monsoon the Lantana hedges and especially the sandy banks of streams seem to be the rendezvous of a great variety of butterflies, of which some are distinguished for their size and brilliant colouring. Three species of similar size and shape chiefly attract our attention: the with black velvety upper wings of about 6 inches in width and light blue under wings; the with similar upper wings and the swallow tailed lower wings ornamented with a pale yellow satin-like spot; the most beautiful, however, is the the black upper and lower wings of which are dotted all over

with minute brilliant green little dots, in addition to which the tailed lower wing is marked with a brilliant greenish blue large spot. A darting showy butterfly is the green mottled A slowly moving but high soaring butterfly is the large winged yellow speckled Distinguished amongst the moths for the swiftness and power of their flight are those that appear in the twilight (Crepuscularia), called Hawk-moths, which include the remarkable Death's-head-moth, the Sesia, the Sphinx of the vine, of the oleander, the caterpillar of which I found in great numbers on Cinchona trees, and many others. Amongst those that come forth at night (Nocturna), the largest perhaps amongst all the moths is the Atlas a beautiful specimen of which I caught only a few days ago on a Lantana hedge and which measures nearly 10 inches across the wings; the ground colour of the wings is a warm brown, with reddish brown curved bands faced by white black lines dividing the wings nearly into halves, a similar band running across the body and a little over the wings with an outward curve. The whole space encircled by these bands is of a deeper brown colour and ornamented by four triangular transparent mica-like spots set in black rims and by a small, elliptical second spot on each of the upper wings. These are curved downwards, tipped with an orange band and a black eye, which gives the extremities of the wings a striking resemblance to a serpent's head. The upper wings are edged with a fine black wavy line and the lower wings with black dots surrounded by yellowish bands. The male is of a darker hue than the female and whilst the antennæ of the former are broad bipectinate and like a feather in miniature, those of the female are narrow. Another large and beautiful moth of the same group is the greenish-white swallow tailed *Lithosia sanguinobuta*, 6 inches in width. Its upper wings are orna-

mented with a crimson line on the front edge and two lunular ocelli or spots of a black and crimson, shading off into a pale rose colour; the lower wings, which terminate in long twisted tails, are marked with similar spots. The Bombycidae, to which the former moths seem to belong are represented by several other fine species, especially the genus *Saturnia*. There are some moths, of a light brown colour, belonging to the same genus, the caterpillars of which attach their silken cocoons, to the branches of the "*Careya arborea*". They are chiefly found in the open parts of Kiggatnád, and the trees are sometimes covered with clusters of these pale yellow cocoons. The thread of this silk is so interwoven and gummed together that the cocoons seem to be worthless for any practical purpose.

The larva of the *Zenzera Coffeophaga*, commonly called "Red Borer" on account of its colour, is found in coffee and young *Casuarina* trees. It burrows its tunnel chiefly along the pith, leaving an open communication with the outside of the tree through which its globular woody excrements are discharged and which betray the active enemy within. A wire run up through the hole or stopping up the orifice with a peg are the safest means for destroying the insect, which otherwise is apt to take a horizontal turn in its progress and thereby to cut off the upper part of the tree. Its devastations are however insignificant compared with the "White Coffee-Borer". It is not usual to find more than one red borer in a tree. In its chrysalis state it is enveloped in a delicate silken cocoon. The moth measures about three-quarters of an inch across the wings which are pure white, and spotted with small dots of a bluish-black. The body is marked with a large black spot and the abdomen with rings of the same colour. The antennæ of the male are bipectinate to about their middle.

Still more destructive to young coffee plants is the

“*Ringer*”, the larva of the moth *Agrotis Sagetum*, as identified by Dr. Bidie. At times it multiplies to such an extent, that many acres of young coffee are rapidly destroyed by it, unless checked in its devastating course. The “*Ringer*” gnaws off a circle of the bark just above the ground, stops the circulation of the sap, and thus of course kills the plant. The grub is an inch in length, of a greyish black colour and lives in the ground. Its agency for evil is active only at night time when its natural foes, the birds etc. are at roost, and vegetable gardens, especially when planted with beans and potatoes, are equally subject to its attacks, which are only checked by digging it up close to the destroyed plant, or by applying quicklime to the ground. The moth measures about one and three-quarters of an inch from wing to wing. The upper wings are of a clouded brown and the lower pair of a greyish or bluish white colour. The Charcoal tree (*Sponia Wightii*) is infested by the larva of the family *Hepialidæ*. It is a very lively creature from 3 to 4 inches long, pale red, with 8 pairs of feet. Its large burrow in the tree is easily detected by the protruding bag-like cover over the entrance, consisting of a texture of threads mixed up with powdered wood. The moth, when in repose, bends down its greyish brown wings which measure nearly 4 inches across.

Of the *Hemiptera* or halfwinged insects there are some brilliant but disagreeably odoriferous species. The white and the black bug have come to notice by their attacking coffee, but the brown or scaly bug (*Lecanium Coffeæ*, Walker) is the more dreaded species. The male as is usual with moths is innocuous save as the progenitor of evil, but the female after feeding on the sap of the tender shoots or bark, scatters its hundreds of eggs over the coffee tree, the branches of which are soon covered, and the foliage greatly suffers, while part of the berries turn black and fall off. The bug generally first appears in some sheltered damp ravine, but rapidly spreads

over an estate and after 2 or 3 seasons disappears leaving the trees in an exhausted condition. Still it is not so much dreaded as the "White Borer"; for the bug-covered trees recover with propitious weather, and sometimes appear to compensate their owner for the temporary curtailment of produce by an unusually heavy crop.

Amongst the clamorous *Chirpers* the large Cicada or "Knife-grinder" is conspicuous for the tremendous noise which it creates on a sunny day in a bamboo-clump or in a grove on Báne land. It is nearly three inches in length.

The *Diptera* or two-winged insects are largely represented and some much dreaded, such as the Gadflies and Musquitoes (*Culex irritans*) which torment man and beast.

The Blue-bottle, like the vulture, makes its mysterious appearance, wherever animal substances are decaying. The common House-fly is at times very numerous, but its beneficent moisture absorbing services are hardly appreciated. Just before the monsoon Fleas (*Pulex irritans*), which are at large, seem to seek a sheltering abode in houses and become a great nuisance, but with the cold weather they make themselves scarce. Passing over the beautiful Dragon flies,

"That flutter round the Jasmine stems,
Like winged flowers or flying gems,"

our attention is arrested by the destructive Termite or White Ant, which also belongs to the order *Neuroptera* or nerve-winged insects. White ants are not so numerous in Coorg as on the coast, but buildings in the province are not free from their attacks, which they carry on in the light excluding mud-galleries which they construct on every exposed substance, they seek to consume. Their conical shaped mud-nests, which are sometimes 10 feet high, deserve the name of ant-hills, if compared with the tiny insect-architect. They are frequently seen in the dry Kanawé district, where the bark and alburnum of sandalwood trees seem to have great attrac-

tions for the white ant. The habits of the Termites have been exhaustively described by Kirby and Spence, Dr. Lardner and other naturalists.

