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T E A;

ITS EFFECTS, MEDICINAL

AND MORAL.

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TEA;

ITS EFFECTS, MEDICINAL AND MORAL.

BY

G. G. SIGMOND, M.D. F.S.A. F.L.S.

PROFESSOR OF MATERIA MEDICA TO THE ROYAL
MEDICO-BOTANICAL SOCIETY.

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1839.

TO

JAMES HUGHES ANDERDON, Esq.

&c. &c.

MY DEAR ANDERDON,

To you I dedicate this little Volume, as a slight testimonial of the high estimation in which I hold you. Many years of intimate acquaintance have taught me to admire you for your love of all that is beautiful in art and excellent in science, and to respect you for the possession of those intellectual qualifications

which give to this existence its richest charm, and promise happiness in the life to come.

Ever faithfully yours,

G. G. SIGMOND, M.D.

24. Dover Street,
June 26. 1839.

P R E F A C E.

It has long been the custom of the Royal Medico-Botanical Society to invite one of its Professors to deliver an Introductory Address at the opening of each session. The task, this year, devolved upon me. The recent discovery in British India of the Tea Plant, which reflects so much credit upon botanic science, appeared to me deserving the deepest attention; the more so, because it had seemed to escape the notice of scientific men in England, whilst the Continental botanists — amongst them Auguste De Candolle, “the distinguished son of a distinguished father” — had considered it a subject of the highest importance.

The paper I read met with the kindest reception; and a note was recorded upon the minutes, which called upon me to make public

the information I had collected. I found, that were I to print my observations in the form in which they were delivered, they would not be acceptable to the public generally, for they were couched in the language usually employed in science, and they abounded in technical terms. I therefore resolved to give, in a popular form, that which would most probably be required by the general reader, — to condense it in a small volume, and to reserve for the Transactions of the Society those details which bear more immediately a scientific character.

T E A ;

ITS

MEDICINAL AND MORAL EFFECTS.

MAN is so surrounded by objects calculated to arrest his attention, and to excite either his admiration or his curiosity, that he often overlooks the humble friend that ministers to his habitual comfort; and the familiarity he holds with it almost renders him incapable of appreciating its value. Amongst the endless variety of the vegetable productions which the bounteous hand of Nature has given to his use is that simple shrub, whose leaf supplies an agreeable beverage for his daily nourishment or for his solace; but little does he estimate its real importance: he scarcely knows how materially it influences his moral, his physical, and his social condition: — individually and nationally we are deeply indebted to the tea-plant. There may be many vegetables, such as wheat, or barley, the potato, or the vine, from which more immediate sustenance may be derived, or they may, during their cultivation, give employment to large masses of people, but do they call into action the energies of nations, or do they give rise to the exertion of

so much intellectual power? Every circumstance connected with the growth, the cultivation, the preparation, and the exportation from its native soil, of the tea-leaf must awaken the most lively curiosity. The commerce which it creates is of the most exclusive character: it is the source of occupation of the people of two distant nations, strikingly distinguished from each other by their customs, their prejudices, their laws, and their religion. It stimulates the one to agricultural industry, the other to navigation and to manufactures. It compels them to an intercourse which, from the dissimilarity of their tastes, their feelings, and their opinions, they would not otherwise have tolerated. If, too, it is the cause of the distribution of riches amongst individuals, it likewise affords, by the taxes that are raised from it, large revenues to the respective governments, and enables them either to support the burden of expensive wars, or to maintain their dignity abroad and their tranquillity at home.

A curious, and not an uninteresting, work might be written upon the singular benefits which have accrued to this country from the preference we have given to the beverage obtained from the tea-plant, above all those that might be derived from the rich treasures of the vegetable kingdom. It would prove that our national importance has been intimately connected with it, and that much of our present greatness, and even the happiness of our social system, springs from this unsuspected source. It would show us that our mighty empire in the East, that our maritime superiority, and that our

progressive advancement in the arts and the sciences have materially depended upon it. Great, indeed, are the blessings which have been diffused amongst immense masses of mankind by the cultivation of a shrub, whose delicate leaf, passing through a variety of hands, forms an incentive to industry, contributes to health, to national riches, and to domestic happiness. The social tea-table is like the fireside of our country, a national delight; and, if it be the scene of domestic converse and of agreeable relaxation, it should likewise bid us remember that every thing connected with the growth and preparation of this favourite herb should awaken a higher feeling—that of admiration, love, and gratitude to Him “who saw every thing that he had made, and behold it was very good.”

