

IV.—*Discovery of the Genuine Tea Plant in Upper Assam.*

[The following official correspondence of the Tea Committee has been obligingly handed to us for publication. We hasten to present it to our readers in its original shape rather than attempt to make an abstract of its contents, because the curiosity of the public is much raised, and they will naturally wish to follow the whole train of the discovery, and give the credit thereof where it is due.—ED.]

*Letter from the Committee of Tea Culture to W. H. MACNAGHTEN, Esq.
Secretary to the Government of India, in the Revenue Department.*

SIR,

We request that you will have the goodness to submit to the Right Honorable the Governor General of India in Council the enclosed copies of the reports, which we have received from Captain JENKINS, dated the 7th and 19th May, and from Lieut. CHARLTON, dated the 17th May; also a subsequent communication from Lieut. CHARLTON, dated the 5th of last month, together with the samples of the fruit and leaves of the tea plant of Upper Assam, which accompanied it, and some specimens of the leaves previously received.

2. It is with feelings of the highest possible satisfaction that we are enabled to announce to his Lordship in Council, that the tea shrub is beyond all doubt indigenous in Upper Assam, being found there through an extent of country of one month's march within the Honorable Company's territories, from Sadiya and Beesa, to the Chinese frontier province of Yunnan, where the shrub is cultivated for the sake of its leaf. We have no hesitation in declaring this discovery, which is due to the indefatigable researches of Capt. JENKINS and Lieut. CHARLTON, to be by far the most important and valuable that has ever been made in matters connected with the agricultural or commercial resources of this empire. We are perfectly confident that the tea plant which has been brought to light, will be found capable, under proper management, of being cultivated with complete success for commercial purposes, and that consequently the object of our labors may be before long fully realised.

3. It is proper to observe, that we were not altogether unprepared for this highly interesting event. We were acquainted with the fact that so far back as 1826, the late ingenious Mr. DAVID SCOTT, sent down from Muni-pore specimens of the leaves of a shrub, which he insisted upon was a real tea; and it will be seen from the enclosed reports from the agent to the Governor General on the north-eastern frontier and his assistant, that a similar assertion was strongly urged in regard to the existence of the tea in Upper Assam. Still we felt ourselves bound to suspend our decision on the subject until we should be in possession of the fruit of the reputed shrub, the only test which ought to guide us. We knew that several species of *Camellia* were natives of the mountains of Hindustan, and that two of these were

indigenons in our north-eastern frontier provinces; and taking into consideration the close affinity between the two genera, we were disposed to expect, that the alleged tea would prove nothing else but some sort of *Camellia*. We have at length obtained the fruit of the *Sadiya* plant from Lieut. CHARLTON, and we are now enabled to state with certainty, that not only is it a genuine tea, but that no doubt can be entertained of its being the identical tea of China, which is the exclusive source of all the varieties and shades of the tea of commerce. With the view of exhibiting the peculiarities in the structure of the fruit, on which depends entirely the difference between the Tea and *Camellia*, we have desired our officiating secretary to annex to this letter a sketch of the fruit of both, with explanatory remarks.

4. We beg leave most respectfully to submit the preceding facts to the particular consideration of Government, and earnestly to recommend, that in the first instance, and as early as may be practicable, one or more scientific gentlemen properly qualified for the investigation may be deputed into Upper Assam for the purpose of collecting on the spot the greatest variety procurable of botanical, geological and other details, which, as preliminary information, are absolutely necessary before ulterior measures can be successfully taken with regard to the cultivation of the tea shrub of that country. We also beg to express our opinion, that it would be highly desirable to adopt forthwith the plan suggested in Lieut. CHARLTON's last letter, of the 5th of November, of establishing a communication with Yunnan by means of a land-road, at least as far as Hookam, since, independent of all other advantages, it would materially facilitate the operations of the scientific deputation, which we have recommended should be sent to Upper Assam with as little delay as possible.

5. We anticipate that the execution of the recommendations we have made, need not be attended with any considerable expense; but it appears to us, with reference to the very great importance of the occasion, that the only consideration which should have weight is, that the money which may be required should be faithfully and economically applied to the purposes for which it may be granted.