The order *Orthoptera*, or straight winged insects, contains besides the familiar Cockroach, silvery grey Fish-insect or *Lepisma*, Cricket, Grasshopper and Locust, some singular looking creatures, namely: the "Walking-sticks", the "Leaf-insects", and "Mantis" which are not unfrequently found in Coorg. The "Walking-sticks" or spectres (*Phasmidae*) closely resemble a vivified twig. When at rest the two pairs of posterior legs lie close to the slender body and the two anterior legs are joint and projected, covering with the 5 inches long body a space of 10 inches, at least in the specimen now before me. It is but seldom provided with wings; the long legs are three jointed and the femurs armed with short spines. The "Leaf-insect" (*Phyllium siccifolium*) is nearly 5 inches in length and midway 2 inches broad; its bright green body is on both sides expanded like a leaf and on it rest the two reticulated green wings, joining their back-seams like the mid-rib of a natural leaf, from which the opposite side-ribs branch off at regular intervals. The first two joints of the 6 legs are likewise green and expanded like the petiolar stipules of the lime tree; the last joint is short and provided with claws. The head is rather large and depressed, the eyes protruding and yellow, and the antennæ very short. In the *Mantis* or praying insect, the front limbs are folded as in the attitude of prayer. With these sabre-like forelegs the reputedly sanctimonious mantis entraps and decapitates the small insects on which it feeds. When two "Mantis" are placed opposite each other, they will fight with extreme ferocity like a pair of game cocks. A most extraordinary species is the dry-leaf-mantis which seems to be a compound of the three before-mentioned insects. It has the forelegs of the "Mantis", the thorax and posterior legs of the "Walking-stick" and the

wings of the "Leaf-insect", with some peculiarities of its own. The head, with its large elliptical protruding eyes, its horn-like appendage and filiform antennæ, has a formidable appearance, which is heightened by its erect position as it bends upright the expanded protorax and puts forth its powerful long forelegs; the torax is like a thin stick one inch long, and the wings which overlap each other and are bent downwards resemble a withered leaf. The long legs have at the extremities of the first joint a lateral expansion of the same colour as that of the whole insect, which is a light-brown.

Amongst the *Aptera* or wingless insects we need only mention the Centipedes and Millepedes which are rather numerous in Coorg, especially the "Scolopendra" the bite of which causes severe pain and the "Julus" which is frequently found under the bark of trees, coiled up like a watch spring. Other unpopular parasitic genera, comprised in this order and which are coextensive with man's habitation, are not wanting in Coorg, especially among the uncleanly low caste people.

The *Arachnidae* or Spiders and Scorpions have also their numerous representatives. The "Coorg Spider" abounds in all parts of the province. Its central globular black body is supported by 8 hairlike $2\frac{1}{2}$ inches long legs, which give it a ghastly appearance. These spiders are gregarious and haunt dark and damp places, where often thousands are crowded together forming one black mass, which, if disturbed, disengages itself with astonishing rapidity and spreads in every direction.

The yellow banded spider is an interesting object for observation, as it spans its extensive curious web on sunny thoroughfares, watching in the centre for its prey and rushing at the least vibration along the disturbed thread, to catch the unfortunate intruder. The largest spider perhaps in existence is the "Mygale" which lives in the ground. The one in my possession is from a coffee estate. Its body is two inches

and a half in length and one inch broad and the longest leg over 3 inches. The upper mandibles terminate in downward curved horny claws, with which it wounds its victims, the poison being conveyed through the perforated claws. It is of a greyish colour alternately marked along the legs with pale yellow and black bands. The creature is covered with grey bristles which are longest on the legs.

Scorpions (*Can.* Chélu), especially the large greenish black kind, are frequently met with on damp ground under large stones or near decaying trees, where they attain a size of over six inches in length. Their sting is very painful and the wound causes a considerable swelling of the injured limb that lasts for several days. The smaller greyish-yellow kind occurs chiefly in damp rooms and its sting is less painful.

The class *Crustacea* has its representatives in several kinds of Crabs (*Can.* Nalli), that live under stones, in streams (kallalli), in paddy-fields (hullalli) and on damp ground (mandalli), and are eagerly eaten by the natives. A mother of the Yeddavanád people will exhort her children with the proverb:

“Eat Kallalli and you will become a clever man;
Eat Hullalli and you will become brave as a tiger;
Eat Mandalli and you will become master of the house.”

The land-crabs often do great mischief to cultivation, especially to coffee-nurseries in damp ravines.

Of the *Annelides* the “Coorg Leeches” (*Can.* jigini) impress themselves on the memory of every one who ventures during the monsoon into the jungles. They are from one to two inches in length, very slender and astonishingly swift in attacking their victims. Thousands of leeches seem to keep right and left watch for the approaching wanderer, walking along a jungle pathway, and should he stop for a moment, the bloodthirsty creatures make up to him in their peculiar doubling-up way of progress from every quarter, and woe to

him, should they unobserved gain access to any bare part of his feet; they will bleed him unmercifully till he feels the blood trickling down. The wounds produce with some constitutions festering sores. A simple means for keeping them off is a little salt-bag round the ankle. The medicinal leech (*Can. atte*) is also found in tanks and made use of in the Hospital.

3. Meteorological and climatic conditions of Coorg.

Though Coorg is but a small country, yet its high mountain ridges and narrow valleys, its wood-clad hill slopes and open champaign tracts greatly influence the atmospheric conditions of the locality. Still the dry eastern or Kanawé district may in the mean present as constant a climate as the moist hilly tract along the Ghats or the Mercara plateau. We have to distinguish the hot, the rainy and the cold season, though throughout the year the atmosphere is not without humidity which is precipitated either in dense mists or in showers of rain. From the end of December to the end of March, rain, indeed, is scarce, but in the mornings and evenings the valleys are seldom free from fogs or dews. During these months the dry east wind prevails, which has long ceased to carry remains of north-east monsoon clouds to the Western Ghats. Towards the end of March the clouds begin to collect towards the south-west and the cooling sea breeze blows with more regularity over the Ghats. In April and May the sun increases in power, banks of massive clouds extend along the western horizon, and occasional thunderstorms and showers, indicating the approach of the monsoon, cool the atmosphere which is warm and moist. The thunderstorms during this season are even more impressive than in the low country. Mountains of clouds, in double and treble ranges, float against each other with the order of armies. The sound as of heavy

cannon is heard from a distance; solitary discharges of the electric fluid shoot through the gloom. Now whole batteries seem to be in action; peals of thunder are heard at brief intervals, and the eye shuts involuntarily against the dazzling brilliancy of the lightning. Then the conflict seems to subside, the roar of thunder is heard at greater intervals, the flashes of lightning lose their intense and fearful glare and the rain pours down in torrents.