At the present moment every circumstance which relates to the tea-plant carries with it a deeper interest. A discovery has been made of no less importance than that the hand of Nature has planted the shrub within the bounds of the wide dominion of Great Britain: a discovery which must materially influence the destinies of nations; it must change the employment of a vast number of individuals; it must divert the tide of commerce, and awaken to agricultural industry the dormant energies of a mighty country, whose wellbeing must be the great aim of a paternal government. In a scientific as well as in a commercial point of view, the value of the inquiries that must follow upon this important discovery can scarcely be yet estimated. A close investigation, and a diligent research

must elicit many facts relating to the produce of considerable regions of the East, in which, doubtless, exist abundant materials, both known and unknown, for the uses of man : they may diffuse still greater blessings over the human race than those that are now enjoyed. The resources of a magnificent empire are yet to be developed. India has, within her bosom, the richest vegetable and mineral treasures, which are to be given to the rest of the world, to unite together in closer bonds of harmony two great nations, the one capable, by the energies of her people, of governing ; the other, by her climate, evidently destined to be the not unwilling vassal of foreigners ; for such has been her lot from the earliest records of mankind ; and to possess her wealthy domain has been, and will be, the ambition of the conquerors of the world.

Another great inducement to examine this interesting subject arises out of the prevailing disposition which now exists to substitute the infusion of the tea-leaf for the fermented and distilled liquors which have been, from the earliest records we possess, both sacred and profane, the accustomed drink of all the nations of the earth. It is a most remarkable event in the annals of man, that there should be a systematic organisation of large bodies under the name of Temperance Societies, having the strength of moral union, and guided by the opinions of many reflecting persons, who have pledged themselves to abandon all fermented liquids, and to confine themselves to tea. By such an organisation alone can these principles be car-

ried into action ; for the custom of a country bears with it such a despotic sway that it is almost next to an impossibility to eradicate it, even when bordering upon the absurd or mischievous. Public opinion only can act upon it ; and the proselytes daily made seem to prove that this mighty engine is now most actively at work. That dram-drinking is the pernicious source of poverty and sorrow there can be no doubt ; but the question may be fairly asked, and duly considered, whether the glass of generous wine, or strengthening beer, is to be totally abandoned, without an examination of the circumstances which may render a moderate enjoyment either prudent or necessary ? Must man rush from one extreme to the other ? Do not temperature, climate, age, demand some investigation before the denunciation of all fermented liquors be countenanced ; and will not even the lover of tea acknowledge his susceptibility of the pleasure and of the utility of his favourite beverage to be heightened by a moderate indulgence in Nature's other gifts ? Does not our knowledge of the condition of the inhabitants of other countries teach us, that the same fluid, which only causes a slight acceleration of the circulation of the blood of the Scotchman or of the Swede, would drive an Italian or a Spaniard mad ? A German, says Montesquieu, drinks through custom, founded upon constitutional necessity ; a Spaniard drinks from choice, or out of the mere wantonness of luxury. An amiable enthusiast, the excellent Archdeacon of Bombay, has written a quaint little volume, entitled, " Charges against

custom and public opinion, for the following high crimes and misdemeanors : — for having stolen away the senses of mankind, and on sundry occasions driven the world mad ; for their outrageous appetite in having eaten up the understanding and the conscience ; and for having feloniously turned the heart to stone.” He exclaims, “ Bacchus, astride of the spirit cask, is the very evil genius of desolation and wretchedness, poverty, disease, and crime ; and to have anything to do with his horrid cask, to buy any of it, or to sell any of it, or in any way to lend the respectability of our name in the consumption of it, is downright insanity.”

The moralist and the philosopher may be led to acquiesce in the leading doctrines which these societies have laid down, and they may hail with satisfaction the dawn of a new and excellent principle, which may serve to counterbalance the fearful calamities inflicted upon the community by the debasing influence of habitual intoxication. They may naturally applaud the labours of those who are inculcating opinions which promise to substitute domestic tranquillity for the fierce brawlings of the alehouse ; the sober and steady habits which lead to virtue for the reckless dissipation which terminates in vice, in infamy, and in disease. It is, however, for the physician to give the energies of his mind to examine whether the health of the community will suffer by the sudden change of long-established habits, whether the proposed reform carry with it no injurious effects upon the constitution of the inhabitants of the country.

