

C O N T E N T S.

1. Papers received from India relating to the Measures adopted for introducing the cultivation of the Tea Plant within the British Possessions in India. 1839. (63) pp.1-60.
J451.2.M14 A8-9
2. Reports to the Government on the Extension of Tea Plantations in India. 1863. (95) pp.61-80.
J451.2.M14 A8-9
3. Report: Production of Tea in India, 1913. (Dept. of Statistics, India.) 1914. pp.80-95. X7(J451).257 D-4
4. Report: Tea Culture in Assam, 1904. 1905. pp.97-101.
J451.2614 D5

TEA CULTIVATION (INDIA).

R-1478

RETURN to an ORDER of the Honourable The House of Commons,
dated 15 February 1839;—for,

PAPERS received from *India* relating to the Measures adopted
during the Cultivation of the TEA PLANT within the British
possessions in *India*.

(18)

House, }
by 1839. }

JAMES C. MELVILL.

(*Mr. Robert Gordon.*)

Ordered, by The House of Commons, to be Printed,
27 February 1839.

R-1478

TEA CULTIVATION (INDIA).

RETURN to an ORDER of the Honourable The House of Commons,
dated 15 February. 1839;—for,

COPY of PAPERS received from *India* relating to the Measures adopted
for introducing the Cultivation of the TEA PLANT within the British
Possessions in *India*.

18

East India House,
22 February 1839.]



JAMES C. MELVILL.

(*Mr. Robert Gordon.*)

Ordered, by The House of Commons, to be Printed,
27 February 1839.

Page.	Date.	From.	To.	Date of Cons.
5	24 Jan. 1834	Minute by Governor-general.		
6	-	Proposition by Mr. Walker to cultivate Tea upon the Nepal Hills, &c.		1 February 1834
12	3 Feb. 1832	Observations on the cultivation of the Tea plant, by N. Wallich		
15	15 March 1834	Tea Committee	Mr. Secretary Macsween	12 May
18	-	Proceedings of Tea Committee		
21	22 Feb. 1834	Dr. Falconer (Extract)	Secretary to Tea Committee	
27	23 July	Tea Committee	Mr. Secretary Macsween	4 August
28	28 June	Officiating Secretary to Tea Committee.	Commissioner in Kumaon	
29	24 July	Mr. Gordon (Extract)	Dr. Wallich	10 Dec.
32	24 Dec.	Tea Committee	Mr. Secretary Macnaghten	7 January 1835
33	7 May	Agent to Governor-general, Gowahatty.	Secretary to Tea Committee	
34	19 May	Captain Jenkins (Extract)	Mr. Gordon	7 January 1835
35	17 May	Lieut. Charlton	Captain Jenkins	
35	8 Nov.	Ditto	Ditto	
36	22 Nov.	Copy of Note from Captain Jenkins		
36	24 Dec.	Memorandum explanatory of Sketches accompanying the Report of Committee of Tea Culture		28 January
37	6 Jan. 1835	Captain Jenkins	Agent to Governor-general	
38	12 March	Tea Committee	Mr. Secretary Macnaghten	13 March
39	26 Feb.	Agent Governor-general	Secretary to Tea Committee	
40	11 Feb.	Mr. Secretary Macnaghten	Ditto	
41	23 Nov. 1834	Mr. Gordon	Dr. Wallich	5 March
42	24 Jan. 1835	Officiating Secretary, Tea Committee.	Mr. Secretary Macnaghten	30 March
42	30 March	Mr. Secretary Macnaghten	Tea Committee	
43	20 May	Officiating Secretary, Tea Committee.	Mr. Secretary Macnaghten	
43	1 June	Mr. Secretary Macnaghten	Officiating Secretary, Tea Committee.	1 June
44	6 May	Officiating Secretary, Tea Committee.	Mr. Secretary Macnaghten	
44	18 April	C. E. Trevelyan, esq.	Dr. Wallich	18 May
44	9 April	Captain Jenkins	C. E. Trevelyan, esq.	
45	30 March	Lieut. Charlton	Captain Jenkins	
46	6 July	Mr. Secretary Macnaghten	Officiating Secretary, Tea Committee.	6 July
✓46	18 Sept.	Tea Committee	Mr. Secretary Macnaghten	
47	21 Sept.	Mr. Secretary Macnaghten	Tea Committee	21 Sept.
47	11 Aug.	Officiating Secretary, Tea Committee	Mr. Secretary Macnaghten	
48	24 Aug.	Mr. Secretary Macnaghten	Officiating Secretary, Tea Committee.	24 August

Page.	Date.	From	To	Date of Cor
48	12 Nov. 1835	Tea Committee	Mr. Secretary Macnaghten	} 23 Nov. 1835
48	-	Dr. Wallich	Officiating Secretary, Tea Committee.	
49	6 Oct. —	Report by Mr. McClelland	- - - - -	
52	24 Dec. —	Major White	Dr. Wallich	8 Feb. 1836
53	12 Feb. 1836	Dr. Wallich	Officiating Secretary, Tea Committee.	} 4 April —
54	2 Feb. —	Major White	Dr. Wallich	
55	11 Feb. —	Dr. Wallich	Major White	
55	11 Feb. —	Ditto	Captain Hannay	
56	25 Jan. —	Agent, Governor-general	Dr. Wallich	
56	11 Feb. —	Dr. Wallich	Agent, Governor-general	
57	4 April —	Mr. Secretary Macnaghten	Tea Committee	
58	28 March —	Tea Committee	Mr. Secretary Macnaghten	} 11 April —
58	19 Feb. —	Dr. Wallich	J. W. Grant, esq.	
59	26 Feb. —	Ditto	Ditto	
61	3 March —	Ditto	Ditto	
62	11 April —	Mr. Secretary Macnaghten	Tea Committee	} 18 April —
62	14 April —	Tea Committee	Mr. Secretary Macnaghten	
63	18 April —	Mr. Secretary Macnaghten	Tea Committee	
63	29 April —	Mr. Gordon	Ditto	} 16 May —
64	29 April —	Extract Proceedings of Tea Committee	- - - - -	
64	— May —	Tea Committee	Mr. Secretary Macnaghten	} 23 May —
66	15 March —	Dr. Wallich	Agent, Governor-general	
68	23 May —	Mr. Secretary Macnaghten	Commissioner, Assam	} 20 June —
69	30 May —	Political Agent, Assam	Agent, Governor-general	
70	5 May —	Agent, Governor-general	Dr. Wallich	} 11 July —
71	14 April —	C. A. Bruce, esq.	Lieut. Millar	
72	17 June —	Agent, Governor-general	Mr. Secretary Macnaghten	
74	11 July —	Mr. Secretary Macnaghten	Tea Committee	} 11 July —
75	2 May —	Superintendent Botanical Garden, Saharunpore.	Secretary, Tea Committee	
76	- - -	Statements	- - - - -	} 15 Aug. —
76	6 Aug. —	Tea Committee (with sketch, No. 1.)	Mr. Secretary Macnaghten	
79	15 Aug. —	Mr. Secretary Macnaghten	Tea Committee	} 12 Sept. —
79	15 Aug. —	Tea Committee	Mr. Secretary Macnaghten	
80	12 Sept. —	Mr. Secretary Macnaghten	Tea Committee	
81	22 Aug. —	Mr. Chief Secretary Chamier	Mr. Secretary Macnaghten	} 19 Sept. —
81	9 July —	Lieut.-Colonel King	Chief Sec ^y to Government	
82	9 Aug. —	Secretary to Madras Agricultural Society.	Ditto	
82	13 Aug. —	Commissioner, Mysore	Ditto	
82	12 July —	Superintendent, Coorg	Commissioner, Mysore	
83	26 July —	Superintendent, Nuggur Division.	Officiating Secretary to Commissioner for Government of the territories of Rajah of Mysore.	
83	18 Oct. —	Captain Jenkins	Secretary to Tea Committee	} 19 Sept. —
84	1 Oct. —	Superintendent of Tea, with a Sketch, No. 2.	Captain Jenkins	
87	14 Nov. —	Mr. Secretary Macnaghten	Tea Committee	

Page.	Date.	From.	To.	Date of Cons.
87	12 Jan. 1837	Tea Committee	Mr. Secretary Macnaghten	23 Jan. 1837.
88	4 April	Secretary, Tea Committee	Ditto	} 17 April —
89	2 March	Mr. Assistant-surgeon Griffith.	Secretary, Tea Committee	
89	19 Jan.	Captain Jenkins	Secretary, Tea Committee	} 13 May —
89	20 Dec. 1836	Superintendent of Tea	Captain Jenkins	
90	15 Feb. 1837	Captain Jenkins	Secretary, Tea Committee	
91	20 Dec. 1836	Superintendent of Tea	Captain Jenkins	
91	13 March 1837	Mr. Secretary Macnaghten	Tea Committee	
92	20 Feb.	Captain Jenkins	Secretary, Tea Committee	
92	10 Feb.	Superintendent of Tea	Captain Jenkins	} 25 Sept. —
92	5 Sept.	Secretary to Tea Committee	Mr. Secretary Macnaghten	
93	11 Dec.	Extract Resolution of Government		} 11 Dec. —
93	30 Nov.	Secretary, Tea Committee	Mr. Officiating Secretary Mangles.	
94	11 Dec.	Mr. Officiating Secretary Mangles	Tea Committee	
95	12 Dec.	Secretary, Tea Committee	Mr. Officiating Secretary Mangles.	} 29 Dec. —
95	29 Dec.	Mr. Officiating Secretary Mangles	Secretary, Tea Committee	
96	30 Dec.	Tea Committee	Mr. Officiating Secretary Mangles.	} 15 Jan. 1838.
97	15 Jan. 1838	Mr. Secretary Macnaghten	Ditto	
97	7 Feb.	Mr. Officiating Secretary Mangles	Secretary to Tea Committee	} 7 Feb. —
98	-	Extract Report by Mr. Assistant-surgeon W. Griffith.		
		Chart of China. No. 3.		
		Chart of Upper Assam. No. 4.		
		Chart showing the distribution of the Tea Plant between Assam and the 24th degree north latitude. No. 5.		
		Drawings of Assamese specimens. Nos. 6, 7.		
107	25 Sept. 1837	Mr. Secretary Macnaghten	Secretary, Tea Committee	25 Sept. 1837.
107	5 Oct.	Captain Jenkins	Ditto	} 30 Oct. —
109	-	Report by Mr. Bruce, with Sketch of the Kahong River, and Rough Map of the Singpho, Muttuck, and part of the Rajah Purundah's country, &c. Nos. 8 to 11.		
115	30 Oct. 1837	Mr. Officiating Secretary Mangles	Tea Committee	
115	20 March 1838	Tea Committee	Mr. Officiating Secretary Mangles.	} 9 April 1838.
117	9 April	Mr. Officiating Secretary Mangles.	Tea Committee	
117	29 March	Secretary to Tea Committee	Mr. Officiating Secretary Mangles.	
118	17 May	Ditto	Ditto	21 May 1838.

East India House, }
22 February 1839. }

T. L. Peacock,
Examiner of India Correspondence.

COPY of PAPERS received from *India* relating to the Measures adopted for introducing the Cultivation of the TEA PLANT within the British Possessions in *India*.

MINUTE by the GOVERNOR-GENERAL.

It is not necessary that I should trouble the Council with many remarks to support the abstract question of the great advantage which India would derive from the successful introduction of the tea plant; and the only points for consideration are, whether there are not reasonable grounds for the conclusion, that there must be, in all the varieties of climate and soil between the Himalayas and Cape Cormorin, combinations of both, that must be congenial to this particular plant; and next, how far it may be practicable to have from China cuttings of the true and best descriptions of the plant, and knowledge and skill for its cultivation, and for the subsequent process of preparing the leaves for use.

The subject was first urged upon my notice in London immediately after I received my appointment, by a very intelligent gentleman of the name of Walker, whose memorandum I submit for the perusal of the Board. Dr. Wallich remarks, that though some of the opinions are erroneous, there is much in the paper that is valuable and deserving of attention.

It appears that both the present President of the Board of Control, as well as the East India Committee, have had the subject under their consideration. The best evidence obtainable perhaps, not only in India, but elsewhere, is that of Dr. Wallich. This will be found in the reports; but for more convenient reference, I have obtained from him a copy of his letter to Mr. Grant, which contains all the information that can be obtained out of China upon this subject.

The naturalization of so many foreign plants and vegetables, the natives of climates very different from our own, would of itself afford very sufficient encouragement for any attempt of this kind. There are, however, some shrubs and trees that are familiar to us, of such delicacy as hitherto to have languished wherever transplanted; the mangostein is one of these; the claret grape has deteriorated in every other spot, and probably the same is the case of the hock grape. In both instances, the desideratum has been a peculiar soil, united to a particular climate. We have no such cause of apprehension with regard to the tea plant, which flourishes over a space embracing many degrees of longitude and latitude. As a practical agriculturist, I am inclined to think that few of the foreign herbs and plants, that are become not only naturalized, but also the mainstays of our agriculture, did not afford in the first instance a greater promise of successful experiment.

The only real difficulty that occurs to me, is the impossibility of having access to the tea countries, and of thus having personal and local knowledge of all particulars relating to the cultivation and manufacture. If I had not been to the eastward, when the opportunity was given me of observing the character of the Chinese adventurers there, their superior energy, their industry, their spirit of speculation and calculation of profit, quite equal to that of any European nation, I should never have entertained the conviction, which I did from that moment, that this or any other scheme was perfectly practicable through Chinese agency. I therefore now most strongly and confidently recommend that the attempt should be made; and I propose that a Committee, of which I will present a list hereafter, shall be formed, for the purpose of submitting to Government a plan for the accomplishment of the object, and for the superintendence of its execution.

My own idea is, that an intelligent agent should be selected, who should go down to Penang and Singapore, and in conjunction with the authorities there, and the most intelligent of the Chinese agents, should concert measures for obtaining the genuine plant, and the actual cultivators, who upon inspection of

those spots, that upon their representation of the requisite peculiarities of soil and climate, shall have been selected as the most eligible, shall then be employed, under the promise of a liberal remuneration, to carry on the cultivation. I know no one better qualified to select the best means adapted to the end than Mr. Gordon, of the late firm of Mackintosh & Co.

(signed) *W. C. Bentinck.*

Calcutta, 24 January 1834.

(True copy.)

(signed) *W. H. Macnaghten,*
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 1 February 1834.

Proposition to the Honourable the Directors of the East India Company to cultivate Tea upon the Nepaul Hills, and such other parts of the Territories of the East India Company as may be suitable to its growth. By Mr. *Walker.*

No. 4.

(1) ✓ THE commercial relations of this country with China have lately assumed a character of uncertainty, by no means corresponding to the importance of the trade, or consistent with the dignity, of the British empire. This unsatisfactory state of affairs has originated from a combination of causes and occurrences spread over a long series of years, amongst which may be enumerated: the jealous policy of the Chinese Government in her intercourse with all nations; the apprehension which she has always entertained of our formidable empire in the East Indies; the ignorance, pride, and prejudice of the Government; a consciousness of her own strength in some points, and her weakness in others; the rapacity and corruption of her officers, and occasionally the misconduct of our own people.

The strange policy of this singular nation has confined us for the present to the port of Canton, (in former times we had access to other ports,) situated at the western extremity of the empire, and furthest from Peking, the seat of Government: even in the city of Canton, barriers are fixed, beyond which no Englishman can pass; so that all commercial men who go to China, see about as much, and know about as much of China as a Chinese would of England, or of London, if he was confined to Wapping, and not permitted to go beyond the Tower.

The fears of the Chinese Government have lately been excited by the brilliant and rapid progress of our arms, and the prodigious extension of our Indian empire, which in the North and North-East has its boundaries almost upon the very frontiers of China. Nor can we imagine that the successful termination of the Burmese war will at all contribute to allay the irritation which has so long existed.

But, without further causes of irritation, and considering things as they are, many of those amongst the best informed upon the subject suppose it not improbable, that at no very distant period, and from some apparently accidental event, not only the British nation, but all foreigners, may be prohibited from entering the Chinese territories, as all are now excluded from Japan, excepting only the Dutch, who are permitted to send one vessel annually, the crew of which perform the degrading ceremony of trampling upon the Cross (to show that they are not Christians) as a passport to enter the country. Some, indeed, may flatter themselves that the magnitude of our trade renders it necessary to the Chinese; that the wealth acquired by the sale of their teas to Europeans would render it of importance to the Government to continue the trade; that tea, the produce of their agriculture, with many other articles, would become unsaleable, and of no value; with many fancies of a similar nature. We must not deceive ourselves. The empire of China is the greatest, most extensive, and most populous, that exists in the world, or has existed in ancient or modern times, and contains everything necessary within itself. Internally, the empire is admirably well regulated, and from the inflexibility of its decisions, by which the Government is probably maintained, it is internally the most powerful upon the face of the globe; but as the severest measures have been adopted to keep everything

everything stationary, and to avoid variation and change *, the arms and science of the Europeans have so far outstripped those of her subjects, that the forces of China would be almost powerless against European tactics, and for the most part only able to contend with such of the neighbouring states as have not made a progress in civilization or in science beyond her own.

The Government reposes in reasonable confidence that her seas, her deserts, and her mountains, aided by her immense population, will form an effectual barrier against any invader whose cupidity might be excited by the prodigious wealth of her provinces to make an attack. Should any capricious or timid monarch or minister, in petulance, banish all strangers, not the smallest resistance would be made by the people, nor any serious efforts to renew the intercourse; and it seems well ascertained, that though the suspension of the trade might produce some inconvenience to the parties immediately concerned, yet ultimately that it would not create any derangement in the affairs or revenues of the kingdom, or even in the price of tea.

When an interruption in the trade between Russia and China occurred in the reign of the late Empress Catherine, (to which we are indebted for the introduction of our woollens into China, and our calicoes into Russia,) in consequence of some fray at Kiatka, the frontier town of Russia, (at which place alone the trade is permitted to be carried on,) the Empress, after the trade had been suspended seven years, wrote to the Emperor of China, the late Kein Lung, requesting that the trade might be renewed. The monarch of the celestial empire replied to the despatch, by calling the Russians, beasts, dogs, animals, but added, that as he wished to be at peace with all the creatures upon the earth, if the trade was necessary to the Russians, it should be renewed. Kein Lung was an author and a poet; Catherine was an author; and it was said, she was more vexed at this answer than at any despatch received during her reign.

In this renewal, however, the Russians were compelled to receive in exchange for their Siberian furs, &c., the mouldy teas, mildewed calicoes, musty rhubarbs, &c., which had been there for some years, being courteously informed by the Chinese, that as these articles had been brought from a vast distance across the desert on purpose for them, until they were gone they could obtain no others. The Russians submitted with the best grace they could, took the damaged articles, and the trade was renewed.

✓ For many years the consumption of tea has been increasing in this country; it has become a luxury to all, and almost a portion of food to the common people, who in some districts drink it three or four times a day. Its use is so intermingled with our habits and customs, that it would not easily be dispensed with; and from its almost universal consumption, the Government derives a revenue of 4,000,000 *l.* per annum. The original purchase or prime cost, with the shipping, &c. concerned in the trade, must of course amount to a very large proportion of the same sum. The quantity consumed in the United Kingdom exceeds 25,000,000 of pounds per annum; and the annual cost to the people of this country, including the duty, is about 8,000,000 *l.* sterling.

It is, therefore, of considerable national importance, that some better guarantee should be provided for the continued supply of this article, than that at present furnished by the mere toleration of the Chinese government, which, although the Chinese have at present a monopoly, it will be easy for us to destroy.

✓ It has been generally imagined that China was the only country where the tea plant would grow, or where it could be cultivated and manufactured. Recent investigations have dissipated this delusion; for we shall find that the Burmese, the Japanese, and Brazilians, as well as the Chinese, have cultivated tea

* A worthy and wealthy friend of the author of this memorial, many years engaged in the Chinese trade, was requested by one of the most opulent merchants to obtain for him an European flower-mill, which commission he readily undertook: when he left Canton there were 19 vessels in the harbour. The Chinese merchant wrote to him, not by one only but by every one of the 19 vessels, imploring him not to bring the mill, for if it was introduced he should infallibly lose his head. Another Chinese merchant, convinced of the superiority of our square-rigged vessels, fitted out his own in the European manner; the man was bastinadoed and imprisoned. The fate of the steam-vessel sent by the India Company to Canton is well known.

tea with success; and we may confidently state, that if in future we are not rendered independent of the Chinese, by producing tea from our own territories and colonies, it will be our own fault, and we shall merit continuation of that insolence from the Chinese government which all the publications relating to the embassies of Lord Macartney and Lord Amherst so amply and so minutely describe, as well as the unremitting extortions and persecutions of the Chinese officers to the few agents who carry on the trade at Canton.

Within a very short period, an alteration in commercial productions, almost equal in importance to that of tea, has occurred in the instance of indigo: all the indigo used in this country was formerly grown in Guatimala, which exported, when under the dominion of Spain, about 1,200,000 lbs. per annum. Since the cultivation of indigo in the East Indies, nealy 6,000,000 lbs. have been annually imported into this country from the East Indies.

In an unpublished manuscript note of Dr. Buchanan, in the library of the East India Company, upon the Birman empire, he says, "but the chief plant of renown is the tea plant, which grows in the woody, mountainous district to the N. E. and S. of Umerapoor, as well as in various other parts of a similar character. It is cultivated by the Sheen, who inhabit the towns on the Irrawady; they bring it in large baskets to Umerapoor, whence it is dispersed all over the kingdom." The tea districts of China, we should observe, are in the same latitude, and the plant is common in mountains of the same elevation.

In Don's 'Prodromus Flora Nepaulensis' it is stated, that the tea plant is found in Nepaul; but he expresses a doubt whether it is, or is not, indigenous to Nepaul. That it exists there, there is no doubt; for the Honourable Mr. Gardiner, resident of the East India Company at the court of Nepaul, found it flourishing in a garden at Katchmandu, the capital, and sent a plant down to Dr. Wallich, the director of the East India Company's botanic garden at Calcutta, in 1816, from whence Dr. Wallich transmitted a specimen to Sir Joseph Banks, with the observation, that in the low, humid climate of Calcutta it was always a sickly plant.

Mr. Abel, the botanist who accompanied Lord Amherst upon his embassy to China, says, "The question whether the tea plant will grow in any other country than China, has, in a great measure, been settled by the success of the tea plantations at Rio Janeiro, made under very little encouragement. It may, however, be worth considering, what are the countries in which it is most likely to succeed, from their relation to its natural places of growth. The green-tea districts, in the province of Keang Nan, are embraced between the 29th and 31st degrees of north latitude, and are situated in the north-western base of a ridge of mountains, which divide the provinces of Keang Nan and the Keang See.

"The black-tea districts, in the province of Fo Kien, are contained between the 27th and 28th degree of N. latitude, and are situated on the S. E. declivities of a ridge of mountains, dividing the province of Fo Kien from that of Keang Nan. Thus the whole range of the great districts of China, from which Europe is supplied with tea, from the highest to the lowest degree of latitude, is from 31° to 27°. According to the missionaries, the tea plant thrives in the more northern provinces, as at Pekin; and from Kempfer, it would appear that it is cultivated in Japan as far as 45° north.

"From every account given of the tea plant, it succeeds best on the sides of mountains, where there can be little accumulation of vegetable mould; our opportunities of seeing its cultivation were few, but were all in favour of this conclusion. The plantations were always at some elevation above the plains, in a kind of gravelly soil; formed in some places by disintegrated sand-stone; and in others by the debris of primitive rocks. A large and flourishing plantation of all the varieties of the tea plant (brought together by Mr. Bell, the principal tea inspector at Canton) is situated on an island close to Macao, in a loose gravelly soil, formed by the disintegration of large-grained granite. Judging from the specimens collected in our route through the province of Keang Nan, whence the green tea is provided, the rocks consist chiefly of sand-stone, schistus, and granite: as to the precise nature of the rocks of the black-tea country, in the province of Fo Kien, I have no exact information; but as the great ridge, separating that province from Keang Si, is a continuation of one separating the latter from Canton, it is perhaps legitimate to conclude, that their constituent rocks are the same, and that the hills and soil on the eastern side

side are the same as we found them on the western side of the ridge, and that they are covered by a soil like that in which the camellia flourishes; the vegetation chiefly consists of the same kind of plants. But the success of the American plantations proves that the tea plant will flourish within the tropics; and that it will grow vigorously within them, is proved by the fine plants in Sir H. Lowe's plantations at St. Helena.

"If ever it should suit the policy of this country to derive the tea from any of our own dependencies, there can be no doubt we shall soon cease to be indebted to China for an article that enters so largely into the comforts of all classes of our countrymen. I have heard much of the difficulty of transplanting plants from China, in sufficient numbers and in such health as to give a fair chance to any experiment for the cultivation; but I cannot imagine where that difficulty exists.

"A great number of plants which were on board the *Alceste*, for the purpose of being left at the Cape of St. Helena, were in the most vigorous state the day previous to the wreck, and there can be no doubt would have arrived thus at the place of their destination.

"At Rio Janeiro," Mr. Abel observes, that "the botanic garden is of considerable extent; but it has no other care bestowed on its management than what it receives through the judgment and exertion of Senhor Gomez, whose particular appointment is that of superintending some gunpowder mills in the neighbourhood.

"This gentleman, notwithstanding the defects of its establishment, has contrived, by the aid of a few Chinese gardeners, to cultivate the tea plant with great success. The tea plant was in great vigour at the time of my visit, and its leaves have been effectively and repeatedly manufactured. The process was very simple. The leaves are gathered during the month of January, after heavy falls of rain, before they are wholly expanded, care being taken that no foot stalks are mingled with them. They are then put into an iron vessel, and exposed to heat till they begin to shrink, when they are taken out and rolled between the hands until they are spirally folded. They are then returned into the vessel and again exposed to heat, till it becomes intolerable to the hand, which continually agitates them to prevent their burning, and then the process is finished."

The writer of this paper has received some of this tea from his friend Mr. Chamberlain, his Majesty's consul at Rio Janeiro, and has given specimens to many gentlemen at the East India House. Since the above was written, the author has been informed, from undoubted authority, that though the Government plantation at Rio has very much declined, and the Chinese dispersed, that private individuals have successfully cultivated the tea plant at St. Paul's, to a considerable extent. One person, some time ago, had purchased 2,000 acres of land for the purpose of planting the whole with the tea plant. A quantity of the St. Paul's tea has been brought to Europe; it is manufactured entirely by the natives; in quality it is far superior to the Rio Janeiro tea, and so little inferior to the Chinese, that the difference is scarcely perceptible. All the tea produced at St. Paul's is green tea. Latitude of St. Paul's about 21°.

Mr. Abel continues, "I have often been asked, whether there be more than one species of the tea plant? This question I have not been able satisfactorily to answer. I had little doubt, when examining the different plants, that there were two species, but I could not at that time define their characters, and have since lost the specimens by shipwreck." This question, which has so much interested the botanists, whether the green and black teas are produced from two distinct plants, does not appear to be of much practical importance, as it is admitted, both by Abel and Dr. Letson, in his history of the tea tree, that either of the plants will afford the black or green tea of the shops.

"As" adds Mr. Abel, "the colour and quality of the tea does not depend upon the botanical difference of the species, it must arise from some peculiarity in the mode of manufacturing it; namely, in the due management of the heat used in the preparation and drying the leaves. There can be but little doubt that a leaf dried at a low temperature will retain more of its original colour, and more of its peculiar qualities, than one which has suffered a high degree of heat; and I may add, that the strongest tea I tasted in China, called 'Yu tien', used on occasions of ceremony, scarcely coloured the water, and the

leaves upon examination were found to consist of the scarcely expanded buds of the plant."

Green tea is made from the first buds of the plant before the leaves are developed. The best kinds of souchong are derived from the leaves when perfectly formed, and at the exact period of maturity. The bohea and common souchong teas are made in a great measure from the mere gleanings of the leaves, which have passed the period of their perfection, and when, like the withered leaves of autumn, they are nearly dismissed from the service of nature, as unable to contribute to the offices of the vegetable economy.

The Chinese communicate a great variety of flavours to tea, by simple arts. The flowers of the *Olia* fragrans are dried and mixed with their finest teas, to give them fragrance, and a delicate flavour is communicated by a combination of the blossom buds. When the dried leaves are removed from the iron-pan in which they are torrefied, children are employed to touch slightly the leaves with a camel-hair pencil dipped in spirituous solutions of resinous and aromatic gums.

The cowslip souchong receives its peculiar flavour from this process.

The process of drying and manufacturing the tea is very simple. In Japan, there are public buildings or drying-houses for curing the tea, and so regulated that every person who either has not the suitable conveniences or requisite skill, may bring his leaves at any time to be dried. In China, the dealers purchase the leaves of a tea plantation as our fruiterers buy the fruit of an orchard, pluck the leaves, dry them slightly to enable them to bear the carriage, and manufacture them afterwards at their convenience and leisure. The green teas are exposed to the sun in wicker-baskets for 36 hours, and then dried over the fumes of burning indigo; a very slight portion of indigo mixed with powdered gypsum being delicately sprinkled over the tea when packed, to heighten the colour. The black teas are torrefied three or four times in the manner above described, to suit the fancy and palate of the owner. (*Vide* Kempfer and Letson on the tea plant, where the plans of the stoves are described.)

The cultivation of the tea plant is also extremely simple. Kempfer states that in Japan, no particular gardens or fields are allotted for the plant, but that it is cultivated round the borders of rice and corn fields, something like our hedges, or the apple trees in the fences in Hereford and Worcestershire, without any regard to the soil. Any number of seeds, as they are contained in the seed-vessels, not less than 6, or more than 12 or 15, are promiscuously put into one hole, made four or five inches deep in the ground, at certain distances from each other. The seeds contain much oil, which is liable to become rancid, and only about one-fifth generate. The seeds grow without any other care, but the more industrious usually remove the weeds and manure the land. In three years the plants are strong enough to bear denuding of their leaves, which are then plentiful and in their prime. In about seven years the plant rises to 15 or 20 feet in height; it then bears few leaves, which grow slowly; it is then cut down to the stem, which occasions such an exuberance of fresh shoots and leaves the next summer, as abundantly compensates the owners for their former loss and trouble. Some defer the cutting till the plants are of ten years' growth.

In China, where the manufactory and cultivation are great, large plantations are made, and the trees cultivated with great care.

The cultivation of the tea plant, its management and treatment in China, are generally so simple and so well understood, that no difficulty is to be apprehended in bringing its manufacture and cultivation to a successful issue, in soils and climates fitted for the purpose. From the distance of the country, and the magnitude of the object, however, it is absolutely necessary that funds should be provided to meet the probable contingencies and emergencies, and ensure success in a reasonable time.

It is therefore proposed, that the East India Company should resolutely undertake the cultivation upon the Nepaul hills and other districts, where the camellia and other plants of a character similar to the tea plant are indigenous.

At present, the hills in question are of very little value to the East India Company, and have very few inhabitants, the territory acquired from the Goorkahs having been merely taken as a frontier. At the commencement of the cultivation, it will be necessary to obtain plants and seeds from China and other

other places. The plantations should also be protected by inclosures, and a few Chinese families, accustomed to the cultivation and preparation of tea, should be employed to instruct the natives. The Chinese may be easily obtained at Calcutta, or some of the islands in the East Indian Archipelago, or at Canton.

We can scarcely doubt that, when the skill and science of the Europeans, aided by thermometers, &c., shall once be applied to the cultivation and preparation of tea in favourable situations, the Chinese tea will soon be excelled in quality and flavour. Within the last three or four years, the quality of the tea is more uniform at every tea sale of the East India Company, where many thousand chests are sold every six weeks. Five or six chests were included in each lot, but the catalogue formerly very candidly gave the distinguishing marks of "musty," "fusty," "woody," "dusty," to almost every chest in the lot but one. The grocers mixed them as well as they could; the public complained of the quality and its price; but as they had no remedy, drank it and bought another portion with the hopes of better success. The complaint has been almost universal, that the fine teas are not so good now as some years back, but it is understood that the East India Company have exerted themselves to remedy the evil. It is not, however, in the consumption of the United Kingdom alone, that a market would be found for its produce. The whole Continent of Europe has lately adopted its use in a greater or less degree, and in many countries, such as Canada, the United States, and the Barbary coast, the consumption has become very considerable.

In the territories of the East India Company, the consumption would be prodigious. It is now used as a luxury, and a medicine in cases of sickness. The Hindoos live chiefly upon rice and flour; their only drink is water. If tea could be obtained by them at a moderate price, it would form a most refreshing addition to their domestic economy, as well as a salutary beverage in those fatal febrile affections to which the oppressive heat of the climate predisposes them. The consumption of Calcutta at this moment is considerable.

From the most correct information which can be obtained, it is not perhaps possible upon the face of the globe to find a country so admirably situated as the districts of India, where the soil, climate, and low price of labour, combined with the quiet and peaceable habits of the neighbouring population, offer such a concurrence of circumstances favourable to the undertaking.

There are, however, many other and very important considerations to induce the Company to undertake the cultivation of tea in their own territories, besides obtaining tea of a superior quality, and rendering us independent of the monopoly of that singular people, the Chinese, for this excellent beverage.

The inhabitants of India have little or no occupation excepting that of agriculture; and the cultivation and preparation of tea would admirably accord with their sedentary and tranquil habits. The skill of our manufacturers has not only totally superseded the introduction of muslins and cottons from India, but the exportation of Manchester and Glasgow cottons and muslins to India has so deluged the Indian markets, that many thousands of the native weavers are ruined, and in the greatest distress. Their economical habits also render labour extremely low in price. Tea, like almost all other articles, is the produce of land and labour. A man can gather about 15 lbs. of tea leaves per day. The price of labour in India is from 2*d.* to 3*d.* of our money per day: in China, the price of women's labour is about 5*d.*, of men's 7*d.* per day; and in some instances almost as high as in England.

The East India Company are much at a loss to provide some reasonable occupation for the natives, to promote peaceful habits of industry amongst them. It is also an object of great importance to the East India Company to obtain facilities to bring home their territorial revenues, which at present they have very imperfect means of doing; in many instances the loss in exchange has been dreadful.

The boasted mines of South America have furnished Europe for the last two centuries with many hundred millions of the precious metals, of which it is well known a very small portion has remained in Europe. China, with regard to bullion, has, until lately, been that "bourne from whence no traveller returns."

They have received almost all the bullion of Europe, principally in payment for tea. A few millions of dollars, it is said, have been obtained very lately

from China, in payment for East India cotton; but none could give any account of what became of the hundreds of millions of dollars sent in the last two centuries to China to buy tea. The dollars were never seen after delivery, and no human being could conceive what became of them; but, for want of a better conjecture, many have fancied that the Chinese buried them. The Chinese dealings are in ounces of silver; for they have no coin except some miserable scraps of zinc or copper, not exceeding our farthing in value, and no paper circulation. Every one must have remarked that, within this century, Europe has laboured under an augmented consumption, and a diminished supply of the precious metals; for proof of the diminished supply, *vide Flores d'Estrada and Fletcher.*

(2) The same duties and financial regulations which exist in England at present would of course continue, and there could be no apprehension of any diminution to the revenue; but as this undertaking would necessarily extend our intercourse with the natives of India, it may be supposed that in some shape or other it would much contribute to the consumption of British manufactures, and increase the prosperity of our empire in the East, and also annihilate the Chinese monopoly, which it is the object of these proposals to destroy.

(True copy.)

(signed)

W. H. Macnaghten,
Secy to the Gov^t of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 1st February 1834.

OBSERVATIONS on the Cultivation of the Tea Plant, for Commercial purposes; in the mountainous parts of Hindostan; drawn up at the desire of the Right honourable C. Grant, President of the Board of Control for Indian Affairs; by *N. Wallich.*

It has been usual to look upon the tea plant in the light of one of those vegetable productions, of which the natural growth is limited within narrow geographical boundaries; and to imagine that, like the nutmeg, the clove, the cinnamon, camphor, and other trees of extensive commercial importance, its native country occupies but a small and confined spot on the surface of the globe. Without entering in this place into any unprofitable discussion as to its probable origin in one particular spot, in China or Japan, it may be fairly assumed, that the tea plant has from time immemorial continued the very reverse of being circumscribed or local in the geographical extent of its distribution, inasmuch as it grows wild, or at least in a perfectly naturalized state, and maintaining all the properties of the genuine plant, on a vast space, comprising not less than 30° of latitude and 35° of longitude. But, although the shrub is thus widely dispersed, although it is found within the tropics as far south as the 17th degree of north latitude, in Cochin China, and beyond the equatorial regions so far north as 45°, in Japan, it will be proper on this occasion to consider the plant only with reference to its existence in China, since it is the commodity as obtained exclusively from thence which forms the basis of the present inquiry. By far the most important cultivation of the plant is carried on in the provinces of the Chinese empire, situated between the 27th and 30th parallels of north latitude, where the black teas are almost entirely produced; but it is also reared in vast quantities to the south, nearly as far as the sea-shore in Canton, and to the north as far as 40° in the mountainous regions beyond Peking.

There is a remarkable circumstance connected with this part of my subject, which is deserving of attention. Unlike a great many other objects of great agricultural interest, or general utility, the botanical genus to which the shrub yielding the tea leaf belongs, consists of no more than one single species, and the small natural group to which it appertains comprises only one other genus, namely, the camellia. This genus, together with its near ally, the tea shrub, belongs exclusively to the eastern hemisphere; it consists of several species, which have been found wild in Japan, China, Cochin China, in Nepaul, and on the mountains bordering on the north-east frontiers of Bengal. Neither of these

these two genera have ever been met with in any part of the western hemisphere.

With respect to the natural character of the tea plant, it is altogether foreign to my plan to enter into any great detail. It is a hardy evergreen shrub, attaining a man's height, easily raised from seeds, and multiplied by cuttings or layers. It endures the vicissitudes of widely different foreign climates so well, that it has been ascertained by experience it will grow luxuriantly within the tropics; and even in this country it will bear the winter in sheltered situations, in Devonshire and Cornwall, although it rarely blossoms, except in the stove or conservatory. It requires but little care during its tender age, except what is called for by the perishable nature of its seeds on account of their oiliness, and by the ordinary precautions of manuring and protection of the young plant. Few plants are more indiscriminate in their localities of soil and climate; for it is cultivated on comparatively low and depressed situations, as well as on the brows of rugged hills. The plant, generally speaking, is contented with a gravelly or sandy soil, mixed with a scanty proportion of vegetable mould; but it delights most in shady declivities of hills, in moist vallies and the banks of rivers, situations which are peculiarly favourable to the luxuriant growth of the superior sorts of teas, being temperate and mild in their alterations of heat and cold, and other atmospherical changes, exposed to the sun of a genial summer during one half of the year, and sheltered from intense degrees of frost and snow during winter. It may therefore be safely assumed, that the shrub is cultivated to the greatest advantage in a temperate climate, where the thermometer ranges between 30° and 80° , where the heat in the summer season is never scorching or dry for any length of time, and where the winter is not marked by any very severe frost or snow.

The introduction of so valuable a plant into countries foreign to its own must always have been an object of anxious solicitude, and we find accordingly that various attempts have been made to accomplish it. The ultimate results, however, have always been extremely unsatisfactory, owing to circumstances which could have produced no other consequences, and which, as will be presently seen, have entirely vitiated every practical inference to be deduced from the experiments themselves. The shrub has indeed become naturalized in several remote and dissimilar countries; but the quality of its produce has invariably proved greatly deteriorated, or altogether changed from that of the present plant. Before I proceed to give some particulars of the experiments that have been made, it may be proper to premise a few observations on the conditions which ought at all times to regulate our attempts at naturalizing, for any useful purposes, the vegetable productions of one country in another.

An exact conformity of soil and atmospheric phenomena constitute the obvious data by which we are to be guided on such occasions. But since it does not often happen that accurate or sufficient information can be obtained upon those points in remote parts of the world, we must have recourse to the general laws that have been found to prevail in the distribution of heat and the other conditions of the atmosphere, with regard to latitude and other well-known circumstances, and a judgment has to be formed from a calculation of probabilities, instead of from a comparison of exact data. In all cases where a favourable combination of both the direct and the collateral arguments forms the basis of an agricultural undertaking of this nature, the result of it cannot fail to prove successful.

The first point which must be ascertained is, how far the countries are likely to correspond in the degree of their temperature. The probability of a conformity in this respect may, as a general rule, be judged of by the agreement or disagreement of their latitudes, provided the countries in question are both situated in the same hemisphere. For although latitude does not go along with temperature, if we compare the eastern with the western hemisphere, the latter being generally colder than the former on the same parallels both south and north of the equator, the mean temperature of 40° north latitude in the old world being 63° , while in the new world it is only 54° , and that of the Mauritius in $20^{\circ} 9'$ south latitude being $80^{\circ} 4'$, while that of Rio Janeiro in $20^{\circ} 59'$ south latitude is only $74^{\circ} 3'$; yet in the same hemisphere the isothermal lines (or imaginary lines connecting places in which the mean temperature of the year is the same) do nearly accord with the parallels of latitude, with a few exceptions. This, however, is very much regulated by the geological formation

of a given country; mountainous districts being much colder than low, flat regions situated to the northward of them. It has been calculated that, in tropical countries, the decrement of caloric as we ascend in the atmosphere is equal to 1° north latitude for every 396 feet of vertical elevation; so that the temperature of land 4,512 feet above the level of the sea in 10° north latitude, would approximate that of open, flat countries on a level with the sea in 22° north latitude. But beyond the tropics, in Europe at least, it is supposed that the reduction of temperature is nearly equal to 1° north latitude for every 540 feet of perpendicular height.

But as vegetation is less influenced by the mean temperature of the year, than by the heat of summer and winter taken separately, it often happens that corresponding mean temperature will not prove a sufficiently accurate guide to forming an opinion upon acclimating; for a plant produced in a country with an exceedingly high temperature in the summer, may be able to bear very severe cold in winter, and yet when transferred to a country where the mean temperature of the year is higher, but in which the winters are milder and the summers cool, may be found incapable of being cultivated. Hence our second inquiry should be directed to the mean temperature of summer and winter, considered respectively of the countries whose productions it is wished to assimilate.

A third condition necessary to render success probable, is an identity of the atmosphere in regard to humidity, pressure, prevailing winds, &c. Unfortunately, the state of our meteorological knowledge is in general not such as to furnish us with exact information on all these points, and therefore the only other method of judging that is open to us consists in a comparison of the Floras of the two given countries. If it should appear that there is an identity or a considerable similarity in their vegetable productions, it is probable that any plant taken from one will thrive in the other; and in proportion as the vegetation of the two countries differs, does the probability diminish of any useful object being attained by endeavouring to exchange their species.

A very slight acquaintance with the character of the countries where the attempts were made to introduce the cultivation of the tea plant is sufficient to account for the total failure of them at Penang. The late Mr. Brown, misled by the unconnected fact, that the shrub stood well the climate of the island, conceived the project of cultivating it on an extensive scale as a commercial speculation. He accordingly established a large tea plantation at his estate of Slugar, and even took pains to procure several Chinese from Canton on purpose to superintend the undertaking. Upon the whole, the plant grew remarkably well, but when the period arrived for commencing to reap the harvest of all the labour, time, and expense that had been incurred, the quality of the produce was found of a very inferior description, and the infusion of the leaf had moreover acquired the very appalling property of a nauseating and even slightly emetic drug; as if the identical variety possessing this effect, which the Jesuit missionaries pretend does exist in certain parts of the Chinese Empire, had unfortunately found its way into Penang, and become the present stock of Mr. Brown's plantation. However, if we recollect that Prince of Wales Island is situated between 5° and 6° north of the equator, that its highest hill does not exceed 2,500 feet in elevation, that in short every feature of the climate is tropical, we cannot be surprised at the result of the attempt; and it is hardly necessary to add, that all further idea of cultivating the plant for the sake of its leaf has been long since abandoned in that quarter.

In Java, similar trials, made under very similar circumstances, have proved equally fruitless, and have in consequence been given up. I am informed that no better success has attended some experiments which were made many years since by the Dutch Government in the southern parts of Ceylon.

About 20 years ago the cultivation of the tea plant was commenced on a large scale at Rio Janeiro, and, as far as concerns the naturalization of the shrub, a certain degree of success attended the measure, but the produce proved to be so bad in its flavour, that the plantation has of late been nearly relinquished. I have had an opportunity of examining a sample of tea produced in the Brazils. In appearance it resembled the finer sort of green tea, but the taste of the infusion was exceedingly bad, and unlike that of the common article. It is needless to dwell on the cause of the failure in this instance.

From what has been advanced in speaking of the general rules that are to be observed in all our endeavours to naturalize the plants of foreign and distant climates, it is obvious, that we cannot expect to succeed, unless we pay strict attention to those laws of nature, in the distribution of the plants on the surface of the earth, which have been traced by the labours of some of the first naturalists and agriculturists; and on the other hand, it must be allowed, that vague and unsatisfactory experiments, such as those were which have been enumerated above, ought not to have any weight in the solution of the problem, whether the tea plant admits of being advantageously cultivated in foreign countries for commercial or agricultural purposes. The time has arrived when this question has assumed a more than ordinary degree of interest, and there exist territories in the British dominions in the East Indies agreeing so perfectly with those of the tea provinces, that no doubt can be entertained of their being capable of producing tea equal to the best kinds ever obtained from China; unless indeed it should be contended, that the plant differs from all others on a point in which the whole vegetable kingdom has been found to agree, and that it forms an exception to one of the most beautiful laws of nature.

The provinces of Kamaon, Gurwal and Sirinore, contain situations corresponding entirely with what we know of those of China and Japan, in which the cultivation of the tea shrub is carried on to the greatest extent and perfection, not only in the characters of soil and climate, but likewise in all the collateral conditions of naturalization pointed out in a preceding part of this report. They constitute the western and northern corner of Hindostan, and are subordinate to the Presidency of Bengal, being situated within 28° and 31° north latitude, and 76° and 81° west longitude, and extending from the plains of the adjoining provinces to beyond the Snowy mountains. In regard to climate and elevation they are extremely diversified, possessing all degrees of temperature from the scorching heat of a tropical sun, or the temperate atmosphere of the tea provinces, to the severe winter of Chinese Tartary, and the eternal snow of the Himalaya, with all the intermediate gradations, and rising from the level almost of the sea to the height of the loftiest peaks in the world. They are watered by the Sutlej and the Ganges, and by the countless tributary streams of both these rivers, and finally, they possess every variety of soil. To all these advantages must be added, the very striking and almost exclusive similarity of their general Flora with that of China and Japan, amounting to absolute identity of species in some instances, and close similarity in many others. I have already had occasion to observe, that a species of camellia grows wild in Nepal; and in publishing an account of it in 1818, I noticed that a tea shrub was thriving vigorously in a garden at Katmandu, 10 feet in height, and producing plentiful flowers and fruits during the last four months of the year. During my visit to that capital some years afterwards, I saw the shrub, and I ascertained that the seeds of it had been brought from Pekin by the return of one of the triennial embassies, which are sent to China by the Goorka Government.

If we take all these concurring circumstances into due consideration, we may surely entertain sanguine hopes, that under a well directed management, the tea plant may, at no distant period, be made an object of extensive cultivation in the Honourable East India Company's dominions, and that we shall not long continue dependant on the will and caprice of a despotic nation for the supply of one of the greatest comforts and luxuries of civilized life.

London, 3 Feb. 1832.

(True copy.)

(signed)

W. H. Macnaghten,
Secy to Govt of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 12th May 1834.

From the Members of the Tea Committee to *C. Macsween*, Esq., Secretary to Government, Revenue Department.

Sir,

15 March 1834.

In pursuance of the object of our appointment, as communicated in your address of 1st February last, we beg that you will submit to the honourable the Vice-president in Council the following statement of the conclusions at which

we have arrived, regarding the points proposed to our consideration, with our suggestions as to the further measures that should be adopted for carrying the wishes of Government into effect.

2. The first question submitted to our investigation is, whether there may not be found within the Company's territories a climate and soil suitable to the cultivation of tea; and to this we are happy to be able to reply, generally, that we think there is good reason to believe that there are parts of the Company's dominions which present such features of climate and soil as would warrant the expectation that the tea plant might be successfully introduced into them with a view to commercial purposes. We admit, however, that further information on this point is still wanting to enable us to point out specifically the situations in which we could with confidence recommend that the experiment should be made. It was scarcely to be expected, indeed, that travellers and other general observers, whose attention had not been particularly directed towards the cultivation of tea, should have collected such detailed information on the subject as would enable us to determine at once on the chances of success or failure in any given place of which the soil and climate were ascertained; while, on the other hand, as the attention of our own statistical inquiries has not till now been directed to this particular subject, we really know too little of our own provinces to be able to form an accurate comparison between them and what is known of the tea districts of China. In the meantime, however, we may safely say, that the proposed experiment may be made with great probability of success in the lower hills and vallies of the Himala range. Next to them, those of our eastern frontier offer the best prospects, and after them the Nilgherry and other lofty mountains in southern and central India.

3. For the facts and reasonings which have led us to the adoption of this conclusion, we would beg to refer to our proceedings, of which copy is annexed, and more especially to the very able and interesting letter of Dr. Falconer on the subject. We may here, however, state shortly, that our conviction is drawn partly from the fact that a certain degree of success has attended attempts to produce tea in other parts of the world, in circumstances of soil and climate far more dissimilar to those of the tea districts of China, as far as we are acquainted with them, than are to be met with in those parts of our provinces to which we have alluded. In China the principal tea districts are covered with snow generally for one month annually; the navigable rivers are obstructed by ice for a still longer period, while the heat in summer is very oppressive, so that the extremes of temperature in the winter and summer seasons must differ by at least 70°. Neither in the Brazils, nor in Java, where the experiment has been tried on a large scale, does the climate at all approach to this description, while one nearly resembling it, in respect to temperature at least, may be found in the northern hills.

4. Another encouraging circumstance is to be found in the fact, that in the mountainous tracts of our northern and eastern frontier, several species of plants are found indigenous, which are also natives of China, and are not met with in other parts of the world. We may instance species of camellia, nearly allied to the tea plant of *Abelia*, *Stauntonia*, *Ophiopogon*, *Specatum* and *Japonicum*, *Pardathus*, *Chenensis* and *Houttugnia cordata*; also further to the south-east, *Hovema dulcis*, *Jonicera confusa longifolia*, and *Chinensia camellia*, *kissi*, and some magnoliacine.

5. Until we can procure specimens, and can effect an analysis of the soil that is found in China to be most conducive to the perfection of the tea leaf, we cannot be said to possess any accurate information on that subject; but as far as the reports of Dr. Abel and other travellers can be taken for our guidance, there is scarcely a hilly tract in India which will not furnish a soil suitable to the cultivation of tea.