Towards the end of May the clouds take up a firm position in the western sky and grow in massiveness. In June the rapport between the western sea and the atmosphere of Coorg is fully established. Rain prevails, descending at times softly, but more frequently with great violence and heavy gusts of wind. In July the monsoon reaches its greatest vehemence. The clouds seem to be inexhaustible, the blasts of the wind irresistible! As much as 74 inches of rain have been registered within this month, and for several days in succession 5, 6 and 7 inches within 24 hours! The sun is often not seen for weeks, and existence in the province would be as dull and gloomy as the clouds overhead, did not the inhabitants adapt themselves to circumstances and learn to make light of the incessant downpour. But it is pardonable if one is sometimes tempted to envy those favoured few, who may bask all the while in the mild sunshine of pleasant Fraserpet, the monsoon-head-quarters of the Superintendent, 20 miles to the east of Mercara, where the roaring Kávéri river and an occasional shower from the fringe of the monsoon clouds are the only signs of the rainy season in the highlands. In August the rain is considerably less and a few days break with an open sunny sky, atones for all the past discomforts. The ancient Coorg hills send the floods controlled by steep river banks to the east and west and stand forth in renewed beauty. In September the sun breaks through the dense atmosphere. In October the north-east

wind strong and cold, gains the ascendancy and clears the sky; in November, however, it often carries heavy clouds from the eastern coast, which discharge themselves chiefly upon the east and south-east of Coorg. The greater part of December is foggy, but towards the end of the month the weather becomes delightful, clear and fresh, the thermometer falling to a minimum of 50° .

The meteorological observations in Coorg are almost confined to Mercara, the principal station. From the tables in the appendix which are based upon my observations for 7 years, the following facts may be deduced for the meteorological condition of Mercara, near the Central School. The mercurial barometer shows its maximum height during the hot weather months and reaches $26^{\circ} 60'$ and its minimum during the monsoon, when it falls to $26^{\circ} 15'$. The thermometer indicates a moderate temperature, owing not to the latitude, but only to the elevation of the country. During the cold months, from October to January inclusive, the daily average variation ranges over 24° Fahrenheit between the extremes, giving a daily mean of 65° ; during the hot weather months, February to May inclusive, the daily mean temperature is 70° , deduced from the average extremes 57° and 82° which show a daily variation of 25° ; during the monsoon, from June to September, the temperature is most equable, moving between the extremes 60° and 75° which leave only a daily variation of 15° and a daily mean of temperature of 65° for these months.

The prevailing winds are: west wind just before and during the monsoon; north-east wind directly after the monsoon; and east to south-east wind during the remaining season.

The percentage of humidity, as exhibited by Dr. Bidie in his "Report on the Ravages of the Borer", varies between 48 and 87, the minimum occurring in December and the

maximum at the end of September; very gradually and steadily rising 10 cents from January until May, when with a bound it increases 10 cents in May, 5 cents in June, 5 cents in July, and after a decrease of 5 cents in August it reaches the maximum of 87 cents in September, falls 10 cents in October, 10 in November and 22 in December, when it attains its minimum.

The mean annual rainfall for the past 7 years amounts to 123·80 inches of which at a monthly average 1·90 inches fell during the hot, 26·43 inches during the monsoon and 2·64 inches during the cold season. According to the scientific theory of the south-west monsoon, the rainfall in Coorg would seem to be entirely dependent on the geographical position and geological configuration of the country, but practical experience attests the fact, which is also corroborated by the annexed pluviometrical table, that the rainfall has for the last four years been steadily decreasing and the cause is attributed to the extensive denudation of forest-clad hills for coffee cultivation, contemporaneously with the natural decay of all the bamboos in Coorg. The same amount of vapours as in former years may be carried from the sea over the Ghats, but the local power of attracting the rain clouds has diminished with the disappearance of the forests. No one who has attentively watched the sailing of clouds over partially wooded hill-tops can have failed to observe their lingering hovering-over and descent upon the forests, whereas over the bare hills the clouds sweep past with unimpeded velocity. The rains are neither as heavy, regular or continuous, as they used to be, and since there is less rain sinking into the ground and the retaining qualities of the soil have been reduced by the extensive clearing of forests and jungles, there are fewer springs and shallower streams and the country in general has become drier. Were it not for the incidental droughts, injurious to coffee planting, and

the increasing difficulty of rice cultivation in some parts of the country, the change might be hailed as a most welcome improvement in the Coorg climate, which for the sake of human health might be still less loaded with moisture.

On the whole the influence of the Coorg climate with its average temperature of $66^{\circ} 6'$ is salubrious. The nights are cool throughout the year and Europeans are able to take exercise in the open air at all hours. European children in particular enjoy excellent health and their fat rosy cheeks form a striking contrast to the thin pale faces of those in the low country.

The rarified, often cold and damp air of Mercara with the usually prevailing high winds, necessarily does not agree with asthmatic and bronchial affections, chronic disorders of the liver and dysenteric complaints, but Fraserpet, which is 1,000 feet lower than Mercara, affords a salutary change during the rainy season.

The native troops, especially new arrivals from the low country, suffer much from the cold and damp and are, during their first year of acclimatization, subject to fever and bowel complaints, but in time even they enjoy the bracing climate of Mercara.

The climate of the valleys, particularly during the hot months preceding the monsoon, when, as the natives say, the old and new waters are mixed, is far from being healthy. Fevers, agues and bowel complaints are then very frequent and protracted. For the rest of the year the natives of the country pronounce the climate to be excellent especially after the monsoon. Besides the dreaded Coorg fever, which appears in its worst form, especially to Europeans, in the vicinity of Atur in south-east Coorg and about Sampáji on the western boundary, small-pox has laid a fearful hold upon the natives though vaccination is much in vogue. Cholera but seldom makes its appearance; and yields readily to treat-

ment. A peculiar ulcer-disease on the limbs has lately been rather prevalent about Virajpet, which is ascribed to impoverished blood, for want of nourishing animal diet.

The account which natives of Mysore or from the Western Coast give of the climate of Coorg is not favorable. They have experience on their side. Of the large number of people, whom Tippu sent from Mysore to replace the ancient inhabitants, or who during the various wars were carried off by the Coorg Rajahs from the neighbouring countries to cultivate their lands, but few survived the change. In our days the thousands of Mysore coolies who annually emigrate to work on the Government roads or on coffee estates stand the climate much better, care being bestowed upon them and a periodical return to their homes being rendered practicable.

4. Cultivation of the principal productions.

Native agriculture in Coorg, as elsewhere in India, is still carried on as it was centuries ago. A system of rural economy, formed at a remote period and transmitted for ages unchanged, is not likely to be disturbed by so conservative a people, as are the Coorgs.

Rice is the staple product of Coorg. The numerous valleys throughout the land have, from ancient times, yielded an unfailling supply every year for home consumption and for exportation to the Malabar Coast. The rice-valleys are most extensive in South-Coorg, in the neighbourhood of Virajpet and in Kiggatnád, where some fields are of considerable breadth and several miles in length; but owing to the surrounding low, deforested hills which yield little fertilizing detrition, the soil is of a quality inferior to those fields of the narrower valleys near the Ghats, where the ground is terraced at considerable pains, but every field large enough for the use of the plough. The lower and broader fields of a

valley, having a rivulet running through them are called "Beilu-gadde," and those terraced up along the sides and chiefly depending on the rainfall are named "Maki-gadde."

The rice cultivated throughout Coorg and in general use is the large grained "Dodda-batta", which is also exported. A finer and more agreeable kind is the small rice "Sanna-batta" and a red variety the Késari; for parched rice they use the "Kalame".