Having weighed well all the arguments which the advocates of the new system urge, and comparing them with facts already established, it is his duty to place his own opinion before the public, who, guided by that greatest blessing of intellect, common sense, will either be led by him, or will follow the dictates of their own judgment. With such excitements to examine into the nature and artificial preparations of Tea, it will not be considered an intrusion upon the time and the occupation of the intellectual part of the community, if there be placed before them a brief detail of the most important facts that have been from time to time made known; and if there be taken a condensed view of all the bearings of a subject which, if judiciously inquired into, may fairly blend amusement, instruction, and utility. :

Alike, the historical, the botanical, and the medical questions that are involved demand a knowledge of these varied branches of science; but it is not necessary that minutiae should be entered into in a volume which is destined for popular inquirers; more particularly as these have been discussed before by the learned in other shapes, and have been fairly examined: that, however, which is necessary to be known may be given in the simplest language and unencumbered by technical terms.

For a number of centuries the character, the manners, the customs, and the institutions of the Chinese, from whom alone could be gathered any information upon the subject of the tea-plant, were veiled in the deepest obscurity. They were rather

matters of curious speculation than of certain knowledge. This people had managed to conceal their actual state of civilisation, and had shrouded in a mystery almost impenetrable their progress in the arts and sciences. The little that had been gleaned led to the conclusion, which is now proved to be correct, that they had arrived at a certain state of civilisation before other nations had emerged from barbarism, but beyond that they were fearful of advancing ; and that they held that all innovations were to be dreaded. Those who have witnessed the ruin and decay of the mightiest empires, who have seen the revolutions, so fatal to the happiness of society, that have followed upon the introduction of the wealth arising out of the productions of art ; who have seen luxury and dissipation amongst the wealthy, poverty and misery amongst the poor, consequent upon the accumulation of riches by the few, have applauded this dread of novelty, and pointed to the stability of the Chinese empire, amongst the wreck of nations, as a proof of the necessity of avoiding a constant love of advancement. The government assiduously instilled into the minds of their subjects this doctrine, and likewise inculcated an hostility to any communication with strangers, from whom they imagined more was to be dreaded than gained. The prohibition to intercourse with other nations was, however, gradually relaxed, but only in favour of the purchasers of an article of commerce, which excited industry amongst the people, which had become a necessary of life to foreigners, and therefore was to be viewed with

some share of indulgence. From these circumstances, the difficulty of arriving at any decisive knowledge of the nature of the tea-plant precluded the inquiries which scientific persons were anxious to make. A slight information only could be gleaned, either from a few missionaries, whose minds were directed to higher thoughts, or from a few individuals attached to diplomatic missions, who, however capable or anxious of arriving at information, were too much harassed by constant discussions and personal fatigue to gather the facts required. The merchants were too much engaged in commercial speculations, and had neither time nor, probably, the inclination to devote their attention to points which did not immediately promote their own views. The government of this country could render no assistance: they were compelled to make great sacrifices to the prejudices and to the laws of the Chinese, in order that they might maintain an equivocal intercourse which was held by so uncertain a tenure. The scanty materials, however, that were furnished were collected by some of the most learned men. Amongst these, Cornelius Bontekoe, Linnæus, and Dr. Lettsom must be enumerated as the most distinguished.

So many of the obstacles which stood in the way of acquiring some knowledge of the people of China having been removed, we cannot fail to be struck with the singular features that have been presented to our view. We find them to be industrious, polite in their manners, courteous to each other; and that their whole system of public as well

as private life is dependent upon one great tie of nature — that which binds the son to the parent : alike their morality and their religion are based upon this principle. To support the aged father is the great incentive to the acquisition of wealth, and to the cultivation of their intellectual and physical powers. Their country is the most fertile of all the Asiatic regions : its geography and its productions are now sufficiently familiar to us ; and we can appreciate the industry which has converted such varied soils into sources of riches.