6. While, therefore, we would recommend that the experiment should be tried, we think it our duty, before specifying any particular district as absolutely eligible for the purpose, to seek for further information, both regarding our own provinces and the tea districts of China. With this view, we have directed our Secretary to address to several gentlemen, who are believed to be possessed of such local information as may serve for our guidance, a set of specific inquiries

inquiries on the subject. A copy of the letter conveying these is annexed, and we doubt not that the replies we shall receive will put us in possession of all the information we can desire, as far as relates to the climate, soil, &c. of our own provinces; so that when more accurate information shall be obtained regarding the tea provinces of China, with reference to the same points, we shall be able to specify with precision the sites that we may think will prove most suitable to the tea plant.

7. Adverting to the very valuable information furnished by Dr. Falconer, regarding that part of the Himalia which lies between the heads of the Ganges and Jumna, in the letter already alluded to, we think it would be of great importance if we could obtain the services of that gentleman in a similar investigation of other parts of the district, especially those lying between the Ganges and Gogra. Dr. Falconer, it will be seen, expresses his willingness to prosecute his inquiries, if he can be relieved from the medical duties of his station.

8. We are aware of the difficulty of procuring the desired information regarding China, from the extreme jealousy of the government of that country; but we hope it will not be found insuperable. We are informed, that for the last three or four years, vessels have been constantly employed by some of the English merchants in trading to the eastern and northern parts of China, and that notwithstanding the denunciations of the authorities, little practical difficulty has been experienced in carrying on commercial intercourse with the people. The Dutch succeeded in procuring several hundred Chinese, and abundance of plants and seed, for their experimental tea plantations at Java; and there are now several Europeans at Canton who have attained such proficiency in the language, that there would be no difficulty in explaining to intelligent natives the nature of the information, and the description of the people required. A recommendation from this Government to the British authorities at Canton would be calculated to procure for Mr. Gordon any facilities or protection that may be found necessary, and we would suggest that he should be furnished with an official letter to that effect.

9. It appears that the best season for planting tea is in March. In order, therefore, that there may be time for acquiring the desired information, and for procuring plants and seed, for engaging Chinese cultivators to carry on the experiment, for bringing them to Bengal, and conducting them to their final destination early enough to save the planting season, we would recommend that Mr. Gordon should be directed to proceed to China as soon as possible, in order to accomplish all those objects.

10. It will, of course, be necessary, that, for this purpose, Mr. Gordon be furnished with a credit to a sufficient extent. We do not think that any large sum is likely to be required, but to prevent disappointment as far as possible, we would suggest that from 20,000 to 25,000 dollars be placed at his command. The accounts of his expenditure, together with proper vouchers, and such explanations as may be necessary, may, on his return, be submitted to us for examination and report.

11. Considering the object of Government to be purely experimental, it will be Mr. Gordon's principal duty to bring round a select, rather than a numerous, body of planters; men qualified to conduct every operation connected with the production of good tea, from the selection of a proper site for a plantation, to the gathering of the leaf, its preparation, and packing; together with the construction and manufacture of every article required in those various steps. After the practicability of producing tea fit for commercial purposes shall have been ascertained, it may safely be left to the enterprise of individuals to pursue the business as an object of speculation.

12. Confined to the purpose of mere experiment, we think the number of Chinese to be brought round need not exceed 50; and that it would be better to rest content with even a much smaller number than risk the loss of a season in an endeavour to procure so many as 50.

13. The particular terms on which the planters are to be engaged must depend on circumstances, and must, therefore, be left in a great measure to Mr. Gordon's discretion. He will, however, take care to let those who are engaged

engaged understand distinctly, as desired by Government, that if they succeed, they will receive a certain amount of gratuity beyond their subsistence money or wages.

14. To obviate the inconvenience of our Secretary's departure for China before the requisite information on this site shall have been collected and digested, our associate, Dr. Wallich, has very kindly come forward with the offer of his gratuitous services as acting secretary to the committee during Mr. Gordon's absence. We need scarcely add, that if approved by Government we shall be most happy to avail ourselves of this handsome offer, emanating as it does, from one so eminently qualified for the duty he proposes to undertake.

15. We take this opportunity of requesting the sanction of Government for charging in a contingent bill, to be countersigned by the chairman, such office expenses as may be considered unavoidable; as in the employment of a writer and peon, and for printing and stationery. A writer and peon have actually been engaged in the business of the committee since the beginning of February, the former at 30 rupees, and the latter at 6 rupees, per mensem.

We have, &c.

(signed)	<i>Js. Pattle.</i>	<i>Rob. Wilkinson.</i>
	<i>J. W. Grant.</i>	<i>R. D. Colquhoun.</i>
	<i>R. D. Mangles.</i>	<i>N. Wallich.</i>
	<i>J. R. Colvin.</i>	<i>Radhakunt Deb.</i>
	<i>C. E. Trevelyan.</i>	<i>G. J. Gordon.</i>
	<i>C. K. Robison.</i>	

15 March 1834.

(True copy.)

(signed) *W. H. Macnaghten,*
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 12th May 1834.

PROCEEDINGS of the Committee appointed by Government for the introduction of the Tea Plant into the Company's Territories.

No. 5.

Meeting of 13th February 1834.—Present:—J. Pattle, C. Macsween, J. W. Grant, J. R. Colvin, C. K. Robison, G. J. Gordon, Esqrs.; Sir R. Colquhoun, Bart.; Dr. N. Wallich, and Ram Comul Sen Baboo.

Moved by Mr. Macsween, and resolved unanimously, that Mr. Pattle take the chair.

Read two papers which accompanied the letter of Mr. Secretary Macsween, communicating the appointment of this Committee for the purpose specified; viz. proposition to the Honourable the Court of Directors to cultivate Tea upon the Nepaul Hills, and such other parts of the territory of the East India Company as may be suitable to its growth. Understood to have been written by John Walker, Esq.

2. Observations on the Cultivation of the Tea Plant for commercial purposes on the mountainous parts of Hindoostan, by Dr. N. Wallich. The Secretary also obtained leave to read an extract from Du Halde's description of China relative to the Tea plant.

Extracts from the third volume of De Guigne's Voyages regarding the Cultivation of the Tea Plant, and the Soil and Climate of the provinces of its growth.

Extracts from Abel's Journey in China, relating to the same subject. An Extract from M'Culloch's Dictionary of Commerce on the subject of the cultivation of Tea out of China.

Extracts from the Encyclopedia Méthodique. Agriculture. Vol. 6, Article, Thé.

Extracts from Mr. Marjoribanks's Evidence before the Select Committee of the House of Commons.

Extracts from MS. Notes furnished by Mr. Reeves, late inspector of Teas in China, to Dr. Wallich.

Notes from Dr. Lumqueen, of Calcutta, to Mr. Gordon, on the seasons of the Tea provinces in China.

Extracts relative to the climate and soil of Kumaon, from Mr. Traill's account of that province, published in the Asiatic Researches, volume 16th; and

Extract from the late Captain Herbert's account of Darjeelinge.

The places specified in the above several publications and papers were pointed out on Du Halde's Map of China, and Arrowsmith's Map of India.

From the information thus brought to the notice of the Committee, it appeared that the best tea is said to be produced in the provinces of Keung-Nan and Fokien, and between the 27th and 31st degrees of north latitude, at a considerable distance from the sea, where the face of the country is hilly and even mountainous, but at no great elevation on those hills, in their southern aspect, where the cold of winter descends to the freezing point, and snow falls, but does not lie long on the ground, where rain prevails in March and April, and falls heavily in July and August, and where the soil is light and gravelly, and formed of disintegrated rocks of sand and granite.

Read the following Minute by the Secretary:—

✓ If we should succeed in rearing the tea plant in India of a quality, and in quantity, to satisfy the English market, the advantage to this country would be an addition to its wealth, that, after making every allowance for the fall in price that may be expected to follow the opening of the trade with China, may be estimated at from two to three millions sterling per annum.* Bengal would thus become possessed of an additional staple for export nearly equal in value to that of the aggregate mass of indigenous articles now shipped to England, and this without displacing a single production useful either for nutriment or in the arts. The sandy and now barren slopes of rugged mountains will, in this event, become seats of agricultural industry, and sources of commercial riches unknown to the more fertile plains of the Ganges; and our Indian fellow-subjects will thenceforth enjoy the tribute hitherto paid by Europe to their un-courteous eastern neighbours for the most innocent and refreshing of all luxuries.

Other nations, though not possessing the same motives in half the force with which they apply to England, have gone before her in the attempt to deprive the Chinese of their monopoly of the tea leaf; their experiments are alike instructive in their failure or in their partial success, and we should profit by them accordingly. They teach us that the plant will grow well, will put forth its leaves and flowers, and perfect its fructification, in situations very widely differing in many material respects from those in which it best thrives in its native country. It has been reared in Carolina, Corsica, Brazil, Penang, St. Helena and Java. Mounsieur Bose, treating of this article in the Encyclopedia Méthodique, asserts, that he has tried the leaves of tea plants cultivated in the environs of Paris, and has found them superior to most of the teas of commerce. He states that Brassonet, and after him Volney, reared tea plantations in Corsica that succeeded as well as could be desired; but which were ruined by malice. At Rio Janeiro it grew well, even in a garden close to the sea, till the Chinese, who had been employed in the cultivation, were, as I am informed, hunted out of the plantation by the far-famed Don Miguel, who exercised his hounds in this congenial sport. The produce subsequently prepared has been tasted by Dr. Wallich, and pronounced by him to be bad †; that of the tea shrubs at Penang was still worse, the leaves being thick, hard and leathery, and the beverage produced from them absolutely nauseous. In Java, the result of
an

* 28,230,000 lbs. sold for 3,286,000 l. 1828.
27,411,000 lbs. sold for 3,024,000 l. 1829.

† Mr. Walker, however, gives a favourable report of tea produced at St. Paul's, in latitude 21 south.

an experiment to cultivate the shrub, on spots of considerable elevation, has been more successful.

Mr. Wilkinson, a member of our committee, has seen specimens of the Java tea, which appeared tolerably good. Now, all authorities concur in stating, that the plant which furnishes those qualities of tea which are suited for exportation grows in China between the 27th and 31st parallels of north latitude, in situations remote from the sea, where the face of the country is mountainous, and where the cold of winter is considerable, while the sun is extremely powerful in summer. Although, therefore, the experiments referred to have satisfactorily proved the natural vigour of the plant, which can thrive in such a variety of climate, they are absolutely inconclusive in regard to the main question, whether the better qualities of tea can be produced elsewhere than in China; for it will be observed, that in not one instance has the site of the experiment corresponded in the most essential points with the *locale* above described; in not one has it been exposed to the same alternations of temperature, in a similar soil, under a similar pressure of the atmosphere, and equally remote from the influence of sea air. The cold at Rio Janeiro is never equal to the ordinary cold of winter even at Canton; and Penang and Java are within 6 or 8 degrees of the line, so that though at considerable altitudes in the latter island an equal and temperate atmosphere may exist, this does not answer the condition of the climate found to be most congenial to the tea plant. We ought, therefore, to feel rather surprised at the degree of success that appears to have been attained at Java, than disappointed or discouraged by not finding it more complete. Considering that the leaves of plants perform vital functions analogous in some respects to those both of the organs of respiration and of digestion in animals, we can easily understand how much their texture and qualities must be liable to be influenced by soil and climate. We are informed by Du Halde, that even in China the leaves produced from tea plants growing on a clayey soil, and in low situations, are of very inferior description; and we have analogies in the vine, tobacco, cinnamon tree, rhubarb, poppy, and many other familiar instances of the variations caused in the aroma and other qualities of plants, by differences of soil and climate, which do not seem to affect in any remarkable degree their appearance, or their general healthiness and vigour. Our hopes of success must, therefore, mainly rest on the discovery, within our own territories, of localities corresponding closely in point of soil and climate with those of the best tea districts in China. I know of no part of India in which these are so likely to be met with as amongst the Himalia Mountains; even there, however, we may possibly meet with disappointment; for it is not to be concealed, that a lofty wall of mountains, separating a vast alluvial plain on the one hand, from the interminable table lands of Tartary on the other, presents a very different aspect, and is likely to be very differently affected in point of temperature and of moisture from hills centrally situated in a country nowhere presenting wide tracts of level land, either at low or considerable altitudes. My fears, in short, are turned towards the effects of the rainy season, which in our present ignorance of the quantity of rain which falls during the same months in the interior of China, may, I apprehend, be found deleterious from excess of moisture. Fogs, too, are exceedingly prevalent at the same season, at most of our hill stations in that range, a circumstance easily accounted for by the peculiarity of their positions above adverted to, and which, though it may exist in the tea provinces, is not so likely to be prevalent there.

The object proposed, however, is far too vast in importance to be abandoned on mere surmise. It might be proper, therefore, in the first instance, to take a general survey of the Himalia stations. With reference to those points which we know or believe to be of consequence to the success of our object, and as the books and authorities we possess do not afford all the details we require regarding the climate of the tea provinces in China, it is desirable that before incurring any considerable expense in experiments of doubtful issue, we should procure such accurate information respecting those districts as might afford tolerably sure grounds for determining the sites to be selected as most likely to be found suitable to the plant, if any such exist in India. With this view I would suggest that, without subjecting Government to any extra expense, I should be permitted to proceed at once to Shuharunpore, and thence visit the vallies of the Sunnuggur and Deyra Dhoon districts, in order to satisfy myself by actual inspection, and by information procured on the spot, how far they afford situations

situations analagous to the description of those of the Chinese tea provinces, in respect of both soil and climate. By comparing the knowledge thus acquired, with further information to be obtained in China, I should be able to judge whether those districts, or any others of which we have descriptions that can be depended upon, would be the best to which to conduct the tea planters with their plants on their first arrival from China; always leaving it to them to select the particular positions deemed most favourable for tea planting. Should this proposal be approved by the Vice-President in Council, I would lose no time in setting out on my journey, with the intention of being again in Calcutta before the Governor-General's return from Madras, as I learn from Mr. Wilkinson that there would be no advantage in reaching China before the month of June.

It is of importance that the plants and seeds should be conveyed to their destination as quickly as possible; and the shortest passages from China are made in October and November. This, too, would be the least dangerous season for the transportation of the plants from Calcutta to the hills where they are to be tried, as either the hot winds or rains of Bengal would probably prove fatal to the shrub.

The object contemplated by Government being one of great national importance, too much circumspection cannot be employed in attending to every circumstance likely to influence its success.

Resolved, With regard to the proposal contained in the concluding part of the Secretary's Minute, that the Committee deem it more expedient, with reference to the late period of the season, and other circumstances, that he should, instead of visiting the Himalia stations himself, obtain the best information procurable from intelligent persons who have resided on the hills, relative to their soil and climate, so as to enable the Committee to form some conclusion as to their relative aptitude for the culture of the tea plant. That with this view a set of queries be prepared, which, when approved by the Committee, shall be printed and forwarded to such parties as above mentioned.

Resolved, That with reference to the foregoing directions, application be made to Government that correspondence relative to the business of the committee be exempted from charges of postage.

Resolved, That Government be applied to also for permission to charge, in a contingent bill, countersigned by the chairman, the secretary's incidental expenses, including a writer at rupees 30 per month, a peon at rupees six a month, stationery and printing charges. That the tea plant now growing in the garden of the Horticultural Society be examined, and, if found genuine, that steps be taken to have it removed to a more genial climate.

(signed) *J. Pattle*, Charman.

(True copy.)

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 12 May 1834.

EXTRACT of a Letter from *Dr. Falconer*, Civil Surgeon, in charge of the Botanic Garden at Saharunpore, to the Secretary of the Tea Committee; dated Saharunpore, 22 February 1834.

No. 6.

THE most productive tea districts in China, according to all accounts, lie in the maritime provinces of Fokien, Kyan Si, and Kyang-Nan, chiefly between 27° 30' and 31° north latitude, and longitude 112° to 117°. One kind, lu-ngan-cha (a superior sort of hyson), is said by the Jesuit missionaries to be produced so high north as 38°, and east longitude 100°; and another, peecul-cha, brought from the province of Yunnau, is said to be procured from mountains in the latitude of 25°, on the frontiers of Ava and Pegu. The tea plant is grown on the sloping sides of mountains or in valleys, but chiefly at the foot of mountains. It is also produced in level tracts, but less advantageously. Besides the explicit information given by *Dr. Abel*, from actual examination of one district, it is sufficiently certain, that the rock formations in most of the tea districts are chiefly primary, from their being productive of metals, which are only found in such formations. The best tea soils are said to be light, gravelly, sandy, and whitish (blanchatre, in *Du Halde*, probably calcareous), with little accumulation of vegetable mould. *Le Comte* says, the best tea is produced in

gravelly soil, the next best in a light or sandy soil, and the inferior in a yellow (jaune, probably clayey) soil. It is admitted on all hands that the tea plant thrives best with an open exposure to the south.

The climate of the whole of China is remarkable in respect of temperature, and it must be duly weighed when the acclimatization of any of its peculiar vegetable productions in another country is concerned. Latitude alone is here no guide, the mean annual heat being much under what is observed in most other countries at an equal distance from the equator. Peking, latitude $39^{\circ} 54'$, nearly at the level of the sea, has a mean annual temperature of 54.86° ; calculated for the latitude theoretically by a formula* of very general application, we get 62.5° , a difference of about 7.5° above the observed mean temperature of the year. But it is in excesses of the summer and winter seasons that the climate is most remarkable. It has a winter temperature of 26.42° , or nearly that of Upsal, latitude $59^{\circ} 51'$, (20° of north latitude), and a summer heat of $82^{\circ} 58'$. Its winter climate is that of Copenhagen, and its summer heats are as scorching as at Cairo. Between the mean temperature of the hottest month in summer and the coldest of winter, there is a difference of not less than 59° of Fahrenheit; a climate of excesses almost without parallel in any part of the globe, except Quebec in Canada. This condition, which is owing to the vast accumulation of land extending from the Arctic Pole, or through Eastern Asia, to China, is not confined to the northern provinces; it extends to Canton within the tropic, but modified there by the equalizing effect of a non-tropical ocean about it. The mean annual heat of Canton, latitude $22^{\circ} 10'$, calculated theoretically for this latitude, gives $75^{\circ} 5'$ Fahrenheit. Reduced from a register in the Transactions* of the Medical Society of Calcutta, the observed mean temperature is $73'$ nearly. The mean of the coldest winter month is 54° ; of the hottest summer month, $85^{\circ} 5'$. I am not aware that any determination has been made of the climate in the provinces between Peking and Canton, and I have not access to the later writers on China; but an approximation may be made to the temperature of tea districts from the facts known regarding Peking and Canton. Assuming that the most productive tea districts extend from 27° to 31° north latitude, and taking 29° as the central tract, by calculation for this latitude we get 71° Fahrenheit for the mean annual heat. At the level of the sea, assuming further, that the refrigerating influences on the climate of China, which have been seen to be $7^{\circ} 5'$ at Peking, and $2^{\circ} 5'$ at Canton, amount to 5° Fahrenheit in the parallel of 29° latitude, and deducting this from 71° , we get 66° for the mean annual temperature. The elevation of the tracts of tea cultivation above the sea will form another abatement on this sum. But on this point I have no grounds to form anything like a precise conclusion. It is stated by Du Halde, that the tract from which one of the finest green teas, long-lo-cha, is brought, is a mountain in the district of Whey-choo-foo, of the province Kyang-Nan, of no great height or extent (peu de hauteur et d'etendue). Supposing that the tea cultivation reaches the height of 3,000 feet above the sea, and making a reduction for this altitude, the resulting mean temperature might be a range of 56° to 64° . What the range of temperature between the cold of winter and the heat of summer is, it may be difficult to say. The heat of summer cannot be less than at Peking, which is 10° higher north; and it has been seen that the difference between a summer and a winter month at Canton, within the tropic, is 30° , and at Peking, north latitude $40^{\circ} 59'$ Fahrenheit; it may therefore be assumed, that in the latitude of 29° , the range of the thermometer from the mean of summer to that of winter is not less than 40° Fahrenheit.

In regard of the moisture of the climate, there is little precise information, and what is known is chiefly as confined to Canton. The rains are not regularly periodical, as is the case on this side of the continent of Asia, within the same parallel; rains seem to fall all months of the year, although heaviest from August till October. The mean fall of rain, as entered in the above quoted Canton Register, is, for 1829, 42 inches; 1830, 50 inches; 1831, 70 inches: average of the three years, 56 inches. In the tea districts the quantity must be less, excepting at the greater elevations. At the northern limit snow falls abundantly during the winter. At the southern limit, in the province of Canton, where large quantities of the inferior teas are produced, snow is never seen. It is probable that it falls occasionally in the centre districts on the higher elevations.

The circumstances of climate, therefore, in regard to temperature and moisture,

* Meantemperature,
81 cos. lat.

* Vol. 6, by Mr.
Pearson.

ture, under which the tea plant is cultivated in China, may be stated thus: that the tea is produced over an extent of country where the mean annual heat ranges from 73° to $54^{\circ} 5'$; where the heat of summer does not descend below 80° , and the cold of winter ranges from 54° to 26° ; where the difference between summer and winter heat is, on the northern limit, 59° , and on the southern 30° Fahrenheit; that it is cultivated in highest perfection where the mean annual heat ranges from 56° to 64° ; that rain falls in all months of the year; and that the moisture of the climate is on the whole moderate.

The foregoing remarks will apply in a great measure to Japan, in some parts of which excellent teas are produced. Without entering on details, it may be sufficient to say, that at Nangasoki, the temperature of the year is $6^{\circ} 8'$; the greatest observed heat in summer, 98° ; the temperature of January, the coldest month, 35° ; that rain falls periodically about midsummer; that in the higher parts of the country heavy snow falls in winter, with intense frost; that the mean temperature of the summer is 83° , and that of winter 39° .

It may now be worth considering the countries into which the tea plant has been introduced, and failed.

At Penang, close to the line, with a mean annual heat of 80° , an equable climate the whole year round, and an excessive fall of rain, amounting to nearly 80 inches for the year, the climate is in every respect so much in contrast with that of China, that the tea could not be expected to be grown. The same is the case with St. Helena, where, although the mean heat for the year is 73° , the thermometer does not fall in winter below 55° , and the climate is moist and cloudy. Of the causes of failure in Java, I am less able to judge, but they are likely to be found in its low latitude, $6^{\circ} 9'$, and the excessive moistness of the climate, and the great fall of rain during the year. At Rio Janeiro, tea was tried under a colony of Chinese, and failed, perhaps from being within the tropic, and too great heat, with a moist and generally equable climate. It has been twice attempted by the French in the Carribee Islands. The first occasion, in Martinique, was a failure; I do not know the result of the second; but a latitude any where between 11° and 19° , with the kind of climate consequently implied, gives little chance of success.

There is, perhaps, no part of the Company's territories in India which supplies all the conditions of tea districts of China in respect of climate; but there are situations which approach it so nearly, as strongly to bear out the conclusion, that tea may be so successfully produced in this country as to be an object of high commercial importance. It appears to me that this can be expected in no part of the plains of India. The mean annual heat of the climate from 30° north down to the parallel of Calcutta is much beyond that of the tea cultivation in China. We have, in addition, an excessive summer heat, with either hot winds or a close scorching air during the day, a barely temperate winter, cold and heavy periodical rains. We certainly get some Chinese fruits, such as the lechee, the loquat, and the wampee to grow, but the tea plant appears to require a greater cold to thrive in. It has been seen that the annual heat of the southern limit of the tea cultivation in China, assumed to extend to Canton, is 73° * Fahrenheit. At Saharunpore, which may be considered as at the northern limit nearly of the plains of Hindoostan, 8° of latitude higher, and 1,000 feet above the sea, the mean temperature of the year is 73° Fahrenheit, the temperature of June is 90° , and of January 52° .

* at the level of the sea.

In the Himalia Mountains the case is widely different, excepting periodical rains; here all the conditions of a temperate climate are found, and here, above all parts of India, we may look for the successful cultivation of tea. Our not possessing mountain territory below 29° , may alone exclude the consideration of the fitness of the southern tract. My personal knowledge of the hills is chiefly confined to the tract between the Ganges and Jumna. In consequence of being tied to Saharunpore, from having the medical duties of the station to attend to, in addition to the botanic garden, I have not been able hitherto to see much of the mountains; but as the rock formations, and the configuration of the hills, are the same along an immense tract, the remarks which I have to make will apply very generally to the hills.

The Himalias have a direction running from north-west to south-east. They consist, on this side of the snowy range, chiefly of primary rocks, inclined at a considerable angle. The dip of the strata is to the east of north, and their abutment to the west of south. On the flank of the great range, there is a

line of low hills, the Sewalie, which commence at Rooper on the Sutlej, and run down a long way to the south, skirting the great chain. In some places they run up to, and rise upon the Himalias; in others, as in this neighbourhood, they are separated by an intermediate valley. Between the Jumna and Ganges they attain their greatest height, which Captain Herbert estimates at 2,000 feet above the plains at their foot, or 3,000 above the sea; Saharunpore about 1,000 feet above the sea. About 25 miles north are the Sewalie hills; they are here six or seven miles wide. To the east of the Ganges, and west of the Jumna, they gradually fall off. They have the same direction with the great chain, and agree generally in dip, their slope being towards the north, and abutment to the south. They rise at once against the plains with an abrupt mural front. They are serrated across the direction, forming a succession of nearly parallel ridges, with a steep face on one side, and a slope on the other. The strata are inclined at an angle of 25° to 30°. They are of recent tertiary or alluvial formation, and consist of friable sandstone or gravelly conglomerate, agglutinated by a calcareous cement, containing subordinate beds of clay. The upper strata are entirely gravel. Beyond these hills lies the valley of Deyrah, 1,200 or 1,400 feet above the sea, and then the great chain of the Himalais. The opposite rude sketch will perhaps give you an idea of the whole better than description; the distances are not in proportion in the section.

I regard these hills as an up-heaved portion of the plains at the foot of the Himalias, and that they are formed of the debris of the mountains, washed down by streams and other natural causes. They are covered with vast forests of saul, toon, and fir, and are uninhabited.

The soil of the Sewalie Hills, and of the valley of the Dhoon, takes the character of the rocks. It is dry, sandy or gravelly, with a considerable quantity of calcareous matter, and it appears to me to possess the characters indicated for the tea districts in China.

The great chain of the Himalais rises in a ridge with an abrupt steep face against the plains of about 6,000 feet in height. There is then a slope from the crest of the ridge towards the north. This is the general character of the Himalias; the mountains on the side of the snowy range consist of a series of nearly parallel ridges, with intermediate valleys or hollows. They throw off spurs in all directions into the hollows, forming subordinate valleys. There is nothing like



- (a) Level of the sea at Calcutta.
- (b) Level of Saharunpore, 1,000 feet above the sea.
- (cc) The Sewalie Hills.
- (c'c') The strata of sandstone and conglomerate.
- (c'e') Strata of gravel.
- (dd) The valley of the Dhoon.
- (cc) Strata of the Sewalie Hills, in some places rising on the Himalais.
- (ff) Outer ridges of the Himalais.
- (gg) Primary strata.
- (h) The valleys or hollows between the ridges.

like table-land (perhaps in the whole of the mountains, with the exception of Nepaul), and the valleys are more broad, wedge-shaped chasms, contracted at the bottom to a mere watercourse, than anything else. In fact the ridges and intermediate valleys, as a general law, form a series of salient and re-cutrant angles, as seen in the sketch; in consequence, the quantity of level or nearly level ground to be met with is most inconsiderable. From the dip or slope being towards the north, and the abutment to the south, steep, the great mass of vegetation has a northern exposure, and the southern faces of the mountains are greatly naked.

The formations are primary; the first towards the plains consist of vast strata of limestone lying in clay slate, crowned by slate, grey warke or sandstone. Beyond the limestone tract gneiss clay, slate, and other schistose rocks occur. Granite, so far as I know, is not found in the outer ridges; it occurs in the mountains nearer the snowy range. I have not gone that length, and have not yet seen granite in situ. The igneous rocks which have been concerned in the upheavement of the outer tracts are of the green-stone trap series, and are very generally met with in dykes intersecting and rising through the regular strata. The formations have a remarkable feature; the strata are in all directions fractured or comminuted; the slaty rocks are broken into small fragments, as if they had been crushed, and the limestone rocks are vesicular or cavernous, and broken up into masses.

The arrangement and nature of the soil take their character from the rocks. From the high angle at which the rocks are inclined, and the northern direction of the slope, the slope is chiefly accumulated on the northern sides, where the vegetation also is. From the prevalence of schistose strata and limestone the soil under-lying the vegetable mould is clayey and calcareous, or limestone gravel; there is little sandy soil or sandy gravel. From the extreme richness of the vegetation, undisturbed for ages, and the moisture of the climate, there is usually a great accumulation on the northern slopes of vegetable mould. On the southern faces the great steepness leaves little room for the accumulation of soil; where it occurs it is in patches, and consists of clays or limestone gravel mixed up with vegetable mould. There is here also little sandy soil. Towards the crest of the slopes the soil is usually dry, from the moisture running speedily off, but lower down, and where the ground is tolerably level, the soil is quite damp, and perhaps it is rarely dry in the most parching seasons.

Cultivation is laborious and difficult; from the absence of table-land, and the angular and contracted shape of the bottom of the valleys, there is little or no level ground; the most favourable slope is taken, and besides the usual tilling of the ground, it has to be divided into patches, which are built up into inconsiderable terraces, rising the one above the other like the steps of a stair. These circumstances might make the cultivation of tea scattered, and prevent it from being produced in any great quantity on one spot.

The climate of the Himalais is decidedly damp. The periodical rains commence about the middle of June and continue till the end of September; they are greatly heavier than in the plains in the neighbourhood, and continue at times for many days without intermission. Occasional rains occur in most months during the year. The mean annual fall has been estimated by Mr. Traill, commissioner of Kumaon, at Hawulbagh, near Almorah, about 4,000 feet above the sea, and lat. 29.30, at from 40 to 50 inches; but this, I imagine, is too little. From the middle of November till the end of February occasional falls of heavy snow take place down to the level of 6,000 feet above the sea on the outer ridge of the mountains, and lower down within the hills perhaps to 3,500 feet. It is a great cause of the richness of the vegetation and dampness of soil. In the poorer tracts (such as the district of Jounsar), if snow does not fall during the winter the subsequent crop invariably fails.

From the end of February till the middle of June, and from October till the middle of November, the sky is generally clear and unclouded; during these months, in consequence, very heavy dew is deposited during the night, so that as a general fact it may be stated, what with rain, snow, and dew, that moisture in one shape or other falls abundantly every unclouded day during the year; and the cloudy days without rain do not amount to a month in the year.

In respect of heat, the climate of the Himalias, lat. 29.30, at an altitude of 4,000 feet above the sea, is temperate; the hot winds cease, and the vegetation takes on an European character. In those parts of the mountains, such as Mus-

sooree, where the outermost ridge rises at once from the plains to the height of 5,000 or 6,000 feet, the climate is perhaps equal to anything known. About three hours after sunrise the heated air of the Dhoon valley, particularly during the hot months, rises and establishes a current upwards; it gets rarified and consequently cooled, and causes a cool fresh breeze across the hills towards the interior, which diminishes the effects of intense solar radiation at this season. It is as regular as the sea-breeze of a tropical island. At Mussooree, 6,000 to 7,000 feet above the sea, the mean annual heat is 57°; the hottest months, June and July, have a mean temperature of 67°; the coldest months are December and January; the mean heat of January is 42°. At Hawulbagh, below Almorah, nearly 4,000 feet above the sea, the mean temperature for the year, deduced from Mr. Traill's Register,* is 60°, that of January is 41°, and of July 70°, giving a range of 39° between the coldest and hottest months of the year. Between the temperature at seven A. M. in January, and two P. M. in July, there is a difference of 53°. On one occasion the thermometer stood at 18°, showing a range not less than 60° between the greatest observed extremes of summer and winter.

* Transactions,
Asiatic Society,
vol. 16.

In the valley of the Dhoon, I am not aware that any register has been kept of the temperature; but I am inclined to consider the average annual heat is about 68°, or 5° lower than Saharunpore. Generally speaking, it may be stated of the climate, that more rain falls than in the plains, but less than on the mountains; that the hot winds of the plains are shut out by the lower hills (Sewalie) on the S. W. of the valley, although a particularly hot wind is felt; that the cold of winter is below that of the plains in the neighbourhood, and that the cold weather commences earlier and lasts longer.

From what has been mentioned above, it appears to me that there is a great similarity between the climate of the tea districts of China and that of the lower heights or the outer ridges of the Himalias, in the parallel of 29. 30; the chief difference is, perhaps, more moisture in this country. How extensive a range of temperature may be had, will be seen by collating, in a tabular form, the temperature of three places already given, as below:

	Annual Mean Heat.	Summer Heat.	Winter Heat.
Saharunpore, 1,000 feet above the sea plains	73	90	52
Hawulbagh, 3,887 feet, Himalias - -	60	70	41
Mussooree, 6,500 feet - - ditto - -	57	67	42

By varying the altitude, the temperature could be graduated to any point that might be desirable; and as temperature is the mean condition, I am of opinion that tea might successfully be cultivated in this part of India. It is an experiment which can be conducted properly only by a government; on an extensive scale the risk would be too great for private speculation, and on a small one, the advantage too inconsiderable. There remains now to consider what situation is best adapted for a trial. Besides fitness of climate, there are other circumstances to be taken into account affecting a favourable experiment; such as abundance and cost of labour, facility of communication, and distance from the plains. Three stations in the mountains within the Company's territories might be thought of, Almorah, Subathoo, and Mysoree. The hills about Almorah, although favourable enough in climate, are separated from the plains by a broad belt of tyraee, which is only passable at certain seasons of the year, and it is so unhealthy as to be unsafe at all times to pass through; the population in the neighbouring hills is scanty, and a great portion of the tyraee is uninhabited; were the tea cultivated, besides a permanent establishment at the season of gathering, a number of additional hands would be required, which could only be advantageously done where labour was plenty and cheap. On these accounts I am inclined to think that Almorah would not be an eligible district to make a trial in.

Of Subathoo I cannot speak from personal observation, but I imagine it would be a good situation. It is immediately over the plains; there is some level ground about it; there is no tyraee jungle in front of it, and the country

at the foot of the mountain is inhabited. The valley of Pinjore, in the neighbourhood, is populous. The climate is like that of corresponding heights on the hills north of the Dhoon.

I am inclined to think the best ground would be near Mussooree, on the hills north of the Dhoon. The district lies between the Jumna and Ganges, which are navigable till within a few marches from the foot of the hills; the communication with the plains is open almost all months of the year, and the valley of the Dhoon is inhabited. There might be had here, within a short distance, a great variety of situations in respect of soil, climate, and exposure. I imagine that the best position would be a tract on the southern face of the outermost ridge, situated from 3,000 to 6,000 feet above the sea, or where the hot winds cease, up to the limit of winter snow. On the northern slope it should be at a lower level, and perhaps here the finer sorts of tea might be produced. The valley of the Dhoon has a gravelly or sandy soil, which appears closely to resemble what is described as best for the tea cultivation in China; and the climate is such, that it is probable that the inferior kinds of tea, such as are grown in the province of Canton, forming, perhaps, a large proportion of the article exported to Europe, if not superior teas, might be produced in it. In some places, as at Naher, the rocks and soil of the Sewalie-hills formation, rise upon the Himalias to the height of 3,000 feet; and in situations of this sort all the most favourable conditions of soil and climate are combined.

I shall conclude by stating, compendiously, the opinions in this letter:

1st. That the tea plant may be successfully cultivated in India.

2d. That this can be expected nowhere in the plains, from 30° north down to Calcutta.

3d. That in the Himalia mountains, near the parallel of 30° N., notwithstanding some circumstances of soil and moisture of climate, the tea plant may be cultivated with great prospect of success; that a climate here may be found similar in respect of temperature to the tea countries in China; that in the direction and great slope of the hills, the absence of table-land or elevated valleys, and the contracted figure of the existing valleys, are the chief difficulties in the way of cultivation, which may prevent tea from being produced in great quantity on any one spot.

4th. That the most favourable ground for a trial is a tract on the outer ridges, extending from 3,000 feet above the sea, or the point where the hot wind ceases, up to the limit of winter snow.

5th. That in the valley of the Dhoon, if not the better, the inferior sorts of tea might be produced.

If there is any other information that I can afford to you, or the Committee, I shall be happy to give it.

My dear Sir, &c.

Botanical Garden, Saharunpore,

22 February 1834.

To G. J. Gordon, Esq., &c. &c. &c.

(signed) *H. Falconer.*

(True copy.)

(signed) *W. H. Macnaghten,*
Secretary to the Gov^t of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 4 August 1834.

From the Members of the Tea Committee to *C. Macsween*, Esq., Secretary to Government, Revenue Department, dated 23 July 1834.

Sir,

WE beg leave to report*, for the information of Government, that Mr. Gordon left Calcutta last month for China, in the *Water Witch*, and to enclose copy of the instructions with which he was furnished previous to his departure.

2. In

* Letter from the Tea Committee to G. J. Gordon, Esq., dated 20th May, and two memorandums of Dr. Wallich.

2. In order to lose no time in making the requisite preparations for the reception and cultivation of the supply of tea plants and seeds, which are expected to arrive from China before the end of the year, we have deemed it necessary to take measures for the prompt establishment of several small nurseries in our north-western mountainous provinces. With this view we have addressed letters* to the Commissioner in Kumaon, and the superintendent of the botanic garden at Saharunpore, of which the enclosed are copies. We have thankfully accepted Mr. Traill's offer of his aid, and have requested him to undertake the accomplishment of the above-mentioned plan within the province, and under his charge. At his recommendation, and with the concurrence of the superintendent of the botanic garden of Calcutta, we have availed ourselves of the services of Mr. Robert Blinkworth, a very able and steady person, who has been for many years in the employ of the botanic garden here, as plant and seed collector, and who, from his long residence in Kumaon, has become well acquainted with its localities and productions. We understand that his allowances have lately been reduced to only 48 rupees a month, which we recommend may be increased to 100 rupees, including travelling charges.

3. It will be seen from the enclosed copy of a letter from Doctor Falconer, dated the 4th instant, that he has already entered the hills to the northward of Saharunpore on the proposed journey in behalf of our committee. As most of the points on which he wishes to have our specific directions have already been anticipated in our letter of instructions, in which we requested him to confine his present labours to the selection of suitable sites for some nurseries in the Gurwhal and Sirmone hills, we have only now to solicit the favourable consideration of the Honourable the Vice-president in Council to paragraph 5 of Dr. Falconer's letter, relating to his personal allowances and travelling charges, and to recommend that the civil authorities on his route may be requested to aid that officer in the attainment of the object of his journey.

We have, &c.

(signed)	<i>J. Pattle.</i>	<i>Robt. Wilkinson.</i>
	<i>J. W. Grant.</i>	<i>Ram Comul Sen.</i>
	<i>C. Macsween.</i>	<i>R. D. Colquhoun.</i>
	<i>C. E. Trevelyan.</i>	<i>R. D. Mangles.</i>
	<i>C. K. Robison.</i>	<i>Radakhan Deb.</i>
	<i>J. R. Colvin.</i>	<i>N. Wallich.</i>

(True copy.)

(signed) *W. H. Macnaghten,*
Secretary to the Government of India.

Calcutta, 23 July 1834.

EXTRACT INDIA REVENUE CONSULTATIONS, 4 August 1834.

From *N. Wallich, Esq., M.D.,* Officiating Secretary to the Committee of Tea Culture, to *G. W. Traill, Esq.,* Commissioner in Kumaon, dated 28 June 1834.

Sir,

THE Committee of tea culture being desirous of establishing some nurseries in the mountainous province of Western Hindostan, bordering on the Himalaya, for the reception of the plants and seeds which they expect will arrive from China before the end of the year, are anxious to avail themselves of your valuable aid, so politely offered to them in your letters to Sir Robert Colquhoun and to their Secretary. With this view I am directed to address you on this occasion, requesting that you will have the goodness to undertake the inquiries which may appear to you necessary to carry into effect the object in the province under your charge.

2. In

* To G. W. Traill, Esq., and Dr. Falconer, dated 28th June.

2. In order to apprise you of the views which the committee entertain relative to the conditions of soil, climate, &c. required for the successful cultivation of the tea shrub, I am desired to send you the accompanying extract, paragraphs 2 to 8, from their report to Government, dated the 17th March. It is necessary, however, to add, that the accounts which the Committee have subsequently been able to gather, have all tended to strengthen and confirm their opinion, that a decided winter of at least six weeks or two months' duration, with frost as well as snow, is indispensable to ensure final success with really good sorts of teas; and that, in the absence of that marked feature, although the shrub may thrive, and become in some manner productive, yet the quality of the leaf will not attain that degree of perfection which would render it fit for even common commercial purposes.

3. On the other hand, the Committee are aware that the arduous and distant transport of the plants grown in the tea provinces in China (to the consignment of which, as far as it may be possible, Mr. Gordon has been restricted) to Calcutta, and thence to the hills, may possibly impart to them a degree of tenderness and impatience of cold, which will require that they should be nursed on their first arrival in situations partaking of less severe degrees of cold. The committee would therefore suggest to you the expediency of some of the proposed sites being fixed at a comparatively low elevation among the hills, gradually ascending with the others to that height where the shrub may be expected to thrive best, and where the permanent seminaries are to be ultimately established for the supply of future tea plantations.

4. With respect to the size and number of the nurseries, the committee desire to be guided entirely by your own judgment and intimate local knowledge; only observing, that it appears expedient that the nurseries should be small in extent, and their number such as to afford sufficient scope for a satisfactory and complete trial of the growth of the tea within the province of Kamaon, and in this view five or six sites would probably not be too many.

5. The committee agreeing entirely with you in the utility of Mr. R. Blinkworth, plant and seed collector to this garden, being employed on this occasion, I am happy not only in concurring in this arrangement, but also in strongly recommending the services of a faithful and zealous man, who for many years has served under me, and who, from his long residence in Nepaul and in Kamaon (where he is at present stationed) must be well acquainted with the localities and natural productions of those countries. The necessary orders will accordingly be sent to Mr. Blinkworth.

6. In conclusion, I beg leave to inform you, that the Government, having granted to the committee the services of Dr. Falconer, superintendent of the botanic garden at Saharunpore, that officer will be requested to examine the countries situated between the heads of the Jumna and Ganges, for the purpose of selecting appropriate sites for tea nurseries in that direction.

I have, &c.

(signed) *N. Wallich,*

Officiating Sec. to the Committee of Tea Culture.

Tea Committee Office,
Head Botanic Garden, 28 June 1834.

EXTRACT INDIA REVENUE CONSULTATIONS, 10 December 1834.

EXTRACT Letter from Mr. *Gordon* to Dr. *Wallich*, Acting Secretary to the Tea Committee, dated Macao, 24 July 1834.

No. 33.

FROM the Agent to the Dutch Company I learn that they have got at Java between 3,000,000 and 4,000,000 of plants; and that the Company is so sanguine of success, that they are extending the plantations vigorously. Their annual supply of seed is immense; and of last year's despatch half has actually come up in the nurseries. The produce, he asserts, is of very good quality, between peko and congo; but, owing perhaps to the youth of their plants, they have not yet succeeded in a perfect imitation either of peko or congo. He

says, great pains were taken in the first instance to procure persons skilled in the manufacturing process; but, while little difficulty was experienced in getting 500 or 600 to emigrate as cultivators, they were only able to procure about a dozen professed tea-curers, and those perished in the massacre amongst 300 who were cut to pieces. This province, and that of Fokien, pour out annually thousands of able-bodied men, who settle in the several European colonies or Malay states. But these are driven to emigrate by the dread of starvation at home, while those whose employment is the manufacture of tea, are too well paid for their labour to be desirous of bettering their fortune by emigration, particularly under all the perils that attend such a breach of the laws by those from whose families anything can be extorted by the mandarins. The difficulty is enhanced in our case by our requiring men that have been born and brought up at a distance from the sea, and to whom the idea of a long voyage to a barbarous land is likely to be very terrific, independently of natural aversion to long separation from friends and family. Such men will of course require much stronger temptation than would suffice to induce a native of the coast to emigrate, and it is not impossible that we may even fail altogether in getting any such persons to come into our terms, in the first instance. We may be forced to content ourselves with procuring superintendents and cultivators for the present. If, at the end of two years, the superintendents see a clear prospect of their earning their reward, they will be glad to return to China for the purpose of engaging manufacturers of the best description; once fairly established, we shall be better able to judge what number of persons it may be necessary to procure to superintend the manipulation of the leaf.

You will observe, by Mr. Daniell's information, that the wages of the lowest class of labourers at the tea districts are from 80 to 100 cash a day, or from about sicca rupees 7 to rupees 8. 10 a month. At Java they have recourse to forced labour, and calculate that they can bring tea to market at half the Canton prices; so ought we, if we succeed. With respect to the teas of the coast, I have many conflicting accounts; the reason of this is, that as tea is not allowed to be brought by sea, and as there is no canal or river communication between the maritime provinces and Canton, the expense of land carriage is an inseparable bar to those teas coming to this market; so those who see them here can only judge of their quality from the common trash used by the people who navigate the petty coasting junks. From such specimens, however, no fair inference can be drawn regarding the better descriptions of the produce of Chittagong and Kyang-nan, which find their way even to Peking. In a manuscript journal which I have seen, of one of the voyages to that coast, it is stated that there are numerous tea plantations on the large and lofty islands of the Chusan group, off the coast of Chilsyang (latitude $29^{\circ} 30'$), and that the produce was found remarkably fragrant. All the missionary travellers bear testimony to the excellent quality of the tea produced on the coast of Kyang-nan, but it is not known at Canton. Now, Mr. Jardine proposes despatching his vessel, called *The Fairy*, to wait *The Colonel Young*, now upon the east coast, and on board of which is Mr. Gutzlaff, with orders to proceed as far north as the latitude of Nankin, with a fresh supply of goods, which *The Fairy* will deliver.

It is my intention to avail myself of this opportunity of visiting the coast, where, with Mr. Gutzlaff's assistance, I shall make such arrangements for people, plants and seed, as, after personal examination of the quality of the tea produced, I may find expedient.

The Fairy only waits the return of Mr. Matheson, who is daily expected from Bombay. *The Colonel Young* will return to port before the change of the monsoon, so that I shall be back in time to proceed by the first ships of the season for Bengal, if, as I trust may be the case, my Canton friends shall by that time have succeeded in their part of the undertaking. At Canton I fell in with a country captain, who told me he was commissioned by the Bombay Government to procure cuttings of the tea plant. He has got a few shrubs supplied by the Canton gardeners in pots filled with blue clay, exactly similar to what is found in cutting tanks in Bengal, and this they have persuaded him is the soil of the best tea plantations.

Should we succeed ourselves, we must undeceive our Bombay neighbours, and supply them with some good seed, and a muster of soil, that their experiment may not be altogether useless.

Should

Should I pick up any further information that may be useful or interesting to the Committee, I will write again before I embark in *The Fairy*. In the meantime I must throw myself on their indulgence for being unable to present them with less crude and imperfect remarks than the foregoing.

(signed) *G. J. Gordon.*

Query. At what height above the general level of the plains are the tea plantations commonly situated? Is the height generally so considerable, that those localities are materially colder in the summer months than valleys?—*A.* The hills on which tea is cultivated are not high, and the plantations, where the soil is favourable, extend over their whole face from their summit to their foot. The difference of temperature from that of the adjacent plains is scarcely perceptible. The soil consists of deposited granite, and the rocks which usually accompany it. On the nature of the soil depends principally the quality of tea.

In what months does it rain? Are the showers heavy and long continued, or light and frequent? Are fogs common, and at what season do they prevail? How long does snow generally cover the ground where the tea plantations lie?—Rain falls in March and April, during which months the showers are not very heavy, but the air is extremely damp. The finest leaves appear at this time, and are plucked early in April. In May the rain is very heavy, and the leaves begin to be of inferior quality.

At Boo-ee-Shan is there often severe and long-continued frost without snow? Are trees of any other species ever planted with tea to afford shelter from the sun or from storms? Are the seeds that are used for replacing trees, or forming new plantations, taken from plants reserved for that purpose, or from plants that have been stript of their leaves the same season?—No other tree is planted amongst the tea shrubs, but they are propped up with bamboos. Those plants which have yielded the most fragrant tea are also preferred for seed. There is no other appropriation or selection.

At what season do the seeds ripen? Are they gathered from trees as soon as ripe, or suffered to remain upon them over winter? Are they ever kept longer than from autumn till spring? How are they preserved? At what season are they put into the ground? How many are put together, and at what depth? How long are they in the ground before they come up?—Towards the end of February, or early in March. Seeds planted in the end of February come up almost immediately.

At what distance apart do the plants commonly stand?—About three chiks, three feet and a half.

Are the plants manured, and if so, at what stages of their growth, and in what manner?—But little manure is required, and that only at first, when some mud or thick mucilage is applied to each plant.

Are the plantations irrigated, and at what season, and how? How much dry tea is it calculated that 1,000 plants produce on an average of season: or, in other words, how many plants, or what extent of plantation, will produce a pecul of any tea? Are the same plants stripped of their leaves three times successively in one year, or are the younger plants stript at one season, and the older at another?—The leaves of every plant are gathered three times a year, young and old indiscriminately. Seedlings of one year's growth, if too thick, are thinned, but their leaves are not used for two years.

What quantity of leaves, estimated by their weight when dry, can a person collect in one day? in other words, how many persons labour, and for what time, does the whole process of gathering and preparing for market a pecul of tea require? What is the proportion between the different classes of labourers employed in gathering the leaves, and in the other steps of the process? What is the price of labour, when hired, in the tea districts?—The gatherers and the driers of the tea are quite distinct classes; the wages of the former 80 to 100 cash per day ($4\frac{1}{2}$ to $5\frac{1}{2}$ annas), while some of the latter are paid 200 or 300 dollars for the season.

On what food do the labourers subsist?—The people live upon rice, salt greens, and occasionally animal food; this last not more frequently than once a week.

Are the tea-chests manufactured on the spot, or at a distance, and at what cost?—

Orig. cost?—Tea-chests are manufactured on the spot, from wood which has been, by being steeped in water at least a year before it is used. This precaution is considered one of great importance.

Does the bamboo, of which the leaves are used in packing tea, grow on the spot, or are those leaves brought from a distance?—The bamboo grows in the tea country, and is cultivated solely for the sake of the leaf.

Are tea plantations ever let or sold? If so, at what rate; according to the space of ground, or number of trees?—Persons frequently contract for the produce of a plantation, but at different rates at different stages of its growth, paying the planter so much per pecul of dry tea, the contractor being at the expense of gathering and preparing the produce.

The gentleman whom I speak of as agent to the Dutch Company is Dutch consul here, and it is the government of Java, not the company, that are establishing tea plantations. Mr. Beale tells me, a correspondent of his at Samarang writes him, that every one unconnected with the tea project pronounces it a failure, but he does not state whether it is that the plant does not thrive, or that the produce is of inferior quality.

I doubt whether much dependence is to be placed on the assertion that the cultivators reside at a distance from the tea plantations. If it be so in a particular district, it is an exception, I am assured, to the general rule.