We have, &c.

Calcutta, Dec. 24, 1834. Signed by the Committee of Tea Culture.

From Captain F. JENKINS, Agent to the Governor General on the N. E. Frontier, to G. J. GORDON, Esq. Secretary of the Committee of Tea Culture, dated Gowahatty, 7th May, 1834.

I regret the delay that has occurred in acknowledging your circular, dated the 3rd March, to my address: it has been occasioned by unavoidable circumstances which I have further to regret will prevent

my replying to your communication to the length I could wish or the subject deserves.

2. My little acquaintance with Assam will not admit of my replying to all your questions, but from general information and my own observation, I am so fully impressed with the belief of the fitness of the mountainous region which divides Cachár from Assam for the growth of tea, that I beg to attempt to call the attention of the Committee to that region in the most forcible manner I can, with a view to its examination by a competent individual.

3. The mountainous tract I allude to, commences from the east of the country of the Jynteah Raja, and continues always increasing in elevation until it reaches to the eastern end of the valley of Assam, and is so far under the controul of British authority, immediately between Cachar and Assam completely so, and farther on more or less directly or indirectly. The part entirely under us ranges from 6 to 8000 feet greatest heights, and farther east the mountains attain a height of 10,000 feet, and the valleys and beds of streams are from 2500 to 4000 feet above the sea. From the end of the valley of Assam this ceases to be merely a west and east range, its direct continuation passes into China into the tea countries of Sechuen and Yunnan: the northern bend in the latitude of Sadiya meets a branch of the snowy mountains, and the southern divides off into the two mountainous ranges, which border the Irrawady on either side, from its sources to the sea.

4. Every part of this mountainous country that I have visited, presents nearly a uniform geological structure, being almost entirely composed of clay-slate, and every where nearly of the same appearance, very much broken and disintegrated, so much so as to be seldom visible in mass, and being covered with a deep coat of soil and luxuriant vegetation even on the greatest heights.

5. Camellias are found in every part of this hill country, and within our jurisdiction in the Singpho district of Beesa, a coarse variety of the tea plant is, as I am informed, undoubtedly indigenous. A plant was given to me at Sadiya, which I have reason to suppose, was a genuine tea tree, and I intended to have brought it to Calcutta for examination, but I received it in a sickly state, and from the prevalence of great heat I was unable to succeed in taking it to the presidency. I shall endeavour to procure another plant or two for the satisfaction of the Committee. However, having no doubt myself of the fact of the tea shrub being found wild in the eastern parts of Assam, I would beg to recommend the expediency of some well-qualified person being at once sent up for the identification of the plant beyond any objection, for the examination of the soil in which it grows as reported, and an inspection of the tract of mountains between Cachar and Assam.

6. If this recommendation were acted upon, the person deputed should be in Cachar by the 1st of November, and proceed immediately to ascend the mountains in communication with the officer in civil charge, Captain FISHER, who would previously have made arrangements for his being provided with porters, &c. He should pursue nearly the tract followed by me on the same journey, and on arrival at Bishonath should proceed by water to Sadiya, and thence go up to Beesa at the foot of the mountains dividing Assam from Ava.

7. As the individual thus deputed would of course be a competent botanist, and perhaps geologist, I contemplate much indirect acquisition to science from the trip thus sketched out, it being almost entirely untrodden ground to any scientific observer, and of course it is to be expected that much benefit, in an economical point of view, might result to the state from the researches and suggestions of one who could bring to knowledge the unlimited productions of the vegetable and mineral kingdoms in the regions in question.

8. In case you should not have forwarded a copy of your circular to Captain FISHER, I shall do so, and request him to make a report to you upon the subject of it with reference to Cachar.

Extract of a private letter from Captain F. JENKINS to G. J. GORDON, Esq. dated the 19th May, 1834, with enclosures.