Except in a few valleys in North-Coorg, there is annually but one rice crop, but its return is so rich, that the ryots may well be satisfied and allow their wretched cattle rest and their fields to lie fallow or to "sun themselves," as the natives say, for the remainder of the year. Whilst in the low country and also in some parts of North-Coorg the average return of one crop is from 10 to 25 fold, that in most parts of Coorg proper is from 40 to 60 fold, and in seasons of extraordinary fertility even from 80 to 100 fold, which exceeds by far the famous fertility of Egypt!

The agricultural implements are few and of the rudest kind. The plough, constructed by the ryot himself, consists of a Sampige-wood ploughshare, with an iron point, a handle of Pali-wood and a pole of palm wood for the yoke, and is so light, that the farmer carries it to the field on his shoulders. Its value hardly exceeds one rupee. The Tawe which answers to our English harrow is generally a simple board to which a split bamboo is fastened to connect it with the yoke. The driver standing on the board adds to the efficiency of the operation, be it for pulverizing dry ground, as in the Múdu-shime or eastern district, or smoothing and levelling the wet fields. A strong sickle and a mamoti or hoe complete the stock of farming utensils. To cultivate 100 butties of land, which is equivalent to an area yielding 100 butties at 80 seers by measure of paddy, or rice in the husk, a farmer requires either a pair of bullocks, or a pair of buffaloes, one

plough and two labourers. On Monday he does not plough with bullocks, but buffaloes only, considering Monday as the day of the bullock's creation.

Whatever of cattle manure and dry leaves has been collected during the year is in the dry season carried by the women to the fields in large baskets and deposited in little heaps which are there burnt and the ashes are subsequently strewn over the ground. With the first showers in April and May the ploughing commences. On a propitious day before sunrise the house-lamp—Táli-akki-balake (dish-rice-lamp)—which plays a conspicuous roll on all festive occasions, is lighted in the inner verandah, the housepeople assemble and invoke their ancestors and Kávéri Amma for a blessing; the young men make obeisance to their parents and elders and then drive a pair of bullocks into the paddy-fields, where they turn the heads of the beasts towards the east. The landlord now offers cocoanuts and plantains, rice and milk to the presiding deity of his Nád, and lifting up his hands in adoration to the rising sun invokes a blessing. The oxen are yoked and three furrows ploughed, when the work is finished for that morning. Of the turned earth they take a clod home to the store-house or granary praying Shiva to grant them a hundred-fold increase. This recognition of the source of material wellbeing, is followed by personal industry that should command success.

From 6 to 10 in the morning the ploughing is continued till all the fields are turned over 2 or 3 times. Then the borders are trimmed, the channels cleaned and the little banks between the fields repaired, to regulate the water.

By the end of May one part of the fields which commands a permanent water supply and which has been well manured, is prepared for a nursery by repeated ploughing and harrowing, whilst the whole field is submerged. For every hundred butties of land from 2 to 2½ butties of grain are required for

seed. The seed paddy is heaped up on the north side of the house, watered for 3 days, then covered up with plantain leaves and stones, till it begins to sprout. The nursery ground has meanwhile again been ploughed and harrowed, and the water allowed to run off, so that the grain when sown is just imbedded in the soft mud. After 20 or 30 days the blades have attained a height of about one foot and the seedlings are ready for transplanting. Beautiful as are corn and clover fields in Europe, there is no vegetation there that surpasses in beauty the brilliant green of a rice nursery. The eye is irresistibly attracted to these bright spots and rests upon them with the utmost delight!

Regulated by the monsoon rain the rice-transplanting takes place during July and August. The women, covered with leaf-umbrellas, called Goragas, that rest on the head and protect the whole of the body, pull out the plants from the nursery, tie them in small bundles, which are collected in one spot. Meanwhile the submerged fields are repeatedly ploughed and levelled with the Tawe, "till the soil is soft as treacle, white as milk the foaming surface," when all the men of the house, placed in a line and standing almost knee deep in the muddy fields, begin the transplanting in which women are not expected to join. The bundles are conveniently deposited over the field; each man takes a handful of plants at a time into his left and with the right hand presses with great rapidity 6 or 8 seedlings together into the mud, keeping a regular distance of about 6 inches. Before the completion of the largest field an open space of about 10 feet wide is left throughout the whole length. This is the Coorgs' race-ground and offers right good sport which greatly exhilarates their monotonous task. All the men engaged in the work—and 15 are reckoned for a 100 butties of land—may run, but 4 or 5 only obtain a prize. Wearing merely a pair of short drawers, they are eager for the run, for which their powerful

legs well qualify them. The sign is given and away they scramble and plunge and stagger in the deep mud and roars of laughter greet the unfortunate wight who tumbles into the mud. Having reached the opposite bank, they return the same way, and hard is their struggle close to the winning post. The first comer is rewarded with a piece of cloth, the second with a bunch of plantains, the third with a jack-fruit, the fourth with a basket of oranges and the fifth with parched rice. When all the fields are planted, a feast for the people is given by the landlord.

As a protection against the evil eye, some half burnt bamboos about 6 feet high are erected in a line throughout the middle of the fields. It is now the farmer's business, to regulate the water supply of each field and to fill up holes made by crabs in the embankments. Also the weeding is attended to and any failures are replanted. At the end of October, when the ears of the grain are fully out, huts on high posts are erected, one for every 100 butties, for the watchman who guards the crop against wild beasts and occasionally fires off a gun. In November or December the paddy gets ripe and the feast of first fruits or "Huttari" is celebrated, after which the paddy may be reaped. The water is drained off the fields, the paddy cut down with sickles close to the ground and spread out to dry; after 5 or 6 days it is bound up into sheaves and carried home and stacked in a heap, the ears turned inside. In January or February, chiefly in moonlight nights, the sheaves are taken down to the threshing floor, spread round a stone pillar, fixed in the middle, and trodden out by bullocks and buffaloes, when the paddy is winnowed, the best quality reserved for seed and the rest stored up in the granary, already described, for home consumption and for sale, the price varying from 2 to 4 Rs. a butty. A threshing machine, lately introduced by Lieut. Mackenzie, excited the astonishment and admiration of the

natives; but the handlabour of two coolies for turning it appears to them too severe and impracticable for large quantities of paddy. A winnowing machine would find greater favour.

The cultivation of Cardamom is to a great number of Coorgs next in importance to that of rice, and the possession of a fine cardamom jungle is regarded as a mine of wealth. In the time of the Coorg Rajahs and for some time after, cardamoms were a Government monopoly, and the cultivators had to sell their produce at a fixed rate to the Sircar, receiving from 12 to 20 rupees per maund of 40 seers dry capsules. Now the jungles are held from the state on a lease of 10 years, at 3 lacs of rupees, but this revenue to Government has not yet reached the amount, cleared by the Rajahs which, owing to their monopoly of selling the spice, rose as high as 80,000 rupees per annum! Any jungles that are not disposed of at the lease-auction, are worked by the ryots for Government.