Dr. Morrison's son, who is an excellent Chinese scholar, has promised me to obtain from the Fokien gentleman the replies promised by his late father. I have asked him to sound the man (who is a poor scholar of 50, preparing for examination as a candidate for promotion in literary rank), and to offer to pay his expenses to Peking, and give him a handsome gratuity besides, if he will look after the provision and despatch of a good supply of seed from the black-tea country; this, of course, after he has given all the information he may have regarding tea.

Mr. Pereira has been searching the records of the Macao government for the particulars of the Brazil tea colony, but has not succeeded, and the Dutch consul can only speak from recollection of what he has heard from Mr. Jacobson, so that we must after all be guided by our own views of the terms which ought to suffice to secure our object, and to go as little as possible beyond that limit.

(signed) *G. J. Gordon.*

EXTRACT INDIA REVENUE CONSULTATIONS, 7 January 1835.

No. 6. From the Members of the Tea Committee to *IV. H. Macnaghten*, Esq.,
Secretary to the Government in the Revenue Department.

Sir,

24 December 1834.

WE request that you will have the goodness to submit to the Right honourable the Governor-General in Council, the enclosed copies of the reports which we have received from Captain Jenkins, dated the 7th and 19th May; and from Lieutenant Charlton, dated the 17th May; also a subsequent communication from Lieutenant 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 Honourable Company's territories, from Suddya 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 Captain Jenkins and Lieutenant Charlton, to be by far the most important and valuable that has ever been made on 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 labours may be before long fully realized.

3. It

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 Munnipore 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 indigenous 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 Suddya plant from Lieutenant 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 Lieutenant 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.

(signed)	<i>J. Pattle.</i>	<i>R. Wilkinson.</i>
	<i>J. W. Grant.</i>	<i>R. D. Colquhoun.</i>
	<i>R. D. Mangles.</i>	<i>Radakant Deb.</i>
	<i>J. R. Colvin.</i>	<i>Ram Comul Sen.</i>
	<i>C. K. Robison.</i>	<i>N. Wallich, M. D.</i>

Calcutta, 24 December 1834.

EXTRACT INDIA REVENUE CONSULTATIONS, 7 January 1835.

From *F. Jenkins*, Esq., Agent to the Governor-General North-Eastern Frontier, Gowahatty, to the Secretary of the Committee of Tea Culture; 7 May 1834.

Sir,

I REGRET the delay that has occurred in acknowledging your circular, dated the 3d 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 Cachar 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 Jynteeah 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 control 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 6,000 to 8,000 feet, greatest heights; and farther east, the mountains attain a height of 10,000 feet, and the valleys and beds of streams are from 2,500 to 4,000 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 Sechnen and Younan; the northern bend in the latitude of Sudya 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 Sudya, 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 plants 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, Capt. 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 Sudya, 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 Capt. Fisher, I shall do so, and request him to make a report to you upon the subject of it with reference to Cachar.

Political Agent's Office,
N. E. Frontier, Gowahatty,
7 May 1834.

I have, &c.
(signed) *F. Jenkins*,
Agent to the Governor-General.

EXTRACT Private Letter from Capt. *F. Jenkins*, to Mr. *Gordon*, dated the 19 May 1834; with Enclosures.

SINCE I wrote you officially, I have had the enclosed note from Capt. *Charlton*, of the Assam Light Infantry, regarding tea, and I have been presented with

with the enclosed luminous map of the tea districts in Upper Assam, by a shokun who accompanied Lieut. Burnett in an expedition to the top of the Patkoye range of hills, dividing the waters of the Burhampooter from those of the Kuendwa. 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.

I have sent your circular to me, over to Fisher, in case you should not have done so, for his thoughts, and on return I will send it to Suddya.

(signed) *F. Jenkins.*

COPY of a Letter from Lieutenant *Charlton* to Captain *Jenkins*, enclosed in the preceding.

17 May 1834.

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 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 grew was described to be alluvial, like most parts of Assam, and the trees, rising to the height of 12 or 14 feet, were 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 favourable. 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 plants into Upper Assam would be attended with success. I have not had an opportunity of making any experiments on the leaves; they are devoid of smell in their green state, but acquire the fragrance and flavour of Chinese tea when dried. The Singphos and Kampteas are in the habit of drinking an infusion of the leaves, which I have lately understood they prepare by pulling 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 Suddya 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-by.

(signed) *A. Charlton.*

COPY of a Private Letter from Lieutenant *Charlton* to Captain *Jenkins*.

Suddya, 8 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; but at the end of the cold weather, when the young leaves are on the trees, I hope to send you as good black tea as one generally receives 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 Younan, 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 *bonâ fide* tea. What a pity that there is no means of communication between Suddya and Younan. A good land road made only as far as Hookum, 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.

(signed) *A. Charlton.*

COPY of a Note of Captain *Jenkins* on the back of the above (at Gowahatty).

22 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, as it appears to me.

(signed) *F. Jenkins.*

EXTRACTS INDIA REVENUE CONSULTATIONS, 28th January 1835.

MEMORANDUM explanatory of the Sketches accompanying the Reports 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 the 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 connected), 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 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 at length free and unconnected. 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

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.

(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, a detached seed, nearly 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, considerably enlarged; 6, outline of a full-grown leaf, of the natural dimensions.

(B.) The Nipal camellia. 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, an horizontal section, as in the tea, much enlarged, representing the places of bursting, which alternate with the angles of the fruit, and the partitions, which are opposite to the angles of the fruit and to the valves, separating from the free axis; 11, a detached seed, natural size; 12, outline of a full-grown leaf.

H. C. Botanic Garden,
24 December 1834.

(signed) *N. Wallich*, M. D.

EXTRACT of a Private Letter from Captain *Jenkins*, Agent to the Governor-General on the North-Eastern Frontier, to the Officiating Secretary to the Tea Committee, dated 6 January 1835.

I do not relish the proposal for you to come this way at this season of the year, the period is gone by for a mere visit; and I should recommend that one of the gentlemen you wished to depute should be sent up without further loss of time to Chirar, thence to come here and take boat for Sudyā, where I would propose his being housed all the rains, employing himself in getting all the information during the season of inactivity, and prepared to start thence at the earliest possible period, in such direction as his previous inquiries might lead him to consider most expedient.

The information needful for the subsequent measures I anticipate as certain, is not to be gathered in a mere passage through the country; at least I should not think such hasty gleanings safe. The officer who is deputed should most assuredly be accompanied by two or three able Chinamen, men acquainted with the cultivation of tea, if possibly procurable; if not, good agriculturists, and sensible, clever men, who could be sent into Hookoom, or into Yunnan, as may seem necessary, and at least be able to carry on a correspondence with their countrymen.

We have had letters in Chinese about opening a trade; so said the bearers; but I believe the letters have never been readable in Assam.

The Chinamen who come from Yunnan to Ava are, I think, all Mahometans, and one or two of these, if procurable, would be of course the men to send up to us, that we might despatch them home to lead their own people into Assam. A few colonists direct from Yunnan would commence the cultivation of our plant, if it be the same as that of Yunnan, of which I have no doubt, with the greatest chance of success; and if we do not possess the right varieties, they would procure them. I wrote some time ago to Government about addressing the Resident at Ava to take steps for opening the trade between Ava and Assam, always having in view the prospect of bringing a part of the trade of Yunnan direct into our province, and this, I think, should be strenuously recommended by the Tea Committee, for if the road be once opened, we shall most assuredly be able to get Chinese cultivators, all, I think, that we require, in any number. We have about Sudyā an unlimited range of wastes, wastes enough for three or four millions of people, which implies, of course, that our population is very scanty, and what is worse, they are very rude; fine, able, strong men, but without the introduction of a more civilized race they are not convertible to

immediate use. I should therefore propose that a very strong attempt be made to open a fully free communication between Ava and Assam, and if practicable, that the Resident should be directed to send up a European officer to Sudyā, by way of commencement, to meet your botanist at Sudyā. This road, of all the roads communicating with Ava and British India, is the most important, and it is the only one that has not been visited by a British officer. I look upon it as a *sine qua non* to the commencement of any tea cultivation to any extent, that we be able to get colonies direct of Shans or Chinese; and the same measures that will enable us to command these, will also, without fail, immensely extend the general commerce of the east of India, besides, which is incidental, and of no small importance, put Ava entirely at our disposal, if the Burmahs should ever forget the last war; and, what is a consequence of our attaining a commanding position, keep that government from all warlike thoughts, and bind us together in amity to proceed in detaching Yunnan from China, may be, in case of need, and in the fulness of time.

(A true extract.)

(signed) N. Wallich, M. D.,
Officiating Secretary to the Tea Committee.

EXTRACT INDIA REVENUE CONSULTATIONS, 13 March 1835.

From Members of the Tea Committee, to W. H. Macnaghten, Esq., Secretary to Government of India.

Sir,

12 March 1835.

WE have the honour to acknowledge the receipt of the orders of the Right Honourable the Governor-general of India in Council, conveyed in your letter of the 28th January, in answer to our letter of the 24th December, and our officiating secretary's of the 19th ultimo, on the subject of the growth of the tea shrub in Upper Assam, and approving of our recommendation for the deputation to the spot of one or more scientific gentlemen, properly qualified for the accomplishment of the purposes which we have particularly stated.

2. In obedience to the instructions of his Lordship in Council, directing us to report the names of the officers whom we would propose for employment on this important duty, and the terms of remuneration which we would recommend to be assigned to them respectively, we have the honour to submit, that in our opinion, the employment of Doctor Wallich, aided by Mr. Assistant-surgeon M'Clelland, of this establishment, and Mr. Assistant-surgeon Griffith, of the Madras establishment, the latter at present at Tavoy, and the former in Kumaon, will afford the best prospect of success. Indeed we may confidently assert, that if his superior qualifications for the adequate discharge of this duty do not conduce to the most satisfactory results, they may be looked for in vain by any other arrangement.

3. We are particularly anxious to obtain for Dr. Wallich the aid of Mr. Assistant-surgeon M'Clelland, as being an experienced geologist, and we are equally desirous that Dr. Wallich should have also the aid of Mr. Assistant-surgeon Griffith, as we consider it to be of very great importance that the objects of the mission may be completely accomplished in the course of one season.

4. We would respectfully suggest that the remuneration to Dr. Wallich during his continuance in the execution of these special and arduous duties, may be fixed at 500 rupees per mensem, he being afforded the aid of the Government establishment for his travelling, his guard, &c., and that his assistants may each have a consolidated allowance of 500 rupees per mensem, together with the same assistance for their travelling.

5. We have the honour to submit for the consideration of the Right Honourable the Governor-general of India in Council, copies of a letter we addressed to Captain Jenkins, dated the 16th ultimo, and of his answer, dated the 20th ultimo; and with reference to the season for active local operations having expired, and to the earliest period when Dr. Wallich's personal services can be needed on this mission, we would propose that we should be instructed to direct him
and

and his assistants to be at Suddya by the 1st of November next, and also to require Dr. Wallich to convey intermediately, to Captain Jenkins and Lieutenant Charlton, such suggestions as will guide them in the collection of all the information and materials that may be calculated to enable him to commence operations from the instant of his arrival at Suddya.

6. We beg to avail ourselves of this opportunity for intimating to his Lordship in Council, that we have deemed it expedient to direct Mr. Gordon to return to Bengal with the least practicable delay. The following are the considerations which have led us to this determination. The discovery of the growth of the tea in Upper Assam, and the reports which we have received of the facility of multiplying it to any extent by seeds, render all supplies from China unnecessary, inasmuch as there is every reason to suppose, that seeds, even of the best sorts of tea, will produce only inferior sorts of plants when removed from their native soil; and the extensive supplies of the bohea kind, which we have lately received from Mr. Gordon, together with those of the tea which may be expected to arrive soon, will answer all purposes of a trial. Besides, there is this great advantage in favour of the seeds produced within our own territories, that they may be had in a perfectly fresh state, and with comparatively little or no expense. With regard to the importation of Chinese cultivators and manufacturers, we are of opinion, that the plan suggested by Captain Jenkins, in the letter which accompanied our officiating secretary's letter of the 19th ultimo, for procuring that class of people from Yunnan, is far preferable to bringing them from China; at any rate it holds out an auxiliary resource in case Mr. Gordon, on the receipt of our instructions, should not have succeeded in procuring people willing to proceed to Bengal.

We have &c.

(signed)	<i>J. Pattle.</i>	<i>C. K. Robison.</i>
	<i>J. W. Grant.</i>	<i>Robert Wilkinson.</i>
	<i>C. E. Trevelyan.</i>	<i>Radhukant Deb.</i>
	<i>Ross D. Mangles.</i>	<i>Ram Comul Sen.</i>
	<i>J. R. Colvin.</i>	

P.S.—Since the above letter was draughted, we have received the enclosed letter from Dr. Wallich, which we would strongly recommend for favourable consideration.

(signed)	<i>J. Pattle.</i>	<i>J. R. Colvin.</i>
	<i>J. W. Grant.</i>	<i>Robert Wilkinson.</i>
	<i>Ross D. Mangles.</i>	<i>Radakant Deb.</i>
	<i>C. E. Trevelyan.</i>	<i>Ram Comul Sen.</i>
	<i>C. K. Robison.</i>	

(True copy.)

(signed) *J. W. Grant,*
Dep^y Sec^y to the Gov^t of India.

From Captain *Jenkins*, Agent to the Governor-general, Assam, to *N. Wallich*, Esq., M. D., Secretary to the Tea Committee; 26 February 1835.

Sir,

I HAVE the honour to acknowledge the receipt this day of your letter of the 16th instant.

2. In addressing you on the 6th of last month, I conceive there was still some time remaining of this season that might be usefully employed at Suddya in inquiries preparatory to a trip into the districts producing the tea plant; but the season is short in the eastern extremity of Assam, and at present there can be no doubt that ere this letter could be acted upon below, it would be a useless exposure to attempt sending up any individual until the rains are over.

3. I would beg to suggest, however, that as early as possible the gentlemen to be deputed eventually to Suddya should be directed to proceed to the Kasiah hills, to be at hand to take advantage of the earliest possible period of starting, which would probably be between the 1st and 15th of October. From Churiah

they would come to this station, where their boats should be previously got ready.

4. I am of opinion not only that the services of the gentlemen deputed might be very advantageously employed in the meantime in the Kasiah hills in general pursuits of natural history, the results of which might be of importance to this frontier, but that it is highly probable that their researches might be made conducive to the particular subject of their mission, by the discovery of favourable localities for plantations in those hills. The very singular variety of aspect and climate possessed by that part of this range of hills, which commences with Central Cachar and ends in the Garrow hills, inclines me to suppose that we could grow within it every variety of tea known in commerce.

5. I consider the Garrow hills to resemble more nearly the country of the Brazils, into which the tea has been so successfully introduced, than any country in India that I am in any way acquainted with. Although these hills are dreadful for notorious unhealthiness, this is true only of the jungles below them; the central tracts may be approached safely from the Kasiah country. They are elevated and, I believe, salubrious, and wonderfully rich in vegetable and mineral productions. On these subjects the gentlemen deputed, during their detention in the hills, could not fail of making most interesting and valuable investigations.

6. I have only further to observe, that if our relations with Ava admit of it, I would most strongly suggest, that the present deputation should, after a residence of a couple of months on our frontier, cross the Patkoye hills, and proceed through the Ava Shan provinces to the frontier of Yunnan; this would bring us acquainted with all the districts east of China producing the tea plant, and their journey would otherwise be of the very highest importance to the empire in all points of view. With regard to useful information of every sort that would be acquired by such an extension of their trip, I know of no journey that could be undertaken from British India likely to be attended with more valuable results.

(signed) *F. Jenkins,*
Agent to Governor-General.
Political Agent's Office, Assam,
26 February 1835.

EXTRACT INDIA REVENUE CONSULTATIONS, 13 March 1835.

No. 4

From *W. H. Macnaghten*, Esq., Secretary to Government of India, to
N. Wallich, Esq., M. D., Officiating Secretary to the Tea Committee;
11 February 1835.

Sir,

I AM directed by the Right Honourable the Governor-general of India in Council to acknowledge the receipt of your letter dated the 28th ultimo, and in reply to request that you will inform the Committee, that his Lordship in Council has been pleased to sanction the appointment of Mr. C. A. Bance, upon a salary of 150 rupees per mensem, for the charge of the tea nurseries to be prepared in Upper Assam, at Sudya, and other places.

2. His Lordship in Council is also pleased to authorize the outlay of such sums as may be necessary for the formation and maintenance of the nurseries. Periodical statements of their expenditure will be submitted by the Committee for the information of Government.

3. A copy of the present correspondence has been forwarded to the Commissioner of Assam, with instructions to him to arrange for the payment of the allowance to Mr. Bruce, and the disbursements above authorized, from the nearest treasury under his authority.

(signed) *W. H. Macnaghten,*
Secretary to Government of India.
Council Chamber, 11 February 1835.

EXTRACT INDIA REVENUE CONSULTATIONS, 5 March 1835.

From *G. J. Gordon, Esq.* to *Dr. Wallich*; Lintin, 23 November 1834.

Sir,

FOR three weeks after my joining the "Colonel Young" on the coast, the weather continued so boisterous, that we should certainly have been frustrated had we attempted to proceed to Ning Fe Hyen in the "Fairy" within the term limited for her return. In the meantime, Mr. Gutzlaff was active in his inquiries regarding the most eligible route to the Ankoy (Nyan Ki) hills; and it was finally determined that we should land from a deep bay, which you will find in the map of the province of Fokien, lying between the bay of Suen Chen-fu on the north, and that of Hya-men, or Amivi, on the south. Owing to the want of any chart of the bay, we durst not anchor farther up than within about 20 miles of its head, and it was not till the 7th that the weather moderated so far as to make it safe for a boat to go so great a distance. On the morning of the 8th November we at last set out on our expedition, from which we safely returned on the 13th. Accompanying I have the pleasure of sending you a journal of occurrences and observations on this little trip, taken from memoranda kept by Mr. Gutzlaff and myself. The success of this first attempt has only served to make me more eagerly desirous of visiting both Woo-ee and the green-tea districts to the north; but I apprehend it will be necessary to return to Bengal in the first instance with the cultivators expected from Bohea. I am strongly persuaded that the inferiority of Ankoy tea arises more from unskilful culture and preparation of the leaf than from soil or climate; I made, therefore, no offer to the peasantry at Twa-Be to accompany me to Bengal as planters, reserving recourse to them as a *pis aller*, in case of disappointment in the other quarter. With reference to the brittleness and thinness of the shell which covers the tea-seed, as well as to the moist, and, at the same time, oily nature of the kernel, I have judged it most expedient to put them up in barrels with dry sand, as giving them the best chance for preservation. Mr. Beale will sow a few of them in his garden to ascertain whether they are at present in good vegetating condition; and if they are, I trust they will continue in that state till they reach Almora, where they should be immediately sown in beds, such as I have described in my journal. I take it for granted, that the moment they reach you they will be despatched, in well-soldered tin canisters, to Mr. Traill, with such instructions as you may think expedient. They are said to take three months to spring, and are not transplanted till the ensuing month of March. It is still a question in my mind, whether part of that interval may not be spent by me to greater advantage in China than in Bengal. Mr. Gutzlaff is now perfectly willing to accompany me to the Woo-ee district, as well as to the northward, and I may never be able again to command his invaluable assistance, without which it would be quite in vain to attempt a journey of such length into the interior. Should my final determination be to remain in China with this view, it will be desirable to postpone the expedition till the month of March, that I may have an opportunity of witnessing the process of gathering and preparing the leaf. On this point I propose consulting with Mr. Daniell, and I shall probably be guided by his recommendation.

Should my native agent fail in procuring planters to proceed with me, I shall certainly remain to wait the success of other springs, which Mr. Gutzlaff proposes to put in motion. None of my English friends here have been able to do anything towards the object of my mission, and I attribute to Mr. Gutzlaff alone my success, as far as it has hitherto gone, or may eventually be attained. I mentioned to you in my last, that, before my return to the coast, several of the contractors had announced that they had seed ready for delivery; as anticipated, it was found to be unripe, and was rejected on that score, without reference to the suspiciousness of its origin. For all these services, and as a further retaining fee, I have given Mr. Gutzlaff an order on Mr. Daniell for (Spanish dollars, 1,000) 1,000 Spanish dollars, which I trust the Committee will approve. By going to the coast, I might doubtless have of myself been able to procure some sort of tea-seed, but, without his aid, none that could be in the slightest degree depended upon as genuine. I have no doubt, either,

that I might have engaged the same agents as the Dutch, but it would have been with the almost sure result of being supplied with seeds from plants growing within the province of Quantong, which, with reference to my instructions, I should have considered as only one degree short of total failure in my mission.

Should the result of further deliberation and consultation with my friends be in favour of my return to Bengal this season, I will take care to leave such directions as will, I trust, secure a further annual supply of Bohea tea-seed, as well as a supply of tea-seed and plants from the green-tea districts; and in the same case, I shall return by the very first opportunity after the arrival here of the Bohea planters, whom I expect in January.

Lintin, 23 November 1834.

(signed) *G. J. Gordon.*

P. S.—I have furnished Miss Napier with a small quantity of tea-seed, which she intends trying in Scotland.

(signed) *G. J. G.*

EXTRACT INDIA REVENUE CONSULTATIONS, 30 March 1835.

From *N. Wallich*, Esq., Officiating Secretary to the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to the Government of India, &c. &c. &c.

Dear Sir,

Botanic Garden, 24 January 1835.

I HASTEN to send you, for the purpose of your doing me the honour to submit them to the Right Honourable the Governor-general, samples of tea-seeds and fruits, which were safely landed here late yesterday evening from the Forth, having been sent round from China by Mr. Gordon in November. The consignment consists of one hogshead, one quarter cask, and a small case; and upon the whole, this noble supply of seeds appears fresh and good. I have already taken the orders of the Committee (previous to the landing of the seeds), for their being divided between Kumaon, Sirinore, and *our own* tea province, Upper Assam.

The seeds are of Bohea tea, and I shall with the least possible delay be able to report as to the vegetative state of them: a quantity shall be sown here this day.

But I have feelings of a still more intense pleasure on this occasion, for I am able to verify, beyond all further question, the Committee's Report to Government relative to the genuineness of the Assam tea. More than that, the correctness of the distinctive characters of the tea and camellia has also on this occasion been most amply and fully confirmed. Most fortunately it has so happened that there were a few camellia capsules among the supplies just received; they are of course of a China species. I beg to add them to the tea seeds in the accompanying bottle (wrapped in a separate small paper) in order to satisfy his Lordship that the sketch of the Nepaul camellia (copied from the *Plantæ Asiaticæ Rariores*), which accompanied the Committee's Report, is a faithful representation of the Chinese camellia also.

I have, &c.

(signed) *N. Wallich.*

(No. 27.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee, dated 30 March 1835.

Gentlemen,

I AM directed by the Governor-general of India in Council to acknowledge the receipt of your officiating secretary's letter, dated the 24th of January, submitting samples of tea-seeds and fruits recently landed from China.

2. It appears to be your intention to divide this supply between Kumaon, Sirinore, and Upper Assam; but I am desired to suggest to you, that it would be desirable to extend the experimental cultivation to other parts of India, and to request that you will forward a portion of the present supply to the chief secretary to Government, Fort St. George, with a view to its being distributed to the commissioner and resident in Mysore, and to the superintendent of the Nulgherrie hills.

3. The

3. The commissioner will be instructed to endeavour to introduce the cultivation into the Nuggur district, and the resident will be instructed to forward the supply which he may receive to the superintendent of Coorg, with a view to its introduction into that country.

4. All three officers will be directed to furnish, through me, for your information, the result of the experiment, and you are requested to accompany the supply of seeds with such suggestions as to the mode of cultivation as you may deem calculated to ensure its success.

Council Chamber, 30 March 1835. (signed) *W. H. Macnaghten*,
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 1 June 1835.

From *N. Wallich*, Esq., Officiating Secretary to the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to Government of India; 20 May 1835.

No. 12.

Sir,

I AM directed by the Tea Committee to send you, for the purpose of being laid before the Honourable the Governor-general of India in Council, the accompanying packet, containing a sample of Assam tea prepared by Lieut. Charlton, of Suddya, and recently received by dawk Banghy.

2. Owing to the unusual wet and boisterous weather which has been experienced of late, and notwithstanding the precaution that had been taken before despatching the sample, by packing it in a tin case enclosed within a strong wooden box, covered with wax cloth, the heavy rains had penetrated, and the tea arrived in a perfectly damp and mouldy condition. It was immediately placed in the sun and dried, and is now submitted to the examination of Government.

3. Considering the above unfortunate accident, and likewise that the leaves were gathered from the wild or crab tree, and have not undergone a proper course of manipulation, the Committee are of opinion that the sample affords the most satisfactory evidence that the result of the active investigation in which they are engaged will prove highly important and successful. It will be found that the tea, notwithstanding what has happened to it, is equal to the ordinary black sort (Congou), in common use among the lower orders at home, and that it bears also a favourable comparison with the Burmese or Shan tea, of which, by order of the Committee, I beg leave to send a large ball, which was presented to them by Lieut.-Colonel Burney, the Resident at Ava.

Tea Committee's Office, (signed) *N. Wallich*, M.D.,
H. C. Botanic Garden, 20 May 1835. Officiating Secretary.

(No. 61.)—From *W. H. Macnaghten*, Esq., Secretary to Government of India, to *N. Wallich*, Esq., Officiating Secretary to the Tea Committee; 1 June 1835.

No. 13

Sir,

I AM directed by the Honourable the Governor-general of India in Council to acknowledge the receipt of your letter, dated the 20th ult., and the specimens of tea which accompanied it, and in reply to request that you will acquaint the Committee of the gratification derived by Government from the satisfactory prospect thus afforded, that the result of the important investigation in which they are now engaged will prove successful.

Council Chamber, 1 June 1835. (signed) *W. H. Macnaghten*,
Secretary to Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 18 May 1835.

No. 9.

From *N. Wallich*, Esq., M. D., Officiating Secretary to Tea Committee, to
W. H. Macnaghten, Esq., Secretary to the Government of India; 6 May 1835.

Sir,

I AM directed by the Tea Committee to send you, for the purpose of being submitted to the consideration of the Honourable the Governor-general of India in Council, the accompanying copy of a communication from Mr. Trevelyan, dated the 18th ultimo, and of two letters therein referred to from Captain Jenkins and Lieutenant Charlton.

2. The Committee concurring entirely in the sentiments and views expressed in these letters, and being of opinion that the object of their labours would be greatly promoted by their being allowed to hold out to the Rev. Mr. Gutzlaff's enterprize the encouragement proposed by Mr. Trevelyan, they beg leave to recommend that they may be authorized to intimate to the Rev. Gentleman, that in the event of his undertaking, and successfully performing, the overland journey through China to Assam, he will be suitably rewarded by this Government.

(signed) *N. Wallich*, M. D.,
Tea Committee's Office, H. C. Botanic Gardens, 6 May 1835. Officiating Secretary.

No. 10.
Enclosure.From *C. E. Trevelyan*, Esq., to Dr. *Wallich*.

My dear Sir,

Calcutta, 18 April 1835.

WHEN my friend Coverly Jackson, of our civil service, returned from China, about two years ago, he informed me that Mr. Gutzlaff had it in contemplation to penetrate into Assam through Yunnan, and on my causing the circumstance to be intimated to Lord William, I was authorized by his Lordship to say, that if Mr. Gutzlaff succeeded in making the journey he would be rewarded for it; my attention was again called to the subject by a conversation I had a few months since with Mr. Clarke, the late China writer, and I wrote in consequence to Captain Jenkins, whose reply I send you, together with its enclosure.

You are welcome to keep these letters, and make any use of them you like. I think a person so remarkably qualified as Mr. Gutzlaff is said to be, could not employ his time better than in exploring the interior of China, and ascertaining the facilities which exist for such communication between it and Calcutta.

Perhaps the Tea Committee would recommend to Government, that the same kind of general encouragement should be held out to Mr. Gutzlaff to do so, as I was authorized by Lord William to give; or some specific plan, with its appropriate reward, might be suggested to him, with reference to the increased degree of importance which now belongs to the inquiries. Might it not be as well to have the double chance of success, which would be obtained by Mr. Gutzlaff's setting off for Assam at the same time that you and your companions start for Yunnan.

(signed) *C. E. Trevelyan*.From Captain *F. Jenkins* to *C. E. Trevelyan*, Esq.

Sir,

Gowahatty, 9 April 1835.

I DID not reply to your note about Mr. Gutzlaff sooner, as I wished to have Lieutenant Charlton's opinion on the subject of his intended journey. I am now able to send you this, and I do not know that I have much to add. Of course Mr. G. would come in a Chinese dress, and would know the road to Santafaw, on the eastern side, and thence I cannot imagine any difficulty in his finding his way into Ava, or Assam. The most interesting route, however, by far, would be up the great Nankin river, and thence across from the head of that river

(from

(from a northerly and southerly direction to its due eastern course) to Bhor Khanti, where Wilcox finished his survey.

In that short distance he would be able to solve all the problems about the great rivers of Cambodia, Cochin, and Laos; whether or not they come from Upper Tartary. This part of the world is totally unknown to us, and I believe to the Chinese; it was never crossed by their armies that we know of, and was never penetrated by the Jesuit missionaries. If Colonel Burney could be prevailed upon to move up the Irrawaddy as far as it is navigable, he would pick up a great deal of information that would be serviceable to us. The two countries may be highly useful to each other; but only by our assuming our proper position, and dictating whatever we may feel to be necessary for the good of either. The country is prostrate before us, and the population would be glad to put themselves under our protection; but we cannot open a trade from Assam to Ava, that would be so profitable to India and all the countries east, merely to indulge his Majesty in a vain fancy, that by the interdiction, he makes his country less accessible in case of the recurrence of a war. Lieutenant Charlton's postscript requires, I think, immediate attention; we ought to do something to improve the road on our side; and the small revenue we shall now raise at Sudyah might most profitably be spent on these local improvements.

(signed) *F. Jenkins.*

From Lieutenant *A. Charlton* to Captain *Jenkins.*

Sir,

Sudyah, 30 March 1835.

I HAD yesterday the pleasure of receiving your letter of the 12th instant, and am glad to hear there is a prospect of Mr. Gutzlaff's penetrating from Canton through Yunnan to Assam. His best plan would be, I think, on leaving Yunnan, to accompany the caravan which starts from the frontier town of Chanda, or Santa, for Munkoom and Hookoom, in the Burmah territory, annually in the month of October or November, consisting of from 500 to 1,000 traders; and if he could travel as a Chinaman incognito, so much the better; he need not then be apprehensive of the slightest danger or molestation. There appears to be a good understanding between the Chinese, Shans, Burmese, and Singphoos, with whom he would come in contact after leaving Yunnan; but if it be discovered his being a European, I would recommend his not leaving Mankoom without a guard of Burma sepoy, or some influential person on the part of the governor, Moha Seree Kio Dang, to accompany him as far as our frontier, the Patkay hills. The following, I am told, is the direct route from the frontier town of Santa to this place; but I cannot enumerate all the intermediate stages:

	From Santa to Hookoom	- - -	21 days' journey.
	- Hookoom to the Patkay Hills	- - -	5 -
Hon. Company's	- Patkay Hills to Beesa	- - -	3 -
Territories. }	- Beesa to Sudyah, by water	- - -	1 -
			30

But the route the caravan takes is, I believe,

	From Santa to Moonkoom	- - -	15 days.
	- Moonkoom to Hookoom	- - -	8 -

Which makes the journey 32 days from Santa to this place. None of the Chinese merchants have hitherto come nearer to our territory than Hookoom; but from the inquiries they have been making lately, I fully expect to see some of them at Sudyah in December or January next, especially if any of their countrymen are sent up here, whom Mr. Gordon is to bring from China.

(signed) *A. Charlton.*

The road is good, I believe, from Santa to the Patkay hills; after which, I need not tell you, it is very bad indeed. The Chinese carry their merchandise on mules.

EXTRACT INDIA REVENUE CONSULTATIONS, 6 July 1835.

n. 18.

(No. 67.)—From *W. H. Macnaghten*, Esq., Secretary to Government of India, to Officiating Secretary to the Tea Committee; 6 July 1835.

Sir,

I AM desired by the Honourable the Governor-general of India in Council to acknowledge the receipt of your letter, dated the 25th ultimo, on the subject of the proposed overland-journey by Mr. Gutzlaff, from China to Assam.

2. The Tea Committee recommend, that in the event of the journey in question being undertaken by that gentleman, he should be guaranteed his Chinese allowance of 800 *l.* per annum during his absence, and an additional remuneration of 5,000 rupees.

3. The Governor-general in Council is of opinion, that the proposed journey might be productive of advantage, from the increased knowledge which it would afford of China and the intervening countries, and that it embraces national objects, for which the authorities under the Crown in China might be disposed to afford support to the undertaking, by permitting Mr. Gutzlaff to draw the salary attached to his office during the period of his absence, in which case the Governor-general of India in Council will be prepared to present Mr. Gutzlaff with the sum of 5,000 rupees, on the completion of his journey; or if the authorities in China will consent to furnish two-thirds of the amount required for this purpose, (namely, the salary of Mr. Gutzlaff, during his absence, and the bonus of 5,000 rupees,) the Company's Government will supply the remaining third of those sums.

4. You are authorized to conclude the arrangement for Mr. Gutzlaff's journey on either of these terms, reporting the result for the information of the Governor-general in Council.

(signed) *W. H. Macnaghten*,
Secretary to Government of India.

Council Chamber,
6 July 1835.

No. 1.

EXTRACT INDIA REVENUE CONSULTATIONS, 21 September 1835.

From the Tea Committee to *W. H. Macnaghten*, Esq., Secretary to the Government of India; 18 September 1835.

Sir,

WE beg to report to you, for the information of the Honourable the Governor-general of India, the return of our secretary, Mr. Gordon, from China, in obedience to our instructions, as sanctioned by Government in their proceedings of 13 March last.

Mr. Gordon has already sent a large supply of tea-seeds of the black tea kind, and had, in March last, engaged a party to proceed to the green tea country for the sake of procuring a supply of seed of that description, also as well as of engaging persons properly qualified to superintend its cultivation, and the manipulation of the leaves.

Mr. Gordon had also, previously to leaving Canton, engaged two emissaries to proceed to the Bohea country, for the purpose of acquiring important information regarding the cultivation and manufacture of the best black teas, and of engaging competent superintendents.

Should the emissaries above alluded to succeed in their missions, so far as to bring to Canton persons of the required description, the expenses incurred will, inclusive of advances, amount to about 4,500 dollars; and there will still remain a risk that the superintendents engaged may draw back when they find their services are required beyond the limits of China.

Mr. Gordon has taken the precaution to engage the best services of some of his private friends residing at Canton and Macao in perfecting those arrangements, by entering into such engagements with the cultivators, &c., as may induce them to proceed to Bengal; and, in taking measures for the safe transmission of such seeds and plants as they may bring. Looking, however, upon the acquisition of properly qualified persons to superintend the cultivation and manufacture

manufacture of tea, as of vital importance to the successful introduction of tea culture within the British territories in India, and, in fact, as forming the only desideratum now required to ensure so important a result, we cannot but feel a most anxious wish that Mr. Gordon were himself on the spot to conclude such agreements as may be requisite with that view, and to remove all such doubts and apprehensions as might tend to deter the persons alluded to from undertaking so distant a voyage.

We have, therefore, earnestly to request the sanction of his Honor in Council, for the immediate return of Mr. Gordon to China. His absence is not likely to exceed the period of three, or, at the utmost, of four months; and there are no important duties for him to be performed here that can come in the least in competition, in the estimation of the Committee, with the paramount object likely to be attained by his speedy return to China.

As the season for a re-voyage to China is already far advanced, we solicit the earliest intimation of the decision of his Honor in Council on the point submitted.

We have, &c.

(signed)	<i>J. Pattle.</i>	<i>C. E. Trevelyan.</i>
	<i>J. W. Grant.</i>	<i>C. K. Robison.</i>
	<i>J. R. Colvin.</i>	

Calcutta, 18 September 1835.

From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee, dated 21st September 1835.

Gentlemen,

No. 2.

I AM directed to acknowledge the receipt of your letter, dated the 18th instant, reporting the return of Mr. Gordon from China, and the steps taken by him to secure seeds, plants, and cultivators, and requesting sanction for his return to China for the purpose of completing the arrangements which he has already put in train.

2. In reply, I am desired to acquaint you, that in compliance with the recommendation of the Committee, the Honourable the Governor-general of India in Council has been pleased to sanction Mr. Gordon's return to China, and the continuance to him of the additional allowance of 500 rupees per mensem, for the further period of four months.

I have, &c.

Council Chamber,
21 Sept. 1835.

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

Ordered, That the necessary communication be made to the civil auditor.

EXTRACT INDIA REVENUE CONSULTATIONS, 24 August 1835.

From *N. Wallich*, Esq., M.D., Officiating Secretary, Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to the Government of India, Revenue Department, dated 11 August 1835.

No. 2.

Sir,

ON the 20th of May I had the honour, by order of the Tea Committee, to forward to you a sample of tea produced at Assam from the wild plants growing about Suddeya. The Committee having within these few days received a further supply from Lieutenant Charlton, which, being packed in well-corked bottles, has arrived in a much better condition than the above sample, I am directed to send you the accompanying specimen of it, requesting that you will please to submit it to the Honourable the Governor-general of India in Council, as a much more satisfactory sample of the Assam tea, both in regard to smell and taste, than that previously furnished, which, as I intimated at the time, had

suffered from mouldiness. I beg leave to observe, that in both instances the leaves have been gathered from the wild shrub, and that they have not undergone that proper course of manipulation which alone is capable of imparting and securing the genuine flavour to any sort of tea.

Tea Committee Office, Botanic
Garden, 11 August 1835.

I have, &c.
(signed) *N. Wallich*, M.D.,
Officiating Secretary, Tea Committee.

No. 3.

(No. 35.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to *N. Wallich*, Esq., Officiating Secretary to the Tea Committee, dated 24 August 1835.

Sir,

I AM directed by the Honourable the Governor-general of India in Council to acknowledge the receipt of your letter of the 11th instant, submitting further sample of the Assam tea, the leaves of which have been gathered from the wild shrub, but have not undergone a proper course of manipulation.

2. In reply, I am desired to apprise you of the satisfaction which the Government have derived from the further prospect which is thus afforded of the successful result of the important inquiry in which the Committee is engaged.

Council Chamber,
24 August 1835.

I have, &c.
(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 23 November 1835.

No. 7.

From the Members of the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to the Government of India; 12 November 1835.

Sir,

As showing the first operations of the mission, we have the honour to submit to the Honourable the Governor-general of India in Council, an original letter from Dr. Wallich, together with an analysis by Mr. M'Clelland, of different of tea soils from China and Munnipore.

Calcutta
12 November 1835.

We have &c.
(signed) *J. Pattle.* *C. K. Robison.*
J. R. Colvin. *Radakant Deb.*
C. E. Trevelyan. *Ram Comul Sen.*

From *N. Wallich*, Esq. M.D., on deputation to Assam, to the Officiating Secretary to the Tea Committee, without date.

No. 8.

Sir,

I REQUEST you will do me the favour to inform the Tea Committee, that I arrived here with my party on the 10th of this month.

According to the arrangement made with Captain Jenkins, agent to the Governor-general on the north-east frontier, I immediately informed him of our having reached Chirra, requesting his advice respecting our further movements. His reply, dated at Gowahatty the 20th, reached me yesterday at Mamloo, whither we had proceeded on a tour of examination. It recommends our joining him as soon as we can, in order that we may get into our boats, and go on to Suddeya. He expresses his confident expectation that all hostilities will have terminated before we can reach that principal point of our inquiries, and that we shall be able to pursue these with safety and success. We shall accordingly break ground to-morrow, proceeding to Gowahatty by Myreeng and Runklow, and intending to make every possible inquiry during our progress across the Khoseah hills. That a vast field is still open for us in that direction is obvious, from the extent of the harvest which has already been gathered, and which I am happy to think will satisfy the Committee and the Government that we have

have not been uselessly employed during our journey to and stay at Chirra. It would be improper to enter into any details of our labours on the present occasion; it may not however be uninteresting to the Committee to be informed, that among a variety of vegetable forms, which this range of hills has in common with the tea provinces of China, are two, perhaps three, species of camellia, and a sort of star anise, resembling that of China in every respect but in its flavour. These facts are of great importance with reference to the spontaneous growth of the tea in Upper Assam, and most probably also at Munipore. Our botanical and geological collections are already immense, and I venture to hope that they will be found in the highest degree creditable to the indefatigable zeal and research of the two scientific gentlemen attached to my deputation.

I have the pleasure to enclose a report of Mr. M'Clelland, on several samples of tea soils from Munipore and China, which were forwarded by Major Grant and Mr. Gordon; they were analyzed by him on our way to Chattuc.

In requesting that you will do me the honour to submit this letter, and its enclosure, to the Committee, I beg to explain, that I should have reported my arrival here long before now, had I not been desirous at the same time to give some information respecting my further movements, which I was unable to do until I had got the above-mentioned letter from Colonel Jenkins.

I have, &c.

(signed) N. Wallich, M.D.,
On Deputation to Assam.

EXAMINATION of SOILS in which the Tea Plant is cultivated in China.

Specimen 1; contained in a small parcel of about an ounce weight, marked "Soil of the Honam Tea Shrubberies;" to which was added, in Dr. Wallich's handwriting, "Received per 'Forth,' from Mr. Gordon, 22d August 1835."

It is salmon colour, loose, and friable. On rubbing it on the palm of the hand it resolves itself into two portions; one consisting of angular grains, which scratch glass; the other adheres to the skin, renders it shining, and feels soft and somewhat meagre.

Having been first bruised greatly and mixed, 200 grains were heated to about 300 Fahr., it only lost four grains of its weight.

It was again bruised and sifted, when sandy parts, with slight adherent dust, amounted to 129 grains impalpable powder; 63, and 2 grains of undecomposed vegetable fibres, were the different results.

The earthy parts were digested in delitto muriatic acid for 12 hours, washed and dried, when the remaining insoluble matter amounted to 171 grains.

The acid solution was then treated in succession with prussiate and carbonate of potash, and afterwards boiled, and the different precipitates procured by these means dried and examined.

The parts that were insoluble in muriatic acid were exposed for 20 minutes to the heat of a charcoal fire, and scarcely lost any portion of their weight. They were then boiled for two hours in sulphuric diluted acid*, washed and dried, and were found to have lost 36 grains of their weight. The insoluble parts were found to be chiefly angular grains of quartz, intermixed with fine silicious powder.

* Dilute sulphuric acid.

From the foregoing experiments, the constituents of this soil may, with sufficient accuracy for agricultural purposes, be stated as follows:

Silex	-	-	-	-	-	-	-	-	135
Alumine	-	-	-	-	-	-	-	-	36
Carb. magnes.	-	-	-	-	-	-	-	-	6
- lime	-	-	-	-	-	-	-	-	4
Oxide of iron	-	-	-	-	-	-	-	-	13
Roots and fibres of plants	-	-	-	-	-	-	-	-	2
Water of absorption	-	-	-	-	-	-	-	-	4
									200

The following five specimens of soils, sent by Mr. Gordon from the black-tea districts visited by him in China, were received by a previous conveyance; they

were contained in distinct papers, consisting of from 200 to 400 grains in each; the whole were enclosed in a small box, and forwarded per 'Emily,' Captain Bocthby, to Dr. Wallich.

In ranking these additional soils according to their external characters, they separate into two varieties: the first variety is a yellow colour, composed of concrete masses, which are very friable, and soft between the fingers; the second variety is grey, consisting also of friable masses, and with occasional irregular-shaped pieces of gravel, apparently felspar, hardened, in its decomposed state, by oxide of iron.

A specimen of decomposed felspar, including minute hexagonal crystals of quartz, and spotted with oxide of iron, and a fresh specimen, probably of the same, accompanied these soils. The fresh specimen just alluded to, resembles granite, but has pinite as a basis to the felspar, and quartz instead of mica; the quartz, indeed, is in very small proportion. These geological specimens, no doubt, belong to the rock that affords these soils.

The first variety of these soils comprises two parcels, only distinguished from each other by different degrees of intensity of colour; the one was reddish yellow, approaching to the brightness of the Honam soil already described, and the other was a pale yellow. These specimens may either have been taken from the same, or from distinct plantations; as, however, they were forwarded separately, so also I thought it best to examine them.

(No. 2.)

Besides the colour, it has a great many of the characters of the Honam soil; it feels, however, more uniformly soft, and does not adhere so much to the skin, or feel meagre.

Nearly the same method of analysis was adopted in this as in the examination of the Honam soil; the following are the constituents afforded:

Silex	-	-	-	-	-	-	-	-	-	71
Alumine	-	-	-	-	-	-	-	-	-	12
Oxide of iron	-	-	-	-	-	-	-	-	-	7
Carb. lime	-	-	-	-	-	-	-	-	-	2
- magnes.	-	-	-	-	-	-	-	-	-	1
Muriate of soda	-	-	-	-	-	-	-	-	-	1
Water of absorption	-	-	-	-	-	-	-	-	-	3
										97

One hundred grains only were examined of this and the following soils, owing to the smallness of the quantities supplied; it being our wish also to reserve a small portion of each sample for the purpose of comparison with such soils as we may meet in Assam. The same causes, and the want of a sufficient delicate balance, prevented my taking their specific gravities.

(No. 3.)

This soil is soft to the feel, and is composed of very friable nodules, mixed with flat, irregular pieces of gravel. In the course of its analysis, the only peculiarity to be mentioned was, that after having been heated, bruised, and sifted, it afforded 60 grains of impalpable powder; the remainder consisted of minute particles cemented into small grains like soft sand, and on breaking these they were found to be red internally and white without.

The following are the constituents of this soil:

Silex	-	-	-	-	-	-	-	-	-	63
Alumine	-	-	-	-	-	-	-	-	-	20
Carb. magnes.	-	-	-	-	-	-	-	-	-	$-\frac{1}{2}$
- lime	-	-	-	-	-	-	-	-	-	$-\frac{1}{2}$
Oxide of iron	-	-	-	-	-	-	-	-	-	5
Muriate of soda	-	-	-	-	-	-	-	-	-	1
Water of absorption	-	-	-	-	-	-	-	-	-	2
										97

The three following soils belong to the grey variety already mentioned :

(No. 4.)

This is a light-grey soil, containing irregular earthy nodules of gravel, which on being fractured, look like earthy felspar. Moistened and quickly dried, it becomes somewhat hard and solid, so as to be reduced again to powder, with some difficulty, between the fingers. This peculiarity renders it rough, as if it contained coarse sand, which it does not. Its constituents are,

Silex	-	-	-	-	-	-	-	-	80
Alumine	-	-	-	-	-	-	-	-	6
Oxide of iron	-	-	-	-	-	-	-	-	6
Carb. lime	-	-	-	-	-	-	-	-	2
Alkaline salt	-	-	-	-	-	-	-	-	1
Water of absorption	-	-	-	-	-	-	-	-	5
									100

(No. 5.)

The physical characters of this soil are the same as those of No. 4; but the gravel contained in that only amounted to about 3 per cent., while it forms 20 per cent. of this soil. Its constituents are as follow :

Silex, in the state of earthy felspar, variously reduced } from the size of gravel to impalpable powder - }									83
Alumine	-	-	-	-	-	-	-	-	8
Oxide of iron	-	-	-	-	-	-	-	-	4
Carb. lime	-	-	-	-	-	-	-	-	1
Alkaline salt	-	-	-	-	-	-	-	-	1
Water of absorption	-	-	-	-	-	-	-	-	3
									100

(No. 6.)

The whole sample of this soil adhered together, forming a brittle mass of dark-grey colour, with occasional small nodules of gravel, and a few slight undecomposed vegetable fibres, projecting from the surface.

The nodules of gravel present the same external characters as those observed in the last two soils, and constitute about five per cent. of the whole. The ingredients of this soil are,

Silex	-	-	-	-	-	-	-	-	76
Alumine	-	-	-	-	-	-	-	-	14
Oxide of iron	-	-	-	-	-	-	-	-	4
Carb. lime	-	-	-	-	-	-	-	-	2
Alkaline salt	-	-	-	-	-	-	-	-	1
Water of absorption	-	-	-	-	-	-	-	-	3
									100

Note.—The water of absorption has been estimated by the loss of weight sustained when the soil was exposed to such heat as slightly blackened the end of a stick when placed a few minutes in contact with the vessel containing the soil.

As an appendix to the foregoing, I may add the following result of an analysis of the soil of the valley of Moneypore, two specimens of which were transferred to me by Dr. Wallich. One of these had been received by the Tea Committee before Dr. Wallich became its officiating secretary, the other was afterwards received. The first is marked "soil from the eastern side of the valley of Moneypore," the second, specimen of the soil near Sonal, in Alunpore, where the tea (or camellia) seeds were found in Moneypore. See Major Grant's letter, 24 May 1835.

No. 1. "From the eastern side of Moneypore." It is of a clear yellow colour; when rubbed in the hand, it adheres to it, and renders it ochre yellow. It is
63. composed

composed of nodules, which may be reduced to the finest powder between the fingers, requiring however considerable exertion. It contains :

Silex - - - - -	51
Alumine - - - - -	32
Oxide of iron - - - - -	6
Carb. lime - - - - -	2
Water of absorption - - - - -	9
	100

No. 2. Is a dark, dirty, grey colour, abounding in vegetable fibre. It contains nodules of a much softer nature than the above soil, as well as an occasional fragment of steakito and felspar, but these were only found in a general examination of a considerable quantity of the soil, and may be considered as adventitious. Its constituents are as follows :

Silex - - - - -	49
Alumine - - - - -	24
Oxide of iron - - - - -	8
Undecomposed fibre - - - - -	1
Animal or vegetable matter destructible by heat - - - - -	8
Water of absorption - - - - -	10
	100

I do not know what the prevailing rocks are in the vicinity of these soils, but should infer that they are clay slates. The last soil appears to have received manure, either by natural or artificial means.

Chattuc, 6 October 1835.

(signed) *J. McClelland.*

EXTRACT INDIA REVENUE PROCEEDINGS, 8 February 1836.

From Major *A. White* to Dr. *N. Wallich*, M.D., dated Jorhaut, 24 Dec. 1835.

My dear Sir,

I HAVE been making inquiries about tea here, and I find that the plant is to be found at a place called Gulroo Purbut, about 18 or 20 miles from this; and the Kacharries, who are the best labourers in Assam, are to be found quite close to the spot; so Rajah Purandur says, who enters heartily into the scheme, and will afford every assistance in procuring labourers. I herewith send a plant, which was transplanted from the hill a short time ago, and I send a number of dried leaves, which were taken from the plants on the hill itself; by making a decoction from them, you will be enabled to judge as to its being the real tea or not; I am inclined to think that it is though, because I am told that two Burmese, or rather Shans, who had given offence to the Burmese Government, and had been compelled to take refuge in the province of Yunnan, taught a man named Boglee to make a decoction from the leaves gathered from the said Gulroo Purbut plant. He is a gardener, and is now employed by Government at Suddya, where you will see him. The two Shans came to Jorhaut with a view of seeking the aid of our Government to re-establish them, and I perfectly recollect their being here.