The Chinese have followed, it would appear, from the earliest annals of the empire, agriculture, with zeal, with assiduity, ingenuity, and unwearied attention. They are admirably adapted to carry this branch of industry to perfection, for they are remarkable for their strength, and for their capability of encountering fatigue. They are characterised by a superiority over all the nations by whom they are surrounded, no less as to their mental than to their physical powers. Europeans living amongst Asiatic nations have been particularly struck with this fact. Amongst the valuable mass of evidence delivered before a committee of the House of Commons, in the year 1830, relating to the tea-trade, and other articles of our Indian commerce, Mr. Crawford, a gentleman who enjoyed considerable opportunities of ascertaining the truth, from his residence for several years in the Bengal Presidency, in Calcutta, in Penang, in Java, in Siam, in Cochin China, and in the Burmese territory, stated, that a Chinese is at least two inches taller

than a Siamese, and by three inches taller than a Cochin Chinese, a Malay, or a Javanese, and that his frame is proportionally stronger and well-built. His superiority in personal skill, in dexterity, and ingenuity, are still more striking. They have brought the art of cultivation of their land to the highest state of perfection; they have taken every advantage of soil and of climate; and have, by their perseverance, rendered the immense portion of the globe which they inhabit highly productive, and necessarily important to other nations. Dr. Abel, who accompanied the first embassy, has given us a general idea of the appearance of the provinces through which he passed. He has told us that they abounded in proofs of the most determined perseverance and labour. On every side he saw, cultivated with the greatest care, the plants which are most necessary for the uses of man, such as wheat, rice, barley, beans, peas, potatoes, and the white turnip; he likewise observed that the cotton, the sugar-cane, the mulberry, were objects of incessant attention; he was struck with the growth of the *camellia oleifera* (the oil-bearing tea-plant), the *croton sebiferum* (the tallow-tree), the *laurus camphora* (the camphor laurel), and many other of those plants which yield to domestic economy or to medicine products of inestimable value. It has been observed, by a high authority, that "a Chinaman keeps his field in better order than his house." His implements are formed with ingenuity, and are admirably adapted to fulfil the purposes for which they were invented: he wields them with a due

knowledge of their power, and of the skill necessary to render them subservient to the muscular strength of man. With the plough, with the harrow, the brake, the hoe, and the roller, he is familiar: they are not of that rude construction which belongs to the infancy of agriculture, at the same time they are of the simplest structure, and formed of the most durable materials. He excels almost all nations in the process of manuring land; his mode of irrigation is admirable; the conveyance of water by canals and aqueducts perfect. He has carried his knowledge of machinery to so great a height that he throws volumes of water to any part of his farm. He takes especial care that every acre shall be rendered productive. In the different provinces, vegetable bodies best suited to them are cultivated; for the variety of soil, of climate, and of atmosphere, has been duly watched, and every advantage taken of the knowledge that has been gained through a long series of centuries. To a people thus acquainted with the principles and the practice of husbandry, the rearing the tree, and the bringing it to a state of the utmost perfection, would neither be a matter of neglect nor of difficulty. Attached themselves to the infusion furnished by the leaves, they appear, from a very early period, to have devoted considerable attention to the points connected with it. The origin of its employment as a beverage amongst them is wrapped in the obscurity which generally belongs to ancient usages; and a fabulous tale is narrated, as to its introduction, which has had credence

even amongst the better informed inhabitants of the empire; whilst, as is usual with fables, it has been imagined to have some allegorical allusion, which, if explained, would satisfy the lover of antiquarian lore. The tale is thus related by one of the compilers of a history of China:—

Darma, a very religious prince, and third son of an Indian king, named Kosjusvo, is said to have landed in China, in the year 510 of the Christian era. He employed all his care and thought to diffuse throughout the country a knowledge of God and religion; and, being desirous to excite men by his example, imposed on himself privations and mortifications of every kind; living in the open air, and devoting the days and nights to prayer and contemplation. After several years, however, being worn out with fatigue, he fell asleep against his will; and that he might faithfully observe his oath, which he thought he had violated, he cut off his eyelids, and threw them on the ground. Next day, having returned to the same spot, he found them changed into a shrub which the earth had never before produced. Having eaten some of the leaves of it, he found his spirits exhilarated, and his former vigour restored. He recommended this aliment to his disciples and followers. The reputation of tea increased, and after that time it continued to be generally used. Kæmpfer, in his *Amœnitates Exoticae*, gives the life with a portrait of this saint, so celebrated in China and Japan. There is seen at the feet of Darma a reed, which indicates that he had traversed the seas and rivers.