The Cardamom plant (*Elettaria cardamomum* *Kg.* yélaki) grows spontaneously in the evergreen forests or Males along the Ghat-line and its spurs at an elevation of from 3,000 to 5,000 feet. Still, nature requires a certain stimulus to produce the plant in greater abundance and this is effected by a singular process, but though perfectly empirical on the part of the natives, no doubt it is based on a natural law which holds good in many other instances, where seed is kept in the ground in a state of vitality for a long period, till such a change in the climatic condition is brought about, as will favour its germination and subsequent growth. Of many other instances besides the cardamom, I need only mention: the Mexican thistle (*Argemone Mexicana*), the white weed (*Ageratum cordifolium*) and the charcoal tree (*Sponia Wightii*), all of which spring up spontaneously on newly cleared or broken, but favourable soil.

The cardamom requires a rich, moist soil in a bracing hill-climate, accessible to sea breezes and favoured by deep shade and partial sunshine. A western or northern hill-slope offers the greatest advantage. A working party of about 10 men start for the forest in February or March; and the site for a garden being fixed, one of the largest trees is marked for felling; a temporary hut is built on a convenient spot and operations are commenced. The smaller trees and brush-wood are cut down to some distance round the giant tree, that is to be felled, and a platform some 10 feet high built close to the tree on the upper slope. This part being completed, the party sets out early next morning with 4 good axes and, standing on the platform, a pair of cutters, generally Kudias or Yeravas, belabour the tree with all their might. When tired they are relieved by their comrades. Their work must be finished by noontide or they are unlucky. At noon the front part of the tree is cut and at last some strokes are given to the side facing the high ground; the tree now trembles bends over and topples down the side of the hill, with a thundering crash, carrying down in its precipitate fall a number of smaller trees. The thorough shaking of the ground is the essential object of this operation. A piece of ground thus prepared is called a garden and according to the size of the large trees the party may cut down more than one in a day and clear as many as four or five gardens.

Within 3 months after the felling of the tree, the young plants shoot up all over the ground, shaken by the fallen giant especially near its stem and roots, and reach a height of one foot with 8 or 10 leaves within the first year; in the third year they will be 4 feet high and require a little culling, whilst previously one annual weeding is all the necessary work. In April of the third year the fruit bearing racemes shoot forth from the ground; they are alternately covered with short-stalked, beautiful, pale-white, solitary flowers of a

lion mouthed shape, marked with purple-violet stripes in the centre. The numerous angular black seeds are closely packed in oval trivalvular capsules of a yellowish white colour and, if bruised, have a pungent aromatic taste. On this account and for their cordial, stimulant properties they are much in use as an agreeable spice and as a cough and vomiting allaying medicine.

The capsules ripen in September or October, when the crop is gathered and being the first, is dedicated to the deity and called Déva-cottu (God's gift). A full harvest, however, is collected only in the fourth year and the plants may continue to yield a good crop for seven successive years, when on their decline they are reinvigorated by the felling of another tree on the top of them. According to the number of fruit-bearing racemes on one stem, which amount from one to four, the crop is estimated as a quarter, half, three quarters and a full crop. The perennial stem of the full grown plant is erect, jointed and from 6 to 9 feet high and enveloped in the sheaths of the 1 to 2 feet long lanceolate leaves.

The yearly gathering of the cardamoms is attended with much hardship, especially when the gardens are not in Umales, i. e. hills near the úru or village, but far away in the Gademales. The high and sharp edged hill-grass is in October infested by innumerable leeches and poisonous snakes.

The cardamom gatherers, consisting of a party of Coorgs with their coolies of the Páleya, Kudiya, Yerava and Kuraba caste, (the Holeyas are not permitted to set their foot on those grounds) first set up a camp near the garden. A hut thatched with the long hill-grass is erected. At night a fire is kindled and the men sleep around it. Early in the morning they are at their work. One party clears the ground of weeds, the other cuts the fruit branches. Each man gathers a good load into his leafy basket formed of the Netti-mara and returns

to the hut before sunset. After a hearty meal, they pick the capsules from the branches, an operation that keeps them up till late at night. With the dawn of day the men set out again for the plantation. The master remains. At noon the women of the house arrive; the picked cardamoms are measured into bags which they carry home to the drying ground. In the Gade-males the cardamoms are dried on the spot on a bamboo mat in the open but near a sheltering hut in case of rain. They are thinly spread and require but 4 days' hot sun to dry; further exposure would cause the capsules to burst, which is avoided. Before the capsules are ready for the market, the fruit-stalks are rubbed off, and all impurities removed. When assorted according to size and colour, they are stored away in closed baskets in a dry room, to preserve their aroma. Mopla traders or their agents visit the Náds at this time with a stock of bright handkerchiefs and other attractive finery for the Coorg women and make many a good bargain.

Some Coorgs gather from 30 to 50 maunds in weight of dry cardamoms, one maund (equal to 1,100 rupees in weight) is worth from 50 to 65 rupees in Coorg. The average produce of one garden of a quarter of an acre in extent may be estimated at 10 seers of dry cardamom. The contingent expenditure is insignificant. With more systematic cultivation seedlings and roots might be transplanted, and by trenching, manuring and irrigation, the produce might be greatly increased in quantity; but the owners of cardamom jungles require to have them on a longer lease, to make such extra expenditure remunerative.

Coffee cultivation.—There are but few Europeans and natives in Coorg, who are not interested in coffee cultivation. As the rush to the Ceylon Coffee-districts before the memorable years of 1847 and 1848, so has been the influx of European settlers to Coorg for the last 8 years. Their number is

now over fifty and the change already effected in the appearance of the country would surprise one who left Coorg 10 years ago. The capabilities of the province as a coffee-growing country have long been known to the natives, and it is a matter of surprise, that the European enterprise did not enter on the field till a much later date. It is conjectured that in the time of the Coorg Rajahs some Moplas, to whom they had given land near Nalknád, introduced the shrub from seed, which was brought from "Mocha" or perhaps second hand from Munzerabad. Its successful and profitable cultivation was at first concealed from the Coorgs, but these were shrewd enough to find out for themselves, that, whilst none of the fabled fatal consequences followed the cultivation of the shrub, there was a ready and lucrative sale for the produce. Through the exertions of the first British Superintendent, Captain LeHardy, who took a deep interest in the material prosperity of the country, the coffee plant became almost universal, and now there is hardly a Coorg or any native house, that does not pride itself in a coffee-garden, comprising, it may be, a few trees or as many acres.

The native mode of cultivation was exceedingly simple. The plants, reared from seed in a nursery, were in the monsoon put out on a shady hill-slope, the underwood of which had been previously cleared away. An occasional weeding was all the attention bestowed upon the plants which in 3 or 4 years, according to the density of the covering shade, gave a promising crop, that was picked, dried and disposed of in the husk to the merchant, as they did with their cardamoms, the price of dry cherry coffee averaging from 7 to 10 rupees per batty of 80 seers measure.