I have sent out for another plant to the hill itself, and will send it as soon as it comes in. Gulroo Purbut is nearer than Jayee, and I think this of some consequence with reference to the success of an experimental nursery, as it is more within the pale of civilization than Muttock, or the site of the plants discovered in the Singho country. I am quite indifferent where the experiment is made; but if Suddya does not answer, I think this would be the best place, as a person superintending the plantation at Gulroo Purbut, might live here during the rains, for I do not think a European could live in the Assam jungles at that season, and from two years' experience I know this to be a salubrious place. Mr. Scott got a boat load of plants from this place early in 1826, and sent them down to Gowalparah and Singamarie; part went to Mr. Swinton. I
only

only knew this to-day. I send a specimen of coal found within half a day's journey of Gulroo Purbut, which might be found useful in the manufacture of the tea.

Your's truly,
(signed) *A. White.*

P. S.—After seeing the Muttock place, I think your best plan would be to come here, as Jayee and Gulroo Purbut must be close to each other.

EXTRACT INDIA REVENUE CONSULTATIONS, 4 April 1836.

From *N. Wallich*, Esq., M.D., on Deputation to Upper Assam, to *J. W. Grant*, Esq., Officiating Secretary to the Tea Committee; 12 February 1836.

No. 14 (A.)

Sir,

I BEG leave to enclose a copy of a letter from Major White, political agent in Upper Assam, dated the 2d inst., and of my reply of yesterday, which I request that you will do me the honour to submit to the Committee.

2. As it was originally intended that my deputation should, if practicable, return to Culcatta by Ava, and under the circumstances explained in the above correspondence, I humbly hope that the Committee will approve of the plan of eventually detaching Assistant-surgeon Griffith, to accompany Captain Hannay on his way back to Ava from Suddya; and that they will please to obtain for it the sanction of Government. The unexpected discovery of tea forests in the Bursumaputis and Raja Purundur Sing's territories, within the British influence and control, renders it indispensably necessary that Mr. M'Clelland and myself should proceed on our route to examine them, even if, on the arrival of Captain Hannay on the Assam frontier, it should in other respects be found practicable for the whole deputation to accompany him to Burma; nor will Mr. Griffith be detached until a communication has been received from Capt. Hannay, affirmative on the points detailed in my correspondence with Major White.

3. I take the liberty of enclosing also the copy of a communication from Capt. Jenkins, agent to the Governor-general on the north-east frontier, dated the 25th ult., and of my reply to the same, dated yesterday, relative to detaching Assistant-surgeon M'Clelland, on an important occasion of public interest, humbly hoping that the plan will meet with the Committee's approval. A copy of the letter of the 4th December, to which Capt. Jenkins refers, has been forwarded by him to the Committee. Mr. M'Clelland will, of course, not leave me until we have finished the inspection of the tea forests.

4. We met to-day with the boats that were despatched early in November last from the Botanic Garden, with tea seedlings for Assam. The instruction which I had sent in duplicate to the sergeant who is in charge of the plants, as soon as I had heard of the boats having left Bissenath, had not reached him, owing to the canoes having descended by a different channel of this immense river from that along which the boats were tracking. My orders to him were to halt at the mouth of the Dilroo river, until I should arrive there from my examination of Soyqua and Muttuck, in either of which countries, as I observed in my letter to you of the 29th ult., it would be desirable to establish the plants, in preference to Suddya and Choonpura. The distance, however, of the Dilroo town, the place where the boats have now arrived, not being considerable, they may easily drop down there in one day. I have accordingly ordered Sergeant Moore to halt until he gets further instructions from me. The difficulty of getting a fleet of such heavy boats (of 600 to 900 maunds burthen) much higher up the Berhampooter, at this season of the year, and the impossibility almost of their passing that reach of the river called Sillannee-mook, requiring that they should be changed for other conveyances, render it very desirable to put the plants into a nursery somewhere near the Dilroo, in preference to Soyqua, which is situated beyond the above-mentioned dangerous point.

I regret to say, that a great number of the seedlings have died on their way thus far, owing partly to the protracted durations and difficulties of the journey,

the long confinement under Choppar, and the numerous rats which infest the boats, and partly to another circumstance which I shall presently explain. Thirty-four small boxes and two large ones, besides 31 pots, were left behind at Bishenath, as they contained altogether only 213 good plants, the remainder having perished or being in a doubtful state, which enabled Major White to discharge one of the boats, so that only seven are now retained. On examining the cargo of each boat, I found that the seedlings in the pots and gumlahs were generally in a much more healthy and thriving condition than those in the boxes. I attribute this difference chiefly to two causes; first, to the seedlings in the cases being all transplanted, and secondly, to the latter being constructed of teak, and very tightly fastened by means of iron champs, impeding the proper degree of prompt draining of all superfluous moisture, the only outlet being vertical, through the holes made in the bottom of each case, whereby some dampness may have been occasioned. On the other hand, a great proportion of the plants in the pots and gumlahs were of a more vigorous growth, in consequence of being raised from seeds originally sown in them, while the porous nature of the earthenware has admitted of a free evaporation or draining of moisture in all directions. The plants being crowded on a larger area in the cases than in the pots, may likewise have had a prejudicial effect; yet I did not observe that there was any perceptible degree of moisture of the soil in the two sorts of receptacles, notwithstanding that so many plants in the boxes appeared to have damped away, as gardeners call it. But with the knowledge I now possess of the great degree of humidity of the climate of Assam, I can readily imagine that common earthen vessels are best suited for holding plants that are to be transported from any distance, not forgetting that there exists at present no other land conveyance in Upper Assam except that which is afforded by means of men. The sergeant has had the whole collection counted over since leaving Bissenath, and it appears that out of the 20,000 plants which left Calcutta, only 8,000 are surviving. Considering all the circumstances connected with so large a consignment of young and tender seedlings, the tallest of them scarcely six inches in height, and supported by the experience of many years, I am of opinion, that the loss of three-fifths is not greater than might reasonably have been expected, the remainder still affording an ample and valuable stock for the formation of a future tea plantation. It is proper to remark, that I have every reason to be satisfied that the sergeant in charge, and the two Maullees who are with him, have performed their duties with great diligence and attention.

6. We left Suddeya on the 6th instant, accompanied by Mr. Bruce, whose local knowledge and experience have already been of the greatest service to my deputation, and made a halt at the mouth of Soyqua Nulla, in order to visit some lands in that neighbourhood. The permanent importance of finishing the examination of the tea forests on our present route to Bissenath, before the termination of the season, prevented our devoting more than one day to Soyqua. We succeeded, however, in selecting a piece of new forest land, which will be available in case we should be disappointed in our expectation of meeting with a better locality in the direction of the spontaneous tea in Muttuck, where an additional advantage would exist on the score of economy. We are now on our way to that country, having been much impeded both in our starting from Suddeya, and in our progress thus far, by continued wet weather since the 2d, and almost incessant heavy rain during the last two days, without the slightest indication of a favourable change taking place soon.

On the Berhampooter,
above the Dilroo River,
12 February 1836.

I have, &c.
(signed) N. Wallich, M.D.,
On Deputation to Upper Assam.

No. 14 (B.)

From Major A. White, Political Agent in Upper Assam, to Dr. Wallich, on Deputation at Suddeya; 2 February 1836.

Sir,

I beg leave to forward you an extract of a letter from Captain Jenkins, Agent Governor-general, dated 26 January, for your guidance and information.

Political Agent's Office,
Upper Assam,
2 February 1836.

I have, &c.
(signed) A. White,
Political Agent.

EXTRACT of a Letter from Captain *F. Jenkins*, Agent to the Governor-general in Assam, to the Address of Major *A. White*, Political Agent in Upper Assam, dated 26th January 1836.

No. 1.

5. SHOULD, however, Captain Hannay consider it proper to return to Ava by the route he came up, I would beg of you to press on him and Dr. Wallich the expediency of Mr. Assistant-surgeon Griffith accompanying Captain Hannay to Ava, for the purpose of adding to the stock of Captain Hannay's information, by those investigations into the natural history of the intermediate countries between Suddeya and Ava, which Mr. Griffith's scientific attainments will enable him to pursue.

6. It seems to me so very desirable to embrace the opportunity of extending our knowledge which now offers itself to us, in the presence of the gentlemen on the tea deputation on our frontier, and Captain Hannay's unexpected deputation, that if Captain Hannay considers himself authorized, from his acquaintance with the feelings of the Burmese towards us, to take Mr. Griffith with him, I conceive that it is so important to the furtherance of the service that one of those gentlemen should pass through the frontier districts of Ava, under Captain Hannay's direction, that this measure ought to supersede any other arrangements, and that Captain Hannay should confine himself to a written communication with you, and proceed to return forthwith to the Resident of Ava, and report his proceedings to that officer.

(True extract.)

(signed) *A. White*,
Political Agent.

From Dr. *N. Wallich*, M. D., on Deputation, to Major *A. White*, Political Agent, Upper Assam; 11 February 1836.

No. 2.

Sir,

I HAVE the honour to acknowledge the receipt yesterday of your letter of the 2d instant, with the extract from the letter of Captain Jenkins, dated 26th ultimo, accompanying it.

2. In reply, I beg leave to forward the annexed copy of a letter which I have this day addressed to Captain Hannay, to await his arrival at Sudd eay.

3. It would undoubtedly be attended with results the most beneficial to the cause of science, if the recommendation of Captain Jenkins, that Mr. Griffith should accompany Captain Hannay, in the event of his return to Ava by land, could be carried into effect; I confidently trust that the Tea Committee will concur in the plan, and obtain for it the sanction of Government. I need not add, that Mr. Griffith, with that ardour which is inseparable from eminent acquirements in natural history, has expressed his anxious wish to be detached on the contemplated tour.

On the Berhampooter,
above Dilroo River,
11 February 1836.

I have, &c.
(signed) *N. Wallich*, M. D.
On Deputation.

From Dr. *N. Wallich*, M. D., on Deputation, to Captain *Hannay*, Commanding the Escort of the Resident of Ava, Suddeya; 11 February 1836.

No. 3.

Sir,

I BEG leave to forward to you, annexed, a copy of an extract from a letter from Captain Jenkins, agent to the Governor-general on the north-east frontier, to Major White, political agent in Upper Assam, dated the 26th ultimo, and received yesterday in a letter from Major White, dated the 2d instant.

2. Agreeing entirely in the views and suggestions of Captain Jenkins, I shall be extremely happy if the circumstances pointed out by him should not stand in the way of your consenting to Mr. Griffith's accompanying you back to Ava,
(3) and

and thereby affording an opportunity of our acquiring a knowledge of the natural productions of the interesting countries between Assam and Burmah, which the first-rate talents of that gentleman are so capable of supplying.

3. In the event of your concurrence in the above arrangement, a letter addressed to me, on your arrival at Suddeya, will be immediately attended to, and Mr. Griffith would use every exertion to going on there with the least possible delay. The deputation which I have the honour of heading is now proceeding down the river, on the route to several tea forests which are reported to exist near the Dilroo and Dessye rivers, having accomplished the examination of those among the Singphos, towards Beeza. We expect to arrive at Bishenath about the 15th of next month, when our labours, as connected with the production of tea in Assam, will terminate, at least for this season. I request that you will have the goodness to forward your letter to me by outside post until the 1st proximo, and after that time in the Bishenath post-packet, directed to the care of Major White at that station.

4. I cannot conclude without expressing my regret, that circumstances prevent the possibility of my having the satisfaction of meeting you at Suddeya.

I have, &c.

On the Berhampooter, above the
Dilroo River, 11 February 1836.

(signed) *N. Wallich*, M. D.,
on Deputation.

From Captain *F. Jenkins*, Agent to the Governor-General, to *N. Wallich*, Esq., M. D., on Deputation at Suddeya; 25 January 1836.

Sir,

WITH reference to the 20th and 21st paragraphs of my letter of the 4th ultimo, I beg to inform you, that, from researches since made as to the mineral products of the line of country there alluded to, I am disposed to consider them of much importance from the information received; so much so, that I beg to request, that if not convenient to you to follow the route pointed out, that you will detach Mr. McClelland from Jorehauth to examine the geological formations at the junction of the Dheong and Dunsiri rivers; and placing himself in communication with Ensign Brodie, I should wish him to pass through the Mikeer hills, and proceed to Durrumpore, to examine the coal and lime formations on that quarter, with a view to make an immediate report to Government on their extent and value.

2. If you see no objection to this, I beg you will request Mr. McClelland to inform Mr. Brodie of the date at which he may be expected to reach the Dhunzie, in order that this gentleman may direct persons to be in attendance to conduct him to the localities referred to.

I have, &c.

Pol^l Agent's Office, N. E. Frontier,
25 January 1836.

(signed) *F. Jenkins*,
Agent to the Governor-General.

No. 5.

From Dr. *N. Wallich*, M. D., on Deputation, to Captain *F. Jenkins*, Agent to the Governor-General on the North-east Frontier; 11 February 1836.

Sir,

I BEG leave to acknowledge the receipt of your letter, dated the 25th ultimo, which reached me yesterday.

2. Mr. McClelland concurring with me in the importance which attaches to the researches pointed out in your letter, and anxiously desirous of engaging in that pursuit, I trust that, if this season should not admit of his accomplishing all the examinations embraced in your letter, the Government will consent to his being employed on them during next season.

3. You will observe, from my letter of the 6th instant, that Cacharee Hath, near the junction of the Dheong and Dhunsire, is included in the route to the tea forests in Muttuck, and the Rajah's territories. On our arrival there, we shall be better able than at present to form our decision relative to the other

points

points on which you urge Mr. M'Clelland's attention; but in the meantime I have requested him to communicate with Ensign Brodie, in order that, in the event of his being detached from the deputation, an arrangement may have been formed for joining that officer.

4. In conclusion I beg to observe, that I shall feel extremely happy if the highly meritorious and valuable services of Mr. M'Clelland were to be extended in Assam, even beyond the duration of the present deputation, in the interesting inquiries detailed in your present letter, and your previous communication of the 4th December.

I have, &c.

On the Berhampooter, above the
Dilroo River, 11 February 1836.

(signed) *N. Wallich*, M. D.,
on Deputation.

(True copies.)

(signed) *N. Wallich*, M. D., on Deputation.

(No. 21.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 4 April 1836.

No. 15.

Gentlemen,

I AM directed by the Right Honourable the Governor-general of India in Council to acknowledge the receipt of your letter, dated the 18th ultimo, and its enclosures, and in reply to communicate to you as follows:

2. His Lordship in Council approves the employment of Dr. Griffith and Dr. M'Clelland, on the special duties described in the letters of Dr. Wallich, there being every reason to expect that valuable information will be obtained by the scientific researches of those gentlemen.

3. With regard, however, to the proposed deputation of Lum Qua, a Chinese physician, on a salary of 400 rupees per mensem, the Governor-general in Council is of opinion, that this amount of expenditure is much too large to be made on what may be termed an experimental arrangement, and that it will be better to send along with the labourers a Chinese carpenter, sufficiently conversant with English, to act as interpreter, and whose services would be more practically useful, and might be obtained on less expensive terms.

4. Should your Committee concur in this view of the case, the Governor-general in Council authorizes you to hire an individual of that description, on a monthly allowance not exceeding 60 rupees per mensem, and to send him, in company with the Chinese labourers, to Assam, in charge of Lieutenant Bigge, or any other officer who may be proceeding in that direction, and who may be directed, on their arrival in Assam, to make over his charge to Captain Jenkins, or Mr. Bruce, until instruction as to the mode of disposing of them can be obtained from Dr. Wallich, to whom you will of course communicate the date on which the party may quit the Presidency.

5. The original enclosures of your letter are herewith returned.

I am, &c.

Council Chamber,
4 April 1836.

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

Ordered, That a copy of para. 4 of the foregoing letter to the Tea Committee be forwarded to the Military Department, from whence the necessary instructions will be issued to Lieutenant Bigge, or any other officer who may be proceeding to Assam, to take charge of the Chinese tea planters, for the purpose therein stated.

EXTRACT INDIA REVENUE PROCEEDINGS, 11 April 1836.

No. 9. From the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to Government; 28 March 1836.

Sir,

WE have the honour to submit, for the information and orders of the Right Honourable the Governor-general in Council, copies of the under-mentioned letters, to the address of our late Acting Secretary, Mr. Grant, from Dr. Wallich. You will please to observe, that Dr. Wallich entertains the same view as ourselves of the expediency of employing a Chinese who understands English to accompany the tea planters. He also recommends that an additional number of planters should be procured from China; a measure in the expediency of which we fully concur, and which we have little doubt can be effected under the care of Mr. Gutzlaff, through the instrumentality of the person whom Mr. Gordon employed successfully in procuring those already here. We take this occasion to recommend also, that a Chinese carpenter be hired to accompany the planters to Assam; his services will be required for making tea boxes, and a variety of other work. We understand that the usual wages for a person of this description are 40 rupees a month.

We have, &c.

(signed)

J. Pattle.

C. K. Robison.

Ross D. Mangles.

Radakant Deb.

J. W. Grant.

C. E. Trevelyan.

Ram Comul Sen.

G. J. Gordon.

Calcutta,
28 March 1836.

Letters sent herewith:—Dr. Wallich's Letters to J. W. Grant, Esq.: 19th February 1836, 26th February 1836, 3d March 1836, 10th March 1836.

No. 10.

From *N. Wallich*, Esq., M. D., to *J. W. Grant*, Esq.; dated Bagdoam, in the Muttuck Country, 19th February 1836; concluded at Rungagora, 20th.

My dear Grant,

ALTHOUGH there is not much prospect of my being able to despatch a letter from Rungagora (the head-quarters of the Bursumaputti), still I will finish one in order that I may be prepared against any opportunity that may occur on our arrival there, which I hope will be to-morrow. On the morning of the 16th, when we started on our march inland from the mouth of the Dilroo, there appeared some change of the weather to be near at hand; but we were deceived, and during the three days' march to this village, we have had incessant rain day and night. This is awfully distressing, considering the rough mode of travelling which we are obliged to adopt, and the horrid jungles we have to pass through. But *jacta est alea*, the object of my mission must be accomplished this season, unless the obstacles should become absolutely insurmountable; my only fear is that the seasons have changed manners, and that the rains have been anticipating their usual period by a couple of months or so, and that this, in fact, is the beginning of them. Such is Assam! But still I hope for better things, and I think there may be a favourable change yet, this being the first afternoon with a fresh southerly breeze and some sunshine during these several days. Yesterday we visited a beautiful tea jungle, a couple of miles from our camp at Nuddooa; as usual, heavy, pelting rain from first to last; still we were highly gratified by our excursion. The spot appears to be very small, although it is very probable that there are others in the same direction. But it was utterly impossible to do more than we did, situated as we were; and there can be no doubt that the jungle ought to be, without delay, appropriated for the purposes of Government, which can be effected with ease and little cost: there are abundance of shrubs, small and large, but no large trees; I mean of the tea; the largest which we saw had been cut down, and had a stem of about five inches in diameter. The soil is of a peculiarly light character, resembling closely that of the tea jungles in the Singpho country, which we have visited. The plants had mostly done flowering; some were still in bud. Some seeds, just commencing to germinate, were found on the ground,

and

and there were abundance of young seedlings. A circumstance which adds very great interest to the occurrence of the shrub here is, that plants are associated with it in these parts which belong also to China, and to the very tea district or provinces of China; two out of three of which have been figured and described by Mr. Brown, in Abel's account of that empire. I cannot tell you how much interest and importance I attach to this curious fact, which will be fully detailed, and I hope satisfactorily, when I am able to submit my report to the Committee; for the present, I must content myself with simply noticing the fact.

To-morrow we proceed to Rangagora, on the route to Tengrae, where, according to all accounts, tea grows in great abundance and perfection. The people who have been sent to us by the Bursunnaputti, as well as others whom we have questioned on the subject, insist on there being tea at no other places than the two I have mentioned above. We have our own men out in all directions to inquire; and if there should be sufficient ground for supposing our informants to be in the wrong, we shall act accordingly; otherwise we intend to adhere to our original plan of proceeding to Gulroo-perbut, in the Rajah's territories, as soon as we have done with Tengaree. The jungles begin to be unhealthy in March, and unless I have done with them early in that month, I shall certainly fall ill, even though my two assistants, who are very young in age, as well as in the country, might perhaps be able to rough the jungles a couple of weeks longer. I hope to be at Bissenath before the 15th proximo, Captain Jenkins having politely complied with my anxious request to meet me at that station, in order that, together with Major White, we might personally consult together on the best plan for taking the tea forest into our immediate management, to be laid before the Committee.

Rungagora, 20 February.

During the evening, and throughout the night, heavy and almost continued rain. We arrived here at eleven o'clock, and shall be on our way towards Tengrae to-morrow or the day after. The Bursunnaputti came out to meet us on our approaching his town or village, and has been very civil to us. He had received a purwannah from the subadahr at Suddeya for a supply of rice, fowls, &c. for a gentleman, who had informed him that he was approaching Suddeya, from Munkaum, and would speedily arrive. This, of course, is Captain Hannay, and I mean to send off an express, as soon as one can be got, with letters for him. On the 11th I wrote to you officially on the subject of Captain Hannay's deputation, and expected arrival, which cannot fail to be productive of the most valuable information, connected especially with the tea forests which abound in the vast countries between Ava and Suddeya.

Believe me, &c.

(signed) *N. Wallich.*

From *N. Wallich*, Esq., M.D., to *J. W. Grant*, Esq., dated Rungagora, on the Dilroo River, in the Bengmora or Muttuck Country, 26th February 1836.

My dear Grant,

SINCE I had the pleasure to write to you on the 20th from this place, we have been at Tengrae, and examined the tea there; we devoted two days to this duty, and were not sorry when they were passed, because a fiercer Turraij jungle cannot easily be imagined, rendered still more unhealthy in consequence of the late long-continued rain.

Owing to a diminution of plants in one direction, leading to their complete cessation, the result perhaps of the clearing of the lands more than to any other cause, Tengrae may be conveniently considered to possess two distinct tea jungles, of very irregular and straggling forms; but, taken together, of much greater extent than all those which we have hitherto seen, put together. One of the tracts is confined in one direction by the Tengaree nulla, which empties itself into the Boree Dihing; the other is partly confined, and partly intersected by several small nullas falling into the Tengaree, and now dry, or nearly so, and in a great measure choked up by vast numbers of bamboos, which latter form a very leading feature of these jungles. As I have already remarked,

the boundary of them is very irregular, and therefore not easily defined; the same observation holds with regard to the general level, which is much undulated. The soil is what I could call a good forest soil, of considerable depth, changing below into a sandy and clayey earth. The tea looks remarkably healthy and vigorous, consisting of plants of all ages, between quite young seedlings and tall shrubs of 12, 16 to 20 feet in height, with stems mostly under an inch in diameter, and in no instance reaching beyond two inches; almost all the full-grown plants had abundance of seed-buds; a few had still some flowers on them. They must have been in fine bloom a month ago. The late unseasonable rain has produced a crop of developed young leaves, as well as leaf-buds, while the older foliage was remarkably large, and of a fine dark green colour. I speak here of one of the tracts of forest which I have characterized, by embracing several forest nullahs, for in consequence of the extensive fellings of the large forest trees in that portion which extends along and is confined by the Tengaree nulla, a great number of teas which have fortunately been left unhurt by the dow or cutlass, have, by exposure to a sudden excess of light and heat, had the colour of their leaves changed from a dark, to a pale, somewhat yellowish green colour. Notwithstanding this change, curious in more than one respect, the plants themselves were as numerous and as healthy as those in other parts. In many instances where tea-plants had been cut down, vigorous and frequent shoots were observed to surround the base and top of the stumps that had been left standing on the ground. In some spots the plants were seen in very thick and crowded numbers, in others they were more scattered and remote from each other; at times they were lost sight of altogether, at others recurring again of a sudden; occasionally extending even down the sides of the damp beds of the nullahs or water-courses. Altogether these forests deserve our immediate attention, lest further mischief be done by the ignorant and semi-barbarous hands under which they at present suffer. On my arrival at Bissenath, about the middle of next month, I trust that I shall be able to arrange with Major White for taking the lands under our own care; and I have the more hopes to be able to effect this with ease, having experienced the greatest attention and assistance from the Bursumnaputty, who is the chief of the country. To conclude this brief sketch with an additional most weighty argument in favour of the tea of Assam, I am truly happy to say, that we have found a species of *camellia* (vulgarly called Japan rose) between Rungagora and Tengaree, so exceedingly like the real *Camellia Japonica* as scarcely to be distinguished by the form and nature of the leaves; the shrubs had young fruits set, but no flowers. I need not intimate that this plant or shrub is the companion of all teas in China, as well as in Japan.

Your's sincerely,

(signed) *N. Wallich.*

On the Burhampoota, at the mouth of the Dilroo River, the 29th
February 1836.

P.S.—In continuation of my letter commenced at Rungagora on the 26th, I add a few lines to say, that we arrived here in canoes from that place yesterday. Sergeant Moore arrived here soon after us, after having safely deposited the cargo of tea seedlings at Seggua, agreeably to the arrangement which I had the pleasure to explain in my official letter to you of the 11th instant. The boats were immediately discharged, and I have ordered the sergeant to proceed forthwith to Calcutta. He states that the plants had improved in a remarkable manner since the time I inspected them, about a fortnight ago. We start to-morrow for Jorhath.

Your's truly,

(signed) *N. Wallich.*

EXTRACT INDIA REVENUE CONSULTATIONS, 11 April 1836.

From *N. Wallich*, Esq., M.D., to *J. W. Grant*, Esq.Monghyr, at the Mouth of the Dessoy River,
3 March 1836.

My dear Grant,

WE arrived here at noon to-day, and to-morrow morning start for Gobroo-purbut, for the tea jungles there, about which you will recollect that Major White wrote to me a letter, of which I sent you a copy soon after reaching Suddeya. Our route lies by Jorhath, on the Dessoy-river (Dissue in the Company's Atlas, No. 130). We calculate on reaching the spot in three days hence; two days must be devoted to the tea, three back to this ghaut, and from hence two to Bissenath, where we hope to arrive on the 13th, or at farthest on the 14th.

I am most happy to say that Captain Jenkins, in compliance with my anxious wish, has promised to meet me at Bissenath; he has, moreover, invited Raja Purrunder Sing, in whose territories I now am, to join us. We shall thus be able, in consultation with Major White, to form arrangements, for the approval of the Committee, regarding the spontaneous tea, both in the Raja's dominions and in those of the Bursumaputy. I find a number of boats and other preparations at this ghaut for the conveyance of Purrunder Sing to Bissenath.

Soon after arriving here I had the satisfaction of receiving your letter of the 10th February; accept of a thousand thanks for it; more than I can tell you does your intimation gratify me, that the Committee are pleased with my examinations as far as they had become acquainted with them, namely, as far as the Kooja forest, among the Singfoos. From my subsequent letter, especially since I have visited the highly interesting and promising forests in the Bursumaputy's country, I hope and trust that the Committee will derive still greater satisfaction. No scheme of this nature was ever entered upon with such a progressive accumulation of favourable and confirmatory circumstances as our tea scheme; instead of trying by experiment whether or not the tea would grow in the Company's dominions, which, please to remember, was the bias and object of the formation of the Committee, we soon found out that the plant was indigenous among the Singfoo, the true, real, only, China plant. Immediately on my arrival in Upper Assam I learnt that Mr. Bruce had discovered that there were tea jungles both in Muttuck and in the direction of Jorhath. The former we have already examined, and found most valuable, I mean those in Muttuck. Those at Gobroo still remain to be inspected; and reports from Major White, as well as from Mr. Bruce's men, incline me to expect something equal, if not superior, to what we have already seen. We have thus the ready means of acquiring possession of natural tea forests, which will enable us, with far less expense than was contemplated, and with next to positive certainty of success, to put the matter to a direct and immediate test. How widely different the conditions under which the introduction of tea into Penang by the English, into Ceylon and Java by the Dutch, and into the Brazils by the Portuguese, has been, and is attempted.

I anxiously hope that we shall have many more China cultivators besides the three that have already reached Calcutta. In the meantime, the sooner that these men are sent up to Assam the better, I should think. It may perhaps be advisable to let them be accompanied by a Chinaman of Calcutta, by way of an interpreter.

I write these lines in much haste, not expecting that there will be here an immediate opportunity for despatching a dawk to Bissenath. I am happy to say that my cold has entirely left me. I wrote to you on the 29th ultimo, but I verily believe I forgot to thank you for your kind favour of the 27th January. We met yesterday the American missionaries and their families (Drs. Cutler and Brown); they are on their way to Suddeya, and seen very good people, and are highly spoken of as such.

Your's most obliged,
(signed) *N. Wallich*.

I also wrote an official letter to you yesterday, sending our bills under the same cover with this.

No. 11.

(No. 22).—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 11 April 1836.

Gentlemen,

I AM directed by the Right Honourable the Governor-general of India in Council to acknowledge the receipt of your letter, dated the 28th ult., submitting communications from Dr. Wallich, who recommends the employment of a Chinese who understands English, to accompany the tea planters to Assam, and to procure an additional number of planters from China, which can be effected through the Rev. Mr. Gutzlaff, also recommending that a Chinese carpenter accompany the planters, upon a salary of 40 rupees per month.

2. You have already received instructions in my letter, No. 21, dated the 4th instant, on the subject of an interpreter and carpenter to accompany the Chinese labourers, and you have been authorized to incur an expenditure, on this account, not exceeding 60 rupees per mensem.

3. With regard to the question of procuring additional labourers from China, his Lordship in Council is of opinion, that the consideration of it had better be postponed till the return of Dr. Wallich to the Presidency; when, should an additional supply be deemed necessary, the most efficient and economical means of procuring them may be resorted to.

I have, &c.

Council Chamber,
11 April 1836.

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 18 April 1836.

No. 2.

From the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to Government; 14 April 1836.

Sir,

WITH reference to your letter of the 4th instant, No. 21, conveying the sentiments of the Right Honourable the Governor-general in Council, regarding the employment of a competent person to act as a medium of communication with the Chinese tea planters about to proceed to Assam, we have now to request the favour of your stating to his Lordship in Council our regret that we have not been able to carry into effect his Lordship's suggestions to their full extent.

The dialect spoken in that part of the province of Fahkeen bordering on Kyangse, of which those people are natives, differs very materially from that spoken on the coast of the same province, as well as from that of the province of Canton, insomuch that it is only through the medium of the written character, that natives of those respective districts can make themselves mutually understood. Fortunately, however, the dialect of the Bohea hills approaches, in point of purity, to that of Nankin, which is the standard or literary dialect, so that it may be pretty well understood by natives of the other provinces who have some knowledge of classical pronunciation. This difficulty will account for our want of success in the endeavour to find a person, qualified to act at the same time as carpenter and interpreter. We learn upon inquiry, that there are few if any Chinese carpenters in Calcutta, who are not natives of Canton; and that these are totally illiterate and unable to understand, or to make themselves intelligible, to the Bohea men.

We have therefore been obliged to seek some other arrangement, and we deem ourselves fortunate in having fallen in with a person who, though much inferior in point of intelligence to Dr. Lum Qua, whom we formerly proposed, may be found sufficiently qualified for the purpose for which his services are required, and may be engaged on much cheaper terms.

The individual alluded to, named Laon Chung, was formerly employed in the licence department of the police, on a salary of 80 rupees per month. He is understood to have given satisfaction while so employed; but resigned the situation to engage in trade, which he has pursued for some years, and which he is unwilling to relinquish unless for an appointment of some permanence. The lowest terms on which he consents to proceed to Assam, are 100 rupees a month,

month, for three years certain. He speaks English pretty well, and can read a plain hand; his own language he reads and writes fluently, and is conversant with several of its dialects; and may thus eventually be found useful in case of any Chinese of the adjoining province of Yunnan visiting Assam with a commercial view.

A carpenter of good character has offered his services, at 45 rupees a month; he originally demanded 40 sicca rupees and his victuals. We would recommend the fixed sum of 45 Company's rupees to be allowed to him in preference.

We have further to request the favour of your obtaining the orders of Government for an advance of three months' wages to the tea planters, as submitted in our letter of the 1st instant, and also to the individuals we now propose should be entertained, should our recommendation be sanctioned.

We have, &c.

(signed)	<i>J. Pattle.</i>	<i>Ram Camol Sen.</i>
	<i>Ross D. Mangles.</i>	<i>J W. Grant.</i>
	<i>C. E. Trevelyan.</i>	<i>Radhakant Deb.</i>
	<i>C. K. Robison.</i>	<i>G. J. Gordon.</i>

Calcutta, 14 April 1836.

(No. 30.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 18 April 1836.

No. 3.

Gentlemen,

I AM directed by the Right Honourable the Governor-general of India in Council to acknowledge the receipt of your letter, dated the 14th instant, reporting the failure to arrange for a Chinese interpreter on the terms suggested in my letter of the 4th instant; but that a person is available at a salary of 100 rupees per mensem for three years certain, and a carpenter at 45 rupees per mensem, also recommending their employment, and that they should receive three months' pay in advance.

2. In reply, I am directed to acquaint you, that his Lordship in Council has been pleased to sanction your employing the individual in question on the monthly allowances suggested; but that the contract to retain the interpreter for a period of three years, must be clearly understood as being subject to the condition of his conducting himself properly and satisfactorily.

3. The advance of three months' pay solicited for the individuals in question, is authorized, and will be paid to your order on application at the General Treasury in the usual way.

Council Chamber,
18 April 1836.

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

Ordered, That the necessary communication be made to the civil auditor and sub-treasurer respectively.

EXTRACT INDIA REVENUE CONSULTATIONS, 16 May 1836.

From *G. J. Gordon*, Esq., to the Chairman and Members of the Tea Committee; 29 April 1836.

Encl. to No. 4.

Dear Sirs,

I THINK it right to take the occasion of the happy return of Dr. Wallich amongst us, to inform you, that in pursuance of the intention I have already expressed, I will, with the expiration of the present month, resign my office of Secretary to the Committee. I am induced to take this step by considerations, partly public and partly private.

The investigations assigned to our Committee on its first formation have been completed, and the objects especially entrusted to myself for execution have been effected. Nothing in fact is now wanted but Dr. Wallich's report, and my own, to satisfy Government and the public, that there are situations within the Company's territories in which tea can be cultivated with every prospect of success.

Persons qualified for superintending the culture and manufacture of that species of tea which forms the great bulk of consumption, I mean black tea,

are already on their way to the province of Assam, where they can ascertain the quality of the indigenous plant, and direct the cultivation of the foreign stock imported from China.

Those great objects having been effected, nothing further remains that can demand the undivided labours and attention of a secretary, and it does not appear to myself proper that I should, under such circumstances, continue to burthen Government with a salary allotted to me, when I was required to perform more onerous duties than now remain to be executed.

Such are my public grounds for tendering the resignation of my office of Secretary. I have only to regret that my private circumstances are such, that I cannot afford to devote gratuitously, even to an object in which I feel so lively an interest as in that in which your Committee is engaged, such portion of my time as would still be required for that duty, otherwise my best services in that capacity would continue to be at your disposal, and that of Government.

I have, &c.

Calcutta, 29 April 1836.

(signed) *G. J. Gordon.*

EXTRACT of Proceedings at a Meeting of the Tea Committee, held at the Office of the Sudder Board of Revenue, on Friday the 29th April 1836.—Present, Mr. Pattle in the Chair, Dr. Wallich, Mr. Trevelyan, Mr. Robison, Mr. Grant, Mr. Gordon, and Baboo Radhakant Deb.

8. ON perusal of the Secretary's letter, the Chairman submitted the following resolution, which was adopted by the Committee:

Resolved, That it will be but just to Mr. Gordon to express to Government the very great and uniform satisfaction we have derived from the zealous, judicious, and indefatigable exertions he has employed, at times exposed to severe privations and risk, to ensure the successful execution of the important objects for the accomplishment of which he was twice deputed to China. He had necessarily to contend with great difficulties from causes beyond his control. That disappointment, therefore, should to a certain degree occur, must have been anticipated by us all; but, we can with truth declare, that no exertion of judgment, or personal effort, has been omitted by Mr. Gordon that could tend to secure success. Mr. Gordon is, therefore, fully entitled to our commendation and thanks, and that we should notice to Government his just claim to the distinction of their approval of his labours.

9. The services of a Secretary being indispensable, and as we have all official duties which demand the whole of our time, it is expedient that we request Mr. Gordon to continue his services till Dr. Wallich shall have finished his report, and till we shall have submitted it with our sentiments to the Government of India. Should Mr. Gordon assent to our wishes, we will address to Government the expression of our sentiments in respect to the services of Mr. Gordon, with a suggestion that Doctor Wallich may, in succession to Mr. Gordon, be requested to assume the office of our Secretary.

Resolved, That the foregoing resolution be communicated to Mr. Gordon, in order that the Committee may be in possession of his answer before addressing Government.

(signed)	<i>J. Pattle.</i>	<i>C. K. Robison.</i>
	<i>R. D. Mangles.</i>	<i>Radhakant Deb.</i>
	<i>C. E. Trevelyan.</i>	<i>N. Wallich.</i>
	<i>J. W. Grant.</i>	

EXTRACT INDIA REVENUE CONSULTATIONS, 23 May 1836.

No. 2.

From the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to the Government of India; — May 1836.

Sir,

WE have the honour to transmit copy of a letter addressed to us by Dr. Wallich, on the 28th March last, enclosing copy of his letter of the 15th March to Captain Jenkins, political agent at Assam, recommending the immediate

diate adoption of certain measures for securing the advantages contemplated from the discovery, that the tea-plant is indigenous in several parts in the province of Assam.

2. We learn from Dr. Wallich, that there is considerable variety in the appearance of the plant, as well as in the quality of the soil in which it is found at those several places respectively; and it is, therefore, very desirable, that all of them should be subjected to the test of experiment, as there are no indications that can in the present state of our knowledge of the subject point to any one of those spots as more likely to produce good tea than any other of them, or which ought to be preferred on any other account.

3. We entirely concur with Dr. Wallich in thinking, that justice will not have been done to the inquiry, unless the wild plant be placed in circumstances as nearly as possible resembling those in which the cultivated plant yields the best produce, and that no fair judgment can be formed as to the value of the indigenous plant, unless the trees, climbers, &c. growing on the same spot be cleared away, the ground drained, and the plants themselves trimmed, or cut down, so as to secure the springing out of a number of fresh twigs and branches that will thus be subjected to the influence of free exposure to the air and sun. We know, from the unanimous testimony of all those who are acquainted with the tea countries of China, that those conditions are essential to the good quality of the leaf.

4. It is estimated by Dr. Wallich, that the possession of the small patches of forest land to which he alludes, may be obtained for a few hundred rupees each, so that the whole of them might probably be acquired for a sum not exceeding 1,500 rupees. A further sum of 4,000 or 5,000 rupees he conceives would suffice to cover the cost of the operations described in the 9th paragraph of his letter of 15th March, addressed to Captain Jenkins. Regarding so small an outlay as quite inconsiderable compared with the importance of the object in view, we have no hesitation in strongly recommending to Government to place that sum at the disposal of Captain Jenkins, as applicable to the purposes recommended by Dr. Wallich.

5. As it will be necessary to employ a competent person for the superintendence of the operations above recommended, we deem it fortunate that the services of one so eminently qualified for that duty, as the gentleman named in the 10th paragraph of Dr. Wallich's letter, can be obtained on the spot. We understand that Mr. Bruce, the gentleman alluded to, would resign the charge of the gun-boats which he now holds, as well as his private business, and devote the whole of his time and labour to the care of the nurseries, and the proposed experiment on the indigenous tea plant, for a salary of 500 rupees a month, and this allowance we would propose to have a retrospective effect from the 10th of January last, when Mr. Bruce first gave his assistance to the deputation headed by Dr. Wallich.

6. The salary above proposed for Mr. Bruce, it is intended shall include his travelling expenses, which, considering that the spots which would be under his charge spread over a very extensive tract of country, cannot but be heavy.

7. A moderate establishment of labourers and chowkedars will be required at each forest, after the most pressing works alluded to above have been accomplished; but this subject will be more fitly laid before the Government at a future period, when the necessity for this expense arises.

We have, &c.

(signed)	<i>J. Pattle.</i>	<i>C. K. Robison.</i>
	<i>Ross D. Mangles.</i>	<i>Radhakant Deb.</i>
	<i>Ram Comul Sen.</i>	<i>N. Wallich.</i>
	<i>J. W. Grant.</i>	

Calcutta, May 1836.

Encl. to No. 3. From *N. Wallich*, Esq., M.D., on Deputation, to Captain *F. Jenkins*, Agent to the Governor-general North-east Frontier; 15 March 1836.

Sir,

THE time has now arrived when I should lay before you my sentiments relative to our taking the tea forests, which have been examined during my deputation, under our own management. I have already had the honour to address you privately on the subject, and shall therefore confine myself entirely to an outline of the plan which I have in view, the more so as its details belong properly to the official report relative to the tracts in question, and, generally, on my proceedings during the deputation, which shall as soon as possible be submitted to the Tea Committee.

2. On the present occasion, it will be sufficient to enumerate briefly the places where we examined the tea in its natural or wild state :

1st. At Koojo.

2d. Near Niggroo, on the Booree Dehung, among the Singfoo.

3d. Near Nuddooa, } In the Muttuck country.

4th. At Tengrae, }

5th. At the foot of the Nagu range, at Gubhroo, in the Rajah's territories.

3. I beg leave to observe, that at the time when I left Calcutta, on my present tour, the Committee were not in possession of any data on which they could found a supposition that tea existed anywhere in this province, except on its remotest frontier to the southward and eastward of Suddeya. It was not until I reached Assam that I heard from you that forests were to be met with lower down the Berhampooter, in countries subject to British control and influence. We have fortunately been able to examine all these forests personally, as far as we had any positive knowledge of their existence.

4. As far as regards the forests among the Singfoo, I am confident that it was never contemplated as practicable to get possession of them for public purposes. Indeed, the views of the Committee with regard to my mission, unless I am greatly mistaken, were limited to my simply examining the Singfoo forests, and selecting proper sites for tea plantations within our own territories. I am warranted in believing that we may get possession, not only of those forests, but of all the others which I have mentioned above; and that, by adopting this measure, the number as well as sites of the intended plantations may be considerably modified.

5. In my humble opinion, the gamers or chiefs who own the Singfo tea tracts, will not object to our purchasing or leasing them. Such a measure would, moreover, have a very beneficial effect on the tribe; it would improve and strengthen the impression which, I trust, my party has left among them, that there are other objects than those of war and punishment which may bring them into close contact with their neighbours. But setting aside these considerations, there is a great probability that the tea in the two forests in question has originally travelled from the frontiers of China, where it has been recently proved that some of the most valuable trees, in the estimation of the Chinese, are produced.

6. The forests in the Bursunnaputtis and the Rajah's territories are also highly interesting. That at the foot of the Nagas range, which we found growing on one of the small hills of the cluster which bears the name of Gubhroo-purbut, it is reasonable to suppose is connected with others extending to the southward among the Nagas, and with the tea which Major Grant has announced as existing in Munnepore, and which may have originated from the Hookum plant.

7. Under the preceding views, I most anxiously recommend, that all the tracts which I have enumerated above should be put under a systematic course of management in our own hands, in order that we may be enabled, with far less cost, and with vast saving in point of time, compared to what would be the case were we to depend exclusively on artificial plantations, to arrive at a satisfactory conclusion as to the capability of the Assam tea of yielding a good and merchantable produce. At the same time, I beg to repeat, what I have

have

have already had several occasions to intimate to you before now, that I suspect we shall have to ascend much higher elevations than those where the tea has been hitherto seen in Assam, to meet with localities subject to a decided winter of six weeks or two months' duration, before we can expect to find the more valued and superior sorts of teas, and that it is to such localities that we must chiefly direct our attention in the establishment of our new plantations. But since it is the ordinary description of article which ought to be considered at present as the principal object of our endeavours, I mean that sort of tea which is cheapest of all, and for the consumption of which, like that of sugar, it may be assumed there is no other limitation than what is caused by the price it bears in the market; and since all varieties of tea in commerce are derived from one and the same parent stock, probably not even excepting the two grand divisions of black and green teas, I do maintain, that the Assam forests hold out the fairest prospects, that, under a proper treatment, they may be made to yield a very valuable supply of good and potable tea, which will before long repay all the expenses of the preliminary trials, provided the leaf is made to undergo the same sort of manipulation which is practised in China, and which so entirely differs from that in use among the Singfos and our other neighbours.

8. Nothing could be more favourable for the object I have in view in addressing you these observations, than the fortunate circumstance of my having the honour of meeting you at this station with Major White, since, in case you should coincide with me in opinion, that the forests ought to be taken into our own hands, the preliminary steps may at once be adopted for giving full effect to the scheme, in case it should be finally sanctioned below. Nor can I omit noticing the opportune presence at this moment at Bishinath of Rajah Purunder Singh. Without presuming to offer any opinion on the mode in which the object may be attained, I would suggest, that procuring the forest lands on a long lease might, probably, insure all our purposes. Considering, however, the destructive manner in which the tracts in question have been hitherto treated by the natives, and the injuries which most of them are at this time almost daily undergoing, I beg most earnestly to urge the necessity of immediate and effective measures being taken to secure the forests from further spoliation, pending my reference to the Tea Committee.

9. As none of the jungles are very large, I would recommend that a strong fence should be put round each, to protect them from encroachment and depredation from man and beast; such a durable fence as has partly been constructed near the Tengral tea forests, for the security of that part which has been cleared for the cultivation of opium and rice. The materials for raising such a fence are at hand everywhere. As much as can be done during this season, the tea plants should be relieved from the thickest jungle of shrubs, climbers, &c., which at present overwhelm them, and which is very destructive; leaving the large trees, which form so conspicuous a feature in these jungles, for future thinning and removal. A number of labourers should be entertained, to dig and level the ground, whenever it is required, and to drain the lands at places where there is any fear of severe floodings. It will be necessary also to have some teklas or choukedars, to guard the tracts from the plants and seeds being robbed, &c.

10. It is of the utmost importance that a trustworthy and properly-qualified person should be nominated for the charge of the forests, and for carrying into effect the above provisional and subsequent steps; and whose duty it should be to visit the forests frequently and in succession, and to report upon their progressive condition. Believing it to be impossible to find a man equally qualified with Mr. C. Bruce, in point of experience, zeal, and bodily constitution, it is my intention to recommend that gentleman, in the strongest manner I can, to the Tea Committee, for the charge of the Assam forests: the more so, as I have every reason to believe that you agree with me entirely in this matter. It was Mr. Bruce, and his late brother, Major R. Bruce, at Jorehath, who originally brought the Assam tea into public notice, many years ago, when no one had the slightest idea of its existence; a fact to which the late Mr. David Scott has borne ample testimony; and it is to Mr. Bruce's indefatigable exertions that the Muttock and Gubhroo forests have come to light. His long residence

in Assam, his intimate acquaintance with the customs, languages, prejudices, &c. of the many tribes that inhabit the province and the adjoining countries, the excellent moral character which he deservedly bears among us all, his extraordinary strength of constitution, which has enabled him to encounter the fiercest jungles, at seasons when it would be fatal to any one else to come near them; all these considerations combine to render him eminently qualified for the duties in question. Mr. Bruce has accompanied my deputation from the 10th of January to this day in all our excursions; and I am doing nothing but an act of plain justice to that worthy and useful man, if I declare that, whatever may have been the success which has attended my mission among the various tribes in Upper Assam, and I do humbly trust that I may claim for it some degree of success, it is to Mr. Bruce's unwearied exertions and advice during our journeys, his conciliatory demeanor towards the natives, his intimate knowledge of them and of their country, and the strong interest which he has unceasingly taken in the tea scheme, that I am bound mainly to attribute that success. In short, when I reflect on the peculiar predicament in which the frontier was placed, when I and my party arrived at Suddeya, you will no doubt agree with me in thinking that I could have done very little if I had not had the advantage of Mr. Bruce's personal assistance. Being already in charge of the nurseries at Suddeya, he has a further claim to favourable notice on this occasion; and the mere fact of his having so long resided in this part of India, and being able to endure the climate at all seasons and in all localities, give him a decided advantage over any person, however qualified, who might be sent up from Calcutta, but who would soon experience the deleterious effects of an Assam jungle.

11. I shall of course submit this matter to the consideration of the Tea Committee, with whom it will rest to recommend Mr. Bruce for the situation, with such a scale of allowance as will enable him to devote all his time and abilities to the charge. In the meantime, I consider his services as indispensably necessary, even for carrying the above preliminary measures into execution; and under this impression, I have ventured to dwell at length on his permanent appointment. It occurs to me, however, that his present charge of the Suddeya gun-boats would be incompatible with the proposed superintendence of the tea forests.

I have, &c.
(signed) *N. Wallich, M.D.,*
On Deputation.

Bissenath, 15 March 1836.

EXTRACT INDIA REVENUE CONSULTATIONS, 23 May 1836.

(No. 42.)—From *W. H. Macnaghten, Esq.*, Secretary to the Government of India, to Captain *F. Jenkins*, Commissioner of Assam, dated 23 May 1836.

Sir,

To secure the advantages contemplated from the discovery that the tea plant is indigenous in several parts of the province of Assam, certain measures have been recommended to Government for adoption by the Tea Committee. These measures may be enumerated as follows:—

1st. To obtain, by purchase or otherwise, tracts of forests in the Singfo, Muttock, and Gabhroo hills.

2d. That the tracts be placed under a systematic course of management, for establishing tea plantations.

3d. That the tracts be protected, by a strong fence, from encroachment and depredation of man and beast.

4th. That labourers be entertained to dig and level the ground, and drain lands at places where there is fear of severe flooding.

5th. That choukedars be hired to guard the tracts, to prevent theft of plant and seed.

2. To the Governor-general in Council it appears that it would be premature to enter at present upon so extended a scale of operations, and it might be preferable, in the opinion of his Lordship in Council, to confine our proceedings to

to two or three spots, selected on account of the convenience of the position, and with reference to the variety of soil required for the different species of plants.

3. I am desired to request that you will submit a report of your sentiments as to the most eligible places to be used for this purpose, and the measures you would recommend to be adopted in the prosecution, on the limited scale, of the objects contemplated by the Committee, and the expense which it is calculated will be incurred in obtaining the patches of forests, and in inclosing and dressing them in the manner proposed by Dr. Wallich.

4. The appointment of Mr. Bruce, as superintendent, with a salary of 500 rupees per mensem, as proposed by the Tea Committee, does not appear to be objectionable, but his Lordship in Council is of opinion, that the establishment proposed to be attached to him is much larger than he would be justified in allowing, both in regard to the early stage of these proceedings, and to the scale upon which he thinks this should, in the first instance, be prosecuted. You are, accordingly, requested to submit a report on this point also, (showing what reduction can be effected,) for the consideration of his Lordship in Council; on the receipt of which, final orders will be issued regarding the employment of Mr. Bruce.