Certain it is, that European travellers, who, at the commencement of the revival of knowledge, found their way into the empire which the inhabitants called celestial, speak of the Chiai Catai as a universal favourite; and the custom of sipping it has evidently been handed down from generation to generation, until it has become indispensably necessary to the rich, and a great desideratum to the poor. At this day the consumption of tea in a Chinese family must be very great: it would appear that throughout the whole of the day they take advantage of an apparatus in which it is kept, and are constantly sipping it. There exists in the language numerous proverbs which tend to show that the rich enjoy the strongest, whilst the poor must be contented with that which is weak. Mr. Davis observed, in the very interesting evidence which he gave before the House of Commons, that their figurative expression for poverty is drawn from this source. It is weak tea, and insipid rice, in allusion to the want of means to obtain a strong tea, and wherewithal to flavour their rice. The tea-plant is evidently indigenous in many of the provinces of China, and in various situations serves in the fields as a hedge-shrub; but there are particular localities in which neither labour, skill, nor ingenuity are spared to bring it to the state of the highest perfection of which it is capable. It exists, indeed, in different parts of the Eastern hemisphere, but it is only in China that it has been extensively cultivated; for, although the Javanese assert that they have within the limits of their empire a shrub which

is far superior to that which is found in China, we have no evidence of the fact, nor has any exportation been made of that of which they have so loudly boasted. The plant evidently flourishes over the greater portion of the Chinese empire; and there must be varieties produced by cultivation, which are not known in Europe, but which are said to be in high estimation amongst those people who can afford to purchase them. That which is best known to the European, and which, indeed, seems grown and prepared for the supply of our markets, is the produce of the central and the maritime provinces of China, forming the richest and finest portions of the empire. From these, too, the most valued productions, and the more highly esteemed manufactures of various articles of dress and of luxury, are obtained. The demand for exportation has necessarily increased its cultivation; and it is now successfully reared in many situations where it was formerly unknown, or entirely neglected. The provinces of Fokien, of Keang-nan, of Chek-cang, of Kiang-si, and Kung-soo yield the largest proportion; and the English resident is led to believe that from them the best supply is obtained; but the provinces immediately around Peking afford that which is preferred by the luxurious citizen; and, from those which border upon the Tartarian region, the Russian and the Muscovite draw their supplies, which are of a kind and of a character which are much to be prized by the amateur of tea.

It is in Fokien, or in "the happy establishment," that a very large proportion of that tea which is the

ordinary beverage of the tea-drinkers of this country is grown. The shrub here acquires great luxuriance ; is diligently watched over ; its farmyards, its drying establishments, are on a scale of great magnitude ; and it furnishes us with a sound black tea, of sufficient aroma, strength, and taste to gratify the palate. This province is described as highly picturesque : it is separated from the rest of the empire by a chain of mountains, surrounding it on every side towards the land, whilst rugged cliffs, which gradually diminish in height, gently undulate towards the sea. Although the elevations are considerable, yet admirable localities are furnished for the tea-plant amongst numerous fertile valleys and luxuriant plains, from which it gradually spreads up almost to the summit of the loftiest range of hills. In the district of this province, which is called Keen-nung-foo, are situated some tea-farms, which have acquired considerable celebrity ; for the produce of the Woo-e-shan mountains is eagerly purchased. It is, however, attended with considerable expense ; for, from the absence of beasts of burden, of wheel carriages, or of tolerable roads, each year's growth must be transported on the shoulders of porters over the intervening mountains. Each chest of tea is carried on a man's back. Although, from this district, eighteen miles are only to be traversed to reach Kwang-tun or Canton, yet sometimes the farms are situated three hundred miles from this great depository, and, as many mountain passes, rivers, creeks, and canals, intervene, the transportation may require weeks, nay, months. The general

vegetation of the province of Fokien is by no means luxuriant, for the soil is poor; still the industry of its inhabitants has led them to the successful cultivation of some of the more highly prized fruits. The natural growth of the province is not particularly striking, and even the tea-plant district is confined to a very limited range; the farmer generally asserting that the good black tea grows only within a circumference of about thirty miles, and that all which is found beyond it is of an inferior character. They prefer the produce of the sides of the hills; and, although it is the custom of the country to plant both hill and vale, the preference is given to that which is brought from elevations.

Keang-nan, which has been of late divided into two provinces, is represented as one of the most favoured spots on the face of the earth. It is asserted that the natives of this part of China are remarkable for excelling all their countrymen, not only in agriculture, in manufacture, but likewise in literature and accomplishments, and that there is an evident superiority in every thing that springs from it. This important province consists of an immense plain, interspersed by a few hilly ridges: one of the noblest rivers of the old world, Yang-tse, flows through it. It is here that one of the most delicate and highly prized of the green teas, the Song-lo, is cultivated and prepared. Che-keang is likewise a province of much agricultural industry, and a nursery for the tea-plant. Keang-se and Keang-soo are both remarked for their salubrity, for their valuable productions; and amongst the chief em-

ployments of the people is the rearing and drying the leaves of the shrub.