Since I wrote you officially, I have had the enclosed note from Lieut. CHARLTON of the Assam Light Infantry, regarding tea, and I have been presented with the enclosed luminous map* of the tea districts in Upper Assam by a Phokun who accompanied Lieut. BURNETT in an expedition to the top of the Patkoye range of hills, dividing the waters of the Burhamputra from those of the Kuenduen. On this range of hills the trees grow in great abundance, and are described to reach the size of small forest trees or very large shrubs. You will see how he says the leaves are treated, which though it seems rather an odd mode of manufacture, he and others persist in saying is the way in which the Singphos manage the tea. I never had an opportunity of trying it, but those who had said it was palatable enough, and the leaves thus prepared keep for ever.

Copy of a letter from Lieut. CHARLTON to Captain JENKINS, dated on the Burhamputra, the 17th May, 1834, enclosed in the preceding.

With regard to the circular from the Tea Committee which you showed me at Gowahatty, I have much pleasure in communicating the little I know of the tea plant of Assam. I was informed about three years ago of its being found growing wild in the vicinity of Beesa at

* This map being of the most crude description is omitted here. It did not accompany the Committee's Report to Government.

the foot of a low range of hills and in the subjacent plains, from whence I obtained three or four young trees, which I gave to Dr. JOHN TYTLER in Calcutta, with a view of their being planted in the Government Botanical Garden. I have since understood they decayed soon after.

The soil where they grow was described to be alluvial like most parts of Assam, and the trees rising to the height of twelve or fourteen feet more, either at the foot or a small distance up the hills, but never on the summit; from which I infer a sheltered situation to be most favorable. The aspect was generally southerly or south-east. I am sorry I cannot give you a minute description of the plant, not having it now before me; but so much I recollect, the leaves were about two inches in length and one in breadth, alternate, elliptic-oblong and serrate. The flower white, very like that of the wild white rose, but much smaller. The seed I have not seen; it was described to be contained in a red, round, three-lobed capsule, the lobes detached or bursting along the upper sides, with a single seed in each. From what I have seen of the tea plant in different parts of the world, and lately in New Holland, propagated by seeds brought direct from China, I have little doubt but that *that* found near Beesa is a species of tea; and though it may be spurious or even a *Camellia*, as Dr. WALLICH suggests, its growing there indigenous and in great abundance affords good grounds for supposing that the introduction of the Chinese plant into Upper Assam would be attended with success. I have not had an opportunity of making any experiment on the leaves; they are described as small in their green state, but acquire the fragrance and flavour of Chinese tea when dried. The Singphos and Kamtees are in the habit of drinking an infusion of the leaves which I have lately understood they prepare by cutting them into small pieces, taking out the stalks and fibres, boiling and then squeezing them into a ball which they dry in the sun and retain for use. I have written to Sadiya for a specimen of the tea prepared in this manner, and for plants and seeds; I will send you some if I am able to procure them, and write to you on this subject more fully by and bye.

Copy of a private letter from Lieut. CHARLTON to Captain JENKINS, dated at Sadiya, the 8th November, 1834.

I have now the pleasure of sending you some seeds and leaves of the tea tree of Assam, and am sorry that the unsettled state I have been in for the last three months has prevented my sending them so soon as I intended. The leaves you could have had before, but I was anxious to make them into something like tea, the best test that the tree is not a *Camellia*, as Dr. WALLICH imagines. It appears coarse, owing to the leaves being large and much too old, which could not at

the time be obviated. By the end of the cold weather, when the young leaves are on the trees, I hope to send you as good black tea as we generally receive from China. I will make experiments in the interim in the art of preparing green.

The tree I now find is indigenous to this place as well as Beesa, and grows wild every here and there, all the way from this, about a month's journey, to the Chinese province Yunnan, where I am told it is extensively cultivated. One or two people from that province have assured me, that the tea tree grown there exactly resembles the species that we have here ; so I think there can be no longer any doubt of its being *bona-fide* tea. What a pity there is no means of communication between Sadiya and Yunnan. A good land-road made only as far as Hookam, and there are no natural obstacles of any consequence to prevent it, would afford an outlet for British merchandize into the very heart of China.

Copy of a note from Captain F. JENKINS to Dr. WALLICH, on the back of the above, dated (at Gowahatty) 22nd November, 1834.