5. Copy of the letter to my address from the Tea Committee, and of its enclosures, is sent herewith for your information.

I have, &c.

(signed) *W. H. Macnaghten*,
Secretary to Government of India.

Fort William,
23 May 1836.

Ordered, That a copy of the foregoing letter to the address of Captain Jenkins be forwarded to the Tea Committee for their information.

EXTRACT INDIA REVENUE CONSULTATIONS, 20 June 1836.

From Major *A. White*, Political Agent, Upper Assam, to Captain *F. Jenkins*, Agent to the Governor-general, Assam; 30 May 1836.

Sir,

I BEG leave to forward copies of two letters from the Bur Senaputtee regarding the tea forests discovered within his territory, by which you will perceive that he is willing to make them over to Government unconditionally, for the prosecution of the experiment, and is ready to supply labourers, a guard, &c.

2. By his second reply you will further perceive, that he declined giving a qubooleeyat for these lands, on the ground that he had already fully acknowledged that the British Government was lord paramount of the soil, consequently might lay claim to any unoccupied lands within his territory.

With reference to this feeling on his part, I am inclined to think it preferable that the arrangement should remain on the footing he wishes it, the more particularly as he has suffered no pecuniary loss on the occasion, and may eventually benefit by it.

3. I regret to mention, that the Koochwo and Nugroo Gaums have as yet not made their appearance at Suddeya, for the purpose of treating regarding the tea forests discovered within their respective tracts of territory. I apprehend this is to be ascribed to some latent distrust on their part in consequence of their having been connected with the Duffa Gaum, although I had made every exertion to dissipate it by making Mr. Bruce the organ of communication on this occasion, who had been intimately acquainted with them prior to the Duffa Gaum's incursion, and has since been on friendly terms of intercourse with them consequent on Dr. Wallich's visit.

However, I trust that their reluctance to come in will be overcome prior to the arrival of Dr. Lumqua and the Chinese, and that thereby nurseries will be

established in the three different localities where the tea plant has been found.

Political Agent's Office,
Upper Assam, Bishnath,
30 May 1836.

I have &c.
(signed) *A. White*,
Political Agent.

(True copy.)

(signed) *Francis Jenkins*,
Agent to Governor-general.

Ordered, That the Tea Committee be informed that the foregoing information appears to be very satisfactory.

EXTRACT INDIA REVENUE CONSULTATIONS, 11 July 1836.

No. 6.

(No. 157.)—From Captain *F. Jenkins*, Agent to the Governor-general, North-East Frontier, to *N. Wallich*, Esq. M.D., late on Deputation to Assam, dated 5 May 1836.

Sir,

WITH reference to my letter to your address of the 25th March, I have the honour to forward a copy of my letter of the same date to Major White, on the subjects proposed for my consideration in your letter of the 15th March, and a copy of Major White's letters of the 27th and 28th ultimo, with the documents annexed, as per note below.*

2. You will be glad to learn from Major White's letter of the 27th April, that Rajah Poorunder Sing makes no hesitation in placing the Gubroo hill at the disposal of Government; but he is anxious to retain one-half of the hill, that he may carry on the cultivation of the tea plants, on that half, simultaneously with us on the other, and that the superintendent and overseers of the Government should instruct his people in the management of the plant and manufacture of tea.

3. It is very desirable to carry with us, in the important measure before us, the goodwill of all the native chiefs, and the proposals of Rajah Poorunder Sing appear to me so perfectly unobjectionable, that I should have no hesitation in recommending our complying with his wishes, if it were only as an equitable remuneration for the use of half the hill.

4. There are however stronger reasons in my opinion for accepting his offer on his own terms. I do not contemplate the Government wish to do more themselves than to show the feasibility of producing a marketable tea within our own provinces, and thence I should judge that the sooner they can abandon the proposed tea plantation to private enterprise the better.

5. This is secured I conceive by the plan proposed by Poorunder Sing. To be taken into a sort of joint partnership, in the first expense of the tea plantations is, I think, most favourable to the views of Government, as it will ensure his zealous assistance in the undertaking, and will more quickly prepare the way for the Government to give over to others the prosecution of the contemplated plantations.

6. Major White's letter of the 28th April, and accompaniments, announce the terms on which Mr. Bruce is willing to undertake the superintendence of the tea forests, viz., on a personal salary of 400 rupees a month, with two assistants, writers, and such establishments as may be hereafter found absolutely necessary.

7. The salary Mr. Bruce proposes for himself is in my opinion very moderate, on the supposition that he devotes his entire leisure to the duties of this charge. From a long personal knowledge of Mr. Bruce, I am enabled to coincide entirely with you in the high opinion you express of Mr. Bruce; his unwearied activity,
his

* Extract of a letter from Major White to Lieut. Millar, dated 30th March; Lieut. Millar's reply, 19th April. Mr. Bruce's letter to Lieut. Millar, 14th April. Rajah Poorunder's letter to Major White, 13th.

his great good temper, with a knowledge of the natives, and his physical ability to stand any fatigue and exposure, could hardly be found combined in any individual. Of his other qualifications, I may mention, that I should have the most perfect confidence in his trustworthiness, and in his zeal to forward by every means in his power the objects of Government. I may only add my conviction, that it is absolutely necessary to avail ourselves of his services in some capacity or other, for without his aid, I would not say that the scheme would not succeed, but I am perfectly satisfied that it would be greatly retarded and intercepted.

8. In regard to Mr. Bruce's proposal to have two assistants; this I should also consider requisite; I can hardly say what might be adequate salaries for them; but probably for the

First assistant	-	-	-	-	-	-	100
Second ditto	-	-	-	-	-	-	70

To these appointments I know of only one qualified individual in the province, disposable, and that is Capt. Bruce, now commanding Rajah Poorunder Sing's militia; a situation which I am aware he is anxious to give up. Capt. Bruce is a nephew of Mr. Bruce, was born in this province, and enjoys in great measure his uncle's constitutional strength, and a perfect acquaintance with every part of Assam. I would beg to propose him as first assistant, and for the second I would recommend that some individual should be sought out who has a practical knowledge of agriculture and horticulture.

9. I am unable to give any opinion as to the extent or expense of the other parts of the establishment; but this may be intrusted to Mr. Bruce. Two elephants I should consider necessary; they should be bought in the province; and the pair would be purchased here for about 300 rupees; the *bonâ fide* charge for which Mr. Bruce should charge in his bills; I think it would not exceed 10 rupees a head per mensem.

10. You will be gratified at perceiving from Mr. Bruce's letter, that he has ascertained the existence of another tea tract near Fingry, in the Muttock country.

11. Nothing more, I think, remains for me to say at present, than that I would beg to call attention to the services that Mr. Bruce has already performed in accompanying your deputation, and to recommend that if appointed superintendent on the salary proposed, that his salary should commence from the time of your arrival at Suddeya, deducting the amount he has in the meantime received as overseer of tea nurseries.

I have, &c.

Political Agent's Office,
N. E. Frontier, 5 May 1836.

(signed) *F. Jenkins*,
Agent to the Governor-general.

From *C. A. Bruce*, Esq., Commanding Gun Boats, to Lieutenant *J. Millar*,
Commanding at Suddeya, dated 14 April 1836.

Sir,

IN reply to yours of the 13th May, I beg to say, that I shall be most happy to undertake the superintendence of the tea forests for 400 rupees per month, provided I am allowed an adequate establishment for the same. As the distance is so great from the easternmost to the westernmost tea jungles, I should think it necessary to have two European or Anglo-Indian assistants, with a native writer to keep accounts in English, and a molly at each place, as also a taclah and some runners to carry orders; a couple of elephants and some canoes would also be necessary; as to the number of hands required it would be impossible to specify, but no more shall be employed than is absolutely necessary, and Government may rest assured that strict economy shall be my aim.

With respect to the tea at Khegoo and Nugroo, it would be as well to follow Major White's plan; for myself, I have little hope of making anything in that quarter as long as the Duffa Gaum is at large. After a large outlay, a sudden incursion of these people may sweep all away in the course of an hour; so it would be as well to leave that alone until more favourable times.

I am most happy to inform you, that it has been reported to me that there is more tea near Fingry in the Muttock country. I have not had time to examine or send there, as there is such a scarcity of men at this place that I have not sufficient to look after the nurseries under my care here and at Chykook; Government ought to encourage people to settle here.

If Government wish Chinamen to cultivate tea, I might probably be able to get some from the nearest China frontiers; at all events I could but try it if Government wished; some advances would be required to give the men, to induce them to go.

One thing I would wish to bring to your notice, which is, that it is and ever has been a custom among the Assam Rajahs never to tax or take any rent from any one that would take the trouble to cultivate hills; so if we clear the hill of Gabroo, now a thick jungle, where the tea is, the Rajah could not in equity ask one rupee for it, or any other hill that may hereafter be discovered with tea on it; he ought to be satisfied that a large sum of money annually comes into his country.

I have, &c.

Suddya, 14 April 1836.

(signed) C. A. Bruce,
Commanding Gun Boats.

No. 7.

(No. 41.)—From Captain *F. Jenkins*, Agent to Governor-general N. E. Frontier, to *W. H. Macnaghten*, Esq., Secretary to the Government of India, Fort William, dated 17 June 1836.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 42, of the 23d ult., with its enclosure, and to submit my opinions on the several measures proposed by the Tea Committee.

2. By my letters to Dr. Wallich, No. 157 and No. 187, of the 5th ult., and 1st June*, the Government will have been informed that the tea forests in the Muttuck and Gabroo hills have been placed at the disposal of Government without incurring any expense; and I have further the pleasure to acquaint the Government, that one of the Singfo chiefs has consented to do whatever may be required to the forests in his district, provided Government pay the coolies employed by him. There will therefore be no expense, except in the mere hire of coolies for the fencing and clearing of the forests.

3. I apprehend that little or nothing further will be required than what is above stated, as far as regards the natural plantations†, and the doing as much and attending to and carrying on the nurseries already planted, appears to me all that should be done until the Chinese planters have inspected the different patches of tea plants, and shown specimens of their produce.

4. On this being done‡, I should recommend that one or two plantations, wherever the Chinese may prefer, should be placed under their particular management, and be treated exactly as they may direct. It is obvious, it appears to me, that no tea prepared from the plants now in a state of nature, can give any satisfactory result as to the produce which Assam may be made to yield when the plant is brought under proper cultivation. Conceiving that the tea which the Chinese settlers may immediately be able to manufacture, will give but a faint idea of what may be expected from the cultivated plants, it seems to me essential, to complete the experiment, that the plants should be allowed the test of a certain degree of melioration by cultivation.

5. The

* 1. To obtain by purchase, or otherwise, tracts of forests in the Singfo, Muttock and Gabroo hills.

† 2. That the tracts be placed under a systematic course of management for establishing tea plantations.

‡ 3. That the tracts be protected by a strong fence from encroachments and depredation of man and beast.

4. That labourers be entertained to dig and level the ground, and drain lands, at places where there is fear of severe flooding.

5. The Chinese may be able to judge, with some degree of accuracy, what may be produced from the tea made of the plant in its natural state; but their judgment will be relative to some particular tea with which only they are well acquainted, and would not be decisive as to this plant of Assam not being capable of yielding a different variety of tea of good quality. Before any fine teas are produced, it will be requisite possibly to extend the experiments over a great variety of grounds that are not now available, and to carry on the careful culture of particular plants for several years; but I only allude at present to such cultivation as may be necessary to satisfy private speculators of the feasibility of producing marketable teas. If we omit the tests of cultivation altogether, I should be apprehensive that we might fail to show the capabilities of Assam in regard to tea, though the failure may not be owing to the want of natural fitness of the soil and climate, but to the defectiveness of our experiments. It would thus be possible to lose all the high advantages to be expected from possessing tea plantations in British India, merely from the inadequateness of the measures pursued on the present occasion.

6. Even should the issue of the experiment now in question not be productive of results of the great national importance which are hoped for, yet as the tea is now in great demand with the Singfos and Khamtis, whilst it is only prepared in the very rudest manner possible from trees luxuriating in the wildest state of nature, it appears to me that we are almost certain of realizing very essential benefits to Assam by producing an article of consumption that will be much sought after by the Bhootians, Thibetians, and others now in the constant habit of using tea as a necessary of life. We may, moreover, be able to introduce this wholesome beverage throughout India, where tea is now universally grateful, but cannot be indulged in, except by a very few indeed, from the expensiveness of the article brought from China. A very moderate outlay may suffice to give our poor but immense population in India the means of adding to the very few luxuries they now enjoy; one of the most innocent, pleasant, and salutary known, and thus create an internal trade, the extent of which it is impossible to foresee.

7. From the information given by the Singfos, I am led to believe that the tea of Hookoom is unpalatable to them from its bitterness, and that our tea has not this defect; from a note of Dr. Lumqua's, it also appeared to be his opinion that our Assam tea was precisely of the same kind as a very highly-valued kind of Yunnan. There is every ground for presumption, therefore, I think, that our tea is by no means an inferior variety of the black teas; and that however strange its flavour may be at first to Europeans, that they will be shortly reconciled to it, and that it will be now very acceptable to all classes of natives of India, who have not been accustomed to the high-flavoured teas of our markets. It is undoubtedly a wholesome tea; and this alone will be one recommendation of it, and its cheapness, it is to be hoped, will be another.

8. On these grounds, I should by no means think it impolitic to stint the experiment now making to the mere manufacture from the forests, for it seems absolutely necessary to ascertain something of the quality of the tea that may be expected from properly-cultivated plants, both native and imported; these experiments need not be conducted on any very extensive scale, nor carried on for any great length of time, but they should be in some measure varied as to the localities, for the advantage of trying different aspects and soils; and whilst making these trials, I would not advise the plantations being made of very limited dimensions; for, as the heaviest parts of the expense will be confined to the charges for superintendence and the Chinese planters, if, as we hope, the experiment will to some extent succeed, it, in that event, will be a waste of time and a loss of money to have been expending these establishments on plantations so inconsiderable that they will not be available for further proceedings, and not remunerate for past outlays. The ground costing nothing, at the only additional charge for coolies, the Government may now establish plantations that may be so valuable as to cover the whole expense of the experiment, and if it fail, the hire of the labourers will be a small portion of the sacrifice made on it.

9. The Chinese planters and Mr. Bruce should, I think, visit together, as early as possible, all the tea tracts, and have samples made of the produce of

the leaves of each ; and if these first experiments are not altogether discouraging, their immediate attention should then be turned to cultivating tea plantations on the spots, and in the manner preferred by the Chinese. In the meantime, presuming that the experiment will not be altogether a failure, I should recommend that all the forests should be attended to, and the nurseries be extended as far as the seeds procurable will go ; for any neglect on this point may greatly retard future progress.

10. With these views as to what should be the nature and extent of our proceedings, the scale of establishment that I have already recommended in my letter of the 5th May, before alluded to, does not appear to me too large. The country is deficient in all facilities of moving ; the people are very rude ; and the tea tracts are located widely apart. The preservation of all the forests at present seems a most necessary precaution, for the loss of the leaves and seeds of any one of these natural forests may eventually prove very injurious. Mr. Bruce must therefore be provided with the means of moving with facility, and have assistants that he can confide in ; his operations will embrace an extensive field, though the present expense, by good superintendence, may be very limited.

I have, &c.
(signed) *F. Jenkins*,
Agent to the Governor-general.

Office of Governor-general's Agent,
North-East Frontier, 17 June 1836.

No. 8.

(No. 55.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee, dated 11 July 1836.

Gentlemen,

IN continuation of my letter, No. 45, dated the 23d May last, to your address, I am desired to forward for your information the accompanying copy of a communication to my address from Captain Jenkins, dated the 17th ultimo.

2. The Governor-general in Council is still of opinion that the establishment proposed in Captain Jenkins' letter, of the 5th of May last, is unnecessarily large, and that one assistant would have been sufficient for Mr. Bruce ; but being unwilling to risk the success of the experiment now going on, his Lordship in Council has been pleased to authorize an establishment to be entertained for the tea plantations, consisting of one superintendent at 400 rupees per mensem, one assistant at 100 rupees, and one assistant at 70 rupees per mensem. His Lordship in Council is further pleased to authorize the purchase of two elephants, at a cost not exceeding 300 rupees ; the expense of keeping these animals, and any other minor charges for labourers, chowkedars, &c. may be entered in a contingent bill.

3. Mr. Bruce, whom it is intended to appoint to the office of superintendent, may draw the allowance of that situation from the time of Dr. Wallich's arrival at Suddeya, deducting the amount he has in the meantime received as overseer of tea nurseries.

4. Your Committee will be pleased to communicate the above resolution to Captain Jenkins, and to supply him with any subsidiary instructions which may be deemed necessary to give effect to the operations on the scale which that officer has recommended in his letter, a copy of which is sent herewith.

5. I am desired to take this opportunity of acknowledging the receipt of your secretary's letter, dated the 27th of May last, and to acquaint you, that in compliance with the recommendation of your Committee, the civil auditor will receive instructions to pass the abstract of establishment and accounts of contingent charges incurred by Dr. Falconer, which accompanied your secretary's letter, and which are herewith returned.

I have, &c.
(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

Council Chamber,
11 July 1836.

Ordered, That the necessary communication on the subject be made to the civil auditor.

EXTRACT INDIA REVENUE CONSULTATIONS, 11 July 1836.

From *H. Falconer, Esq., M. D.*, Superintendent Botanical Garden, Seharunpore, on duty in the Hills, under orders of Tea Committee, to the Secretary to the Tea Committee of Tea Culture, Calcutta; 2 May 1836.

Sir,

I HAVE the honour to forward annexed bills: 1st. Of the expenses incurred in preparing the Government experimental tea nurseries, in the hill provinces of Gurwahl and Sirmoor. 2d. Of the contingent charges upon the transport of tea plants from Gurmooktesur Ghat to the hills. 3d. Of the wages of the establishments kept up at the nurseries of Chejooree, Koth, and Rama Serai, in Gurwahl, and of Ruroo and Bencher Baugh, in Sirmoor, since their commencement; being as follow:

1. Bill for contingent expenses on the nursery at Chejooree - Gurwahl.
2. Ditto - - - - ditto - - - - Koth - - - ditto.
3. Ditto - - - - ditto - - - - Rama Serai - ditto.
4. Ditto - - - - ditto - - - - Ruroo - - - Sirmoor.
5. Ditto - - - - ditto - - - - Bencher Baugh, ditto.
6. Ditto - charges for transport from Gurmucktesir.
7. Ditto - wages of establishment, from 24th December 1834 to 1st January 1836.
- 8-9. Ditto - for the months of January, February, and March, 1836, and April 1836.

2. With regard to the contingent bills, I beg to explain, that the labour of the coolies and carpenters refers to the preparation of the ground, and the inclosing of the nurseries with a paling; the rate varying, in some particulars, in the different districts, and the amount differing according to the facilities of the localities respectively. The item for compensation for produce on the nursery ground is greater in the Ruroo nursery than in the others, from a portion of the crop having been opium.

3. With reference to the bills for establishment, amounting to 50 rupees per month, I have to remark, that the gardeners have been continuously held on in all the nurseries from the first operation, so as to protect the ground, and be efficient for any supply of seeds or plants that might be received; and that the chuprassees were only attached to three of the nurseries, viz. Chejooree, Koth, and Rama Serai, in which alone tea seeds were sown, and where the sowing operations were begun. The establishment will now be increased by two chuprassees, one at Ruroo, and one at Bencher Baugh, in Sirmoor, tea plants having been distributed to all the five nurseries.

4. With regard to the rate of wages, the gardeners have been fixed at seven rupees each per month, being one rupee more than is allowed to the gardeners upon the Seharunpore botanic-garden establishment, while employed in the hills; this addition having been made as an inducement to secure men of good character from the plains, to remain for a length of time in the hills. The chuprassees have been fixed at five rupees each per month.

5. All the arrangements hitherto have been framed on a scale of economy proportioned to the absolute wants of the establishments. As tea plants have now been distributed to all the nurseries, I beg to suggest to the consideration of the Committee, that the establishment be put on the following footing:

- A Persian writer, at 15s. per month.
- Two unattached chuprassees, at 5s. each per month.
- Five gardeners - - - - at 7s. ditto - ditto.
- Five attached chuprassees - at 5s. ditto - ditto.

The writer to keep the accounts and records of the progress of the nurseries; the two unattached chuprassees to establish constant attendance of one responsible person upon the ground.

6. I have to request the favour of your putting the bills in train of being passed and made payable, to meet the advances for the expenditure, and to

furnish me with a document authorizing the establishment in future upon such a footing as the Committee may be pleased to approve of, to enable me to send in monthly bills for the salaries.

7. I further enclose a descriptive roll of the nurseries, and an abstract of the present establishment; a detailed report, with all other particulars, accompanied under a separate cover.

I have, &c.

Hills, North of Deyrah,
2 May 1836.

(signed) *H. Falconer, M. D.,*
Sup^{dt} Bot^l Garden, Seharunpore, on duty in the
Hills, under orders of Tea Committee.

DESCRIPTIVE ROLL of the GOVERNMENT EXPERIMENTAL TEA NURSERIES, in the Hill Provinces of
Gurwahl and *Sirmoor*.

NAMES of NURSERIES.	Provinces.	Extent.	Geographical Position.		Elevation.	Exposure.	Distribution of Plants.	REMARKS.
			Long.	Lat.				
Chejooree - - -	Gurwahl	about 2 beegahs	78° 4	30° 29	About 4,000 ft.	Northerly -	300	- - 25 plants
Koth - - -	ditto	about 2 ditto -	78° 7	30° 36	5,300 ft.	South-west	300	tried at an
Rama Serai - - -	ditto	about 2 ditto -	78° 2	30° 52	5,000 ft.	- ditto -	300	extra locality;
Ruroo - - -	Sirmoor	about 1½ ditto -	77° 49	30° 56	5,400 ft.	E. S. E. -	300	elevation
Bencher Baugh - - -	ditto	about 1½ ditto -	77° 21	30° 39	5,100 ft.	Southerly -	100	6,400 feet.

Hills, North of Deyrah,
28 April 1836.

(signed) *H. Falconer, M. D.,*
Superintendent Botanical Garden, Seharunpore, on duty
in Hills, under orders of Tea Committee.

ABSTRACT of the ESTABLISHMENTS attached to the GOVERNMENT EXPERIMENTAL TEA NURSERIES, in *Gurwahl*
and *Sirmoor*; commencing with 24th December 1834.

NAMES of the NURSERIES.	Name of Hill Province.	GARDENERS.			CHUPRASSEES.		
		Number.	Rate of Wages per Month.	Date of Service.	Number.	Rate of Wages per Month.	Date of Service.
Chejooree - - -	Gurwahl -	1	7 rupees -	24 Dec. 1834	1	5 rupees -	7 March 1835.
Koth - - -	ditto -	1	7 rupees -	- ditto -	1	5 rupees -	- ditto.
Rama Serai - - -	ditto -	1	7 rupees -	- ditto -	1	5 rupees -	- ditto.
Ruroo - - -	Sirmoor -	1	7 rupees -	- ditto -	-	-	-
Bencher Baugh - - -	ditto -	1	7 rupees -	- ditto -	-	-	-

Hills, North of Deyra,
28 April 1836.

(signed) *H. Falconer, M. D.,*
Superintendent Botanical Garden, Seharunpore, on duty in
the Hills, under orders of the Tea Committee.

EXTRACT INDIA REVENUE CONSULTATIONS, 15 August 1836.

No. 7.

From the Tea Committee, to *W. H. Macnaghten, Esq.,* Secretary to
Governor-general; 6 August 1836.

Sir,

WE have the honour to request that you will submit to the consideration of
the Right Honourable the Governor-general in Council the following facts and
observations derived from a private communication from Mr. Bruce, of Sudra,
which

which we have been afforded an opportunity of perusing, and which appears to us to convey information of very great interest and importance.

2. It appears that Mr. Bruce, unappalled by the discomforts, difficulties, and even dangers of travelling in the rainy season through the jungly country of Singfos, on the south side of the Burhampooter, made an excursion amongst those tribes as far as Beeralakum, on the Terappanee, beyond the Burra Dehing river, from which he returned in the beginning of July.

Vide accompanying sketch Map, No. I, drawn by Mr. Bruce.

3. Confiding in his own extraordinary talent for conciliating the goodwill of these rude people, he took with him only one servant, and two other attendants. Before reaching Koojee, on the Debru river, where tea had been found by Dr. Wallich, Mr. Bruce heard that there were other spots producing tea near that place, and on his arrival there, he sent for the gaum, and questioned him on the subject. At first the gaum denied that any more tea grew in that neighbourhood than he had shown when Mr. Bruce was there with the deputation. By presenting him with a little opium, and the use of a "few soft words," however, Mr. Bruce prevailed upon him to promise that he would make further inquiries. Next morning he told Mr. Bruce that he had got information of a large patch not far from his house, and people having been immediately set to work to clear it, Mr. Bruce proceeded to Ningrew, on the Burra Dehing river. There the gaum, though very kind and civil, denied at first that he knew of any more tea in that neighbourhood than had been already shown to the deputation; Mr. Bruce made him a small present of opium, and told him how much he would be thought of by the Commissioner if he forwarded his views, seated himself cross-legged amongst his people, smoked a Singfo pipe, addressed the chief as "elder brother," and conducted himself altogether so as to completely ingratiate himself with him. The chief took up Mr. Bruce's double-barrelled gun, and begged him to ask the Commissioner to grant him one, as he had already made similar presents to the Tow and Bunwah gohains. Mr. Bruce said presents had been made to those chiefs on account of services they had rendered Government, and if the gaum would do the same, he would apply in his behalf to the Commissioner. By this means Mr. Bruce obtained information that tea was growing at Jugundoo, further down the Burra Dehing. To this place he proceeded forthwith in a canoe manned by Singfos, and on his arrival, persuaded the gaum to set about clearing the tea trees from the low jungle and creepers amongst which they were buried; some of the produce of those trees was prepared and compared with some Chinese tea brought by Mr. Bruce, which the gaum declared was not equal to his own. A payment of 20 rupees, with the promise of a further payment of 20 rupees as soon as the ground should be cleared, sufficed for the expense of that operation. Returning to Ningrew, Mr. Bruce found that considerable progress had been already made in clearing the jungle from the tea trees at that spot, and a similar payment, and further promises were made there, as at Jagundoo. A little more opium, and "sweet words," induced that chief to make a further disclosure of the existence of tea trees at a place called Phakial, and distinguished by Mr. Bruce from another village of the same name, as Big Phakial. Here Mr. Bruce was not able to find the spot described, but the Ningrew chief promised to take him to it at his next visit. He likewise got information of two large patches of tea trees at a place called Sookumcumjoy, one at Kanang, one at Nanchik, and, besides the two spots already known, a third at Kooju, in all 10, and none of them further than one day's journey from Ningrew. The tea behind Big Phakial is said to grow on a small range of hills rising there, from 60 to 100 cubits, but attaining a more considerable height as they extend to the neighbourhood of Jypoor. Close to Phakial is a small stream rising on those hills called Powipanee, where gold is collected in great abundance, as it would seem, for Mr. Bruce was informed that three men are able to obtain a sicca weight per diem. The course of the river does not exceed 12 miles in length, and Mr. Bruce suggests that if traced towards its source some rich bed of gold might be discovered. The Ningrew chief, who is a Hookum man, says, the tea tree that grows on the hills there reaches not more than 10 or 12 feet in height, and bears leaves, of which none exceed an inch and a half in length; while the tea trees that grow on the plain are similar to those of Ningrew. Besides those two sorts, he added, that there is a third species, which is bitter,

and which the Singfos do not use. It never grows in the same place with the other tea. It is distinguished by the central thick fibre of the leaf, as well as the edges being of a brownish colour. The small-leaved tea of the hills is also described as more deeply serrated than that of the plains; so that as far as this information can be relied on, there can be no doubt of the existence of three indigenous species of tea in Upper Assam. With respect to the existence of a bitter species, the information communicated to Mr. Bruce confirms that obtained from a Burman chief by Major White, and already communicated by Captain Jenkins to Government. On mentioning at Ningrew the process used at a place called Palang for preparing the tea-leaf, by subjecting it to a species of fermentation, the people declared themselves well acquainted with that mode, and that it produced excellent tea, which, however, was used only to eat with rice. In this way, however, they affirmed that it produced the same effects as its decretion, in preventing sleep, insomuch that if one ate much of it he could never sleep again!

4. That the indigenous tea of the Singfos should possess the quality here attributed to it to such a degree as to be remarked by those hardy people, the Committee consider to be a fact of the greatest importance, as in one most striking respect identifying the species alluded to with the green tea of China. Mr. Bruce describes the whole of the country which he traversed as a plain, intersected by numerous nearly parallel ravines, which at this season form watercourses. This is very different from the description of country in which the black tea is found in China, while it corresponds with that in which green tea is principally cultivated. A similar correspondence to a certain extent is found in the nature of the soil, which is far more favourable to other vegetation than that of the black tea hills of China, and in this respect approaches those superior soils in which green tea is there cultivated. These considerations appear to us to warrant the conclusion anticipated by Mr. Bruce, that the tea which grows on the plains of Upper Assam is of the green species.

5. We think it also highly probable that the small deeply-serrated leaved tree of the hills will prove to be of the black species; and the third, or bitter kind, to be identical with that which is brought from the western provinces of China to Canton, and there used medicinally.

6. Had we anticipated this discovery while our secretary was in China, we should, of course, have directed him to engage the services of persons practically acquainted with the peculiar process by which the green tea-leaf is prepared for the foreign market. That which is followed at Canton, in the preparation of the green tea cultivated in some parts of that province, corresponds exactly with the description given by the Chinese deputed by Mr. Gordon to the green-tea country, of the method followed in that district, and which differs materially from the more simple process followed in the manufacture of black tea. We beg, therefore, to recommend, that we be permitted to take steps for procuring a few manufacturers of green tea from Canton, with such workmen as are employed exclusively in making the requisite implements. If no delay be incurred, it will be practicable to bring those people round in time to commence operations at the ensuing proper season of March or April; and should their success realize our present sanguine expectations, the important object of Government, which led to our appointment, will have been, in one considerable respect, attained, and individuals may be confidently invited to engage in a branch of commerce fraught with the most valuable results in relation to the civilization and prosperity of Assam, the revenues of India, and the commercial relations of Great Britain.

7. It cannot, however, escape the notice of Government, how intimately connected with the full realization of the advantages so near our grasp, is the establishment of friendly feelings in the minds of the rude tribes, amongst whose villages the indigenous tea is found, towards the British name generally. How successful Mr. Bruce has been in effecting this very important object, is instanced in the foregoing statement, and has been officially testified on former occasions. We do not call for any specific mark of the approbation of Government to the zeal, enterprise, and judgment now displayed by that gentleman, highly as we estimate them, but conclude by requesting that means may be placed in his hands to confirm and extend his influence, by granting him a few
cheap

cheap double-barrelled guns and pistols, to be presented, at his discretion, to such native chiefs as may have it in their power, and may show inclinations favourable to our objects. The cost of the whole need not exceed 500 or 600 rupees.

We have, &c.

(signed)	<i>J. Pattle.</i>	<i>Ross. D. Mangles.</i>
	<i>N. Wallich.</i>	<i>Ram Comul Sen.</i>
	<i>C. E. Trevelyan.</i>	<i>J. W. Grant.</i>

6 August 1836.

(No. 65.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 15 August 1836.

No. 8.

Gentlemen,

1. I AM directed to acknowledge the receipt of your letter, dated the 6th instant, the contents of which are very satisfactory.

2. In the 6th paragraph of that communication, you recommend that permission may be granted to procure a few manufacturers of green tea from Canton, with such workmen as are employed exclusively in making the requisite implements; but it does not appear that Mr. Bruce has anywhere urged the necessity of this measure. I am directed, therefore, to request that you will communicate further with Mr. Bruce on this point, and ascertain from him whether the people referred to are urgently required at the present stage of his proceedings. Should such prove to be the case, you will be pleased to submit an estimate of the expense which would be incurred in giving effect to the measure.

3. His Lordship in Council has been pleased to sanction the outlay of a sum, not exceeding 500 rupees, for the purchase of cheap fire-arms, to be presented, at the discretion of Mr. Bruce, to such of the native chiefs as may have it in their power, and may show inclination favourable to promote the object in view.

I have, &c.

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

Council Chamber, 15 August 1836.

Ordered, That the necessary communication be made to the civil auditor and sub-treasurer respectively.

EXTRACT INDIA REVENUE CONSULTATIONS, 12 September 1836.

From the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to Government; dated the — August 1836.

No. 9.

Sir,

WE have the honour to acknowledge the receipt of your letter of the 15th inst., with reference to the second paragraph of which we beg to state as follows:

Our reasons for recommending that early measures should be taken for procuring manufacturers of green tea, and of tea-chests, from Canton, were stated to be the conclusion we had ourselves arrived at, that the indigenous tea of the Singfo country was of the green-tea species; and, secondly, that the Chinese of the Bohea country, now in Assam, are quite ignorant of the proper process for manufacturing that species of tea. Mr. Bruce is neither aware of some of the grounds on which we have arrived at the same conclusion with himself regarding the species of the plant, nor has he any suspicion that the Chinese now in Assam are not equally familiar with both species. The circumstance that seems principally to have weighed with Mr. Bruce, in his conjecture regarding the species of the Singfo plant, appears to have been the quality of preventing sleep attributed to it. We had, however, been predisposed to arrive at the same conclusion, from the consideration that, in point of locality and of soil, the circumstances of the Singfo plant coincide with those in which the green-tea plant is produced, and not with those in which the

black-tea plant is found, in China; at the same time, that a different species from that seen in the plains, and corresponding in description with the black species, is averred to grow in the neighbouring hills. Mr. Bruce, therefore, being ignorant of the facts on which the expediency of the measure rested, could not have suggested it, nor would he now be able to form any idea of its necessity, except what he might draw from the information we should ourselves afford him. He does, however, express great anxiety for the arrival of the Chinese, now detained by sickness at Biswanath, under the mistaken idea of their competency to manufacture green tea. We shall, however, in obedience to the orders of Government, address Mr. Bruce on the subject.

With respect to the probable expense of procuring the people referred to, we can only estimate widely, that, supposing six people required, they may be procurable at an aggregate of salaries somewhere between 300 and 600 rupees per mensem, according to the degree of danger they would be exposed to in entering on a contract with foreigners; and this depends upon the accidental vigilance or laxity of the Chinese authorities. They may probably stipulate for an advance of three months' wages before embarking, and perhaps 200 rupees for tools and instruments. To this add passage money, say for six men, at 50 rupees, making 300 rupees, and the utmost outlay in the first instance will be:

For advance of wages for three months	-	900	Spanish dollars.
Tools	- - - - -	100	—
Passage money	- - - - -	150	—
		1,150	
	Sp. dollars	- -	1,150

Or, possibly, the object may be effected for 700 dollars.

We have only to repeat our conviction, that the incurring of this expense, be it greater or less, is indispensable to the further pursuit of the experiment intrusted to our superintendence; and that, under the persuasion that the speediest mode of bringing to the test the real value of the indigenous tea of Assam is manifestly the most economical, it is our recommendation, that another year's expenditure should not be thrown away while discussing to what extent a portion of it shall be incurred. Unless the persons whom we have proposed to procure from China can be set to work in the Singfo country by the month of March next, their services will be unavailable for a whole season.

We have, &c.

(signed)	<i>J. Pattle.</i>	<i>Ram Comul Sen.</i>
	<i>Ross D. Mangles.</i>	<i>N. Wallich.</i>
	<i>C. K. Robison.</i>	<i>C. E. Trevelyan.</i>
	<i>J. W. Grant.</i>	<i>Radhakant Dev.</i>

The — August 1836.

No. 10.

(No. 74.)—From *W. H. Macnaghten*, Esq., Secretary to Government of India, to the Tea Committee, dated 12 September 1836.

Gentlemen,

I AM directed to acknowledge the receipt of your letter, without date, received on the 29th ultimo, explaining your reasons for recommending the adoption of early measures to procure the manufacturers of green tea from China; and in reply to inform you, that the Right honourable the Governor-general in Council will suspend the issue of final orders on this subject till the receipt of Mr. Bruce's reply to your communication.

I have, &c.

(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

Council Chamber, 12 September 1836.

EXTRACT INDIA REVENUE CONSULTATIONS, 19 September 1836.

No. 1.

(No. 1086.)—From *H. Chamier, Esq.*, Chief Secretary to the Government of Fort St. George, to *W. H. Macnaghten, Esq.*, Secretary to the Government of India; 22 August 1836.

Sir,

1. THE Governor in Council having, in accordance with the wishes of the Government of India, as conveyed in paragraph 2 of your letter of the 30th March 1835, called on the officers to whom the experimental cultivation of the tea plant had been entrusted to furnish a report on the growth, appearance, and present condition of the seedling plants, of which 20 boxes were received from Bengal, and distributed in the proportions noted below.* I am directed to transmit to you, for the purpose of being laid before his Lordship in Council, copies of their replies†, from which it will be observed, that the experiment has almost entirely failed, and that with the exception of a few plants on the Neilgherry hills, and in the Nuggur country, the rest have withered away.

2. Should his Lordship in Council, after a perusal of these reports, resolve to make a further trial in the cultivation of the plant on this side of India, the Governor in Council would desire to draw his Lordship's attention to the suggestion contained in the concluding paragraph of the letter dated the 13th instant, from the Commissioner for the affairs of Mysore, as to the proper season at which the plants are required to be there.

(signed) *H. Chamier,*
Chief Secretary.

Fort St. George, 22 August 1836.

From Lieutenant-Colonel *T. King*, Commanding Neilgherries, to the Chief Secretary to Government, Fort St. George; 9 July 1836.

No. 2, Enclosure.

Sir,

IN reply to your letter of the 2d instant, I have the honour to state, for the information of the Right honourable the Governor in Council, that out of the six boxes of tea plants which were sent up to Cotacamund in December last, there are not more than 20 of the plants now alive; and whether they will ever arrive at perfection seems very doubtful.

Six of them have recently been sent to the charge of a gardener at Billieul, named James, by order of the Governor. Ten were transplanted into the garden at Kaisee, eight of which still bear a healthy appearance; and 10 more have been distributed among the permanent residents here, who cultivate gardens.

I shall take the opportunity of marking the progress of these plants, and do myself the honour of reporting to you thereon.

I am apprehensive that they were kept too long in the boxes, in which numbers had perished before they reached Cotacamund, and that the remainder were not properly attended to afterwards.

From my observation of three forward plants, which have been in the garden to the house I at present occupy for a considerable period, the growth of them appears to be very slow, and I doubt if they will ever attain the proper size, although they are apparently in a very healthy state, and continue to throw out new shoots.

(signed) *Thomas King,*
Lieut.-Colonel, Commanding Neilgherries.

Cotacamund,
9 July 1836.

* 6 boxes to the officer commanding the Neilgherries.
6 boxes to the Commissioner for Coorg.
6 boxes to the Commissioner for Mysore.
2 boxes to the Agricultural and Horticultural Society at Madras.

† From the officer commanding the Neilgherry hills, dated 9th July 1836. From the Secretary to the Madras Agricultural and Horticultural Society, dated —, received 8 August 1836. From the Commissioner for the affairs of Mysore, dated 13th August 1836, with Two Enclosures.

From *W. Liddell*, Esq., Secretary to the Madras Agricultural and Horticultural Society, to *H. Chamier*, Esq., Chief Secretary to Government, &c. &c. &c.; — August 1836.

Sir,

I HAVE the honour to state, in reply to your letter of the 2d ultimo, respecting the two boxes of tea plants which were sent to the committee of the Madras Agricultural and Horticultural Society in December last, that the society had not at that time any garden of their own, and that the plants in question were taken charge of by a member of the committee, who kept some in his own garden, and distributed the remainder amongst other members of the society; but, notwithstanding the utmost attention on the part of those entrusted with them, they all died.

It appears to be the general opinion of the committee, that the season of the year in which the tea plants reached Madras was very unfavourable to them, but, it is right to add, that the plants were all dead before the hot winds set in.

(signed) *William Liddell*,
Secretary to the Madras Agricultural and
Horticultural Society.

Madras, — August 1836.

(No. 71.)—From *M. Cubbon*, Esq., Commissioner, to the Chief Secretary to Government, Fort St. George; 13 August 1836.

Sir,

WITH reference to the last paragraph of my letter of the 26th ultimo, I have the honour to transmit, for the information of the Governor in Council, copies of letters from the superintendents of Coorg and Nuggur, under date the 12th and 26th ultimo, reporting, I regret to say, the almost entire failure of the experiments made to introduce the tea plant into Mysore and Coorg.

2. It is proper to state, that these plants arrived above the Ghauts in the end of December, a most unfavourable season for vegetation, in consequence of the strong parching winds which prevail at that period; and that, if it should be deemed advisable to make a further trial, I would respectfully recommend, that the plants should be sent so as to arrive in Mysore between the months of May and October, which is considered to be the best time for putting tender plants into the ground.

(signed) *M. Cubbon*,
Commissioner.

Mysore Commissioner's Office,
Bangalore, 13 August 1836.

From *C. F. Lettardy*, Esq., Superintendent, to the Commissioner for the Affairs of Mysore, Bangalore; 12 July 1836.

Sir,

IN reply to your letter of the 9th instant, forwarding copy of a communication from the chief secretary of the Madras Government, dated the 2d instant, requesting information relative to the growth of the tea plants received from Bengal, I have the honour to state, that out of 541 plants contained in the boxes, only 132 were found alive on their arrival at Mereara.

2. On the receipt of Captain Clarke's letter of the 26th February last, between 80 and 90 then remaining alive were removed from the boxes, and planted in the garden of the new palace at Mereara, in soil considered favourable to their growth; but, although every possible care was taken of them, their number continued gradually decreasing until there remained, at the end of May, not more than half a dozen alive, as reported in my letter of the 31st of that month. The few that then survived have also, I regret to say, withered away.

It may be proper to mention, that on the plants being removed from the boxes, a number of small white grubs were found about the roots of all the dead ones; and as the same kind of grub was also observed about the roots of several of those that died after being transplanted, it is probable that their failure

failure may be owing to the injury which they received from this insect, rather than to the climate or to the soil into which they were transplanted.

Superintendent's Office, Coorg,
Mereara, 12 July 1836.

(signed) *C. F. Lettardy*,
Superintendent.

(No. 347.)—From *H. Stokes*, Esq., Superintendent, to the Officiating Secretary to the Commissioner for the Government of the Territories of the Rajah of Mysore; 26 July 1836.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 198, of the 9th instant, calling for information to be furnished to the Madras Government regarding the growth and present condition of the tea plants forwarded to this division in January last.

2. In my letter of the 29th January, I reported that on the arrival of the six boxes at Terry Kerry only 104 of the plants showed any appearance of vegetation, and that in the three boxes which were brought to Shewmoga, 35 only had any leaves when they reached this place. Being in daily hopes of receiving the instructions regarding the proper mode of treatment promised by the Tea Committee, and being apprehensive of exposing the plants in their then sickly condition to the hot, dry weather which then prevailed, I deferred their transplantation, and allowed them to remain in the boxes, which were moderately watered, and watched with all the attention that could be bestowed upon them. None of the plants, however, that had shed their leaves again recovered, and the others continued to languish and gradually die off, till on my return to Shewmoga in the end of March, I found only about 10 remaining alive. I then thought it best to have them transplanted at all risks; only three took root, and one of these was subsequently nipped off close to the ground by some insect. Two still survive, but though they continue to throw out leaves, they are yet very diminutive, only about three inches high.

3. With respect to the three boxes which were sent to Chiccamoogaloor, I enclose copies of the arzees received from the amildar, from which it appears, I regret to observe, that no better success has attended them than those which were brought to Shewmoga.

Nuggur Division,
Superintendent's Office, Shewmoga,
26 July 1836.

(signed) *H. Stokes*,
Superintendent.

Ordered, That copies of the foregoing papers be forwarded to the Tea Committee for their information.

From Captain *F. Jenkins*, Governor-general's Agent, to *G. J. Gordon*, Esq., Secretary to the Tea Committee, Fort William; 18 October 1836.

Sir,

I HAVE much pleasure in forwarding a letter, in original, from Mr. C. A. Bruce, superintendent of tea plantations, detailing the result of a recent visit to the Muttuck country, in the discovery of tea plants in several new localities, in reconciling the Bur Senaputtee, who had evinced a good deal of jealousy in regard to our occupation of the tea forests, to the proceedings of Government, and inducing him to take upon himself the charge of the preservation of all the tea in his district.

2. The measures pursued by Mr. Bruce towards this chieftain will, I trust, be approved by the Committee; and I hope it will not be long before Mr. Bruce will be able to report an equal success in his negotiations with the Singpho chiefs, in persuading them also to feel that it is their interest to promote the views of Government.

3. The Committee will observe, that one of the principal objects of Mr. Bruce's present trip was to examine the state of the tea plants on a patch of

land where they had been cut down, and deprived of the shade of the large forest trees, by the villagers, in preparing the ground for a rice crop, but had again sprung up, and were full of tender foliage, notwithstanding their complete exposure to the sun. Mr. Bruce considers the result of this unintentional experiment to be conclusive as to the propriety of adopting a similar process in regard to all the other tea tracts; but before having recourse to this decisive measure, he would wish to be favoured with the sentiments of the Tea Committee. I should suppose that the Chinese cultivators, whose arrival at Suddya is reported in the postscript of his letter, would be able to give him information that he could depend upon in regard to the proper treatment of the plant.

4. Mr. Bruce, in a concluding paragraph of his letter, suggests the expediency of abandoning the plantation at Suddya, and distributing the plants amongst the native chiefs. This recommendation seems to me worthy of adoption, for we are now certain, I think, from the great quantities of tea plant lately brought to light, of securing a sufficiency of the indigenous plants, without having recourse to any artificial plantations of these plants whatever, at least at the expense of Government, for it appears certain that if the Chinese manufacturers succeed in making a tea that will be in demand for exportation, the native chiefs will take care to propagate the plants to any required extent, on being remunerated for the leaves supplied.

5. Mr. Bruce reports his having engaged Mr. R. Bruce as his assistant from the 1st August, under the permission granted in Mr. Secretary Macnaghten's letter of the 11th July last, and requests his pay may be sanctioned from the former date.

6. I beg to call the favourable attention of the Committee to the last paragraph of Mr. Bruce's letter.

7. Having been unable to get Mr. Bruce's letter copied, I have to request the favour of the Committee returning it, with their reply.

Political Agent's Office,
N. E. Frontier, 18 October 1836.

(signed) *F. Jenkins*,
Governor-general's Agent.

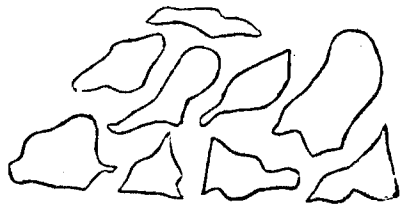
From *C. A. Bruce*, Esq., Superintendent of Tea, to Captain *F. Jenkins*, Agent to Governor-general, Gowhatty; 1 October 1836.

Sir,

I HAVE the honour to inform you of my return from a trip to the Muttuck country, where I went to collect tea seeds, and to examine the state of the tea that had been cut down last year by the villagers. When these people cut it down, they were not aware that it was tea, but thought it was a part of the forest. It was cut down on a level with the ground, as all the other trees of the forest were, excepting those that were rather thick, and which they cut from two to four feet of the ground. The ground was then cleared from weeds, &c. by the hoe, and with it the earth was turned up a few inches deep. This was in (Maung) January. In (Falgun) February the ahoopaddy was sown. The paddy came up, ripened, and was cut down; after which came the tea, it was just springing up when I took the deputation there in March to look at it. There were then numerous young leaves, which had rather a yellowish appearance. But when I saw it a day or two ago, it had grown from three to ten feet high, and the leaves were of a fine healthy green. The trees that are ten feet high, had been cut down about four feet from the ground by the villagers, and abundant shoots had sprung up a little below the part that had been cut; some of these trees were full of flower buds. The old stump of those that had been cut a few inches above the ground had decayed, but numerous young shoots had sprung up from below, more than those that had been cut four feet from the ground; and it appears to me, all those that had been cut on a level with the ground, threw out more shoots and leaves than those that had been allowed to remain four feet high. It must be remembered, that all these are in the open air, and exposed to the sun, excepting in the evening the high trees surrounding

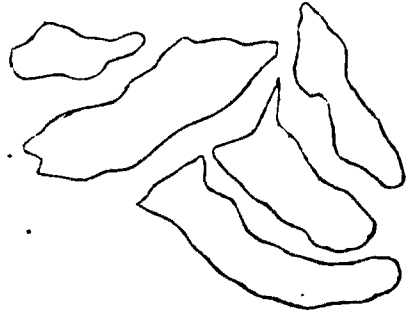
surrounding the jungle keep the sun off. These young plants are full of tender leaves, and the sight is very pretty, just such as one would fancy a China tea-garden to be. I am sorry to say the plants cut down are confined to a small patch of ground, but quite sufficient to show us that the experiment so long desired (to know whether these trees would grow in the sun or not) has been crowned with the greatest success. From the jungle adjoining this all the trees but the tea have been cut down; the contrast between the old and the new tea is great, the former long and thin, with large old leaves, the latter nice little bushes with fresh young leaves. Now this is another proof that they will thrive in the sun; but the experiment on the old trees has not been sufficiently long, nor in my humble opinion is it necessary. Supposing these long and lofty trees (some 29 cubits in height) were to produce numerous young leaves, how could they all be collected? My opinion is this, (and I think I have sufficient living and thriving proofs) to treat the whole of the tea tracts in the same manner as these villagers in their ignorance have done, by cutting the whole down, and clearing the ground with the hoe from weeds, &c. in the month of January and February. But before such a sweeping measure as this should be adopted, I would invite any gentleman to come up and see; perhaps some of the officers from Bishnauth might like to take a trip of pleasure and examine it, in the cold season. The village people, and all those who from their infancy have been brought up to agriculture, agree with me that this would be the best plan, and it is certainly the one I would recommend. The old trees and their branches might be planted off as new plantations. On my arrival at Rungah Gurrah I called on the Rajah Burrah Sunna Putty, and asked him to let me have an elephant and a few coolies to enable me to proceed to Tingry, to examine the tea there. He gave them to me with coolness and reluctance, and shortly afterwards told me that as he was going to bathe and take some refreshment, that I had better do the same. I immediately took the hint, and was off on my way to the tea, and at Tingry I lost no opportunity of gaining all the information I possibly could, by kindness and making a few presents, and by free access to my person of all the village people, who came flocking in to see me, so much so that I seldom retired to my humble couch of paddy-grass on the ground before midnight; however, I was richly repaid for all this by my success in being informed of one tea tract after another, although they had been strictly prohibited from giving me any information whatever. I told all these people that I had come to do their country good, by instructing them how to cultivate and manufacture tea; but I do not think any of them believed me, so strongly had they been prejudiced and assured to the contrary.