When coffee cultivation was taken in hand by European skill and energy, the industry soon assumed greater importance. Mr. Fowler, the first European Planter, opened up the Mercara Estate in 1854, Mr. H. Mann became the pioneer on

the Sampáji Ghat in 1855, Dr. Maxwell opened up the Perambadi Ghat estates in 1856, and in 1857 Mr. Kaundinya founded Anandapur village with a most promising plantation in the Bamboo district. Round these first centres of cultivation dozens of extensive estates sprang up within a short time. Every one who beheld a hill-side, covered with the rich, luxuriant coffee shrub was bewitched by its golden promises. Here seemed to have been discovered the Eldorado of honest industry in a delightful climate and home-like country! Natives too, enriched by the sale of forest land, followed the example of the European planter, and opened up large estates; private and public companies were formed to embark in the lucrative speculation; forest land was to be had either from Government for the mere asking or by purchase from native holders. Cooly labour flowed in plentifully. Thousands of acres of the finest forest land fell under the planter's axe. Every new settler was hailed as a lucky fellow, whose lot was cast in pleasant places. Lacs of rupees were spent in the expectation of a cent per cent return. With the approach of the looked for fabulous income, the excitement rose apace. Envy had fixed an eye upon the fortunate planter;— but never before stood he more in need of pity and sympathy than at that time. A succession of bad seasons disappointed his prospects year after year; then the "Bug" infested the finest estates on the Sampáji and Perambadi Ghat, and scarcely had it left, when the terrible "White Borer," whose acquaintance we have already made, threatened to destroy the very foundation of his prosperity. There are but few planters who have as yet escaped either of these dire calamities, and their success makes the loss of others all the more felt. There is however no cause for despair. The soil and climate of the country seem eminently suitable for coffee cultivation. Coffee may yet succeed in Coorg and the undaunted planter may yet have his reward, if the method of cultivation, best

suiting for each locality, is carefully adopted, and if with the increase of jungle vegetation, especially bamboos, better seasons may be expected to return and the "White Borer" to disappear.

The approved methods of coffee cultivation in Coorg are planting under shade and on the open ground, and an intelligent planter will be guided by his experience of the elevation, exposure, and amount of atmospheric humidity of his locality which method to apply. If shade-planting is decided upon, there is the choice between natural and artificial shade, and in either case due regard is paid to full light and free circulation of air. The former method is but the improved native way of planting already described. For artificial shade-planting the jungle trees are all removed and either burnt or—which seems to be better—piled up and allowed to rot, when of the spontaneous new growth, especially the *Sponia Wightii* or "Charcoal tree" which springs up like weeds, a sufficient number of trees is allowed to remain. More permanent shade-trees, however, are the jack tree, the *Poinciana regia*, *Bauhinia*, the mango tree etc., seeds of which are put down at regular distances on the plantation, and after 5 or 6 years the young trees offer already partial shade. Coffee trees on open ground, that require no shade owing to a moister atmosphere, are evidently in a more congenial habitat; they grow stronger, live longer and yield an earlier and successively more regular and larger crop than trees under shade. Some of the Sampáji Ghat-estates nearest Mercara are of this description and their present appearance leaves hardly anything to be desired in coffee planting.

The soil and elevation best suited for cardamoms is also best adapted for coffee cultivation, hence at first the desire to secure cardamom jungles for coffee plantations.

After a piece of land has been cleared and regularly pitted with holes 18 inches cube and at a distance of 5 or 6 feet from each other, the surface soil is filled in and a peg fixed in the centre. With the first burst of the monsoon, the sturdy

seedlings of 3 or 4 pairs of leaves are removed from the nursery with a ball of earth attached to the roots and transplanted into the holes marked by the pegs. This is the surest and therefore cheapest mode of planting.

Weeding is the next operation to be carefully attended to, but where from the nature of the soil or of the lay of the land there is danger of loss of surface soil from heavy rain, no-hoe weeding is allowed during the monsoon; but only hand weeding or cutting with grass-knives and, after the monsoon, a breaking up of the soil, to turn the weeds down. Easy roads are laid out to bring every part of the estate within ready access and at the same time to be the means of an effectual drainage.

With the end of the first year's operations, the planter very likely builds for himself a simple cottage on a convenient spot, that commands a fine view and some Bungalows are most beautifully situated. With the third year the estate comes into flower and bearing. In March or April the snowy white of the blossoms, in their copiousness but slightly relieved by the dark green foliage, delights the eyes with its morning freshness and purity, wherever you look, and in their bridal glory the jessamine-like flowers fill the air with an agreeable aroma. Let us examine a three years' old tree of best growth. It is 4 feet high of a pyramidal shape with alternately opposite branches (primaries) of which the topmost are 8 inches and the lowest 3 feet long, which are subdivided by secondaries and tertiaries. The flowers are in appearance like jessamines on short stalks, in clusters round the branches and last but 2 days. The tree under examination numbers 20 pairs of branches, and 3 inches from the stem the clusters of flowers begin; the lowest branch contains 22, the middle 8 and the uppermost 2 clusters with an average of 12 blossoms each. These do not all set and produce mature berries, but give an idea of the fertility of the shrub. Gentle showers or heavy mists at this time greatly enhance the fecundity of

the blossoming, hence the importance of spring rains. The leaves are oblong, lanceolate, dark green and glossy on the upper, paler on the lower side and form a striking contrast with the snowy flowers or red berries. After a fertile blossoming the ovaries, if favoured by a few showers, swell rapidly and the green berries resemble olives. In October they become hard, turn yellow and, when mature, red. They now resemble cherries. We open one. A sweet aromatic succulent pulp encloses 2 beans, which are surrounded by a parchment like skin, which, when dry, easily drops off. A thin silky skin called the "silver-skin" is the last coating of the bean which, if of good quality, is long, of a bluish green colour and of a peculiar aroma. In some cherries there is but one bean developed which fills up the whole space. It is round and called Peaberry, and fancy assigns to it a higher price in the market than to ordinary coffee.

The separation of the fresh pulp from the beans is effected on the estate by a machine called "pulper," after which the parchment coffee is washed and slightly fermented to remove all saccharine and gummy matter, carefully dried and sent to the Coast, where it is peeled, garbled, sized, packed and shipped for the market.

Considering that every crop takes a certain amount of nourishment out of the soil, it is clear, that something in the shape of manure must be given to it in return, and it is generally acknowledged, that according to the chemical analysis of the coffee bean, the Coorg soil wants phosphate of lime, carbonate of magnesia and potash as the principal ingredients of the requisite manure, and a mixture of superphosphate of lime and Peruvian guano or stable-manure. Lime and ashes may be the nearest approach to it. Experiments with different proportions of these materials on a number of trees of equal growth soon show which is the most effectual mixture for each locality.

Of almost equal importance with manuring is the pruning of the trees, whereby the extravagant elaboration of the sap is checked and the fertility of the soil economised. It is this operation which makes the planter most familiar with his trees and which impresses upon the appearance of an estate as decided a stamp, as the system of training characterizes a school. It is amusing to hear a planter call one's attention to this and that "dear little tree", which he has "brought round by pruning"; but these are often the men who do justice to a plantation and who eventually succeed!

The export of coffee for the last 12 years, as will be seen from the subjoined table, has with the exception of the last two years been steadily increasing.

Statement of exports of Coffee from Coorg

from 1857—1869 in maunds of which 4 are equal to 1 Cwt.