I have only time to send this and to say, I have sent a jar of tea-leaves and a box of tea seeds to go by to-day's dâk, I hope you will see from the seeds that there is no doubt ours is genuine tea.

Memorandum explanatory of the sketches which accompany the report of the Committee of Tea Culture.

There is no danger of mistaking any plant for the tea except the Camellia. Both are very closely allied to each other in general appearance, in the form of their leaves and the structure of the flowers. It is by the character of the fruit alone that they can be satisfactorily distinguished for practical purposes ; in that respect the two genera differ very widely.

In both the fruit consists of a roundish, more or less triangular, dry capsule, of three distinct cells, each cell containing one solitary seed or nut. At the period of maturity the dehiscence or bursting takes place vertically, by means of three fissures, extending from the top of the capsule towards its base. So far their capsules are precisely alike ; the following are the points of difference.

In the tea, the capsule is more or less deeply divided into three globular lobes, sometimes appearing as if it consisted of three round capsules united into one. The general outline is therefore always decidedly triangular, with extremely obtuse corners. The bursting proceeds along the middle of the lobes or angles, when a large seed is discovered through each aperture enclosed on all sides within its proper cell, which cell is in fact formed by the corresponding lobe of the fruit.

By this process six valves are, properly speaking, formed, (and not three, as they are generally counted,) each lobe splitting into two hemispherical valves. The partitions alternate with the lobes, and are formed by the sides of two adjoining cells being, as it were, glued together, and extending to the axis of the capsule, from which they at length completely detach themselves, when it disappears altogether. The seeds or nuts are almost globular.

In *Camellia* the capsule is very obscurely triangular without any tendency to become deeply three-lobed. It bursts along the middle of each side (consequently alternately with the corners) into three very distinct valves, each of which belongs to two adjoining cells, because the three partitions originate lengthwise from the middle of the respective valves, and are therefore opposite or contrary to these, converging from thence to the triangular axis, from which they gradually separate, leaving it finally unconnected and free. The seeds are of an oval oblong shape, smaller than those of the tea.

The preceding remarks are made with reference chiefly to the Assam Tea and the Nipal *Camellia*; and purposely without technical precision, the object being simply to convey a general idea of the structure of the two sorts of fruit. But they admit of being applied with safety to all other instances of comparison between the genera in question.

References to the Figures in Plate III.

A The Assam tea. *Figs. 1, 2, 3*, ripe capsules scarcely enlarged; at 1, seen from below, deeply three-lobed; 2, the common form, commencing to burst; 3, the same completely burst open, and discovering the seeds; 4, the same, the seeds being removed, and one of these represented separately; of the natural size; 5, the lower half of a ripe capsule divided by an horizontal section and the seeds removed, exhibiting the places of dehiscence along the angles or lobes, and the partitions alternating with these and separating from the axis; a little enlarged; 6, outline of a full-grown leaf, of the natural dimensions.