As some of the tea was said to be not far, I could not resist the temptation of visiting three or four of the nearest tracts (although this time of the season was considered to be very unhealthy). An hour's ride from Tingree, through swamps and jungle, brought me to tea. I went down the Kahung river, (which is only about 20 feet broad, and at present only about a foot of water in it,) and for a ride of about 20 minutes, saw the tea right and left, now and then, situated on little mounds or hillocks of earth, from 8 feet by 8, to 20 feet long, and six broad. Large trees had grown on these mounds, and their roots alone appeared to me to save them from being washed away: under these the tea trees were growing. To form some idea of which, it was something like this. Shortly after I came upon extensive hillocks, of good length and breadth, with water flowing all round, the same as the others, and which had been partly cleared by my people. Here the trees were in greater number and thicker, many of them with flowers full blown and numerous flower-buds, as also a number of seeds. As I had brought many of the villagers along with me, I loaded them with seeds. On my return, I was informed of two more places where the tea was growing, both north and south of one another, each side of Kanjure village, and close to the Kahung river. I immediately sent one of my men to examine one of the spots; the other he did not see. My people whom I had sent out some time ago gave me a good deal of information.



Vide Map II.

But to make all this plain, and to show the number of tea tracts already discovered by me at one view, as also of those that I have been informed of, I have marked them all down in the accompanying Map, which I make in haste. It will, I think, be found pretty correct, and I could but put down little more than *T* in so short time. One thing, I think, is worthy of notice, that all our Assam tea grows near water, and appears to be very fond of it; for wherever there is a small stream, or jheel or jhou, tea is sure to be there. I speak of the Muttuck and Singphoo countries. Even those tracts that are not close to the river, such as those near Kujoo and Kujoodoo, are nothing but large mounds of earth situated close to each other, thus, with water flowing all round them. These mounds are just high enough to prevent their being inundated in the highest rains.



I have entered into details more particularly to enable all those who are interested in the success of our British India tea, to thoroughly understand all the peculiarities of the Assam tea-plant.

On my return from Tingree, with tea seeds for yourself and other gentlemen in Assam, to be distributed to every one that would use them, and which I did myself the honour of sending off express on the 27th ultimo, that they might reach them fresh and sound, I called upon the Rajah, and explained to him that our Government was at a deal of trouble and great expense about this tea on his account; that, as soon as we had taught them the method of rearing and making tea, we would leave it to them, and then purchase from them as much as ever they could cultivate and manufacture in our way; that as he and his country were to reap all the benefit, he ought to go to the expense of clearing and manufacturing it. As soon as he understood that it was for his own interest, and the good of his country, he entered into the spirit of the thing, and said that he would find out every place where it grew, and make every one in his country cultivate it, and that I may inform you that such was his intentions, but that I must instruct him all about it. Rely on it, in this he is perfectly sincere; the love of gain will induce him to fulfil his promise.

As soon as I had settled this point to my satisfaction, and, I trust, to that of Government, and at the same time of having forwarded our tea prospects by some years, I requested the Barraah Sunnah Putty to let me have an elephant to carry me over-land to Suddyah, as I not only wished to see the country, but whether I could find any more tea on the route to this. In this I was not successful, nor could I hear of any more tea after I had crossed the Debrah river. It appears all to lie on the south side of that river, and the Barraah Dohing, in the Muttack country. At this time of the year what I saw of the country was only thick jungles and swamps.

I would recommend giving up the Suddeeah tea plants, and distributing them among the native chiefs and others that may wish to take them, as the money now being expended on them might be employed in far better manner in clearing the Singphoo forests, which would be a great saving to Government.

Some time ago Government proposed clearing Gabru Parbut, along with Rajah Purrunder Sing. If you will permit me I will call on him, and have no doubt, for his own interest, not only to clear Gabru Parbut, but also the tea at Borehaut and Jeypore, and moreover make him get all his ryots to cultivate small patches. If this could be accomplished it would be another great saving.

With respect to the Singphoes, they are a different race of people, and should be dealt with accordingly, I, however, do not despair of bringing them round also to study their own interest, and one and all to cultivate tea. If this could all be effected, we would soon have all Upper Assam a tea-garden.

I would like to go back to the Singphoo country to make a few presents to those gaums who may be favourably disposed to our objects, I therefore hope the guns and pistols are on their way up, the very sight of which would make them promise anything.

I beg leave to say, that agreeably to the permission granted in a copy of letter you sent me from Mr. Secretary Macnaghten, dated 11th July, I have appointed Mr. R. Bruce my head assistant, from the 1st August, and have ordered

ordered him up to Suddeeah, and request that his pay may be allowed to commence from that date; and as he will require an elephant to traverse the country, I beg you will grant me permission to purchase one for him.

In conclusion I beg to say, that as I am exposed to all weathers, and at all seasons, in these unhealthy jungles, should I unfortunately be taken off by a jungle fever, that Government would kindly make some provision for my family, as I am an uncovenanted servant.

(signed) *C. A. Bruce,*
Superintendent of Tea.

Suddeeah, 1 October 1836.

I have the honour to report the arrival of Chinamen this day. Out of seven pots of plants they brought, four are dead, the other three look pretty healthy.

3d October.

(True copy.)

(signed) *G. J. Gordon,*
Secretary to Tea Committee.

(No. 96.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 14 November 1836.

No. 8.

Gentlemen,

I AM directed by the Right honourable the Governor-general of India in Council to acknowledge the receipt of your letter, dated the 27th ultimo, submitting Mr. Bruce's communication, concurring with you for the introduction of green-tea manufacturers and tea-chest makers from China, and stating that you will endeavour to arrange for three of the former to leave China by September or October, and for the latter to be sent round immediately; reporting further discoveries of new patches of tea, and recommending the continuance of the experiment for cultivating the tea plants in nurseries at an annual cost of 150 rupees, and that Mr. Bruce be allowed an addition to his present salary; also requesting permission to purchase sundries for the use of Mr. Bruce, and for presents.

2. In reply, I am desired to state, that his Lordship in Council is pleased, under the circumstances stated in the correspondence which accompanied your letter, to approve and sanction the suggestions which you have submitted; but previously to granting any addition to the allowances already fixed for Mr. Bruce, his Lordship in Council is desirous of ascertaining your opinion as to the nature of the augmentation which could reasonably be afforded.

(signed) *W. H. Macnaghten,*
Secretary to Government of India.

Council Chamber,
14 November 1836.

Ordered, That the necessary communication be made to the civil auditor and sub-treasurer respectively.

EXTRACT INDIA REVENUE CONSULTATIONS, 23 January 1837.

From the Members of the Tea Committee, to *W. H. Macnaghten*, Esq.,
Secretary to Government; 12 January 1837.

No. 17.

Sir,

WE have the honour to state, for the information of Government, that by private letters from Mr. Bruce, dated Sudiya, 19th December, and addressed to Dr. Wallich and our secretary, it appears that that gentleman had just returned from the Muttuck country, to which he had taken the Chinese tea manufacturers, with the view of ascertaining practically what will be required for the manufacturing process, on a large scale, when the proper season arrives.

Mr. Bruce states, that assistants are the first requisite; and he proposes to employ 12 of his takelabs as such, and to raise their pay from five to ten rupees a month as soon as the Chinese shall declare them duly qualified. As soon as this is the case, he will distribute them over the country, so as to instruct the natives of the villages at which the tea abounds.

The plant is now found to be much more generally diffused over the Muttuk country than he had supposed, seven new spots where it grows having been brought to Mr. Bruce's notice during his last trip; and further observation has served fully to establish the expediency of clearing away the jungle, and cutting down the tea trees close to the ground, in order to improve the quality of the foliage. From the new shoots of plants that had been thus treated, Mr. Bruce has prepared five boxes of tea, a sample of which he has forwarded to Captain Jenkins, for despatch to Calcutta. Mr. Bruce observes, that this tea must not be regarded as a fair specimen of the best sort of tea that the Assam plant is capable of producing. It will require to be kept in a dry place for at least six months, to take off the raw taste incidental to new-made tea; it has, besides, been prepared out of season, and not by the proper process.

Mr. Bruce feels greatly the want of a second assistant; the first to be employed in the Muttuk country, and the second amongst the Singfoos; and we beg to recommend that he should be authorized to engage one accordingly, as a temporary measure, and on a salary not exceeding 70 rupees per mensem, as formerly proposed. Both assistants may be dispensed with as soon as the produce of Assam has fairly attracted the attention of merchants, who will then elicit the capabilities of the tea districts far more effectually than can be done by any public functionaries, even were each to be animated by such extraordinary zeal, and guided by such intelligence, as Mr. Bruce has displayed throughout, from his first discovery of the existence of the tea plant in Assam down to the present moment.

We have, &c.

(signed)

J. Pattie.

C. E. Trevelyan.

J. W. Grant.

C. K. Robison.

Ross D. Mangles.

N. Wallich.

Calcutta,

12 January 1837.

Ordered, That the Tea Committee be informed, that, as recommended, the Right honourable the Governor-general of India in Council authorizes Mr. Bruce, superintendent of tea nurseries in Assam, to engage a second assistant, on a salary not exceeding 70 rupees per mensem, as a temporary measure.

Ordered, That the necessary communication on the subject be made to the civil auditor.

EXTRACT INDIA REVENUE CONSULTATIONS, 17 April 1837.

No. 17.

From *N. Wallich*, Esq., M. D., Secretary to the Tea Committee, to *W. H. Macnaghten*, Esq.; Secretary to Government of India; 4 April 1837.

Sir,

I AM directed by the Tea Committee to request that you will please to lay before the Right honourable the Governor-general of India in Council the accompanying copy of a letter from Assistant-surgeon Griffith, dated at the foot of the Patkoe hills, the 2d ultimo.

2. With respect to the bitter tea (beir fullap, or feeta fullap), mentioned in paragraph 3, the Committee have ascertained, from a number of dried specimens in flower, as also some capsules and seeds forwarded to them by Mr. Bruce, that the plant in question is undoubtedly a species of camellia. Mr. Bruce found it near Koojoo, in the Singfo country, in the month of December last, and the Chinamen who are stationed with him recognised it as a shrub which grows near the tea in their own country, but which is not used as such, and which produced a nut yielding an oil (meaning, probably, camellia oleifera of China). The same shrub was found by Mr. Griffith and myself in the Muttok country, and it affords an additional instance of similarity between the flora of some of the tea provinces in China and of the tea tracts in Upper Assam.

I have, &c.

(signed)

N. Wallich, M. D.,

Secretary to the Tea Committee.

Tea Committee's Office,
Hon. Company's Botanical Garden,
4 April 1837.

From Assistant-Surgeon *William Griffith*, Madras Establishment, to the Secretary of the Tea Committee; 2 March 1837.

No. 18.

Sir,

I HAVE the honour of forwarding to you my pay-bills for February, with the requisite documents, for the inspection of, and signature of, the Chairman of the Committee.

2. I met with Captain Hannay, on the 12th February, at Namroop Putar, to which place I had accompanied Major White, the political agent for Upper Assam; since which time my movements have necessarily been dependant on those of the former officer.

3. No tea has been met with during the march, and I am hence more than ever satisfied, that the prevailing accounts of its occurring as a decidedly hill plant are wholly ungrounded. The bitter tea of Mr. Bruce, bunfullap of the Assamese Donaniers, was found by me extensively on the summit of a hill, the elevation of which is about 1,000 feet, where it occurs as a tree of small size. It is used, I believe, solely as a medicine. At present I am unable to state whether it is a camellia or a tea, although the dehiscence of the fruit is that of the latter genus; from the tea it is at once known, independently of its very different habit, by its having the buds covered with scale. This plant was, I believe, first found by Dr. Wallich at Tengrei, where, however, it only occurs as a shrub.

4. On the Namroop I had the pleasure of ascertaining the existence of coal, of excellent quality, in abundance, and in a situation affording every facility for its being worked, and to a considerable degree for its being deported. At Namroop, putao petroleum is very abundant.

5. I have, in conclusion, the honour of informing you, that Captain Hannay intends moving on to-morrow for Ava, on which day we shall reach the Burmese frontier; it having been satisfactorily ascertained, that the Meervoon evinces no tendency towards effecting a meeting with the Assamese authorities, in the hopes of being present at which Captain Hannay has hitherto waited.

Yoonsam,
Foot of the Pakoye,
2 March 1837.

(signed) *W. Griffith*,
Assistant-surgeon, Madras Establishment,
attached to Assam Department.

EXTRACT INDIA REVENUE CONSULTATIONS, 13 May 1837.

(No. 19.)—From Captain *F. Jenkins*, Agent to the Governor-general, to *G. J. Gordon*, Esq., Secretary to the Tea Committee; 19 January 1837.

No. 31.

Sir,

I HAVE the honour to forward the accompanying copy of a letter, of the 20th ultimo, from Mr. Bruce, for the consideration and orders of the Committee.

2. The proposition in the 3d paragraph of Mr. Bruce's letter, to employ Doanees to learn to make tea under the Chinamen, appears to me worthy of adoption; but it is much to be desired, if the Committee are of opinion that the plants are of the green-tea variety, we should get green-tea makers immediately.

I have, &c.

Office of the Governor-general's
Agent, Cooch Behar,
19 January 1837.

(signed) *F. Jenkins*,
Agent to Governor-general.

From *C. A. Bruce*, Esq., Superintendent of Tea, to Captain *F. Jenkins*, Agent to the Governor-general; 20 December 1836.

Sir,

I HAVE the honour to report to you, that I have been to the tea tracts in the Muttuk country with the tea-makers, to show them our tea plants, and to see

if we could make any tea, although not exactly the season; and also to ascertain their wants before commencing operations in March. Numerous are their wants, but they are chiefly such as we can get in the country. They appeared delighted and astonished at our tea-trees, and declare that they are precisely the same as in China, only ours are overgrown. They made tea from the youngest leaves that could be collected, and also some of the middling and largest kind, which I have the honour to forward. After I had collected all the leaves required by us, I cut down all the tea plants, large and small, and set fire to the whole at No. 2 jungle; but at Dunjay and at Chabwah I only cut down the old trees, keeping those plants from two to three feet high.

2. It is my intention to go to the Singpho country as soon as I can procure elephants and coolies, and the Chinamen have had four days' rest, as they only arrived to-day.

3. As I have only two tea-makers, the business falls heavy on them; and when the season arrives to make the tea, they alone will be able to make but a little. They have requested me to apply to you for assistants. I would suggest, that 12 men should be allowed them, to be taught to make tea, in case of these two men falling sick, or being cut off by death. I would propose to convert all my takelas into tea-makers, as their assistants, and when the Chinamen thought they were able to make tea of themselves, their salaries to be increased to 10 rupees per mensem; thus there would be a stimulus to encourage men to learn quickly; we should then be able to divide ourselves into parties all over the country, and collect the leaves when in season; whereas now, only having two Chinamen, before we have finished the first gathering in March in Muttuk, the leaves in the Singpho country will be too old, and thus be lost for want of tea-makers. I have no doubt, but in a year or two, we should be able to turn out a few men able to make tea; as those men, called Dewannies, who have been amongst the Singfos, are already half taught, and have only the finer parts of the process to learn.

4. My accompanying the Chinamen from one place to another leaves me no time to visit and explore the country to that extent that my wishes incline me.

5. I have much pleasure in informing you, that I have discovered seven new tea tracts in the Muttuk country. Plenty of wax-cloth of the best kind ought to be sent up directly for the covering of the tea-boxes.

Suddeeah, 20 December 1836.

I have, &c.
(signed) C. A. Bruce,
Superintendent of Tea.

No. 34.

(No. 33.)—From Captain *Jenkins*, Agent to Governor-general N. E. Frontier, to *N. Wallich*, Esq., M.D., Secretary to the Tea Committee, Calcutta; 15 February 1837.

Sir,

WITH reference to your predecessor's letter of the 22d November last, I have the honour to submit a copy of a letter from Mr. Bruce, under date the 20th December 1836, detailing his age and services.

2. Mr. Bruce has been in the service of Government, in command of gun-boats, since the commencement of the Burmese war, and his services have given entire satisfaction, and been noticed with much approbation by Government.

3. With regard to the provision that it would be reasonable to allow Mr. Bruce's family, in case of his death, on which I am requested to give an opinion, I am rather at a loss on what principle I should make my recommendation. You will be aware that the insurance offices have been pleased, inconsiderately I think, to except residents in Assam from the benefits of their institutions. Were this not the case, I should have suggested that Mr. Bruce should receive an addition to his pay, sufficient to enable him to insure his life in a reasonable sum, an amount perhaps calculated to give his widow the pension of a subaltern in the army. I believe, however, that Mr. Bruce is eligible to become a member of the Uncovenanted Servants' Fund, if that institution has been formed, of which I am not able to inform myself at present; and if so, the
Government

Government might be pleased to allow him such an addition to his pay, whilst in his present employ, as would secure a pension for his widow, calculated as above proposed.

Office of Governor-general's Agent,
North-East Frontier,
15 February 1837.

I have, &c.
(signed) *F. Jenkins*,
Agent to Governor-general.

From *C. A. Bruce*, Esq., Superintendent of Tea, to Captain *F. Jenkins*, Agent to Governor-general, Gowahatty; 20 December 1836.

Sir,

I HAVE the honour to acknowledge the receipt of your letter of the 20th instant, and its enclosures, referring to my services under Government and my age.

2. I left England in 1809, as midshipman, on board the H. C. ship *Windham*, Capt. *Stewart*, and was twice captured by the French on my way out, after two hard-fought actions; was marched across the Isle of France at the end of the bayonet, and kept prisoner on board of a ship until that island was taken by the British; thus I suffered much, and twice lost all I possessed, and was never remunerated in any way. I afterwards went as an officer of a troop ship against Java, and was at the taking of that place.

3. At the breaking out of the Burmah war, I offered my services to Mr. *Scott*, then Agent to the Governor-general, and was appointed to command gun-boats. As my command was at *Suddeeah*, I was the first who introduced the tea seeds and plants, and sent them to Mr. *Scott*, and other officers below. My late brother, who was in Assam before the breaking out of the war, had previously informed me of their existence; and it was I who verbally informed you of it, and officially brought the subject to your notice in 1833, giving a description of the method of making the tea by the natives. I was the first European who ever penetrated the forests, and visited the tea tracts in British *Suddiya*, and brought away specimens of earth, fruit, and flowers, and the first who discovered numerous other tracts.

4. It was my good fortune last year to go against the *Duffa Gaum*, and his followers, who threatened to over-run our frontier, and it was my good fortune to expel him twice with my gun-boat from two strong positions; for this little service I was honoured with the thanks of the Governor-general in Council.

5. I was born on the 10th of January 1793. I have eight persons to support, including myself and my late brother's children.

now 44.

Suddeeah, 20 December 1836.

I have, &c.
(signed) *C. A. Bruce*,
Superintendent of Tea.

From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 13 March 1837.

No. 35.

Gentlemen,

I AM directed to acknowledge the receipt of your letter, dated the 27th ult., stating the scale of remuneration which should be awarded to the men who are taught the art of manufacturing tea, and forwarding a communication from the Agent to the Governor-general in the N. E. frontier, on the subject of augmenting the salary of Mr. *Bruce*; and of one from your secretary, dated the 3d instant, submitting a communication from Mr. *Bruce*, reporting further discoveries of tea tracts, and the neglect of the *Singphoos*.

2. In reply, I am desired to acquaint you, that the Governor-general of India in Council approves and sanctions the scale of remuneration now suggested for the individuals who may acquire the art of tea-making, viz.:

1st. That 12 takelas receive a reward of 30 rupees each on their being within a reasonable time found proficient in the manufacture of tea; and

2d. That those among them who have gained the reward, be paid at the

if we could make any tea, although not exactly the season; and also to ascertain their wants before commencing operations in March. Numerous are their wants, but they are chiefly such as we can get in the country. They appeared delighted and astonished at our tea-trees, and declare that they are precisely the same as in China, only ours are overgrown. They made tea from the youngest leaves that could be collected, and also some of the middling and largest kind, which I have the honour to forward. After I had collected all the leaves required by us, I cut down all the tea plants, large and small, and set fire to the whole at No. 2 jungle; but at Dunjay and at Chabwah I only cut down the old trees, keeping those plants from two to three feet high.

2. It is my intention to go to the Singpho country as soon as I can procure elephants and coolies, and the Chinamen have had four days' rest, as they only arrived to-day.

3. As I have only two tea-makers, the business falls heavy on them; and when the season arrives to make the tea, they alone will be able to make but a little. They have requested me to apply to you for assistants. I would suggest, that 12 men should be allowed them, to be taught to make tea, in case of these two men falling sick, or being cut off by death. I would propose to convert all my takelas into tea-makers, as their assistants, and when the Chinamen thought they were able to make tea of themselves, their salaries to be increased to 10 rupees per mensem; thus there would be a stimulus to encourage men to learn quickly; we should then be able to divide ourselves into parties all over the country, and collect the leaves when in season; whereas now, only having two Chinamen, before we have finished the first gathering in March in Muttuk, the leaves in the Singpho country will be too old, and thus be lost for want of tea-makers. I have no doubt, but in a year or two, we should be able to turn out a few men able to make tea; as those men, called Dewannies, who have been amongst the Singfos, are already half taught, and have only the finer parts of the process to learn.

4. My accompanying the Chinamen from one place to another leaves me no time to visit and explore the country to that extent that my wishes incline me.

5. I have much pleasure in informing you, that I have discovered seven new tea tracts in the Muttuk country. Plenty of wax-cloth of the best kind ought to be sent up directly for the covering of the tea-boxes.

Suddeeah, 20 December 1836.

I have, &c.
(signed) C. A. Bruce,
Superintendent of Tea.

(No. 33.)—From Captain *Jenkins*, Agent to Governor-general N. E. Frontier, to *N. Wallich*, Esq., M.D., Secretary to the Tea Committee, Calcutta; 15 February 1837.

No. 34.

Sir,

WITH reference to your predecessor's letter of the 22d November last, I have the honour to submit a copy of a letter from Mr. Bruce, under date the 20th December 1836, detailing his age and services.

2. Mr. Bruce has been in the service of Government, in command of gun-boats, since the commencement of the Burmese war, and his services have given entire satisfaction, and been noticed with much approbation by Government.

3. With regard to the provision that it would be reasonable to allow Mr. Bruce's family, in case of his death, on which I am requested to give an opinion, I am rather at a loss on what principle I should make my recommendation. You will be aware that the insurance offices have been pleased, inconsiderately I think, to except residents in Assam from the benefits of their institutions. Were this not the case, I should have suggested that Mr. Bruce should receive an addition to his pay, sufficient to enable him to insure his life in a reasonable sum, an amount perhaps calculated to give his widow the pension of a subaltern in the army. I believe, however, that Mr. Bruce is eligible to become a member of the Uncovenanted Servants' Fund, if that institution has been formed, of which I am not able to inform myself at present; and if so, the
Government

Government might be pleased to allow him such an addition to his pay, whilst in his present employ, as would secure a pension for his widow, calculated as above proposed.

Office of Governor-general's Agent,
North-East Frontier,
15 February 1837.

I have, &c.
(signed) *F. Jenkins*,
Agent to Governor-general.

From *C. A. Bruce*, Esq., Superintendent of Tea, to Captain *F. Jenkins*, Agent to Governor-general, Gowahatty; 20 December 1836.

Sir,

I HAVE the honour to acknowledge the receipt of your letter of the 20th instant, and its enclosures, referring to my services under Government and my age.

2. I left England in 1809, as midshipman, on board the H. C. ship *Windham*, Capt. Stewart, and was twice captured by the French on my way out, after two hard-fought actions; was marched across the Isle of France at the end of the bayonet, and kept prisoner on board of a ship until that island was taken by the British; thus I suffered much, and twice lost all I possessed, and was never remunerated in any way. I afterwards went as an officer of a troop ship against Java, and was at the taking of that place.

3. At the breaking out of the Burmah war, I offered my services to Mr. Scott, then Agent to the Governor-general, and was appointed to command gun-boats. As my command was at *Suddeeah*, I was the first who introduced the tea seeds and plants, and sent them to Mr. Scott, and other officers below. My late brother, who was in Assam before the breaking out of the war, had previously informed me of their existence; and it was I who verbally informed you of it, and officially brought the subject to your notice in 1833, giving a description of the method of making the tea by the natives. I was the first European who ever penetrated the forests, and visited the tea tracts in British *Suddiya*, and brought away specimens of earth, fruit, and flowers, and the first who discovered numerous other tracts.

4. It was my good fortune last year to go against the *Duffa Gaum*, and his followers, who threatened to over-run our frontier, and it was my good fortune to expel him twice with my gun-boat from two strong positions; for this little service I was honoured with the thanks of the Governor-general in Council.

5. I was born on the 10th of January 1793. I have eight persons to support, including myself and my late brother's children.

HOW 44.

Suddeeah, 20 December 1836.

I have, &c.
(signed) *C. A. Bruce*,
Superintendent of Tea.

From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to the Tea Committee; 13 March 1837.

No. 35.

Gentlemen,

I AM directed to acknowledge the receipt of your letter, dated the 27th ult., stating the scale of remuneration which should be awarded to the men who are taught the art of manufacturing tea, and forwarding a communication from the Agent to the Governor-general in the N. E. frontier, on the subject of augmenting the salary of Mr. Bruce; and of one from your secretary, dated the 3d instant, submitting a communication from Mr. Bruce, reporting further discoveries of tea tracts, and the neglect of the *Singphoos*.

2. In reply, I am desired to acquaint you, that the Governor-general of India in Council approves and sanctions the scale of remuneration now suggested for the individuals who may acquire the art of tea-making, viz.:

1st. That 12 takelas receive a reward of 30 rupees each on their being within a reasonable time found proficient in the manufacture of tea; and

2d. That those among them who have gained the reward, be paid at the

rate of 10 rupees a month each, whenever they are detached from their ordinary duties as takelas, either for the purpose of manufacturing tea, or instructing others in the art.

3. His Lordship in Council understands that the Uncovenanted Servants' Fund has not been formed, and he is not aware of any means by which provision could be secured to the family of Mr. Bruce in the event of his death.

4. Your secretary's letter of the date quoted, seems to require no order at present.

Council Chamber,
13 March 1837.

(signed) *W. H. Macnaghten*,
Secretary to Government of India.

No. 37.

(No. 43.)—From Captain *F. Jenkins*, Agent to the Governor-general N. E. Frontier, to *N. Wallich*, Esq., M.D., Secretary to the Tea Committee; 20 February 1837.

Sir,

I HAVE the honour to forward a copy of a letter of the 10th instant, from Mr. Bruce, superintendent tea plantations.

2. Mr. Bruce reports the discoveries of further tea tracts, and he complains of the apathy of the Singphoos; for this evil it will not be difficult to find a remedy, I hope, when the tea becomes to be largely worked, by encouraging the emigration of more industrious races from Chota, Nagpore, or elsewhere; but in the present state of our preparations, in regard to the manufacture of tea, it does not appear immediately necessary to offer any more particular suggestions.

Office of the Governor-general's
Agent, N. E. Frontier,
20 February 1837.

I have, &c.
(signed) *F. Jenkins*,
Agent to Governor-general.

From *C. A. Bruce*, Esq., Superintendent of Tea, to Captain *F. Jenkins*, Agent to the Governor-general, Gowahatty; 10 February 1837.

Sir,

I HAVE the honour to report to you my arrival at Suddeeyah, from a tour of the Muttock and Singpho country. I have discovered plenty of tea in the former; in fact the whole of the Muttock is a tea country. There is plenty of tea in the Singpho country also, and some of the tracts very large, larger than I have seen in Muttock; but I am sorry to say that I cannot get the Singphoos to do as I wish; they work how and when they please. They are under no control, and wish not to work at all; the underwood of the two tracts they have in a great measure cleared, and one tract they cut down, but the wood was not removed. They told me that they would not clear the jungle when it grows up; so I am afraid the tea in our own country, *i. e.* the Singpho country, cannot be available, unless we import men to make the Singphoos more industrious. The Singphoos are all under their own petty chiefs, so coolies cannot be had, and these men will not work for any as long as they have sufficient opium and rice of their own. As long as coolies can get four rupees per month at Suddeeyah, they will never go to the Singphoos for that sum.

Suddeeyah, 10 February 1837.

I have, &c.
(signed) *C. A. Bruce*,
Superintendent of Tea.

EXTRACT INDIA REVENUE CONSULTATIONS, 25 September 1837.

No. 20.

From *N. Wallich*, Esq., M.D., Secretary to the Tea Committee, to *W. H. Macnaghten*, Esq., Secretary to Government of India; 5 September 1837.

Sir,

I AM directed by the Tea Committee to forward to you, for the purpose of being submitted to the Right honourable the Governor-general of India in Council, the accompanying highly interesting and valuable report of Mr. Griffith on the tea plant of Upper Assam, together with a sample of the Assam
"souchong"

“souchong tea,” received a few days ago from Mr. Bruce; and which, in the opinion of the Committee, affords a most promising indication of the success which may be reasonably anticipated will attend the endeavours now employed to cultivate and produce profitable and merchantable tea in Upper Assam.

2. I am instructed to state, that the Committee hope Mr. Griffith may be considered deserving of the high distinction of the approbation of his Lordship in Council.

I have, &c.

Tea Committee's Office,
Hon. Company's Botanic Garden,
5 September 1837.

(signed) *N. Wallich*, M.D.,
Secretary.

EXTRACT INDIA REVENUE CONSULTATIONS, 11 December 1837.

Extract Resolution of Government, dated 11 December 1837.

No. 3.

THE injunctions of the Honourable Court, that the operations undertaken in order to ascertain whether marketable tea can be grown and manufactured in India should be considered strictly experimental, will be carefully borne in mind. Indeed that principle, upon which the inquiry was commenced, has never from the first been lost sight of. The “deep interest” which the Honourable Court have expressed in the experiment, is highly encouraging to the Government; and they trust that in a short time they shall be in possession of data sufficient to guide them to a safe conclusion as to its result, which they see reason to hope will be successful.

2. No time will be lost in bringing matters to this issue; and no expense not considered essential to the fair trial of the experiment will be incurred.

3. A copy of the despatch will be immediately forwarded to the Tea Committee, and their attention particularly drawn to paragraphs 34, 35, and 36. Intimation of the failure of the tea seeds sent to Madras was conveyed to the Honourable Court in paragraph 29 of the despatch from this department, dated 30th January 1837, No. 2. Dr. Griffith's report, adverted to in paragraph 31 of the Honourable Court's letter, has been received, and will be forwarded by an early opportunity. The Committee will be requested to furnish, with the least practicable delay, the reports of Drs. Wallich and M'Clelland, and Mr. Gordon, which have been long expected. A specimen of the tea of Upper Assam, prepared by the most careful process of manipulation of which the means at the command of the Committee admit, will also be forwarded by them to this department, for transmission to the Honourable Court, as desired by them in paragraph 19 of their despatch.

From *N. Wallich*, Esq., M.D., Secretary to the Tea Committee, to *R. D. Mangles*,
Officiating Secretary to Government of India, dated the 30th Nov. 1837.

No. 7.

Sir,

I AM directed by the Tea Committee to request that you will have the goodness to submit to the favourable consideration of Government the following proposition, originally made to them by Captain Jenkins, for attaching a small number of apprentices to Mr. Bruce's establishment in Upper Assam.

2. In proportion as the various operations now carried on for the purpose of bringing the native tea of that country into the market are advancing towards maturity, a number of additional assistants will become necessary at the several branches of the establishment, who may be capable of supervising the cultivation of the plant itself, as well as conducting the manufacturing process. In order to meet this demand, it appears highly desirable that a timely provision should be made for the supply of a number of men not altogether unacquainted with the sort of work that will be required of them, nor yet quite strangers to the country where they will have to reside. Under existing circumstances, the first object is only to be attained by procuring properly qualified people from

China, an undertaking which would be attended with very considerable expense; while the plan of placing some apprentices under Mr. Bruce, for the express purpose of being trained for future employment, would enable the Government, in the lapse of a few years, to dispense altogether with the costly, and, as experience has fully proved, very arduous, importation of Chinamen.

3. But it is not on the score of economy alone that the plan recommends itself for adoption; there is another point to which allusion has already been made, which pleads very strongly in its favour. The climate of Assam, especially of the tea tracts, is admitted to be inimical to the health of most classes of new comers. Of this fact a sad example exists in the death of the Chinese interpreter some months ago. It may reasonably be expected that as the country becomes by degrees relieved of the vast jungles which at present oppress it in all directions, this state of insalubrity will gradually diminish; but in the meantime the difficulty arising from that source admits of being greatly palliated by inuring a number of healthy and strong youths to the influence of the climate. The youth itself of the boys will prove a guarantee for their preserving their health, under the judicious care, vigilance, and precaution which Mr. Bruce will not fail to bestow on them.

4. The Committee, accordingly, beg leave most strongly to second Captain Jenkins's proposition, combining as it does economy with great usefulness, and to recommend that the Honourable the President in Council will please to authorize their engaging eight apprentices from the Lower Orphan Institution, or the Free School, with the usual allowances to the person in charge for feeding and clothing the boys, which will amount to a very moderate sum, probably not exceeding 16 rupees for each. It is scarcely necessary to observe, that the free assent of the boys will form the basis of their being articulated.

5. In the event of his Honor in Council concurring in these views of the Committee, it is their intention to get two of the boys properly instructed in the art of making leaden canisters, previous to sending them to their final destination, as it has been found as impracticable to prevail on native maistrys to go to Assam, as to persuade Assam workmen to come to Calcutta on purpose to be taught the art. The Committee entertain no doubt that Mr. James Prinsep will grant them his valuable aid on this occasion, with the same readiness which distinguishes his exertions to promote all the works of public utility.

I have, &c.

Tea Committee Office,
Hon. Company's Botanic Garden,
30 November 1837.

(signed) *N. Wallich*, M.D.,
Secretary.

No. 8.

(No. 116.)—From *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, to the Tea Committee, dated 11 December 1837.

Gentlemen,

I AM directed by the Honourable the President in Council to acknowledge the receipt of your secretary's letter of the 30th ultimo, recommending, for the sanction of Government, "a proposition, originally made to you by Captain Jenkins, for attaching a small number of apprentices to Mr. Bruce's establishment in Upper Assam," in order to the better carrying on of the experimental cultivation and manufacture of tea in that quarter.

2. In reply, I am directed to refer you to the despatch from the Honourable Court of Directors, under date the 23d August last, this day forwarded to you, and to the sentiments of Government, frequently expressed, in regard to the strictly experimental nature of the operations now in progress at the public expense. Those operations it was never intended to extend beyond the point of ascertaining that marketable tea could be grown and manufactured in British India; the carrying out of the experiment into practice upon such a scale as to render the production of the article a mercantile speculation, was never contemplated

contemplated by Government, whose part will be abundantly fulfilled as soon as the practicability of the plan is established.

3. It appears, however, from your secretary's letter, and especially from its second paragraph, that the views of Government have not been correctly understood by the Committee. It is not the intention of his Honor in Council to employ a large establishment, with "several branches," and requiring "a number of additional assistants," still less is the maintenance of the experiment during, and even beyond, "the lapse of a few years," contemplated. On the contrary, it will be the duty of your Committee, under the instructions of the Honourable Court this day communicated to you, to take active measures to bring the experiment to the critical point, of ascertaining whether marketable tea can or cannot be produced, with the least possible delay.

4. The President in Council does not think it consistent with these views of the legitimate object of the inquiry, to sanction the attachment of apprentices to Mr. Bruce, who could not, for a considerable period, render any useful service to the operations of that gentleman, and who would certainly have embarrassing claims upon the Government in the event of the failure of the experiment, or of its not being immediately taken up by individual enterprise.

I am, &c.

(signed) *R. D. Mangles,*

Officiating Secretary to the Government of India.

Council Chamber, 11 December 1837.

EXTRACT INDIA REVENUE CONSULTATIONS, 29 December 1837.

From *N. Wallich*, Esq., M.D., Secretary to the Tea Committee, to *R. D. Mangles*, Esq., Officiating Secretary to Government of India, dated 12 December 1837.

No. 6.

Sir,

I AM directed by the Tea Committee to send you the accompanying four pint bottles, containing samples of the following first crops of Muttuck teas, and to request that you will please to submit them to the Government; viz.

- A. Souchong, No. 1, Major Gohyne's shady tract.
- B. Ditto - No. 1, Chubwa sunny tract.
- C. Ditto - No. 1, Dunjoy sunny tract.
- D. Paho - No. 3, Tingri shady tract.

2. The Committee deem it worthy of notice, that notwithstanding two pint bottles of B. and D. had broken on the road, their contents, which were found loose among the dry straw in the bungy boxes, had apparently not lost any of the aroma of good and fair tea. This circumstance, together with the quality of the samples generally, furnish, in the opinion of the Committee, additional and very satisfactory proofs of the success with which tea may be produced in Assam.

I have, &c.

Tea Committee Office,
Hon. Company's Botanic Garden,
12 December 1837.

(signed) *N. Wallich*, M.D.,
Secretary.

(No. 1.)—From *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, to *N. Wallich*, Esq., Secretary to the Tea Committee, dated the 29th December 1837.

No. 7.

Sir,

I AM directed to acknowledge the receipt of your letter, dated the 12th instant, and to inform you, in reply, that the Honourable the President in Council concurs with the Committee in considering the quality of the samples which they have sent, with reference to the short period that has elapsed

since the commencement of the experiment, to be very satisfactory. Specimens will be forwarded by dāk, with a copy of this correspondence, to the Right honourable the Governor-general.

I am, &c.

(signed) *R. D. Mangles,*

Officiating Secretary to the Government of India.

Council Chamber, 29 December 1837.

EXTRACT INDIA REVENUE CONSULTATIONS, 15 January 1838.

No. 13.

From the Tea Committee, to *R. D. Mangles*, Esq., Officiating Secretary to Government of India; 30 December 1837.

Sir,

WE have the honour to acknowledge the receipt of your letter, No. 115, dated the 11th instant, enclosing copy of a despatch from the Honourable Court of Directors, dated the 23d August last, and of the Resolution of the Government thereon; also of your letter, No. 116, of the same date, replying to our secretary's of the 30th ultimo.

2. We have perused the above-mentioned records with due attention, and deep interest; and we take this early opportunity of assuring the Honourable the President in Council, that at no stage of our proceedings or recommendations have we contemplated or intended anything more than strictly experimental operations, to ascertain whether marketable tea could be grown and manufactured in this country. To this object our attention has been steadily and exclusively directed, from the first commencement of our labours; and to it we will continue to confine them, until the services of our Committee are not any longer required by the Government. The proposition which we submitted in our secretary's last letter, of 30th ultimo, had no other object in view. We considered it to be a matter of unquestionable and real importance, to the successful prosecution of the operations now experimentally in progress, to ascertain practically, and at a trifling expense, whether the climate of Assam presents any serious difficulties, or whether its reputed insalubrity is only such as may be overcome with ease, in the way we have suggested.

3. We beg leave respectfully to urge on the consideration of his Honor in Council, that the experimental operations now in progress at the tea tracts in Assam require, not only time and careful perseverance to bring them to any degree of perfection, but likewise to be carefully preserved, in order to encourage private speculation, whenever it may be deemed advisable to commit the future extension and profitable success of this experimental trial entirely individual enterprise. This view seems to us to be in perfect accordance with the original intention of the Government, sanctioned in the Honourable Court's letter now before us, and distinctly founded on the principle, that the Government are eventually to withdraw entirely from all further prosecution of the scheme, and, as soon as it may appear to be expedient, to entrust its future success to private speculators, but not earlier. As yet, however, there has not been time enough to redeem the tracts in question, to place them in a proper course of management, and to obtain from them such perfect samples of their produce as will be unquestionably required before an intimate decisive judgment can be pronounced on the quality of that produce. Several specimens of tea of the Assam manufacture have already been laid before Government this year, which have been considered as very encouraging; and we are happy to report, that a considerable quantity, prepared during the last season, is now on its way to Calcutta, which, when received, will be forwarded to Government, with a recommendation that it be transmitted to the Honourable Court, who may probably consider it worthy to be submitted to the greatest of all tests, that of the London tea dealers. In the meantime, we have the satisfaction of forwarding herewith a large canister of tea, recently received from Mr. Bruce, superscribed "Kanung Suchong, shaded tract," which we solicit may be sent to the Honourable Court by an early opportunity. Respecting this package, it may be proper to state further, that the canister itself, as well

as the sheet-lead of which it was made, have been manufactured, as a first attempt, under the able supervision of the assay-master, Mr. J. Prinsep, and that the leaves surrounding the canister on the outside, resembling very closely those used in similar tea-packages from China, are of the gigantic martaban bamboo, cultivated in Honourable Company's botanic garden.

4. We will carefully attend to the instructions contained in your letter, No. 115, and will call on Messrs. Gordon and Wallich to furnish their reports without further delay. With regard to Mr. M'Clelland's very able report, we beg to observe, that it has been long ago printed and published in the 4th volume of the Transactions of the Agricultural and Horticultural Society of India, to whom it was presented for that purpose by the Government. The valuable memoir of Mr. Bruce on the manufacture of tea, as at present practised by the Chinese under his directions in Upper Assam, is in the press of the Orphan School, conformably to the orders of Government.

We have, &c.

	(signed)	<i>J. Pattle.</i>	<i>Ross D. Mangles.</i>
		<i>J. W. Grant.</i>	<i>Radhakant Dev.</i>
		<i>C. K. Robison.</i>	<i>N. Wallich, M. D.</i>
Calcutta,		<i>Ram Comul Sen.</i>	
30 December 1837.			

EXTRACT INDIA REVENUE CONSULTATIONS, 7 February 1838.

From *W. H. Macnaghten*, Esq., Secretary to the Government of India with the Governor-general, to *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, dated the 15th January 1838.

Sir,

I AM desired by the Right honourable the Governor-general of India to acknowledge the receipt of your letter, No. 4, dated the 29th ultimo, submitting correspondence with the Tea Committee, together with four samples of the first crops of Muttuck teas.

2. In reply I am directed to observe, that the tea would, in the opinion of his Lordship, be considered as of a marketable quality, if it could be landed in Europe in the same state in which it has been received here, and he trusts that measures will shortly be taken for sending a few chests, upon trial, to the Honourable Court. His Lordship concludes that, in the present stage of the undertaking, it is deemed premature to form any estimate of the cost of production.

I have, &c.

(signed) *W. H. Macnaghten*,
Secretary to the Gov^t of India with the Governor-general.

Head Quarters, Camp Jellulabad,
Zillah Shajihanpore, the 15th January 1838.

(No. 8.)—From *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, to *N. Wallich*, Esq., Secretary to the Tea Committee, dated the 7th February 1838.

Sir,

IN continuation of my letter, dated the 29th December last, I am directed by the Honourable the President in Council to forward, for the information of the Committee, the accompanying copy of letter from the Secretary to the Government of India with the Governor-general, dated the 15th ultimo, relative to the specimens of the first crop of Muttuck tea, which, as stated on that occasion, were sent to the Right honourable the Governor-general.

2. I am desired to take this opportunity of stating, that a despatch to the Honourable Court of Directors, forwarding the teas received, with your and the Committee's

Committee's letters, dated respectively the 12th and 30th December last, is now ready, and will be soon forwarded.

I am, &c.

(signed) *R. D. Mangles*,
Officiating Secretary to the Government of India.

Council Chamber, 7 February 1838.

Extract Report on the Tea Plant of Upper Assam, by Mr. Assistant-surgeon *William Griffith*, Madras Establishment, late Member of Assam Deputation.

Part VII.

THE project of the cultivation of tea within the vast extent of territory held by Great Britain in India, cannot have failed to have occurred to the Government at a comparatively early period. Accordingly we find that, so early as 1793, Lord Macartney despatched some plants from China to Bengal, "in some parts of which, his Excellency had been informed, were districts adapted for their cultivation." From this period until a very late date, when a committee of tea culture was instituted, no further steps seem to have been taken. On 3d March 1834, a circular was issued by the Committee, calling for information on a considerable number of points, the questions being prefaced by a sketch of the information then possessed by the Committee regarding the climate and soil most congenial to the tea plant, as it exists in China. From this document, it will be seen that I have extracted portions, which must generally be allowed to give strong evidence in favour of the correctness of the views entertained of the stations of the plant in the tea provinces of China by Mr. McClelland, and which were deduced from a close comparison and analysis of all the data bearing on the point. Yet, in the face of the evidence given in the circular, the questions mostly rest on the idea that the plant is a native of hilly countries, in which snow falls during the cold season; and in accordance with this idea, the Committee subsequently came to the conclusion, that the requisite considerations are to be met with on the Himalayas, and that Kumoun appears to be the most eligible spot. The following steps were, therefore, put into execution: Dr. Falconer was requested to report on the localities which appeared to him advantageous for nurseries; and the secretary to the Tea Committee, Mr. Gordon, was despatched to China to procure seeds and plants for the stocking of the nurseries. In order to render Mr. Gordon's mission more successful, Dr. Wallich was requested to draw up instructions, both as to choice of stock, and their transmission, as well as that of seeds, to Bengal. With regard to the first, Dr. Wallich very properly lays great stress on the care to be exercised in selecting plants and seeds from the very best stocks; and in allusion to the necessity of not selecting any of the plants and seeds commonly sold at Canton and Macao, he says, "such would be as utterly worthless to us as a common crab, or any other raw or wild fruit, to any person anxious to plant a garden with the best and most marketable fruit trees."* With regard to the transmission of plants and seeds to Bengal, Mr. Gordon was presented with the copy of an article published by Dr. Wallich in the Transactions of the Horticultural Society of London for 1832, containing the usual routine instructions, now, since the subject has been more maturely considered, entirely superseded. It is strange, however, that no mention of seeds is made, although their transmission, so far as the tea plant is concerned, is certainly much the more delicate affair of the two. In the course of his missions, Mr. Gordon succeeded in transmitting a great number of seeds to Calcutta, of which one-half germinated; a large proportion, when the mode of packing is considered. While Mr. Gordon was engaged in China collecting seeds and plants, the fact of the existence of the tea in Upper Assam, and that to a great extent, was brought to the notice of the Tea Committee, who gave information of the fact to Government in a letter, dated

24th

Staunton, 2,
p. 466.

* See Memorandum drawn up by Dr. Wallich for the instruction of Mr. Gordon, dated 13 May 1834.

24th December 1834. From this I make the following extracts: "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 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." Now, although reasons certainly existed why the alleged tea might have proved, as the Tea Committee suggested, nothing but a camellia, yet the very fact of a camellia being reported to exist should at once have pointed out the immediate necessity of a proper examination of the plant on the spot, and for these two reasons, first, because it was known in May 1834, that the plant in question was used by the Singphos as tea; and, secondly, because it is not certain whether some species of camellia, so called, do not produce tea.* On this point I quote the following extract from Dr. Lindley's Introduction to the Natural Orders: "The tea which is extensively consumed by Europeans is produced by different species of thea or camellia." The examination which was recommended by Captain Jenkins on the 7th May 1834, was recommended by the Tea Committee in December of the same year, and received immediately the sanction of the Government. On the fact being proved to the satisfaction of the Tea Committee that the tea plants really did exist in Assam, Mr. Gordon was directed to suspend all further operations regarding the supplies of tea seeds, &c., and ordered to proceed to Bengal, unless his meditated excursion to the green-tea districts remained unaccomplished, when a further period of precisely two months was allotted to him. On this subject, I cannot refrain from quoting the following extracts from the proceedings of the Tea Committee on the 2d February 1835, and from Dr. Wallich's accompanying letter to Mr. Gordon: "With reference to the communications which the Tea Committee have received about the Upper Assam tea, and its identity with the genuine tea of China; considering, also, that in all probability the Bohea tea seeds lately imported from China will not produce that variety here; and that, according to the accounts before the Tea Committee from Captain Jenkins and Lieutenant Charlton, the Assam plant exists in sufficient abundance to produce seeds for all the purposes of the Committee, with this great advantage, that they can be procured in a state of perfect freshness; finally, taking into consideration the great expenses necessarily incurred in obtaining supplies of seeds from China, which are now ascertained to be no longer required." Here follows the determination of recalling Mr. Gordon. The extracts from Dr. Wallich's letter runs thus: "The Committee have maturely weighed the subject of the new discovery in Upper Assam, in all its bearings. The genuine tea grows there as an indigenous plant, which may be cultivated to any extent. There is no ground for supposing that the various sorts of tea seeds imported from China will produce anything but the shrub in its natural state, retaining nothing of the variety whose name the seeds bear: it is, therefore, useless and unnecessary to import from China, at a great expense and great risk, what may be had, as it were, on the spot, to any extent almost in point of quantity, and in a state of perfect freshness and strength for vegetating, your continuance in China, so far as regards supplies of seeds, is, therefore, useless and unnecessary."

Dated February 8,
1835.

"The Assam discovery has placed the labours of the Committee on quite a different footing from that on which they commenced. Who can say what may be the effect of that truly magnificent discovery? The question is now no longer, whether the tea will grow in Hindostan, or whether it produces leaves fit for use (the Assamese and their neighbours, not to mention the Yunamese, consume vast quantities of them), scarcely whether or not the leaf admits of being prepared in the same manner as is done in China for infusion, but simply whether the shrub can be extensively cultivated for commercial purposes, and whether it admits of being introduced into Kumaon, Sirmore, and the like north-west parts of the country, for the Committee have not had cause to alter their views in respect to the capabilities of other places since you left us."

From

* See extract of a private letter from Capt. F. Jenkins to G. J. Gordon, Esq., dated 19-May 1834
Journal of Asiatic Society, Calcutta.

From the above extracts, two circumstances of sufficient importance may be deduced; of these the first is, that had the attention of the Committee been directed *ab origine* towards the place where the plant was reported to grow, there would have been no occasion for the importation of seeds from China, and thus large sums of money would have been saved to the Government. The second involves considerations known only to those who have some acquaintance with the higher branches of botany. The statement made in the above extracts, "that in all probability the Bohea tea seeds lately imported from China will not produce that variety here;" and the same repeated in the letter of Dr. Wallich, "there is no ground for supposing that the various sorts of tea seeds imported from China will produce anything but the shrub in its natural state, retaining nothing of the variety of whose name the seeds bear," are grounded no doubt on the idea, that seeds propagate the species, and buds the individual. It is to a certain extent perhaps true, and although a gardener planting the seeds of an excellent apple would not expect that all the plants springing from such seeds would inherit the excellencies of that from which the seeds are taken, yet I presume he would not prefer taking seeds from a wild crab-apple, or hope by so doing for equal success. I may be allowed here to quote the words of the leading authority in England as bearing on this point, "in sowing seeds for the purpose of procuring improved varieties, care should be had not only that the seeds be taken from the finest existing kinds, but also that the most handsome, the largest, and the most perfectly ripened specimens should be those that supply the seed. A seedling plant will always partake more or less of the character of its parent, the qualities of which are concentrated in the embryo when it has arrived at full maturity."* Nor can I reconcile the extracts alluded to with the memorandum of instructions furnished by Dr. Wallich to Mr. Gordon, on which so much stress is laid on ascertaining the excellence of the stock from which both plants and seeds are to be obtained.