Year	Coffee in maunds	Avoirdupois weight			Value at Rs. 500 per ton
		Tons.	Cwts.	Qrs.	
1857—58	46,336	579	4	0	289,600
1858—59	66,862	835	15	2	417,850
1859—60	1,11,768	1,379	2	0	689,550
1860—61	1,28,412	1,605	3	0	802,550
1861—62	1,53,781	1,922	5	1	961,125
1862—63	1,40,113	1,751	8	1	875,700
1863—64	2,34,182	2,927	5	2	1,463,625
1864—65	2,40,000	3,000	0	0	1,500,000
1865—66	2,50,000	3,125	0	0	1,562,500
1866—67	2,60,000	3,250	0	0	1,625,000
1867—68	2,40,000	3,000	0	0	1,500,000
1868—69	2,20,700	2,758	15	0	1,379,375
	20,92,154	26,133	17	2	13,066,875

The extent of actual cultivation is difficult to estimate, owing to the survey being incomplete. The land under coffee cultivation on the 1st April 1870 was 5,222 acres less than on the same date in 1869, when 55,750 acres were held by Europeans and 29,930 acres by natives, or a total of 85,780 acres, yielding a landtax of Rs. 91,251 whilst the acreage in 1869-70 produced only Rs. 89,942. The assessment for each holder is, after an exemption for the first 4 years, from the fifth to the ninth year 1 rupee per acre and rupees 2 ever after whether cultivated or uncultivated land. The planters, however, hope that Government will reduce this landtax to 1 rupee per acre in consideration of the sore disappointments and losses from unforeseen causes, under the pressure of which 204 acres have already been resigned by planters and, to recover rupees 3,497 for assessment due, several estates amounting to 3,702 acres have been resumed and sold by Government.

Chinchona cultivation, has been initiated on a small scale by Government in 1863 in a favourable locality 3 miles to the east of Mercara. There are now several hundred trees in a thriving condition, that yield quantities of seed for distribution and for rearing new plants in the hothouse, which was erected for the purpose on the premises of the Central School. Plants have already been distributed to those taluq cutcherries, in the compounds of which they were thought likely to grow, and the experiment has to some extent proved successful. Seed and plants have also been given to private persons. On several coffee estates small patches have been planted with chinchonas for estate use; but the special cultivation on a large scale has not found favour with any planter, though there is little doubt, that, wherever in the open coffee grows, which belongs to the same natural order viz: *Chinchonaceæ*, the *Chinchona* will also thrive. There is some diffidence as to its success as a financial speculation, seeing that the Govern-

ment plantations all over India are likely to supply every possible local want.

Of the many species of chinchona the most generally cultivated is the "Chinchona Succirubra" or "Genuine Red Bark," which grows to a lofty tree and is rich in Alkaloids; but Mr. Broughton, the Government Quinologist on the Nilagiris, has lately discovered a species, which yields more than 11 per cent Alkaloids, and of these 10 per cent Quinine, the largest amount ever obtained from the Peruvian bark.

Tea cultivation has received but little attention. To judge from the experiments already made by Mr. Mann, Dr. Macpherson and Mr. Roberts, there is however no doubt, that tea will grow in Coorg.

The cultivation of Sugarcane is a purely native enterprise and chiefly in the hands of settlers from Mysore, who sell it for raw consumption or use it for the manufacture of jagry, a kind of coarse sugar. It is propagated from cuttings put down in April and yields ripe canes the year after in September. It requires a moist rich soil, that can be brought under irrigation. Some coffee planters have begun to stock their swampy ravines with sugarcane; but, the produce not being large enough, it is doubtful, whether it answers as a pecuniary speculation.

Cotton of a fair description has long been under cultivation to a small extent by ryots in the north-eastern parts of Coorg, where the fibre is used for home-made fabrics and the seed for oil. New species: the Sea-Island, New Orleans, Egyptian and Hybrid Cotton have lately been introduced as experiments and they thrive very well, but the sudden depression in the cotton market discourages any further pursuit of the speculation.

The seed is sown in May on a well broken up rich soil, that is raised in long ridges 3 or 4 feet apart. The seedlings are sufficiently strong to withstand the heavy monsoon rains

and the pods ripen in October or November, when the sunny weather favors the gathering; perennial plants yield however ripe cotton almost at all seasons; and the monsoon crop is of course lost. My own experience on a coffee plantation near Anandapur with all available kinds of cotton seed led me to the conclusion, that the Sea-Island and Berar-Hybrid would yield most satisfactory results. Egyptian cotton grown in 1865 by Captain Taylor on the Sampáji Ghat produced a fibre, which was pronounced by the Bombay Chamber of Commerce the best that had reached the Bombay market.

The Plantain (*Musa paradisiaca*) of which there is a wild kind in the hill-jungles, is common all over Coorg near native dwellings. The 10 to 12 feet high succulent stem consists of a number of fibrous sheaths that may be considered the continuation of the leaf-stalks and is at the base nearly one foot thick. The leaves forming a tuft on the apex of the stem are 6 or 8 feet long and 2 feet broad. In the centre of the stem is a white solid substance forming a cylinder throughout its length. It is used by the natives for curry, when broken across, it shows bundles of spiral vessels to great perfection. The continuation of this cylinder beyond the stem forms the flower-stalk, it is therefore evident that one tree can bear but once, after which it is cut down and a new shoot springs up from the root, by which means the plantain is chiefly propagated. The closely packed conical flower head is not unlike a red cabbage in appearance, and by its own weight inclines downward in a graceful curve. Each of the purple leathery leaves or involucres coated with a pale bloom of great delicacy, covers a double row of 9 or 12 elongate yellowish red flowers, extending in a spiral line over one-third of the circumference of the fleshy stalk. With the maturity of each successive row of flowers, the involucre reclines and falls off, and the fruit appears, which when ripe is from 3 to 6 inches long and from half an inch to 2 inches thick. In its spiral clustering

round the stalk, it forms a large bunch numbering from 200 to 300 plantains. The fruit when divested of its skin may be eaten raw, roasted or baked, or when sliced and dried in the sun, reduced to a kind of flour which is considered very nourishing.

The fruit is supposed to have been the forbidden fruit of Paradise, hence the botanical name of the plant. There is a great variety of plantains, which differ in size, colour and the flavour of their fruit, but all the Coorg plantains seem to be particularly rich in saccharine matter and very nutritious.

The plant is highly esteemed by the natives as the emblem of plenty and fertility and is as such in constant requisition at their marriage and other festivals for ornamenting the entrance of houses and temples. Stumps of large trunks occupy also a conspicuous place in their games and amusements, for it is considered a feat of strength to cut one through at a blow with the famous Coorg knife.

The *Musa textilis* or "*Manilla Hemp*" Plantain has been introduced by Captain Cole, and I have successfully naturalized it in Mercara. Numbers of shoots have already been distributed for extensive cultivation for the sake of its valuable fibre for cloth and paper-manufacture. The fruit is like the common large plantain, but so full of seeds that it can hardly be eaten.

Along with this plant also the *Rheea* or *Assam Nettle* (*Boehmeria nivea*) was introduced, and having successfully reared it in Mercara, I distributed a quantity of roots and cuttings amongst the planters all over Coorg, who find it thriving very well in their sheltered ravines without any further care, but do not yet see how to make the cultivation profitable, owing to the difficulty and expense in preparing the fibre. The plant is indigenous to south-eastern Asia and is known in China as Ma or Chuma and in Assam as *Rheea*. It is a herbaceous plant, with large, perennial, spreading and

much divided roots, from which rise a number of straight, slender, slightly branching stems from the bark of which the fibre is extracted. The leaves resemble those of the nettle, are light green on the surface and silvery white below but are not stinging. The male and female flowers being separate and situated on different parts of the stem, the production of seed is uncertain.