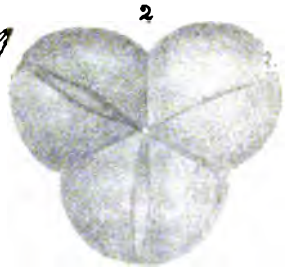
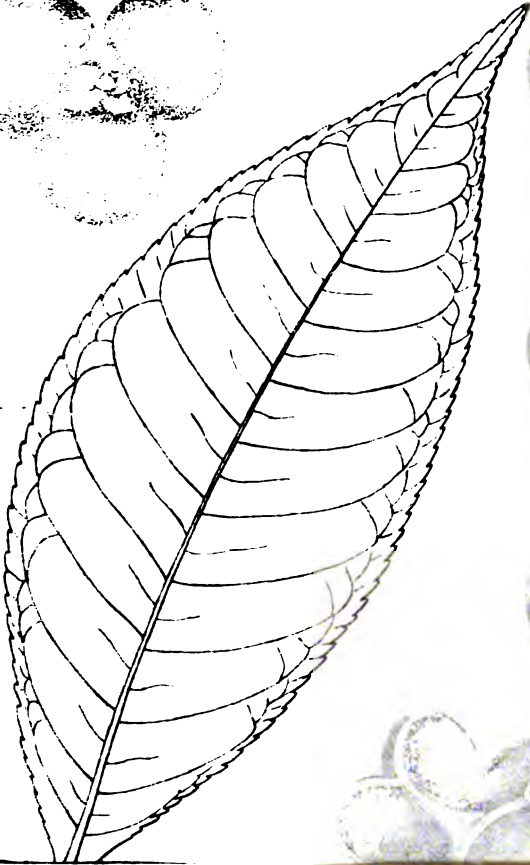
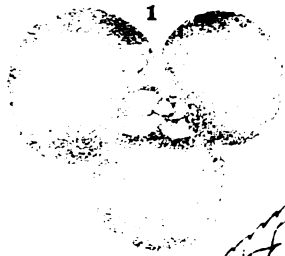
B The Nipal *Camellia* (*C. kissi*). *Fig. 7*, ripe and entire capsule slightly enlarged; 8 and 9, the same after bursting, the free axis being seen in the last figure; 10, a horizontal section as in the tea, much enlarged, representing the places of bursting, which alternate with the angles of the fruit, the partitions which are opposite to the angles of the fruit, and the valves, separating from the free axis; 11, a detached seed, natural size; 12, outline of a full grown leaf.

(Signed), N. WALLICH, M. D.

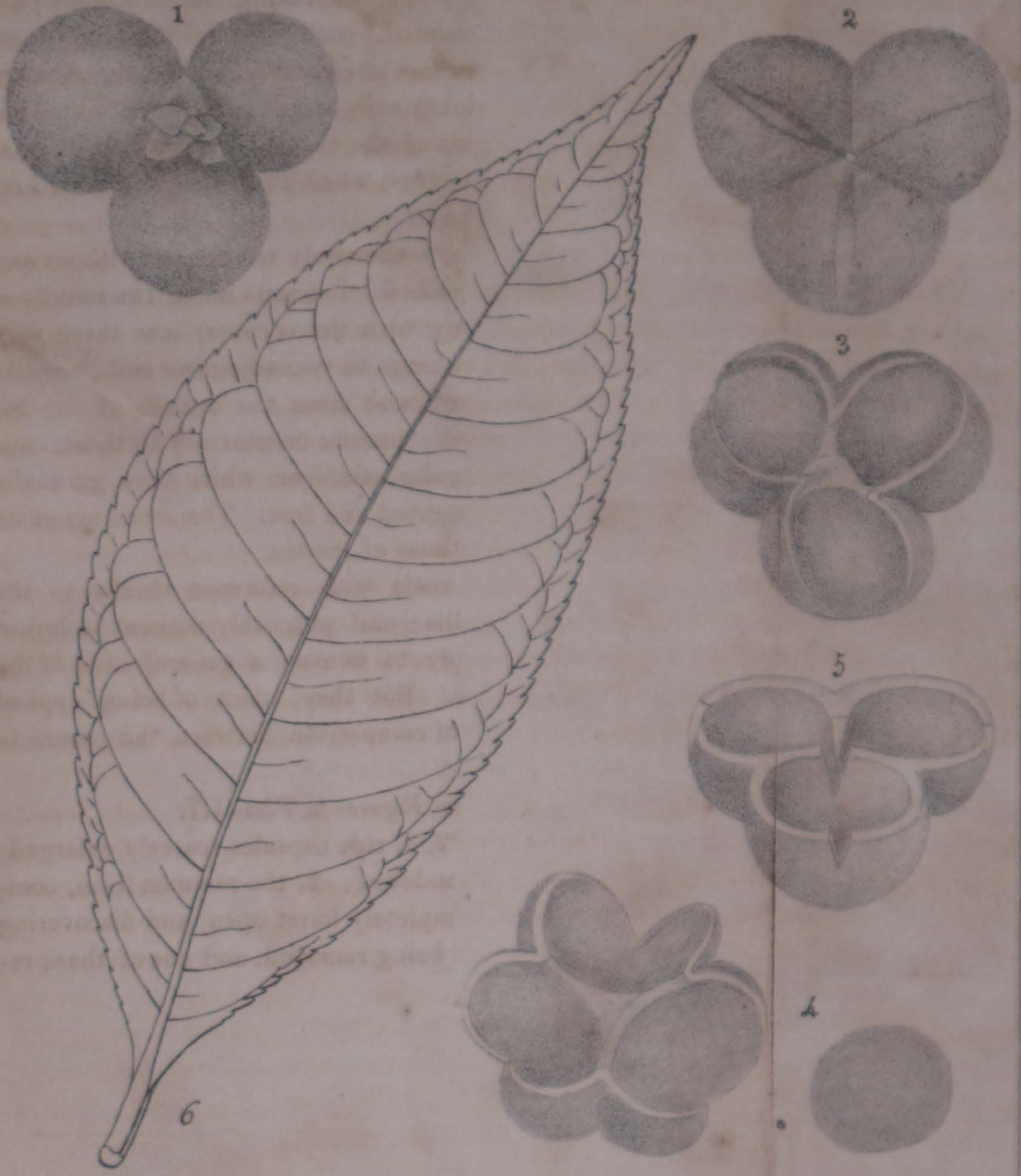
Off. Sec. to the Com. of Tea Cult.