It may be further submitted, how does the argument, at least now that the nature of the Assamese product is known, agree with the acknowledged fact, that the propagation of the tea plant in China is almost entirely carried on by seeds. I take it for granted that the tea of China is superior to that of Assam; but as that tea is the produce of seedlings which, it is said, only inherit the properties of the shrub in its natural state, it follows that the tea plant of China is naturally possessed of higher properties than that of Assam. Against this, the nature of the oil of the tea districts of China, &c. may possibly be urged; but in the present state of our knowledge, nothing can be adduced to support the natural superiority of China, in any one qualification for producing tea, over the province of Assam.

It is in this question that the whole system rests; if the statement be sound, then indeed the present plan of culture will answer, and some slight modifications will alone be required. But I have no hesitation in saying, that it is contrary to the experience of horticulturalists in all ages. If the tea plant be a true species, it will continue to produce its like from seed; if it be a variety only, the seedlings may be inferior or they may be superior to the parent plant.

Dr. Wallich's statement is abundantly disproved by the very genus in question, all the beautiful varieties of camellia having been raised from seed. Of the plants raised from the seeds sent by Mr. Gordon, about half were sent into the hills, a few to Mysore, on the recommendation I believe of Colonel Morison, the remainder to Assam. These last, when seen by the deputation in February 1835, were diminished to about 12,000, so that the alleged invigorating influence of the Assamese or congenial atmosphere must have been transitory.† By far the greater

* Lindley's Introduction to the Guide to the Orchard and Kitchen Garden, p. ix. x.

† The distribution of the plants was as follows:

Assam	-	-	-	-	-	-	20,000
Kumaon and its neighbourhood	-	-	-	-	-	-	20,000
Madras Presidency	-	-	-	-	-	-	2,000
							42,000

Of the Kumaon plants I have no intelligence. Some report on their present state would be interesting. The accounts of those sent to Madras are satisfactory.

greater number had been packed in boxes, a few in large earthen pots or goomlahs. The difference in the state of the contents of the boxes and goomlahs was immense; the few living plants in the boxes were decidedly unhealthy, in the goomlahs they were perfectly healthy, and so thick that the hand could not have been thrust between them; this great excess in favour of the pots naturally leads us to the consideration of the cause of the difference; but this is not all, as many seeds were sent to the hills to be there planted, why was not the same plan carried into execution with regard to Assam?

The largest portions of the tea seeds procured by Mr. Gordon in China, were sown in the earth at the botanic gardens. When the plants were a few inches high, they were transplanted into boxes and flower-pots; a few were sown in goomlahs and not transplanted; and lastly, a few were planted in goomlahs.

The sowing the seeds of woody plants in the earth, and then transplanting into pots or boxes, is contrary to the practice of all experienced nurserymen in England, except when stunted specimens of large growing trees are required. Had the seeds been sown at the first in goomlahs or in boxes, there is little doubt but that they would have reached Assam in a flourishing condition. Plants extract nourishment from the soil by means of the spongioles of their roots, which spongioles are situated at the extremities of the roots. The tea seedling in its first stage produces a long perpendicular root, two or three times the length of the stem, so that when the young plants are three inches above the ground, their roots are probably six or eight inches deep, having very few, if any, lateral fibres; in this stage it is very difficult to transplant them without destroying the spongioles, and the plants are not sufficiently strong to produce new ones before the top withers for want of nourishment. This in part accounts for the plants in goomlahs having borné the journey better than those in boxes; but it appears that those transplanted into goomlahs still looked much better than those in the boxes; this is easily accounted for; earthen vessels are better suited to the growth of plants than wooden ones, and especially so during heavy rains; the superfluous water is carried off with much more facility, and the plants are kept constantly moist, but do not remain saturated. In large boxes there is a large quantity of earth which holds a large quantity of water, and the sides of the boxes become sodden, and the plant rots. Let me still further trace the progress of these unfortunate plants. A spot was fixed upon (as a nursery) by the deputation at Chykwa*, appearing to possess the requisite peculiarities of soil and situation. The spot was completely cleared for the reception of the plants, and after a considerable time had elapsed, owing to the difficulty of procuring labourers, they were at length, under the superintendence of Mr. Bruce, and of a malie from the botanic gardens, removed to their final destination. About August I visited the nursery with Lieut. Millar, commanding at Sadiya, and Mr. Bruce. To my great astonishment, not 500 of the plants were alive, and of these almost all appeared in the last stage of decline. The ground was literally matted down with low tenacious weeds; and it is a fact that on our arrival at the nursery, not a tea plant could be seen, owing to the uniform green colour of the surface. I look upon this nursery, which would, under other circumstances, have contained many thousands of excellent Chinese stocks, to the existence of which I at least attach primary importance, as totally destroyed. The cause of this destruction is beyond doubt to be attributed to the fact, that the plants, which had for several months been under sheds, were in the nursery completely unsheltered from a sufficiently hot sun, the obvious remedy for which would have been the erection of temporary muchowns or mats, by the removal of which at certain times the plants might have become accustomed to that which was to them an excess of solar influence; and that the intervals between the plants, as well as round each, had apparently never been subjected to the operations of a hoe or any other instrument. Having now sketched the fate of the nursery for Chinese plants, I am naturally led to those of the indigenous plants. The original nursery at Sadeya was in Capt. Charlton's command, but as a very eligible spot was selected by Mr. McClelland, behind that of Mr. Bruce, the plants

* Chykwa is a straggling place of some extent, a few miles below Sadya, and on the south or left bank of the river.

From the above extracts, two circumstances of sufficient importance may be deduced; of these the first is, that had the attention of the Committee been directed *ab origine* towards the place where the plant was reported to grow there would have been no occasion for the importation of seeds from China, and thus large sums of money would have been saved to the Government. The second involves considerations known only to those who have some acquaintance with the higher branches of botany. The statement made in the above extracts "that in all probability the Bohea tea seeds lately imported from China will not produce that variety here;" and the same repeated in the letter of Dr. Wallich, "there is no ground for supposing that the various sorts of tea seeds imported from China will produce anything but the shrub in its natural state retaining nothing of the variety of whose name the seeds bear," are grounded no doubt on the idea, that seeds propagate the species, and buds the individual. It is to a certain extent perhaps true, and although a gardener planting the seeds of an excellent apple would not expect that all the plants springing from such seeds would inherit the excellencies of that from which the seeds are taken yet I presume he would not prefer taking seeds from a wild crab-apple, or hope by so doing for equal success. I may be allowed here to quote the words of the leading authority in England as bearing on this point, "in sowing seeds for the purpose of procuring improved varieties, care should be had not only that the seeds be taken from the finest existing kinds, but also that the most handsome, the largest, and the most perfectly ripened specimens should be those that supply the seed. A seedling plant will always partake more or less of the character of its parent, the qualities of which are concentrated in the embryo when it has arrived at full maturity."* Nor can I reconcile the extracts alluded to with the memorandum of instructions furnished by Dr. Wallich to Mr. Gordon, on which so much stress is laid on ascertaining the excellence of the stock from which both plants and seeds are to be obtained.

It may be further submitted, how does the argument, at least now that the nature of the Assamese product is known, agree with the acknowledged fact, that the propagation of the tea plant in China is almost entirely carried on by seeds. I take it for granted that the tea of China is superior to that of Assam; but as that tea is the produce of seedlings which, it is said, only inherit the properties of the shrub in its natural state, it follows that the tea plant of China is naturally possessed of higher properties than that of Assam. Against this, the nature of the soil of the tea districts of China, &c. may possibly be urged; but in the present state of our knowledge, nothing can be adduced to support the natural superiority of China, in any one qualification for producing tea, over the province of Assam.

It is in this question that the whole system rests; if the statement be sound, then indeed the present plan of culture will answer, and some slight modifications will alone be required. But I have no hesitation in saying, that it is contrary to the experience of horticulturalists in all ages. If the tea plant be a true species, it will continue to produce its like from seed; if it be a variety only, the seedlings may be inferior or they may be superior to the parent plant.

Dr. Wallich's statement is abundantly disproved by the very genus in question, all the beautiful varieties of camellia having been raised from seed. Of the plants raised from the seeds sent by Mr. Gordon, about half were sent into the hills, a few to Mysore, on the recommendation I believe of Colonel Morison, the remainder to Assam. These last, when seen by the deputation in February 1835, were diminished to about 12,000, so that the alleged invigorating influence of the Assamese or congenial atmosphere must have been transitory.† By far the greater

* Lindley's Introduction to the Guide to the Orchard and Kitchen Garden, p. ix. x.

† The distribution of the plants was as follows:

Assam	-	-	-	-	-	-	-	20,000
Kumaon and its neighbourhood	-	-	-	-	-	-	-	20,000
Madras Presidency	-	-	-	-	-	-	-	2,000
								42,000

Of the Kumaon plants I have no intelligence. Some report on their present state would be interesting. The accounts of those sent to Madras are satisfactory.

greater number had been packed in boxes, a few in large earthen pots or goomlahs. The difference in the state of the contents of the boxes and goomlahs was immense; the few living plants in the boxes were decidedly unhealthy, in the goomlahs they were perfectly healthy, and so thick that the hand could not have been thrust between them; this great excess in favour of the pots naturally leads us to the consideration of the cause of the difference; but this is not all, as many seeds were sent to the hills to be there planted, why was not the same plan carried into execution with regard to Assam?

The largest portions of the tea seeds procured by Mr. Gordon in China, were sown in the earth at the botanic gardens. When the plants were a few inches high, they were transplanted into boxes and flower-pots; a few were sown in goomlahs and not transplanted; and lastly, a few were planted in goomlahs.

The sowing the seeds of woody plants in the earth, and then transplanting into pots or boxes, is contrary to the practice of all experienced nurserymen in England, except when stunted specimens of large growing trees are required. Had the seeds been sown at the first in goomlahs or in boxes, there is little doubt but that they would have reached Assam in a flourishing condition. Plants extract nourishment from the soil by means of the spongioles of their roots, which spongioles are situated at the extremities of the roots. The tea seedling in its first stage produces a long perpendicular root, two or three times the length of the stem, so that when the young plants are three inches above the ground, their roots are probably six or eight inches deep, having very few, if any, lateral fibres; in this stage it is very difficult to transplant them without destroying the spongioles, and the plants are not sufficiently strong to produce new ones before the top withers for want of nourishment. This in part accounts for the plants in goomlahs having borne the journey better than those in boxes; but it appears that those transplanted into goomlahs still looked much better than those in the boxes; this is easily accounted for; earthen vessels are better suited to the growth of plants than wooden ones, and especially so during heavy rains; the superfluous water is carried off with much more facility, and the plants are kept constantly moist, but do not remain saturated. In large boxes there is a large quantity of earth which holds a large quantity of water, and the sides of the boxes become sodden, and the plant rots. Let me still further trace the progress of these unfortunate plants. A spot was fixed upon (as a nursery) by the deputation at Chykwa*, appearing to possess the requisite peculiarities of soil and situation. The spot was completely cleared for the reception of the plants, and after a considerable time had elapsed, owing to the difficulty of procuring labourers, they were at length, under the superintendence of Mr. Bruce, and of a malie from the botanic gardens, removed to their final destination. About August I visited the nursery with Lieut. Millar, commanding at Sadiya, and Mr. Bruce. To my great astonishment, not 500 of the plants were alive, and of these almost all appeared in the last stage of decline. The ground was literally matted down with low tenacious weeds; and it is a fact that on our arrival at the nursery, not a tea plant could be seen, owing to the uniform green colour of the surface. I look upon this nursery, which would, under other circumstances, have contained many thousands of excellent Chinese stocks, to the existence of which I at least attach primary importance, as totally destroyed. The cause of this destruction is beyond doubt to be attributed to the fact, that the plants, which had for several months been under sheds, were in the nursery completely unsheltered from a sufficiently hot sun, the obvious remedy for which would have been the erection of temporary muchowns or mats, by the removal of which at certain times the plants might have become accustomed to that which was to them an excess of solar influence; and that the intervals between the plants, as well as round each, had apparently never been subjected to the operations of a hoe or any other instrument. Having now sketched the fate of the nursery for Chinese plants, I am naturally led to those of the indigenous plants. The original nursery at Sadeya was in Capt. Charlton's command, but as a very eligible spot was selected by Mr. McClelland, behind that of Mr. Bruce, the
plants

* Chykwa is a straggling place of some extent, a few miles below Sadya, and on the south or left bank of the river.

plants were subsequently removed thither, together with some plants of Mr. Bruce's; seeds of indigenous stock were likewise sown. From these shrubs the first tea ever made by Chinese in British India was procured; and although the supply was small, yet I am not aware of its having proved inferior to any subsequently manufactured. The process was seen by no one but Mr. Bruce, and appeared to have been kept a complete secret from every one at Sadeya.

This nursery I certainly consider to be thriving; and although considerable expense had been incurred in its formation, and although the Chinese reside at Sadiya, it is now, I believe, abolished, and no theatre of operations for the Chinese now exists near their head-quarters. Let me now turn to the system of operations carried on in the tea localities themselves. But as neither Mr. McClelland nor myself were even consulted on this point, I shall confine myself to those put into execution by Mr. Bruce. Orders were first issued to the chiefs of the different districts in which the tea grew for clearing the jungle, and Mr. Bruce proceeded himself to the various spots to see his orders commenced upon. But as this occurred during the rainy season, Mr. Bruce was necessarily unable, with any degree of safety, to protract his stay, and to see his orders efficiently executed. To show the difficulty of working with such tools as the Singphos, I may mention, that on my return from the Mishmee hills in December 1836, the tea locality at Kufoo remained untouched. The first place which was, I believe, cleared to any extent was the Tingrei locality, and to this place I proceeded from Kufoo-doo. That part of the locality which I have mentioned before as having been cleared, was now quite clean, and the first appearance was certainly satisfactory. The shoots which had been given off from the stumps were numerous, giving to the plants a bushy appearance; but this was counteracted by a most palpable coarseness in the texture of the leaves, and was accompanied by an unhealthy yellow tint. The appearance, in fact, was such as to call for exclamations of surprise both from Major White and Lieutenant Bigge, who had previously seen the tea at Gubroo. The flowers were, moreover, totally destitute of odour. Of the other and more extensive portion great part exhibited a scene of considerable confusion; almost all the tea plants had been cut down, the underwood was cleared away, and all the forest trees either felled or in process of being so, the debris were being burnt on the spot among the still living bases of the tea plants.

The only other tea I saw after cultivation had been commenced was at Kufoo-doo, and as here the plan was rational, consisting of a partial clearing of the larger and total of the smaller trees, so the plants had a much better appearance than those before alluded to.

Before entering on the plan which I consider the only one for insuring success, I have to consider the question whether the green and black teas of commerce are the produce of the same species, and modified by culture, soil, and mode of preparation, or whether they are the produce of two distinct species. The question has been much controverted, and must be considered even now as being far from settled. Connected with the tea cultivation in Upper Assam it is of considerable importance, as the Chinese cultivators hitherto imported can only prepare black teas. Indeed this reason has been assigned for the inferior nature of the tea hitherto manufactured in that quarter. The Tea Committee, in the correspondence with Government before alluded to, make use of the following decided remark with reference to the Assam tea plants: "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." And perhaps the generality of systematic botanists entertain the same opinion. Linnæus, however, appears to have considered that these teas were produced by two distinct species. In this he has been followed by Sir W. J. Hooker and Messrs. Loddiges, by which last botanists both the species have been figured. But it is not from botanists in England that we must expect the solution of the question; and as no scientific person has as yet seen it sufficiently often in China, we must be content with leaving the question in *statu quo*. It must be here understood that I attach no importance to the opinions of Abel with regard to the specific differences of the plants affording the two teas. The fact is, the question, like all those involving the differences of plants that have been cultivated from time immemorial is one of extreme difficulty, and will only be solved by long and patient study

study of the plants under very various circumstances. Not less conflicting are the statements made by persons resident at Canton as to whether the same plant will produce either green or black teas. Abel was led to suppose that such could be the case, but that the "broad thin-leaved" plant is preferred for making the green tea; and this statement is corroborated by that of a Chinaman who had been eight times in the bohea country, remaining there from four to six months each time, and who stated that "bohea may be cured as hyson, and hyson as bohea." Mr. Reeves, who is well known to some distinguished botanists in England as having turned his attention in some degree to scientific objects, expresses his astonishment at the two teas ever having been confounded, and that the difference in colour between the two infusions is alone sufficient to do away with the supposition that they are the produce of the same plant, differing only in the mode of curing. Mr. Millett, who, in 1827, held a high official appointment in the Honourable Company's factory at Canton, is of a different opinion. He says, that there are two kinds of plants, of which one has a leaf of a much darker green than the other, and that this difference may be partly attributable to cultivation; "but it is to the various modes of preparation that the green and black teas (as they are called in England) of the shops are due." Mr. Reeves explains the contradiction of the various statements thus: "There is a species of tea grown in the province of Canton of a pale-coloured leaf (occasionally mixed with congou tea to make the tea imported under the name of bohea), and this tea can be coloured and made up to imitate various qualities of green tea, and large quantities are yearly thus made; but still it is only an appearance that can be given." Information of a similar nature as that of Millett is given in a decisive tone by Mr. Davis in his account of the Chinese. So that the balance is certainly in favour of the opinion adopted, perhaps rather too hastily, by the Tea Committee. Further proof may be inferred from the fact, that a system of artificial colouring appears to enter into the composition of all the green teas for exportation, and these again it is averred are never used by the Chinese. Although I have been obliged to leave the question unsettled, enough has been said to show that the inferiority of the Assam tea is not entirely owing to its being, as has been said, green tea prepared in the black method. The discovery of the tea within the British territories in India has excited more speculation among scientific men on the Continent than in England itself! M. Alphonse De Candolle, the distinguished son of a most distinguished father, has published an article on it in the *Bibliothèque Universelle de Genève*, for June 1835, and from this an extract has been made in the *Annales des Sciences Naturelles* for February 1836. M. A. De Candolle, judging from the fact that the Burmese make no use of any other tea for infusion but that which is imported overland by the Chinese, contenting themselves with eating the tea of part of their own frontiers manufactured into a pickle, concludes, that the Assamese tea will prove but of inferior quality, being the same with that which I have said the Burmese use as pickle. He says, "Thé sauvage pourrait bien donner un saveur plus forte, plus acre, et un parfum peu délicat. Cette considération cependant rediminue pas, à nos yeux, l'intérêt de la découverte des Anglais. Si la province d'Assam, que touche à la Chine, présente la thé spontané, elle doit être éminemment propre à la culture de cet arbuste. En supposant que la plante sauvage soit d'une faible ressource, la plante cultivée, celle surtout que l'on ferait venir de Chine, pourrait être forte avantageuse."

Abel's Journey,
p. 222.

Royle's Illust.,
p. 111.

Royle's Illust.,
p. 110.

Bot. Mag. (New
Series), t. 3148.

Royle's Illust.,
p. 111.

Davis's Account,
vol. 2, p. 351. 468.

For this, he gives
Mr. Crawford as
his authority.

Note.—The geographical part of this article is very incorrect, owing probably to the limited means of consultation on such a point in the possession of the author.

I now come to the consideration of the steps which in my opinion must be followed, if any degree of success is to be expected. Of these the most important is the importation of Chinese seeds of unexceptionable quality, and of small numbers of the finest sorts of tea plant. I imagine, and I think that most persons will agree with me, that the importation of even the inferior kinds would be more likely to lead to the produce of a marketable article than the cultivation of a wild, or (to use our Indian notions) a more expressive term, jingly stock. The evidence I have before adduced relative to the fact of seeds possessing or not possessing most of the properties of the parent, is, I trust, sufficient to show, that instead of orders being sent for the recall of Mr. Gordon, that gentleman should have been directed to redouble his exertions in procuring

additional seeds and plants. The discovery of the tea plant in Assam I take to be important on two heads: 1st. The fact of its occurring, as to a considerable extent, denizen of certain portions of the wooded tracts, argues volumes in favour of those tracts being the best adapted for its cultivation. 2dly. From the fact that a wild stock is, under certain management, to which I shall have occasion hereafter to allude, reclaimable to a greater or less extent. On both these grounds the most, indeed the only, philosophical course that remained, was to cultivate *imprimis* on the tracts alluded to, the best procurable plants, taking at the same time every precaution towards reclaiming the Assam plants. These same remarks apply to a considerable extent to the nurseries in other parts of British India, unless, indeed, the usual qualities of a jungle stock are expected to be reclaimable by the soils of the Himmalayan range. From what I have said, it will, I think, appear, that the prospect of immediate competition with China was quite visionary. The first step must be, therefore, the importation of seeds, with a small proportion of the best plants, from China; this is still more essential from the total annihilation of those previously imported, and the importation must continue to be for some years, for obvious reasons, an annual one. The seeds and plants are to be planted in the tea localities themselves, and, when these are stocked, in such other situations as may be deemed most eligible. If it be deemed advisable that the seeds should be sown in Calcutta, they are to be sown in goomlahs, and on no account are they to be transplanted. The living plants that are procured must be brought round and sent up in earthen pots; and the choppers of the boats must be so constructed as to admit of being removed whenever it may be deemed necessary. As I have said, the number of plants may be limited; their transmission will not involve a large outlay of money. It should be so managed that they shall arrive in Bengal at the commencement of the cold season. Having located a certain number of good Chinese stocks, and it is with this view alone that I recommend the importation of plants, owing to the greater certainty of success, experiments may be made in crossing, that is, by applying the fertilizing power of pollen of one to the stigmata or communicating organs of fecundation of another; and as according to the law, that the produce of such fecundation possesses the properties of the plants furnishing the pollen, it is obvious that the pollen of the Chinese plants must be applied to the stigmata of those of Assam. By repeating the experiments indefinitely, always applying good pollen from Chinese plants to the plants produced by previous crosses, it may be expected that the indigenous plants of Assam will lose most or all of those bad qualities that may with reason be supposed to exist in it. I need not enlarge further upon this subject, which is one of great extent, and the operation of which requires, in an especial degree, care; it is one, however, of every-day application in countries where horticulture is properly attended to. The only circumstance that can retard the improvement of the Assamese plants under such circumstances, is the existence of a deteriorating quality in the soil, and this there are no grounds for supposing to be the case; even if it be so, the necessity for the experiments is still further increased. There are other methods of improving, or rather reclaiming plants, on which, as they are obvious to everybody acquainted with horticulture, I need not dwell. I allude to grafting, &c. &c.

On the principle that improved culture improves the whole plant, it may be said that the importation of seeds from China is not necessary. But let me ask, which is the best as well as the safest plan? By adopting the one, success is certain, and moreover rapidly so; by adopting the other, its attainment is postponed to a remote, and perhaps to an indefinite period. The fact that wild stocks are more or less irreclaimable, leads me to state, that all the accounts I was enabled, through Mr. Bayfield, to gather, induce me to suppose, that the tea possesses the last bad quality in a considerable degree. All the Chinese, or rather Shan Chinese, agreed in saying, that the wild plant was not considered worthy of being submitted to cultivation; and I must not omit to mention, that the tea of the Pollong districts of Burma, situated to the N.E. of Ava, and which is said to be from the wild stock, has not hitherto, although cultivated to a certain degree from a remote period, undergone any improvement. The step next in importance is, to secure a sufficient number of first-rate Chinese cultivators and manufacturers, both of black and green teas. This can only be done by the usual route; for I found that among all the so-called Chinese, who are to be met with at Mogoung, Bamo, and Ava, as well as among those

those who form the large annual caravans that trade with Burma, there is not a single genuine Chinaman.

From the remarks I have made as to the importance of improving the Assamese plants, it will be evident that certain qualifications are necessary in the person who has the general superintendence of the whole plan. It has been generally allowed, that the superintendence of the culture of any given plant requires, at the least, a certain degree of practical knowledge, and that, if this be combined with some theoretical knowledge, the chances of success are much increased. Now it may be fairly asked, how are the above qualifications fulfilled in the instance of the present superintendent of tea, Mr. Bruce? The question may appear invidious, particularly to those unacquainted with Assam; but the answer is obvious; indeed, to do Mr. Bruce justice, I believe he does not pretend to possess either one or the other. As a zealous, hard-working person, Mr. Bruce cannot be well exceeded; and to these good qualities he adds those of a tolerable acquaintance with the natives of Upper Assam, and of the Assamese language, so far as colloquial intercourse with the lower orders, and the possession of strong physical powers.

The relative merits of the superintendents of tea culture in Java, and in Assam, require no comments. In the former country, we find the scheme superintended by a naturalist of repute, M. Diard, who has, no doubt, contributed largely to its success; in the latter, it is directed by a person who was bred up to a seafaring life, and whose long residence in Assam has been devoted entirely to mercantile pursuits, and the command of gun-boats.

To counteract the above want of two points, which, to speak plainly, appear to me to be of paramount importance, the only requisite condition is, particularly if the tea scheme be of partial extent, to append to the establishment a person well versed in the theory and practice of horticulture, as well as of arboriculture; without this be done, no experiments can be tried with any prospect of success. If none such are procurable in India, many are in England; neither would a larger salary than 300 rupees a month be required to secure the services of a person embodying all the necessary qualifications. He should be responsible for the treatment of the plants, while Mr. Bruce's responsibility should embrace all the other minor details. Relative to this point I may observe, that the idea of the extreme insalubrity of Upper Assam is totally unfounded, at least so far as Europeans are concerned, and has originated from persons of timid habits, in whose eyes blades of grass are death-bearing toorais.

There is another point on which considerable stress is to be laid, particularly when the extremely indolent habits of the natives of Upper Assam are taken into account. I allude to the necessity of some one residing in or as close to the scene of operations as possible, in order that the labourers may be duly kept to their work. Neither can I conceive what other view could be entertained, after the Government had sanctioned the application of Mr. Bruce for an assistant. Be this as it may, both superintendent and assistant reside at Sadiya, three days' march from Tingrei, the chief scene of operations. In this instance the plea of insalubrity cannot be urged: Rangagurrah has every indication of being healthy, and so have several places between that and Tingrei, a distance of about 10 miles. But with regard to insalubrity, no reference can be made to the superintendent, because his freedom from the liabilities of fever formed part of the grounds on which he was raised to his present situation. I may be here allowed to suggest, that the appointment of his assistants should not remain entirely with Mr. Bruce, as was the case in the first appointment. The last point I would beg to urge is, the placing of the scheme under Captain Jenkins, the head authority in Assam, who, in addition to his well-known zeal for the welfare of the province under his charge, adds a degree of general scientific knowledge which but few possess.

I cannot conclude this part of my report without adverting to the extremely desultory manner in which the question of tea culture in India has been treated by every author who has written on the subject, with the exception of Mr. McClelland. To what conclusion but one can we come, when we find an authority, who has been supposed to be acquainted with the question in all its detail, stating very gravely that a temperature between 30° and 80° is requisite; and when we find that this is as gravely taken up by a more popular and more philosophical author. True it is that neither had seen the tea in its native state

when the statements were made, but equally true it is that neither can show a single datum in any of the authors who have noticed the tea as it exists in China, on which to found such a curious and rather broad statement. From such loose data, such indeed as are generally supposed to be inadmissible into questions of scientific import, it is, that a station between Mussori and Deyra Doon is stated to be particularly eligible.

Royle's Illust.,
p. 136.

The truth of Dr. Wallich's statement, "that a very slight acquaintance with the character of the countries where the attempts were made to introduce the cultivation of the tea plant, is sufficient to account for the total failure of them," has been amply proved by the unqualified success of the tea culture in Java; although indeed Dr. Wallich's opinion is strengthened by that of Mr. Royle, who says, that success could not be expected either in Java or Ceylon, the vegetation of both being tropical. I will admit that it is tropical, as indeed is the case in other tropical countries at or about the level of the sea, but I believe that mountains exist in both of the magnificent islands alluded to. I have the authority of Dr. Blume, one of the first living botanists, and of Professor Schouw, a very able writer on botanical geography, for making a contrary statement, to the purport, that the vegetation of the higher regions of Java (above 5,000 feet) is very much like that of the Himmalayas, and probably forms but one with it, that extra-tropical forms exist in lieu of tropical, as oak-woods, instead of fig-woods, &c. But not only do I object to the desultory style of argument, but to the actual contradictions that appear. How can we reconcile the statement, that the tea "appears to attain the greatest perfection in the mild climate about Nankin, with the selections of spots 5,000 to 7,000 feet above the level of the sea, in latitude 33° 19'."

Lind. Introduction
to Botany, p. 513.

Royle's Illust.,
p. 127.

I trust that the spirit of these observations will be taken in the proper light; that they will not be viewed as originating in a spirit of scepticism; but in a strong wish to protect, so far as my abilities will allow, the interest of the Government which I have the honour to serve. That the tea plant may succeed in certain portions of the Himmalayas is probable enough, but I will not hazard any speculations on this point until I know the precise circumstances attending its successful culture in Java.

That it will not succeed for a very long period, unless tea seeds are imported, cannot, I think, be doubted. That the Himmalayas are not so well adapted as Assam for the cultivation, cannot likewise be doubted; for if "it cannot be a difficult task to transfer from one country to another a plant, which grows naturally and is cultivated extensively, to one which possesses so many of the plants which are common to the two," it will, I presume, be allowed to be a much less difficult task to do so, when, with the same similarity in the associated plants, we have the plant referred to itself occurring naturally and extensively. If these premises be correct, it follows that the culture of the tea plant should be restricted entirely to Assam.

Royle's Illust.,
p. 124.

The success of the scheme cannot depend upon fortuitous circumstances, but will do so on the rationality of the plans adopted. This observation, although a truism to a certain extent, is absolutely necessary. But even supposing that the most rational plans be carried into execution, some time will be necessary before the success of the scheme be complete. But what is a period of even 50 years, if at the end of that time really good teas can be exported from Assam! I say 50 years, not that I think it will require so long a period, for had good tea seeds been sent into Assam, as soon after the sittings of the Tea Committee as would have allowed the examination of the tracts, reported to produce tea, by competent persons, it is my firm conviction that good teas might have been manufactured within three years of the present date. As affairs stand now, the scheme must recommence *ab origine*, involving a loss of nearly three years, and of large sums of money; to say nothing of the revulsion that must have taken place in the minds of all interested in its prosecution. I have above stated my conviction, that success is, under the circumstances alluded to, certain; and I have adopted this conviction on the following grounds:

1st. That the tea plant is indigenous to, and distributed extensively over, large portions of Upper Assam.

2d. That

2d. That there is a similarity in configuration between the valley of Assam and two of the best-known tea provinces of China.

3d. That there is a similarity between the climates of the two countries, both with regard to temperature and humidity.

4th. That there is a precise similarity between the stations of the tea plant in Upper Assam, and its stations in those parts of the provinces of Keang-nan and Kiang-see that have been traversed by Europeans.

5th. That there is a similarity both in the associated and the general vegetation of both Assam and those parts of the Chinese tea provinces situated in or about the same latitudes. I have before more than once alluded to the success that has attended the cultivation of the tea plant in Java. I have but little hesitation in affirming, that Java does not present the necessary qualifications to such an extent as does Assam; yet success has been insured to an unexpected degree. This success appears to have been obtained by annual importations of excellent seed, and by great care in procuring the best possible cultivators. Of the degree of the success some idea may be formed by the fact, that a gentleman of great experience recognised in some Java tea, taken to Canton, the flavour of the original stock. It is said to have succeeded at Rio Janeiro, and in the western parts of North America; but in no place but in Java has it been carried to such an extent as to allow of its exportation.

EXTRACT INDIA REVENUE CONSULTATIONS, 25 September 1837.

(No. 82.)—From *W. H. Macnaghten*, Esq., Secretary to the Government of India, to *N. Wallich*, Esq., Secretary to the Tea Committee.

No. 23.

Sir,

I AM directed by the Right honourable the Governor-general of India in Council to acknowledge the receipt of your letter of the 5th instant, with its enclosure, forwarding Mr. Griffith's report on the tea plant of Upper Assam, together with a sample of the Assam souchong tea.

2. His Lordship in Council concurs with you in opinion, that Mr. Griffith is entitled to the approbation of the Government for the zeal and ability which he has manifested on this occasion.

3. The original papers which accompanied your letter are herewith returned, copies having been kept for record.

Council Chamber,
25 September 1837.

I am, &c.
(signed) *W. H. Macnaghten*,
Secretary to the Government of India.

EXTRACT INDIA REVENUE CONSULTATIONS, 30 October 1837.

From Captain *Francis Jenkins*, Agent to the Governor-general North-East Frontier, to *N. Wallich*, Esq., M. D., Secretary to the Tea Committee, Fort William; dated the 5th October 1837.

No. 27

Sir,

I HAVE the honour to forward, for submission to the Tea Committee, the result of Mr. Bruce's experience on the manufacture of black tea, as at present conducted by the Chinese labourers imported by the Government, together with some information collected by Mr. Bruce from them of the treatment of the plant in that part of the country from which these Chinamen have come, and observations on the growth of the indigenous plant in the Sudya district.

Pol. Depart.
Miscellaneous

2. This memoir by Mr. Bruce appears to me very creditable to him, as it shows the attention he has been paying to the charge with which he has been entrusted, and I think it might beneficially be made public through the medium of the Agricultural Society's transactions. Mr. Bruce has here given all the information on the manufacture of black tea that is obtainable by him, and it may probably not be without use to those who are attempting to manufacture

tea elsewhere; but it is to be hoped that it may draw forth the information of others of our countrymen who may have had more opportunities of observing or ascertaining the growth and culture of the tea plant in different provinces, soils, and aspects; and learning the practice of manufacturing tea, either in China or Java, by natives of more than one province of the former country, and confined not only to the preparation of black, but embracing also the preparation of green and other teas.

3. We are now very devoid of information on all subjects regarding the tea plant, and any contributions which would afford us the means of comparing the relative value of our tea plants and soils, their culture, and the manufacture of tea, could not but prove valuable.

4. In looking over Mr. Bruce's observations, I have been struck with the confirmation of the correctness of Mr. Bruce's views in clearing away the high jungle, exposing the tea plants to the sun, and cutting them down nearly to the surface of the ground. These measures appear to have been justified by the information of the Chinamen, and by subsequent experience from the growth of the plants; although, if I recollect rightly, they were entirely condemned by Mr. Griffith.

5. The Sketch Map annexed will serve to show the number of tea tracts already discovered; and there is a certainty that we are far from yet knowing the extent to which this invaluable plant is spread over that part of Upper Assam. Looking at the abundance of the indigenous plant, the great facility with which it can be propagated, and the wide extent of the appropriate soils and situations for the tea plant which we command round Sudya, I think I may be allowed to conclude, that nothing now remains to be ascertained to establish the expediency of carrying on the experimental plantations, than to have the opinions of experienced persons on the quality of the tea. When the black tea of last year's preparation, which I directed to be sent down, reaches Calcutta, the Committee will have the means of obtaining some judgment on the value of the article as a black tea, although great allowances should be made for the disadvantages under which the tea has been prepared, packed, and preserved. It still, from the unfortunate delay in procuring green-tea manufacturers from China, remains to be known what sort of an article may be turned out from the Assam plant as green tea; notwithstanding, however, that we know so little of the quality of the manufactured tea, I feel convinced myself that a good, wholesome, and marketable article has already been proved to be the successful result of the experimental plantations, and that enough is known to warrant the Government to make a far greater outlay than has yet been ventured on, in taking measures for extending the plantations, and providing a numerous colony of labourers.

6. I have called upon Mr. Bruce to endeavour to give some idea of the quality of tea he could probably manufacture with his present command of labourers, and I shall have occasion to address the Committee again when his reply is received. I imagine that he could make about 200 or 300 chests in the year, and if he can make this quantity or more, without raising the pay of his labourers exorbitantly, he ought, I conceive, to be authorized to do so; for the larger the quantity made, the less will be the proportionate charge of superintendence, and the more likelihood there will be of engaging great capitalists to embark in the speculation, from the knowledge that the means of employing their money is not limited to a confined tract, or a mere experimental plantation.

Governor-General's
Agent's-Office, N. E. Frontier,
5 October 1837.

I have, &c.
(signed) Francis Jenkins,
Agent to the Governor-General.

(True copy.)

(signed) N. Wallich, M.D.
Secretary to the Tea Committee.

1 Account of the Manufacture of the Black Tea, as now practised at Sudeya in Upper Assam, by the Chinamen sent thither for that purpose; with some Observations on the Culture of the Plant in China, and its growth in Assam. By C. A. Bruce, Superintendent of Tea Culture.

The method of making Black Tea.

IN the first place, the youngest and most tender leaves are gathered; but when there are many hands, and a great quantity of leaves to be collected, the people employed nip off, with the forefinger and thumb, the fine end of the branch with about four leaves on, and sometimes even more, if they look tender. These are all brought to the place where they are to be converted into tea; they are then put into a large, circular, open-worked bamboo basket, having a rim all round two fingers broad (*see fig. 1*). The leaves are thinly uttered in these baskets, and then placed in a framework of bamboo, in all appearance like the side of an Indian hut, without grass, resting on posts, two feet from the ground, with an angle of about 25° (*fig. 2*). The baskets with leaves are put in this frame to dry in the sun, and are pushed up and down by long bamboo, with a circular piece of wood at the end (*fig. 3*). The leaves are permitted to dry about two hours, being occasionally turned; but the time required for this process depends on the heat of the sun. When they begin to have a slightly withered appearance, they are taken down and brought into the use, where they are placed on a frame (*fig. 4*) to cool for half an hour. They are then put into smaller baskets, of the same kind as the former, and placed on a stand (*fig. 5*). People are now employed to soften the leaves still more, gently clapping them between their hands, with their fingers and thumb extended, and tossing them up and letting them fall, for about five or ten minutes. They are then again put on the frame (*fig. 4*) during half an hour, and brought down and clapped with the hands as before. This is done three successive times, until the leaves become to the touch like soft leather; the clapping and putting away being said to give the tea the black colour and bitter flavour. After this the tea is put into hot cast-iron pans (*fig. 6*), which are set in a circular mud fire-place, so that the flame cannot ascend round the pan to incommode the operator. This pan is well heated, by a straw or bamboo fire, to a certain degree. About two pounds of the leaves are then put into each hot pan, and spread in such a manner that all the leaves may get the same degree of heat. They are every now and then briskly turned with the naked hand, to prevent a leaf from being burnt; when the leaves become inconveniently hot to the hand, they are quickly taken out and given to another man, with a close-worked bamboo basket (*fig. 7*) ready to receive them. A few leaves that may have been left behind are smartly brushed out with a bamboo broom: all this time a brisk fire is kept up under the pan. After the pan has been used in this manner three or four times, a bucket of cold water is thrown on, and a soft brickbat and bamboo broom used, to give it a good scouring out; the water is thrown out of the pan by the brush on one side, the pan itself being never taken off. The leaves, all hot, on the bamboo basket, are laid on a table that has a narrow rim on its back, to prevent these baskets from slipping off when pushed against it. The two pounds of hot leaves are now divided into two or three parcels, and distributed to as many men, who stand up to the table with the leaves right before them, and each placing his legs close together; the leaves are next collected into a ball, which he gently grasps in his left hand, with the thumb extended, the fingers close together, and the hand resting on the little finger. The right hand must be extended in the same manner as the left, but with the palm turned downwards, resting on the top of the tea leaves. Both hands are now employed to roll and propel the ball along; the left hand pushing it on, and allowing it to revolve as it moves; the right hand also pushes it forward, resting on it with some force, and keeping it down to express the juice which the leaves contain. The art lies here in giving the ball a circular motion, and permitting it to turn under and in the hand two or three whole revolutions, before the arms are extended to their full length, and drawing the ball of leaves quickly back without leaving a leaf behind, being rolled for about five minutes in this way (*fig. 8*). The ball of tea leaves is from time to time gently and delicately opened with the fingers, lifted as high

Plate IX.

Plate X.

Plate X.

as the face, and then allowed to fall again. This is done two or three times, to separate the leaves; and afterwards the basket with the leaves is lifted up as often, and receives a circular shake to bring these towards the centre. The leaves are now taken back to the hot pans, and spread out in them as before, being again turned with the naked hand, and when hot taken out and rolled; after which they are put into the drying basket (fig. 9), and spread on a sieve, which is in the centre of the basket, and the whole placed over a charcoal fire. The fire is very nicely regulated; there must not be the least smoke, and the charcoal should be well picked.

Plate X.

When the fire is lighted, it is fanned until it gets a fine red glare, and the smoke is all gone off; being every now and then stirred, and the coals brought into the centre, so as to leave the outer edge low. When the leaves are put into the drying basket, they are gently separated by lifting them up with the fingers of both hands extended far apart, and allowing them to fall down again: they are placed three or four inches deep on the sieve, leaving a passage in the centre for the hot air to pass. Before it is put over the fire, the drying basket receives a smart slap with both hands, in the act of lifting it up, which is done to shake down any leaves that might otherwise drop through the sieve, or to prevent them from falling into the fire and occasioning a smoke, which would affect and spoil the tea. This slap on the basket is invariably applied throughout the stages of the tea manufacture. There is always a large basket underneath to receive the small leaves that fall, which are afterwards collected, dried, and added to the other tea; in no case are the baskets or sieves permitted to touch or remain on the ground, but always laid on a receiver with three legs (fig. 11). After the leaves have been half dried in the drying basket, and while they are still soft, they are taken off the fire and put into large open-worked baskets (fig. 1), and then put on the shelf (fig. 4), in order that the tea may improve in colour.

Plate X.

Plate IX.

Next day the leaves are all sorted into large, middling, and small; sometimes there are four sorts. All these, the Chinese informed me, become so many different kinds of teas; the smallest leaves they called Pha-ho, and the second Pow-chong, the third Su-chong, and the fourth, or the largest leaves, Tay-chong. After this assortment, they are again put in the sieve in the drying basket (taking great care not to mix the sorts) and on the fire, as on the preceding day; but now very little more than will cover the bottom of the sieve is put in at one time, the same care of the fire is taken as before, and the same precaution of tapping the drying basket every now and then. The tea is taken off the fire with the nicest care, for fear of any particle of the tea falling into it. Whenever the drying basket is taken off, it is put on the receiver (fig. 11), the sieve in the drying basket taken out, the tea turned over, the sieve replaced, the tap given, and the basket placed again over the fire. As the tea becomes crisp, it is taken out and thrown into a large receiving basket, until all the quantity on hand has become alike dried and crisp; from which basket it is again removed into the drying basket, but now in much larger quantities. It is then piled up eight and ten inches high on the sieve in the drying basket; in the centre a small passage is left for the hot air to ascend; the fire, that was before bright and clear, has now ashes thrown on it to deaden its effect, and the shakings that have been collected are put on the top of all; the tap is given, and the basket with the greatest care is put over the fire. Another basket is placed over the whole, to throw back any heat that may ascend. Now and then it is taken off, and put on fig. 11; the hands, with the fingers wide apart, are run down the sides of the basket to the sieve, and the tea gently turned over; the passage in the centre again made, &c., and the basket again placed on the fire. It is from time to time examined, and when the leaves have become so crisp that they break with the slightest pressure of the fingers, it is taken off, when the tea is ready. All the different kinds of leaves underwent the same operation. The tea is now, little by little, put into boxes, and first pressed down with the hands and then with the feet (clean stockings having been previously put on).

Plate X.

Plate X.

There is a small room inside of the tea house, seven cubits square and five high, having bamboos laid across on the top to support a network of bamboo, and the sides of the room smeared with mud to exclude the air. When there is wet weather, and the leaves cannot be dried in the sun, they are laid out on the

the

the top of this room on the network, on an iron pan, the same as is used to heat the leaves; some fire is put into it, either of grass or bamboo, so that the flame may ascend high; the pan is put on a square wooden frame (fig. 12) that has wooden rollers on its legs, and pushed round and round this little room by one man, while another feeds the fire, the leaves on the top being occasionally turned; when they are a little withered, the fire is taken away, and the leaves brought down and manufactured into tea, in the same manner as if it had been dried in the sun. But this is not a good plan, and never had recourse to if it can possibly be avoided.

A DIALOGUE between Mr. *C. A. Bruce* and the China Black-Tea Makers.

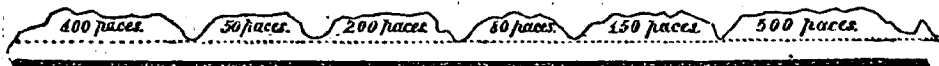
“ Does the China tea plant grow mostly on the mountains of China, or in the valleys?—About seven parts grow on the mountains, and three in the valleys. Does the tea plant grow amongst the snow?—Yes. Does not the snow kill or hurt the plants?—It hurts them very little; it may kill some of the old trees, but often new shoots come up from the old plants. To what age does the tea plant attain in your country?—Generally, about 50 years; but some only live 10. How do you plant the tea seeds?—I dig a hole, about four fingers deep and eight inches in diameter, and put as many as I can hold in both hands into it, then cover it up. How long is it before the seedlings come up, and in what months do you put them into the ground?—We sow some in November and December, and some in January; when the rains set in they come up. When are the plants fit for plucking?—Sometimes in the third and sometimes in the fourth year, according to the soil. How high are they in the third year?—From one to two cubits; a great deal depends on the soil. If you were not to pluck the leaves, would the plants grow higher?—To be sure they would; it is the constant plucking of the leaves that keeps the plants low. How many of the seeds that you sow come up in general?—If good seed, from 10 to 20. Do you allow them all to grow in the same place, or do you transplant them afterwards?—We allow them all to grow, and very seldom transplant; if we do, it is performed in the rains, and from four to six plants are put close together, so as to form a fine bush. At what distance is one tea bush from another?—From three to four feet apart, on small ridges of earth, eight inches to a foot high, a hollow space being left between to draw off the rain water; the bushes are at equal distances from each other, and in straight lines. Do you ever dig trenches, to prevent the plants being washed away?—Yes, we are obliged to dig many, the shape and form of the trenches depend upon the ground and situation. What quantity of manufactured tea do you think each tea plant produces in one season?—This varies very much; some plants only produce two rupees' weight, while others produce a pound and a half; but about a quarter of a pound all round, I should think, the first crop; the second crop a little less, and some people never take the third crop, for fear of killing the trees. Do you always manufacture the tea in China, in the same way as you have the Assam tea?—The same. Do you know how to make green tea?—No. Do you ever put anything to the tea to give it a flavour?—Never. Do you ever sow or plant in the shade, or have you any trees to shade the plants?—No; there are a few large trees here and there, but not for shade. If your plantations are on the side of mountains, they cannot have the sun all day?—True; in some plantations the plants are in the shade for nearly half the day: some China merchants, that come to purchase tea, pretend to know which is shady and which sunny by the smell, the sunny being preferred. Do the tea plants cast all their leaves in the winter?—Great numbers fall, but the plants always retain some. Which do you think have the most juice when they are rolled, the leaves from the sunny tract, or those from the shady?—Those from the shady tract. Which require to be most dried in the sun?—The shady-tract leaves. Which of the two teas do you think best?—That from the sunny tract. Which produce most leaves, those in the shade, or those plants that have been cut down, and afterwards permitted to grow up?—The latter twice as many. Which do you think produce most seeds?—Those in the sun. Do you ever, in China, plant from slips?—No. After you have made the tea in China, how long is it before it is fit to drink?—About one year; if drunk before that, it will taste unpleasantly and of the fire, and will affect the head. How long will tea keep without being damaged?—If well secured from the air

in boxes, it will keep good for three or four years. In which months do you commence plucking the leaves in China?—If the weather is warm and fine, and the season has not been a very cold one, the first crop commences in May, the second crop about 47 days after the first, and the third crop about the same time after the second, or 42 days. When you roll the China leaves, do you think they contain more juice, or less, than the Assam ones?—The China leaves, I think, have more juice, and the leaves are much smaller. Is the soil of the China tea the same as the Assam?—The same. How often do you weed your plantations?—Once in the rains, and once in the cold weather.”

The place these Chinamen speak of is called “Kong-see,” on the mountains, about 40 days’ journey by water to Canton, and two days’ journey from the great tea country “Mow-ee-san.”

A few Observations on the Tea Plant of Assam.