From data, given in the December number of the Calcutta Review 1854, the "Rheea" is propagated either by dividing the roots or by cuttings. The plant is exceedingly hardy and thrives in almost any description of soil, but to have it grown to perfection, the land must be well manured and capable of irrigation. In planting a piece of ground, the roots or cuttings should be placed out in rows a foot or a foot and a half apart each way, so that the plants do not throw out too many lateral shoots which impairs the height of the stems. When once the roots have firmly struck, the plant grows vigorously, but more especially during the rainy season. The first principal shoots burst from the centre of the root, and are quickly followed by exterior ones. In two months generally may be expected, especially upon well manured land, the first cuttings, which must be taken off about one inch above the root. It is essential to mind, that the plant does not become covered with hard or woody bark, which is indicated by the former green coating turning brown, the discoloration commencing at the stem. A little browning strengthens the fibre, too much imposes additional costly labour. It requires a little experience to ascertain clearly the requisite time for cutting. There is another criterion by which the fitness of the plant for cutting may be known, by passing the hand down it from the top to the bottom; if the leaves break off crisply from where they are joined to the stem, it is a good indication that the plantation may be thinned out. If, on the contrary, the plant be not ready, the leaves, instead of breaking, tear off and strip

the stem of the fibre. When all is ready for removing the stalks, cutting more than can be immediately attended to, should be avoided. When the sticks are cut, they should be stripped of the leaves on the ground, which is done by passing the hand down them from top to bottom, after which they are handed over to women or boys to be treated as follows:

The workers should be in couples, one to take off the bark or thin outer coat, the other to strip off the fibre. The barker being provided with some coir fibre and a wooden knife, proceeds with the former to rub the stick in one direction, from top to bottom, or vice versa, which, if the plant be fresh, is easily accomplished; if the bark be obstinate, she uses the wooden knife, scraping in one direction, when the fibre is thoroughly exposed. After removing the bark, she hands the stick to another cooly, who breaks it an inch or two at either end or in the middle by which a portion of fibre is separated and which enables him to lay hold of it and to strip off very carefully the entire fibre. Should any mucilaginous matter still adhere, it is scraped off with a blunt wooden knife and the clean fibre hung up in the sun for a day to dry, when it is ready for the market. Perhaps drying the cut sticks in the sun and exposing them to the dews for several days and then beating out the brittle herbaceous part with a wooden apparatus as they treat hemp in Germany, may be a cheaper and more expeditious mode of separating the fibre.

As to the return. 88 lbs. are calculated upon one acre for one crop, and if the field allows three annual cuttings, the yield is 264 lbs. or a little more than one-tenth of a ton, valued 80 rupees at ₹ 80 a ton, whilst an acre of coffee producing 5 cwt. would yield at 70 shillings per cwt. Rupees 175, all expenditure excluded in both cases.

The *Chocolate tree* or *Theobroma Cacao* has been successfully reared by me from seeds received from Sir Madava Row, the Deván of Travancore. The cultivation of this most use-

ful tree, which requires a soil fit also for coffee, promises to prove a most welcome addition to Coorg exotics, as it produces fruit when 5 years old and requires but little care or labour. The plants are grown from seed, to be obtained in March, much in the same way as coffee seedlings, and after 15 months when they are about 18 inches high, they are transplanted in large pits about 12 feet apart and protected by shade.

The fact, that a wild species of Nutmeg grows plentifully in the Coorg forests induced me, to make an experiment with cultivating *the Nutmeg of commerce*, "*Myristica officinalis*," but the promised seed has not yet arrived. According to Dr. Bidie's instructions, the cultivation may be carried on on coffee-land and seems to offer no great difficulties.

Of *fruit trees* the Coorg Oranges are celebrated and as common as the plantain. There are several varieties, but the best is the sweet, luscious "Loose Jacket" so called because the rind of the ripe fruit is almost detached from the pulp. The Coorg Rajahs owned fine orange gardens in the most suitable localities of the country, but they have since been neglected. There are also varieties of Citrons and the Lime indispensable in Coorg etiquette is in abundance.

Apples and Pears do not succeed in Mercara, as the heavy monsoon does not favour their growth, but there is perhaps no reason, why they should not grow in warmer and more sheltered localities, as well as in Bangalore. Loquats, Peaches, Figs and Pomegranates thrive better and the Guava, which makes a most excellent jelly, would be the Coorg Pear, if it were not for the numerous hard little seeds and the peculiar flavor which is not always appreciated. Strawberries and Pine-apples grow to a large size. Grapes have been reared in sheltered places in Mercara, but the vine soon degenerates. The Brazil-cherry is very common, the fruit is the berry of a herbaceous plant and is made into excellent jam.

English Vegetables are satisfactorily grown by Mercara residents and still more so by some planters on their estates. Potatoes and Cabbage thrive remarkably well; also Peas, Beans, Knoll kohl, Salad, Beets, Turnips and Carrots of excellent quality are produced. The natives do now only attempt to cultivate these vegetables, but the markets are unsupplied with them.

Native Vegetables, which are reared on patches of paddy-fields after harvest time, or in small gardens, in the villages about Fraserpet, include: French Beans, Radishes, Pumpkins, Cucumbers, Indian Corn, Brinjals, Chillies, Coriander, Amaranthus and others, but even these are not plentiful in the Mercara market, and what there is comes chiefly from Fraserpet.

Dry grain, such as Ragy, Avary, Tavary, Huruli and others are chiefly grown in the open country of the Nanjarájpátna taluq lying along the western banks of the Kávéri. It is there also, that Tobacco is cultivated for sale, whilst in most of the Coorg farms little reserved patches of the narcotic is grown for home-consumption; but the Coorg tobacco is of an indifferent description, no particular care being bestowed upon its cultivation. The introduction of a new seed would have a beneficial influence. A few Hemp plants are here and there grown near native houses, but more for the use of smoking the intoxicating leaves, than for the sake of the fibre.

Similar to other hilly parts of India, there prevails a primitive mode of cultivation called "kumari," which is practised by the lowest classes of natives, the Kurumbas and Kudias, chiefly on the western slopes of the Ghats. They cut and burn a patch of jungle, and plant either the small reddish hill-rice, sown broadcast upon the slightly dug up land, or Ragy. The former yields a 10 fold, the latter a 200 to 300 fold return. Such fields are only once or twice cultivated, when they are abandoned in favour of a new piece

of jungle and not resumed till after 5 or 6 years. This wanton jungle-waste has however been put a stop to by Government and brought within reasonable limits.

Bringing to a close the subject of Arbori-horti-culture in Coorg, it were ungrateful, did I omit to mention the many and beautiful exotic flowers and shrubs, that ornament the gardens of European residents and recall by their presence sweet remembrances of distant Home; I forbear however to enumerate any beyond the modest Violet, the fragrant Rose and the showy Dahlia, and leave it to the fancy of the reader to associate with these types of spring, summer and autumn the many other garden flowers, that are familiar to Europeans.