H. C. Bot. Garden, Dec. 24, 1834.

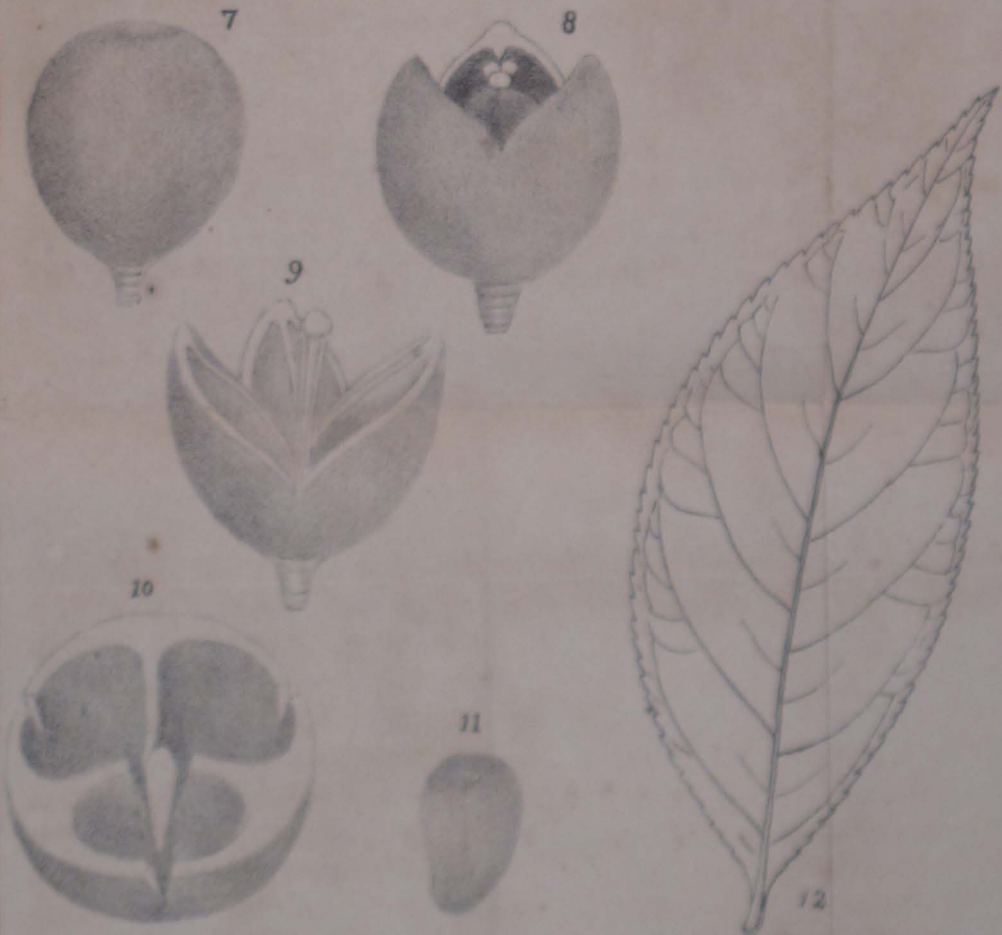
Assam Tea

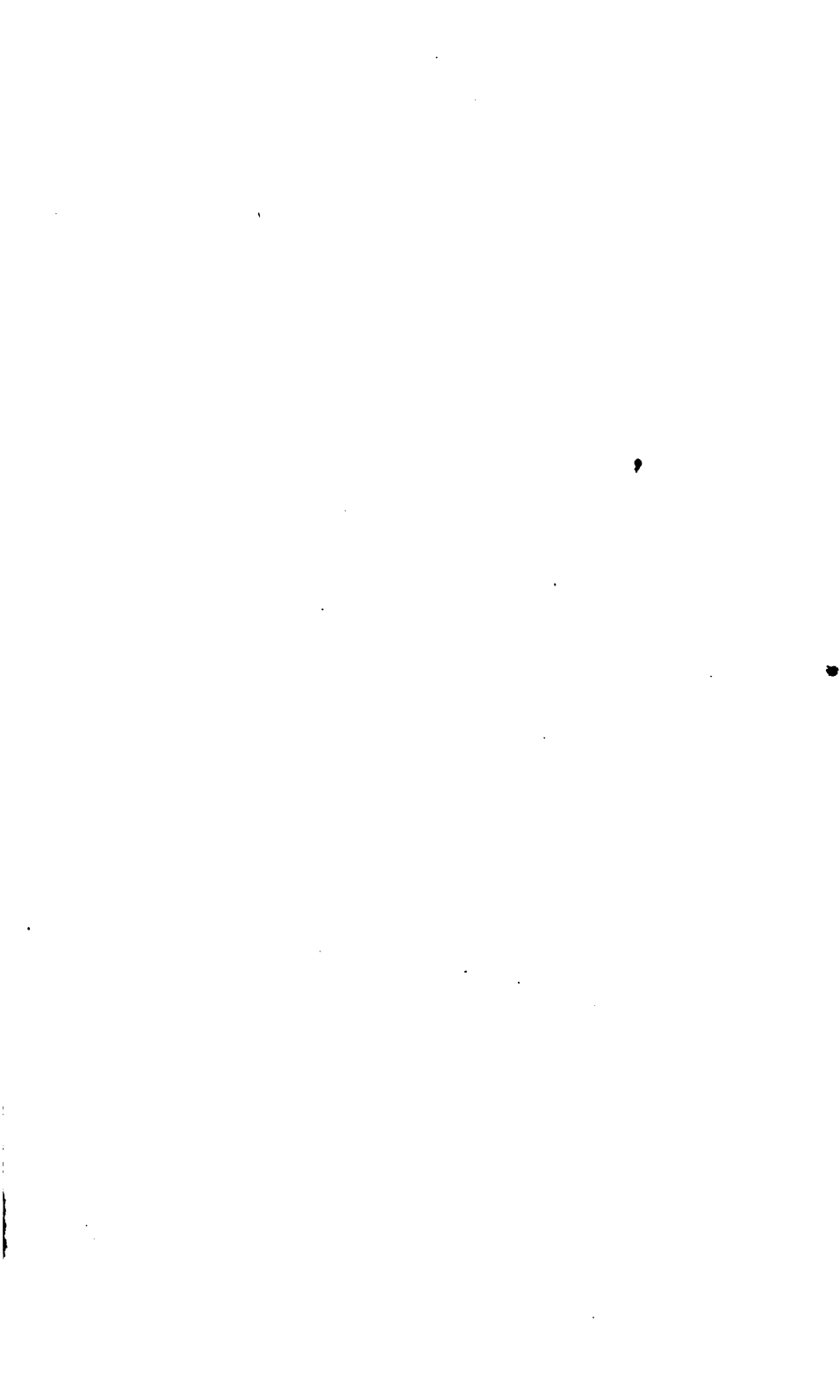


Assam Tea



Nipal Camellia





[In the foregoing correspondence, allusion is made to a prior knowledge of the tea-plant of Assam. The following extract from Captain WILCOX's Memoir of a Survey of Assam, published in the Asiatic Researches XVII. p. 448, proves that officer to have been aware of its existence in the hills east of Sadiya:—he writes from Manché, a Khamti village, latitude 27° 29' 16", longitude 97° 29' :— "according to promise, a specimen of the tea tree was brought to me from one of the neighbouring low hills; it was a full grown one, that is about five feet high; the leaves were coarse and large, and not numerous." Mr. SCOTT and Captain DAVIDSON had also frequently seen it, and the latter officer says, that black tea is now brought to Goalpara from the Bhotan hills. In 1828, CAPTS. GRANT and PEMBERTON sent specimens of what the natives asserted to be the tea plant to Mr. Secretary SWINTON, from Mánipur, but for want of the fruit, its genuine nature was not identified. These travellers made tea from its leaves, and found it approach very nearly in flavour to ordinary black tea.—ED.]