The tea plants in Assam have in general been found to grow, and to thrive best, near small rivers and pools of water, and in those places where, after heavy falls of rain, large quantities of water have accumulated, and in their struggle to get free have cut out for themselves numerous small channels. The sort of land to which I allude will be, perhaps, better explained by means of a diagram :



The dotted line shows the limit of the highest flooding. On the top of this land you must fancy a thick wood of all sorts and sizes of trees, and amongst these the tea tree, struggling for existence; the ground here and there having a natural ditch cut by the rain water, which forms so many small islands. The largest piece of ground that I have met with, I think was about 600 paces without a break. I also add a section of the little river Kahong, where the tea plant abounds, exhibiting many small islands, every one of which is covered with trees of various sizes, and the tea among them; the land being never wholly inundated in the rains, though nearly so. This kind of land is called Coorkah Mutty. I have never met with the tea plants growing in the sun, but invariably under shade, in thick woods, or what we call tree jungle, and only there, and in no other jungle whatever. It struggles for existence amongst so many other trees that it becomes tall and slender, with most of its branches high up. The largest tea tree I ever met with was 29 cubits high, and four spans round: very few, I should say, attain that size. I have taken great numbers of tea plants from the jungles, brought them four to eight days’ journey to my own house, and planted them in the sun, that is, without any shade. During the first six months the half of them died; at the end of the year about one quarter of what I had originally brought only lived; at the end of the second year, there was still less; those that did live threw out leaves and blossoms, but the fruit never came to perfection. The plants I speak of were from one to three feet high; if they have grown anything since they were transplanted, it has hardly been perceptible, either in height or thickness; many of them have had the advantage of a little shade from the trees in my garden, and those that had the most shade, I find, look healthier than those that had none, and they throw out more leaves. I have often read and heard of the China tea plant growing no higher than three feet; their being planted in the sun, and their leaves constantly gathered, I think accounts for it. A short time ago I requested, and got permission from Government, to try some experiments in my own way. About the middle of last March I brought 3,000 or 4,000 young plants from their native soil, in the Muttuck country, about eight days’ journey, and planted them in the tree jungles of this place, eight and ten close together, in deep shade. From 400 to 500 were planted in different places, some miles from each other. In the latter end of May I visited them, and found them as fresh as if they had been in their native soil, throwing out fresh leaves. As these thrived so well, last June I brought from the same place 17,000 more young plants, and planted them in Coorkah Mutty, about two miles from this place, in deep shade; they are now throwing out new leaves,

and

and thriving as well as could be expected, although the soil here is nothing like that from whence they were taken, in which point alone the places differ. To show how very hardy they are, I may mention, that they were in the first instance plucked out by the roots by the village people who were sent to bring them from their native jungles, put upright into baskets, without any earth, brought two days' journey on men's backs, put upright into canoes, a little common earth only being thrown amongst their roots, and were from seven to twenty days before they reached me; and then they had to be carried half a day's journey to the intended new plantation, and were four or five days with only a little moist earth at their roots, before they were finally put into the ground; and yet these plants are doing well, at least the greater part of them. I will give another instance of their hardiness. Last year the Government sent a deputation of three scientific gentlemen to examine the Assam tea plant, Dr. Wallich, Mr. Griffith, and Mr. M'Clelland; the two former botanists, the latter a geologist. Dr. Wallich, who conducted the deputation, requested me to accompany them, being the only European who had ever visited the tea tracts, as the different localities are called. One day after having seen some tea, in company with these gentlemen, and as we were returning, I was informed, by some natives, of another patch or tract of tea that had been cut down. We went and examined it, and found the plants just coming up, about six inches high. On inquiry, we were told that the villagers took the tea plant to be so much jungle, and therefore nearly cut all of it down close to the ground, and set fire to the whole, and then planted paddy or rice on the spot. The crop of paddy had just been cut and brought in. When we saw the plants, the shoots were coming up from the roots and old stumps, thick and numerous. Some tea plants I noticed had only been cut a foot, and some two to four feet, from the ground; all these threw out numerous shoots and leaves, an inch or two below where they had been cut. I afterwards converted this piece of ground into a tea garden, on account of Government, and now it is one of the finest I have. Where there was formerly one tea plant, there are now upwards of a dozen; the new shoots from the old cuttings forming a fine bush, and showing a great contrast to some of the original trees, which I have permitted to stand, with slender trunks, and a few branches only at the top. This tract or garden has yielded more tea this season than twelve times the same space of ground in the jungles would have done. I found that as the plants that had been cut down grew up again, the leaves acquired a yellowish tinge, from their exposure to the sun, and were much thicker than those in the jungles; but this yellow tinge has worn off, and the leaves are now as green as those in the shade. As this tract answered so well by being cut down, and set fire to, I tried the same experiment upon another tract close by, and it has come up to what I expected of it, eight to twelve new shoots having risen from the old stumps in the place of one. It is now a very fine tea tract. Not knowing how this plan of cutting down might answer eventually, and how it might affect the plants, I took another tract in hand, allowed all the tea plants to remain, but cut down all the other trees, large and small, that gave them shade, piled them up, and what I could not set fire to, I threw into the water-courses. These tea plants are doing well; but still each plant remains single, consequently has not many leaves, and is much in the same condition as when under shade. We have not had sufficient time to show what effect the sun may have on the leaves, and the tea made from them. This tract has a curious appearance, the plants appearing hardly strong enough to support themselves now they are deprived of their friendly shade. I have some other tracts under experiment; some where I have permitted the jungle trees to grow, and only cleared away the brushwood and other small trees, to admit the rays of the sun; others with very little shade. I have cut off branches of the tea plants, and laid them horizontally in the ground, with an inch or two of earth on them, and they have thrown out numerous shoots the whole length of the branch; other branches were simply pushed into the earth, and they have grown; but this was all in the shade: I do not think they would answer so well in the sun.

I have the pleasure of furnishing a Map which I have made of all the tea tracts I have discovered; since it was composed, several more tracts have been discovered, which I have not had time to enter. It should be observed, that south from Suddeeah to the Debrée river is generally termed Chyquah; south of Debrée river is called the Muttuck country, as far as the Burro Dehing river;

Plate XI.

river; south of the Burro Dehing river is situated Rajah Purundah Sing's country. From the hill and river called Jourah Poong, which is nearly at the source of the Debree river, to a place called Beesa, south of the above hill, on the Burro Dehing river, near the little river Juglow Pauney, is called the Singpho country, being all to the east of the above line. Now it will be perceived, that not a single tea tract has been discovered north of the Debree river, and that they are all on the south side of it. The Muttuck country, which I have traversed most, appears to me to be one vast tea country; and I feel confident that not one half of its tea tracts have been yet discovered. The whole of the soil of the Muttuck country appears well adapted for tea. I have taken particular notice of it, digging and examining it at every place where I have stopped. Great numbers of the tea tracts have been cut down, in sheer ignorance, by the natives, and converted into paddy fields. I know of three tracts where the paddy had been collected, and the tea plants had sprung up again; when these are neglected, they all rise up into thick wood jungle. Several of these places have been pointed out to me by some of the old inhabitants. Almost every inhabitant of the Muttuck country knows now the tea leaf, seeing how much we prize it, and getting little rewards from me when they bring in a branch from any new tract. There is plenty of tea in Rajah Purundah's country, but he is too lazy to trouble himself about it; he is not even acquainted with those places laid down in my map. I have lately heard of a very extensive tract in his country, said to be as large as a dozen tracts put together. Several tracts are 800 paces long, and nearly the same in breadth, and others only 100; but they have not all been properly examined, and may prove much larger. All these tracts can be enlarged almost to any extent, from the numerous seedlings that are found amongst the tea plants, from the great number of seeds that can be collected every year, and from the immense number of cuttings that may be planted. With respect to the seedlings, I have sown numerous seeds at Suddeeah, in the sun; many have come up, and appeared to thrive very well for the first year; but there was an insect, the mole cricket I think it is called, which used to nip off the young and tender leaves, and carry them into a hole under ground near the root of the plant; and I never succeeded in getting one plant to live. But last year I sowed some seeds in my garden under the shade of trees and bushes; they have come up, and are thriving very well. The seeds I sowed in the sun last year in the Muttuck country, and in their native soil, in one of my tea tracts, have also come up and are doing well. The tea tracts in the Singpho country are much larger than those in the Muttuck. The Singphos have known and drank the tea for many years, but they make it in a very different way from what the Chinese do. They pluck the young and tender leaves, and dry them a little in the sun; some put them out into the dew, and then again into the sun, three successive days; others only after a little drying put them into hot pans, turn them about until quite hot, and then place them into the hollow of a bamboo, and drive the whole down with a stick, holding and turning the bamboo over the fire all the time until it is full, then tie the end up with leaves, and hang the bamboo up in some smoky place in the hut; thus prepared, the tea will keep good for years. A good way further east, they dig holes in the earth, line the sides with large leaves, boil the tea leaves, throw away the decoction, put the leaves into the hole, which they cover over with leaves and earth, and then allow the whole to ferment; after which it is taken out, filled into bamboos, and in this manner prepared, taken to market. These Singphos pretend to be great judges of tea. All their country abounds with the plant, but they are very jealous, and will give no information where it is to be found, like the Muttuck people. All the Singpho territories are over-run with wood jungle, and if only the underwood was cleared, they would make a noble tea country. The soil is well adapted for the plant. Nearly three years ago, I by accident left a few Singpho tea plants, which I had carried away, on the banks of the New Dehing, three days' journey from the place where I had got them; they were discovered by some Singpho friends of mine, and stuck into the earth; and there they are now growing, as if they had never been transplanted, and notwithstanding they were put into the shade. The Singpho country is a fine one, but as long as that nation can get the tea leaves from the jungles, they never will cultivate the plant. The country is thinly inhabited by a set of men who are always fighting amongst themselves. The tea is said to grow on the

top of the Nagah hills, marked in my map south of Ningrew, on the banks of the Burro Dehing. All the tea tracts laid down are in the valleys.

The above observations have been thrown together in a hurry, without much order. I therefore hope that allowances will be made for their imperfections. I may at some other time resume the subject, if it is thought of any interest.

(signed) *C. A. Bruce*,
Superintendent of Tea Culture in Assam.

EXTRACT INDIA REVENUE CONSULTATIONS, 30 October 1837.

(No. 97.)—From *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, to the Tea Committee, dated 30 October 1837.

No. 30.

Gentlemen,

I AM directed by the Honourable the President in Council to acknowledge the receipt of your Secretary's letter, dated the 16th instant, with its enclosures, and to inform you, in reply, that his Honor considers Mr. Bruce's "Account of the manufacture of the black tea, as now practised at Sudiya by the Chinamen sent up for that purpose, with some observations on the culture of the plant in China, and its growth in Assam," to be an interesting and valuable paper, and highly creditable to the zeal and intelligence of the gentleman by whom it has been drawn up. You are requested to communicate to Mr. Bruce the acknowledgments of the President in Council.

2. His Honor has directed 500 copies of the paper to be printed, both for transmission to the Honourable the Court of Directors, and for the information of the public in this country and in England.

I have, &c.

(signed) *R. D. Mangles*,
Officiating Secretary to the Government of India.

Council Chambers, 30 October 1837.

EXTRACT INDIA REVENUE CONSULTATIONS, 9 April 1838.

From the Tea Committee, to *R. D. Mangles*, Esq., Officiating Secretary to Government of India; 20 March 1838.

No. 19.

Sir,

WE have the honour to report, for the information of the Honourable the President in Council, that there are at present in readiness, at our office, for transmission to the Honourable the Court of Directors, a large supply of samples of Assam tea, consisting of 12 large boxes of paho and souchong, assorted as follows:—

Paho, 1st quality -	-	-	-	-	-	-	-	-	-	1 box.
Ditto, 2d ditto -	-	-	-	-	-	-	-	-	-	4 —
Ditto, 3d ditto -	-	-	-	-	-	-	-	-	-	1 —
Souchong, 1st quality	-	-	-	-	-	-	-	-	-	4 —
Ditto - 2d ditto -	-	-	-	-	-	-	-	-	-	1 —
Ditto - 3d ditto -	-	-	-	-	-	-	-	-	-	1 —

12

2. Each box contains on an average 19 seers, or 38 lbs. of tea, carefully packed in a leaden canister made by the manufacturers lately arrived from Canton, and marked as above, both in Chinese and English. The boxes are severally covered with the proper sort of matting, secured by slips of rattan, and addressed to the Honourable Court in the usual manner.

3. The consignment from which these samples were taken arrived in Calcutta on the last day of January. Owing to a deficiency in the original packing, and the great degree of dampness to which the boxes had been exposed during the passage from Assam, a considerable proportion of the tea was either wholly* spoiled,

* Amounting to what would have filled about five boxes more.

spoiled, or so much deteriorated, that no process, we believe, could have restored it to anything like a fair quality. We have therefore rejected all that portion as unfit to be sent home, at least with the present supply; deeming it a matter of primary importance that the value of the first samples transmitted to Europe should not be diminished by anything that might add to the many disadvantages under which they must necessarily arrive at a destination where they will in all probability have to be subjected to the severe test of examination by the first tea inspectors in London.

4. We beg most particularly to urge on the consideration of his Honor in Council, that not only the plants from which the leaves were gathered, still in their original wild and uncultivated state, but the details of the various processes employed in preparing and transmitting the tea, must obviously have laboured under the many and serious difficulties and obstacles of a first attempt, but which it may reasonably be expected will be diminished, and progressively be overcome, as further trials are made. Besides which, it ought to be borne in mind, that, strange as it may appear, it is by no means settled whether it is not actually the green sort that has been prepared in the fashion of black tea; a point which can only be satisfactorily determined when the green tea manufacturers are set at work in Assam.

5. The tea in question arrived here under the designations of paho and souchong. In assorting each of these into three qualities, as noted in paragraph 1, our Secretary has been guided partly by the opinion of the Chinese assistants now here, and partly by his own discrimination of the difference in the flavour and appearance of the teas after they had undergone preparation for being repacked. Likewise, and in the first instance, by the various degrees of preservation in which he received the cargo from Assam, the process of preparation alluded to above consisted in gradually drying the tea over a nicely regulated coal-fire covered with ashes, in baskets made on purpose by the Chinamen, having the form of two inverted cones, with their ends truncated, and having an open sieve in the centre, as described and figured in Mr. Bruce's memoir on the manufacture of tea in Upper Assam, p. 110, fig. 9, 10. This precautionary measure our Secretary deemed absolutely necessary to prevent mouldiness, and consequent damage to the tea during the sea voyage.

Vide Plate X.

6. Our Secretary has been at pains to learn that it has always been customary in China to bestow great attention in preventing consignments of tea from being shipped on board vessels that have cargoes consisting of articles of strong savour, and which are known to be injurious to the delicate and fugacious aroma of tea, whether by their odour, or heating properties, or the like; and that it is usual even to plank off the space allotted for the chests. We accordingly solicit that such orders may be issued in regard to the shipment of the 12 boxes, as may be deemed best calculated to prevent any accident from happening to their contents from any of those sources. In case it should be deemed expedient to entrust the despatch to our Secretary's care, we are persuaded he will use the best diligence and care to procure freight in an early ship at the lowest rate possible, and under such engagements as will prevent any chance of injury during the voyage.

7. We beg leave to forward the accompanying small muster of the first quality of paho, and a large canister of the second quality of the same sort, regretting that we have none left of the souchongs, every leaf of it having been consumed in filling up the boxes.

8. We cannot close this letter without expressing our obligation to our Secretary for the skill and exceeding trouble he has taken to secure for this despatch of tea, on its arrival with the Honourable Court, every possible chance of its being found in a perfect and unimpaired condition, and that to him will be due whatever commendation may be considered ought to attach to the success of this novel and difficult undertaking.

We have, &c.

(signed)

J. Pattle.

J. W. Grant.

R. D. Mangles.

C. K. Robison.

Ram Comul Sen.

Rajah Radhacant

Bahadoor.

Calcutta, 20 March 1838.

EXTRACT INDIA REVENUE CONSULTATIONS, 9 April 1838.

(No. 25.)—From *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, to the Tea Committee; dated 9 April 1838.

No. 20.

Gentlemen,

I AM directed by the Honourable the President in Council to acknowledge the receipt of your letter of the 20th ultimo, and in reply to state, that his Honor in Council approves the measures that have been taken to preserve and pack the tea of Assamese production, which it is proposed to forward to the Honourable the Court of Directors, and that he has noticed with much satisfaction the testimony borne by the Committee to the zealous and valuable services rendered by Dr. Wallich on this occasion.

Revenue
Department.

2. His Honor in Council approves your suggestion, that the engaging of freight for the tea should be left to your Secretary. He is authorized to take measures accordingly, and he will send the shipping documents to this department for despatch to the Honourable Court.

I have, &c.

Council Chamber,
9 April 1838.

(signed) *R. D. Mangles*,
Officiating Secretary to the Government
of India.

From *N. Wallich*, Esq., M. D., Secretary to the Tea Committee, to *R. D. Mangles*, Esq., Officiating Secretary to Government of India, Revenue Department; dated 29 March 1838.

No. 21.

Sir,

I AM directed by the Tea Committee to report, for the information of the Honourable the President of India in Council, that the artificers, who were authorized to be procured from China in Mr. Secretary Macnaghten's letter, No. 96, dated 14th November 1836, arrived in the Futte Salam on the 1st February, and have resided in this garden ever since. The party consists of two green-tea manufacturers, two box-makers, and one canister-maker.

2. In the Committee's letter of the 20th instant, the Government were informed that the above five Chinamen had been of much service in the preparation and packing of the 12 chests of tea at present ready for despatch home. But it is desirable now that these men should be forthwith sent to Upper Assam, and I am directed to solicit, that his Honor in Council will please to sanction the necessary expenses for a boat and a trustworthy peon, for the occasion.

3. It appears from a counterpart of the agreement originally made with the Chinamen, that each received on the 23d November last an advance of six months' wages, at the rate of 15 dollars per month. On the other hand, it is evident from the repeated assurances of the men, that they took the said advance in the belief, that they would not reach their final destination in much less than six months, during which period they would be at no expense whatever, it being expressly stipulated in the agreement, that the men were to have free passage, food, &c. on shipboard. They accordingly left the whole amount of their advances with their families at Canton, and did not even provide themselves with a sufficiency of clothes. Under these circumstances, it was necessary to allow them a small monthly sum of six rupees for each man, by way of subsistence money, instead of insisting on any deduction from their regular wages (when these should become due); and the Committee was the more anxious to grant them this indulgence, as they expressed themselves a good deal disheartened on learning that two of their countrymen, who were sent up to Assam in 1836, had died; and, as the total amount of this extra expense, including five pieces of cloth to be made into dresses, will not exceed 200 rupees.

4. The present being a favourable opportunity for sending another Chinese interpreter in lieu of the man who died in Assam in July last year, as intimated in the Committee's letter to you under date the 15th November, I am directed to solicit the sanction of Government for engaging a properly-qualified person, at a salary not exceeding 100 rupees a month, which was the rate allowed the late interpreter. A respectable person of this description, besides being indispensably necessary in Assam, may, with propriety, be sent in charge of the newly-arrived Chinamen, whereby the expenses for an overseer will on this occasion be superseded.

5. The Committee further request permission to purchase a quantity of tin and lead, in the proportion of one-fourth of the former, and three-fourths of the latter, sufficient for making 200 or 300 canisters. About 20 maunds of lead, at eight rupees per maund, and five maunds of tin, at 25 rupees per maund, may be sent with the canister-maker. The men will also require a few tools, which may be easily procured, and will not exceed 20 or 30 rupees.

6. In conclusion, I am directed to submit the enclosed bill for expenses incurred in making a number of tea-boxes and canisters, amounting to Company's rupees 61. 10. 3. Twelve of these boxes and canisters are filled with tea; one round canister was forwarded to you with the Committee's letter, dated the 20th instant, and five large boxes and canisters are ready at this office for future use.

I have, &c.

Tea Committee's Office, Hon. Com.
Botanic Garden, 29 March 1838.

(signed) *N. Wallich*, M. D.,
Secretary.

The Honourable Company, Debtor.

No 22.

To Expenses incurred in making 17 large boxes with canister, and four separate round canisters for holding samples of tea.

1 maund and 33 seers of lead for the canisters	- - -	Rupees	15	15	9
24 seers of tin for ditto	- - -	- - -	16	9	6
43 planks for the boxes	- - -	- - -	15	9	9
250 one-inch nails	- - -	- - -	-	5	-
12 coarse seetul patty for covering the boxes	- - -	- - -	4	11	-
Charcoal for melting lead, &c., and for drying the tea	- - -	- - -	4	-	-
			<hr/>		
			57	3	-
Sundry petty charges for rosin, flour, mustard, oil, chalk, &c.	- - -	- - -	4	7	3
			<hr/>		
Company's Rupees			61	10	3

Received payment.

Tea Committee's Office,
Hon. Company's Botanic Garden,
30 March 1838.

(signed) *N. Wallich*, M. D.,
Secretary.

To C. Trower, Esq., Civil Auditor.

(signed) *J. Pattle*,
Chairman of the Tea Committee.

EXTRACT INDIA REVENUE CONSULTATIONS, 21 May 1838.

From *N. Wallich*, Esq., M. D., Secretary to the Tea Committee, to *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, Revenue Department; dated 17 May 1838.

Sir,

I AM directed by the Tea Committee to state, for the information of the Honourable the President of India in Council, that in obedience to the instructions contained in paragraph 2, of your letter No. 25 of the 12th ultimo, the Assam tea, to which it relates, has been embarked on board *The Calcutta*, Captain Bentley, and placed in a cabin between decks; and to enclose the bill of lading

lading for the same, in triplicate, from which it will be observed, that the rate of freight is 7*l.* 10*s.* per ton, of 50 cubic feet; the whole amount being 9*l.* 19*s.* 9*d.* payable on delivery.

2. As it was ascertained, that for some years past the cargo of all homeward-bound ships has consisted, at least in part, of ox-hides, it became necessary to take additional measures, besides those described in my letter of the 20th March, with the view to the preservation of the tea, each box has accordingly been placed in a soldered tin case, and all 12 put, by pairs, in six strong wooden chests, for the better stowage of the consignment. The chests are marked "Assam Tea," and addressed to the Honourable Court of Directors of the East India Company; and each of them measures in—

Length, 2 feet 11 inches.

Width, 2 feet 1 inch.

Depth, 1 foot 9 inches.

I have, &c.

Tea Committee's Office,
Hon. Company's Botanic Garden,
17 May 1838.

(signed) *N. Wallich*, M. D.,
Secretary.

(True Extracts.)

East India House,
22 Feb. 1839.

T. L. Peacock,
Examiner of India Correspondence.

4. The present being a favourable opportunity for sending another Chinese interpreter in lieu of the man who died in Assam in July last year, as intimated in the Committee's letter to you under date the 15th November, I am directed to solicit the sanction of Government for engaging a properly-qualified person, at a salary not exceeding 100 rupees a month, which was the rate allowed the late interpreter. A respectable person of this description, besides being indispensably necessary in Assam, may, with propriety, be sent in charge of the newly-arrived Chinamen, whereby the expenses for an overseer will on this occasion be superseded.

5. The Committee further request permission to purchase a quantity of tin and lead, in the proportion of one-fourth of the former, and three-fourths of the latter, sufficient for making 200 or 300 canisters. About 20 maunds of lead, at eight rupees per maund, and five maunds of tin, at 25 rupees per maund, may be sent with the canister-maker. The men will also require a few tools, which may be easily procured, and will not exceed 20 or 30 rupees.

6. In conclusion, I am directed to submit the enclosed bill for expenses incurred in making a number of tea-boxes and canisters, amounting to Company's rupees 61. 10. 3. Twelve of these boxes and canisters are filled with tea; one round canister was forwarded to you with the Committee's letter, dated the 20th instant, and five large boxes and canisters are ready at this office for future use.

I have, &c.

Tea Committee's Office, Hon. Com.
Botanic Garden, 29 March 1838.

(signed) *N. Wallich*, M. D.,
Secretary.

The Honourable Company, Debtor.

No 22.

To Expenses incurred in making 17 large boxes with canister, and four separate round canisters for holding samples of tea.

1 maund and 33 seers of lead for the canisters	- - -	Rupees	15	15	9
24 seers of tin for ditto	- - -	-	16	9	6
43 planks for the boxes	- - -	-	15	9	9
250 one-inch nails	- - -	-	-	5	-
12 coarse seetul patty for covering the boxes	- - -	-	4	11	-
Charcoal for melting lead, &c., and for drying the tea	- - -	-	4	-	-
			<hr/>		
Sundry petty charges for rosin, flour, mustard, oil, chalk, &c.	- -	-	57	3	-
			4	7	3
Company's Rupees			<hr/>		
			61	10	3

Received payment.

Tea Committee's Office,
Hon. Company's Botanic Garden,
30 March 1838.

(signed) *N. Wallich*, M. D.,
Secretary.

To C. Trower, Esq., Civil Auditor.

(signed) *J. Pattle*,
Chairman of the Tea Committee.

EXTRACT INDIA REVENUE CONSULTATIONS, 21 May 1838.

From *N. Wallich*, Esq., M. D., Secretary to the Tea Committee, to *R. D. Mangles*, Esq., Officiating Secretary to the Government of India, Revenue Department; dated 17 May 1838.

Sir,

I AM directed by the Tea Committee to state, for the information of the Honourable the President of India in Council, that in obedience to the instructions contained in paragraph 2, of your letter No. 25 of the 12th ultimo, the Assam tea, to which it relates, has been embarked on board The Calcutta, Captain Bentley, and placed in a cabin between decks; and to enclose the bill of lading

loading for the same, in triplicate, from which it will be observed, that the rate of freight is 7*l.* 10*s.* per ton, of 50 cubic feet; the whole amount being 9*l.* 19*s.* 9*d.* payable on delivery.

2. As it was ascertained, that for some years past the cargo of all homeward-bound ships has consisted, at least in part, of ox-hides, it became necessary to take additional measures, besides those described in my letter of the 20th March, with the view to the preservation of the tea, each box has accordingly been placed in a soldered tin case, and all 12 put, by pairs, in six strong wooden chests, for the better stowage of the consignment. The chests are marked 'Assam Tea,' and addressed to the Honourable Court of Directors of the East India Company; and each of them measures in—

Length, 2 feet 11 inches.

Width, 2 feet 1 inch.

Depth, 1 foot 9 inches.

I have, &c.

Tea Committee's Office,
Hon. Company's Botanic Garden,
17 May 1838.

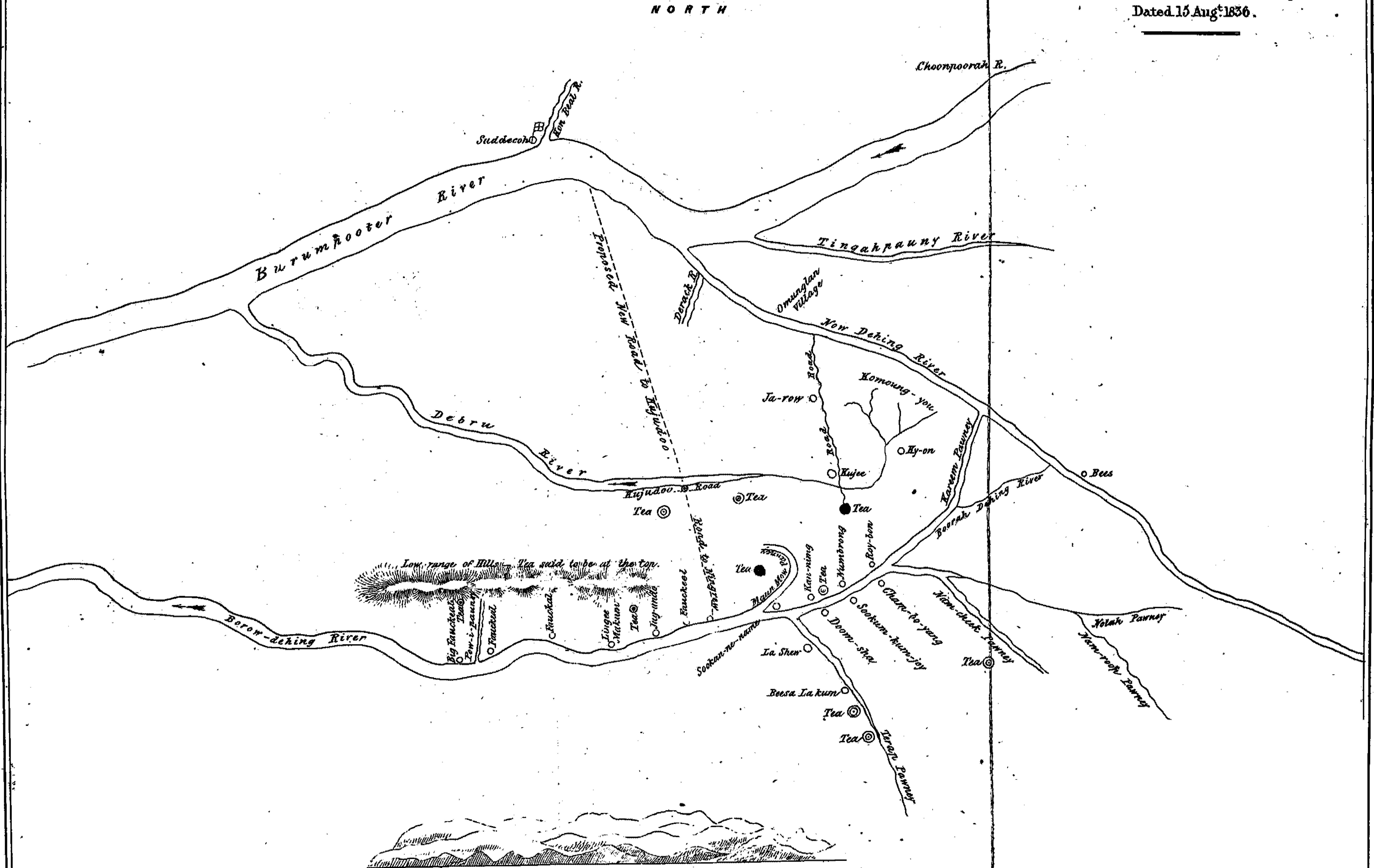
(signed) *N. Wallich*, M. D.,
Secretary.

(True Extracts.)

East India House,
22 Feb. 1839.

T. L. Peacock,
Examiner of India Correspondence.

SKETCH
Accompanying Letter to M^r Macnaghten,
Dated 15 Aug^r 1836.

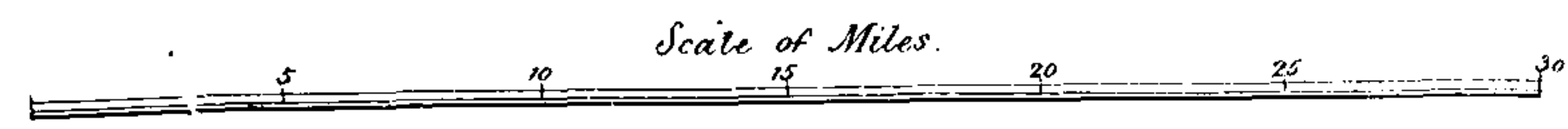


Naga Hills one days journey from Ningrew-Salt-wells - Tea said to be at the top.

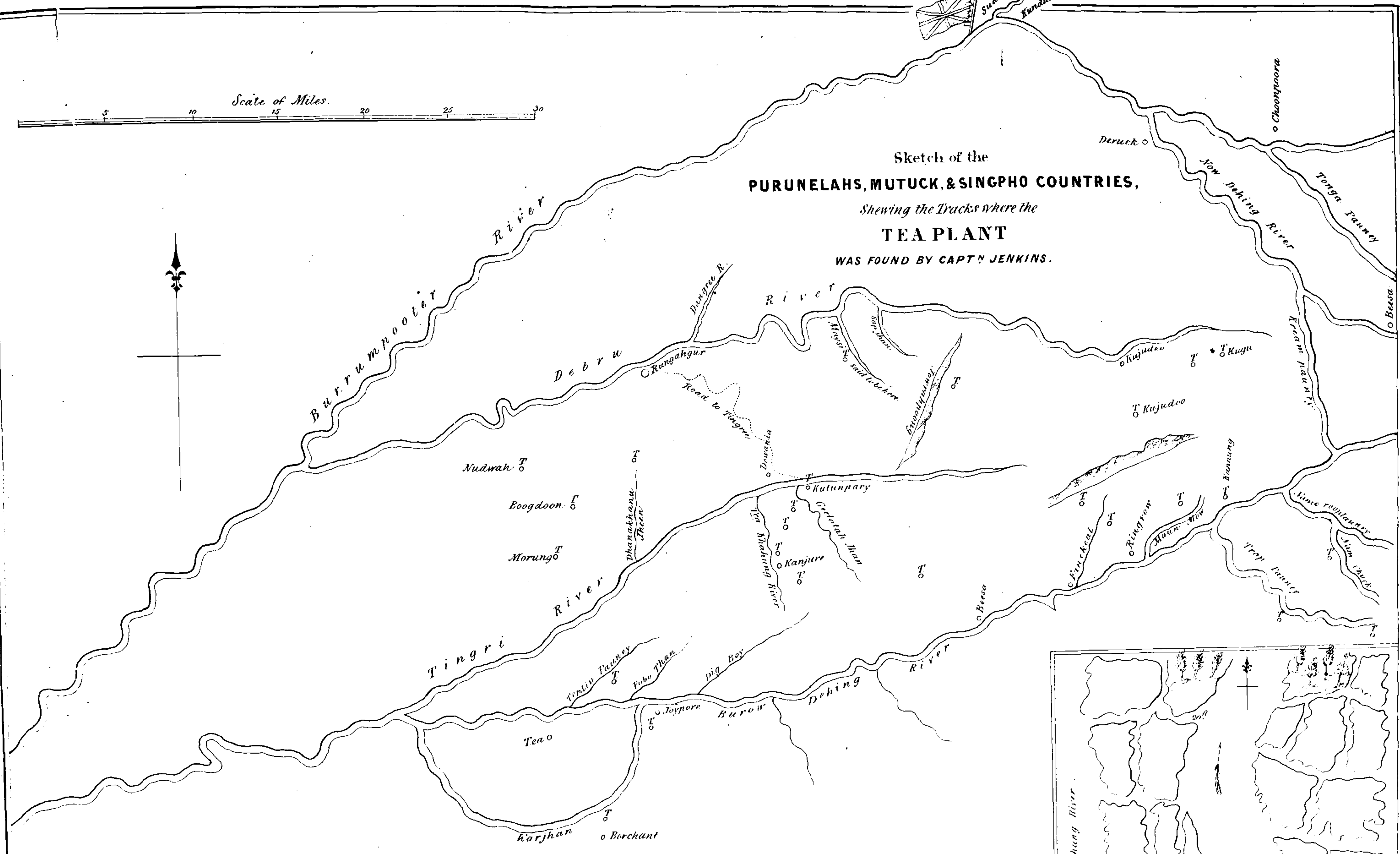
I have marked with red ink the only two
Tea-tracts which were visited among the Singphos
by the Deputation in January last.

(Signed) A. Wallich.

SOUTH



Sketch of the
PURUNELAHS, MUTUCK, & SINGPHO COUNTRIES,
Shewing the Tracks where the
TEA PLANT
WAS FOUND BY CAPTⁿ JENKINS.



NAMES OF THE TEA PLACES.

- In Purunelahs Country*
- x 1 Gabru Parbut
 - 1 A little above the Mouth of the Tingri River
 - 1 Joypoor
 - 1 Borehaut
 - 4 Total

- Mutuck Country*
- 1 Aiwah
 - 1 Boogsoon
 - 1 Morung
 - 1 Dhanah Ahoner Shan
 - 1 Maysi
 - 1 Near Sowrah Poong
 - x 1 Tingri
 - x 1 Gelah Shan
 - 1 On the road to Besa
 - 5 Khang River
 - 1 Phaboo Pauney
 - 15 Total

- Singpho Country*
- x Kaju
 - Kujudoo
 - Near Kujudoo
 - Pan-khal
 - Sugundo
 - x Singrew
 - Kaunano
 - Trap Pauney
 - Niam Chick
 - 10 Total

Grand Total, 29 Tracts.

N.B. These places marked with a Cross have been visited by the Deputation.

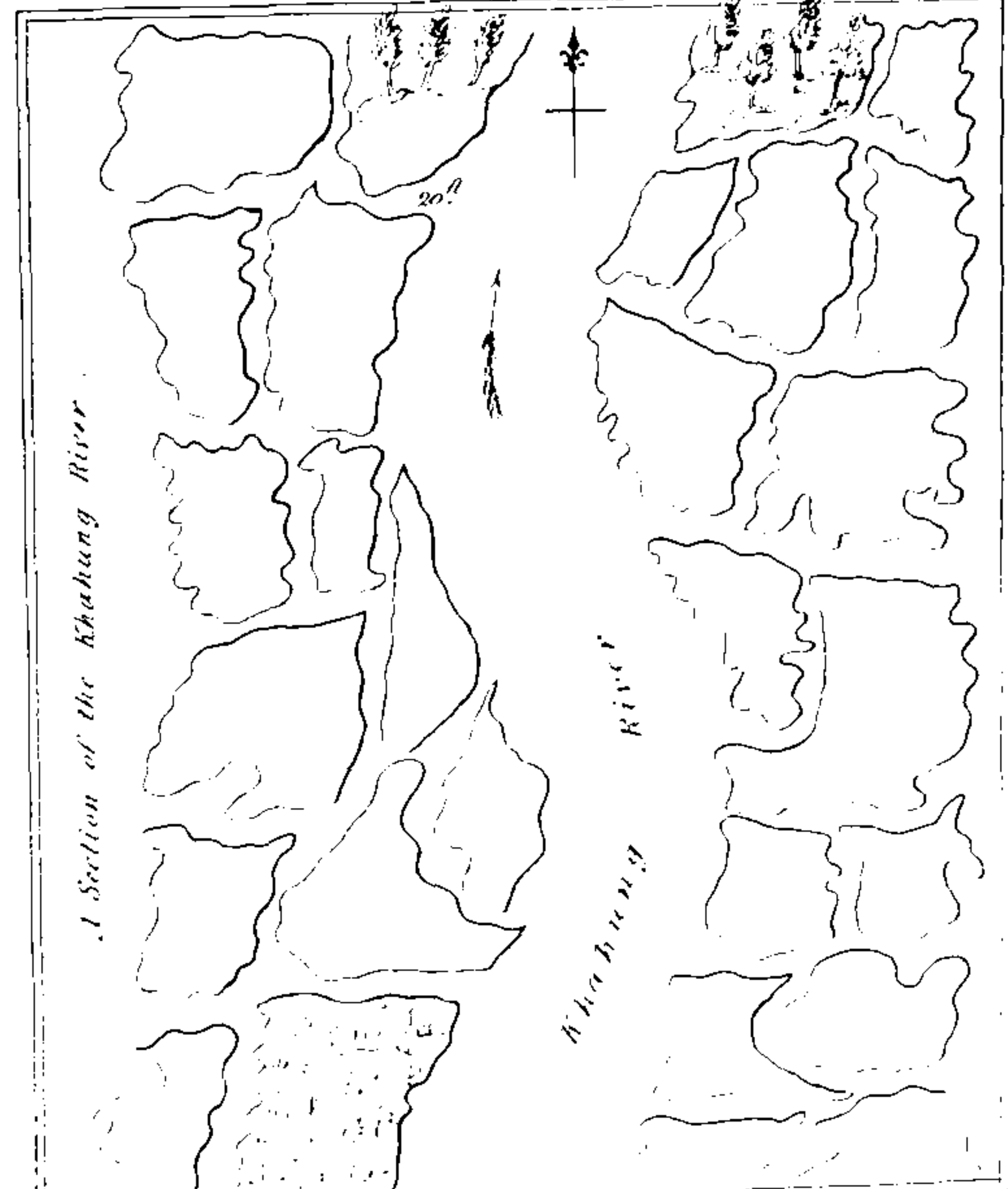
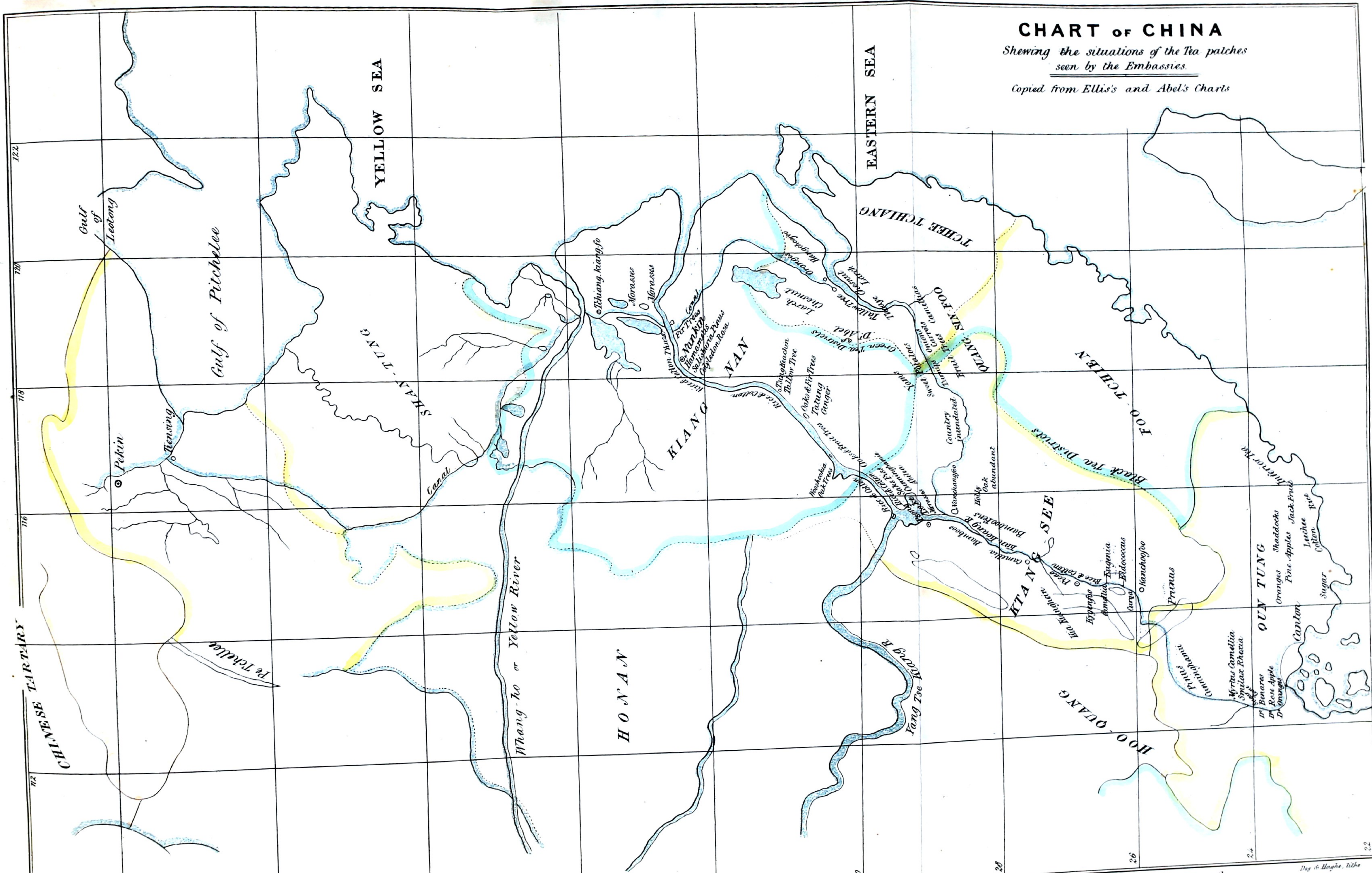


CHART OF CHINA
 Shewing the situations of the Tea patches
 seen by the Embassies.
 Copied from Ellis's and Abel's Charts



Day & Haghe, Litho

CHART OF
UPPER ASSAM.

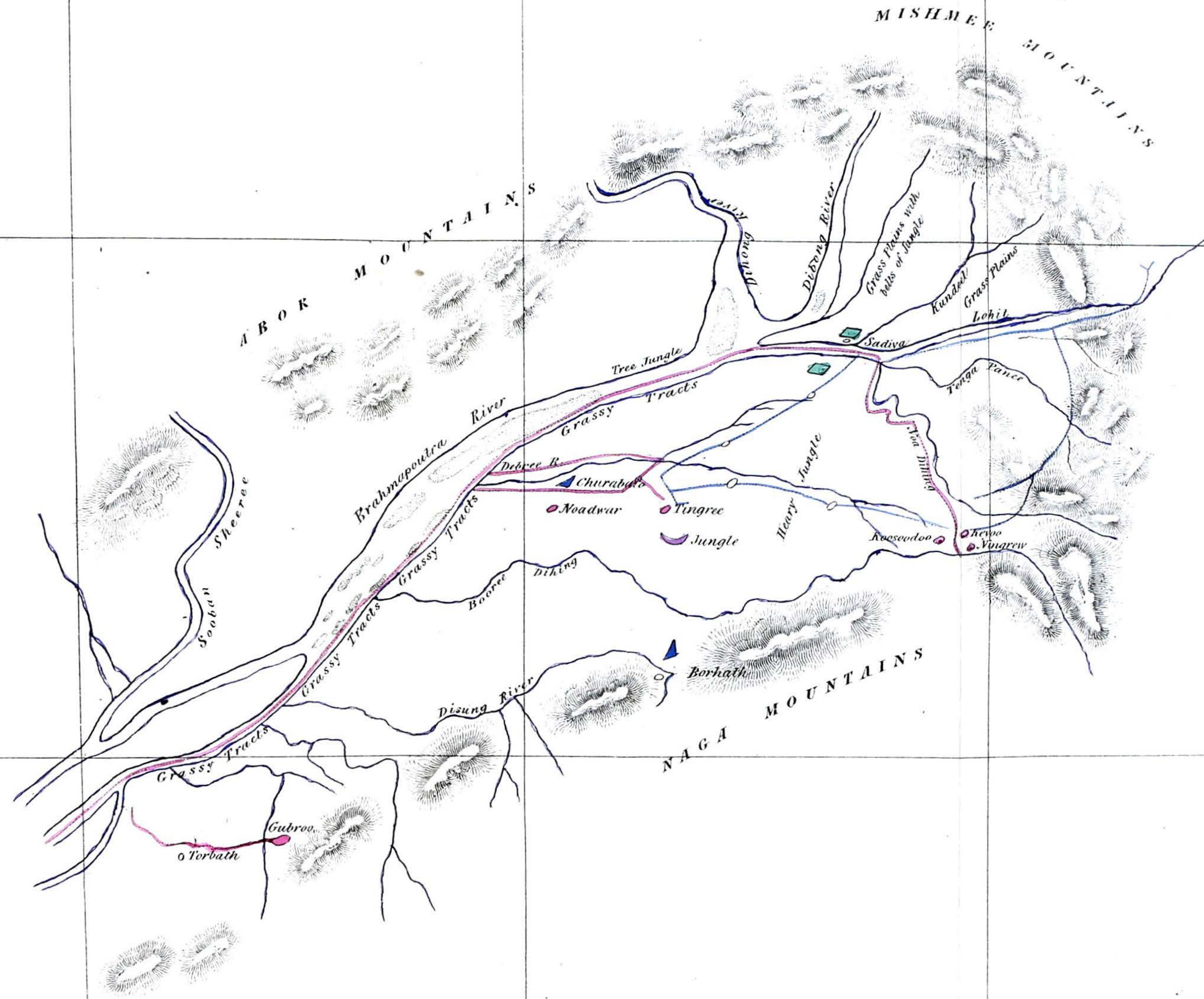
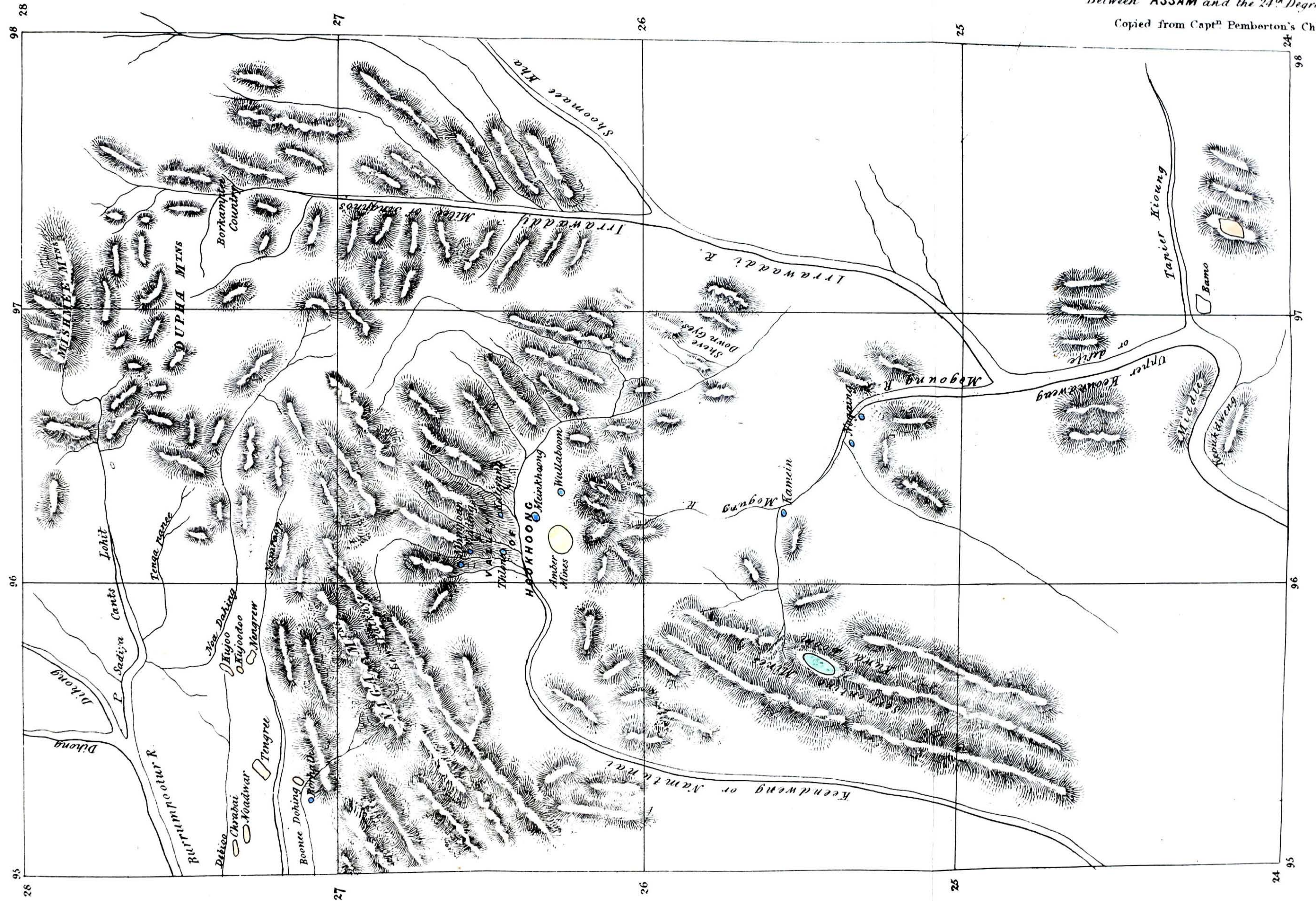


CHART of UPPER ASSAM taken from CAPTⁿ WILCOX'S MAP; the TEA LOCALITIES from M^r M^c CLELLAND'S.

- Tea Localities visited by the Deputation.
- ▲ Do not visited, but known to exist.
- ◐ Do since discovered.
- Nurseries of Tea Plants.
- Route pursued by the Deputation going and returning.
- Do pursued by myself going to and returning from the Mishmee Hills.

CHART
 Showing the Distribution of the
TEA PLANT
 Between ASSAM and the 24th Degree N.L.
 Copied from Capt^l Pemberton's Chart.



A ROUGH MAP of the Singpho, Mulluck and part of Rajah Purundah's Country

Shewing all the Tea Tracts that have hitherto been discovered by M. C. A. Bruce, Superintendent of Tea Culture to the Honorable Company in Assam.

Suddaya, 1st June, 1837.

N^o of Tea Tracts in the Mulluck Country - at

Chabwah	4
Deerjoy	1
Garbandy	2
Maglah Gohain	3
Budally Khal	1
Rungah Darry	1
Mahout Chot	3
Tengah Khal	1
No Kharee	1
Seal Khaly Phatar	1
Madwah	1
Ching-doorah	2
Burdo	2
Boredo	1
Chancaiter beel	1
Boogdoon	1
Heelah-darry	1
Tingli	3
Between Tingli & Kahung	3
Kahung	3
Little Kahung	2
Nomho-leah Phatar	1
Between Tingli & Singpho	1
Temonah	1
Total	41

N^o of Tea Tracts in the Singpho Country - at

Terap Pawng	2
Nam Chick	1
Kaunung	1
Ningrew	1
Jugundoo	1
Kiya	1
Kiyudoo	1
Total	8

N^o of Tea Tracts in Rajah Purundah's Country - at

Borehaut	2
Kookung Hary	1
Joypoor	1
Harjhang	1
Cabra	1
Total	6

Mulluck 41
Singpho 8
Purundah 6
Grand Total 55