V.—Abstract of Meteorological Observations at Nasrabdd. By Lieut.-Col. THOMAS OLIVER.

TABLE I.—Barometer reduced to 32°. Temperature of the External Air, and resulting elevation above Calcutta.

Year and Month.	Barom. at 4 P.M.	Temp. of Air.	Elevation.	Year and Month.	Barom. at 4 P.M.	Temp. of air.	Elevation.
		°	Feet.			°	Feet.
Dec. 1832, ..	28.432	55.7	1461	Dec. 1833, ..	28.391	65.4	1518
Jan. 1833, ..	.504	71.4	1440	Jan. 1834, ..	.402	70.0	1511
Feb. ....	.392	74.5	1437	Feb. ....	.392	76.5	1501
March, ....	.334	84.8	1431	March, ....	.281	86.5	1538
April, ....	.234	96.9	1460	April, ....	.212	93.8	1556
May, ....	.059	102.4	1545	May, ....	.101	103.8	1512
June, ....	.031	102.2	1518	June,	27.980	101.0	1572
July,	27.965	97.1	1548	July, ....	.977	88.1	1576
Aug.	28.021	93.9	1543	Aug.	28.001	88.2	1634
Sept. ....	.090	98.5	1507	Sept.			
Oct. ....	.296	93.7	1484	Oct.			
Nov. ....	.425	80.6	1497	Nov.			
	28.232	88.5	1489				

It is remarkable that the elevations for the nine months, since December, 1833, are all with one exception so much in excess to those for the same months of the former year: I am at a loss to account for this; the average height of my Barometer for the nine months in question being only .026 lower than the average for the same months of the preceding year.

TABLE II.—Mean Temperature of each Month, with the Differences from the Mean of the Year.

Months.	Temp. Day.	Diff. from Mean.	Temp. Night.	Diff. from Mean.	Temp. Sun-set.	Diff. from Mean.
	°	°	°	°	°	°
January,	61.5	— 17.9	57.9	— 17.4	66.0	— 15.8
February,	67.8	— 11.6	60.5	— 14.8	67.7	— 14.1
March,	75.4	— 4.0	71.9	— 3.4	80.7	— 1.1
April,	85.2	+ 5.8	80.9	+ 5.6	88.5	+ 6.7
May,	94.6	+ 15.2	89.9	+ 14.6	96.9	+ 15.1
June,	93.6	+ 14.2	88.8	+ 13.5	94.6	+ 12.8
July,	88.3	+ 8.9	84.7	+ 9.4	88.0	+ 6.2
August,	86.1	+ 6.7	83.1	+ 6.8	86.4	+ 4.6
September,	86.6	+ 7.2	83.1	+ 7.8	87.7	+ 5.9
October,	82.0	+ 2.6	78.0	+ 2.7	85.5	+ 3.7
November,	72.7	— 6.7	69.6	— 5.7	77.1	— 4.7
December,	58.7	— 20.7	55.6	— 19.7	63.0	— 18.8
Means,	79.4		75.3		81.8	