It would appear that, notwithstanding all the labour and skill that may be employed, there are many situations in which the tea-plant, though its natural hardihood is great, vegetates producing flowers and seeds, but does not yield leaves fit for the uses to which they are generally applied: hence, great attention is at all times demanded, and judgment in the selection of a spot fully adapted to the development of its higher qualities. This does not altogether depend upon temperature or range of climate, for it has been observed that the winter of China is much more severe than that which occurs under corresponding latitudes in Europe. De Guignes has remarked that the heat or cold is dependent on the direction of the winds. Cold is predominant during the months of October, November, December, January, February, and March, whilst the wind during the greater proportion of that time is either north or north-east. In April and May the prevailing wind is south-easterly, in June and July south and south-westerly, and it returns south by east by August and September. Dr. Falconer has drawn as a conclusion, from a consideration of the different tea localities, that the tea is produced over an extent of country where the mean annual temperature ranges from 73° to $54^{\circ} 5'$ of Fahrenheit; where the heat of summer does not descend below 80° , and the cold of winter ranges from 54° to 56° ; where the difference between summer and winter heat is on the northern limit 59° , and on the southern 30° : that

it is cultivated in the highest perfection where the mean annual heat ranges from 54° to 64° . That rain falls in all the months of the year, and that the moisture of the climate is on the whole moderate. These remarks will apply to Japan, in some parts of which excellent teas are produced. It is universally admitted that the tea-plant thrives best in an open exposure to the south.

Dr. Abel has given a very good account of the soil, and the geological structure of the tea localities, drawn from his own personal observations, which are thoroughly borne out by all that has been made known to us since he accompanied Lord Amherst on his embassy. The shrub succeeds best on the sides of mountains, where there can be little accumulation of mould, and in a gravelly soil, formed either from disintegrated sandstone or by the debris of the rocks, consisting chiefly of sandstone, schistus, and granite. Le Comte states that the best tea is produced in a gravelly soil, the next best in a light or sandy soil, and the inferior in a yellow soil.

Sir George Staunton thus describes the appearance of the tea-tree, as it was seen by Lord Macartney's embassy, for the first and only time, on its return from Peking, on the river Chentaun-kiang, in the latitude $29^{\circ} 30' N.$, "On the sides and tops of earthen embankments, dividing the garden-grounds and groves of oranges, the tea-plant was for the first time seen growing like a common shrub, scattered carelessly about." Mr. Barrow speaks of the same spot: — "We had thus

far passed through the country without having seen a single plant of the tea-shrub ; but here we found it used as a common plant for hedge-rows, to divide the gardens and fruit groves, but not particularly cultivated for its leaves.”

The tea-plant is a beautiful shrub, bearing some resemblance to the myrtle : it bears a yellow flower, which is exceedingly fragrant. Its similarity to the camellia in its general appearance, in the shape of its leaf, in the formation of its floral developments, had struck the common observer, and it was remarked that the *Camellia Oleifera* bore so strong a resemblance, that even the practised eye had great difficulty in distinguishing one from the other when out of flower. A question has been agitated amongst botanists whether the thea be not a camellia.

Dr. Wallich considers the two genera differ widely from each other, and that this is marked by the formation of their respective fruits, in both of which it is a roundish, more or less triangular, dry capsule, of three distinct cells, containing one solitary seed or nut ; and it bursts at the time of its full maturity vertically, by means of three fissures extending from the top of its capsule towards the base ; but this bursting, or, as it is botanically termed, dehiscence, takes place differently in the two capsules. In the tea, it proceeds along the middle of the lobes or angles, thus six valves are formed, each lobe splitting into two hemispherical valves. In the camellia, it bursts along the middle of each side, consequently, alternating with the corners into three very distinct valves. The general outline of the capsule of the tea is triangular, divided into three

globular lobes ; whilst the camellia is very obscurely triangular, without any tendency to become deeply three lobed. Mr. Griffith, in his admirable report of the tea-plant of Upper Assam, has discussed very ably this opinion of the great botanist, Dr. Wallich, with whom he does not agree. He expresses his opinion that, from examination of the Assamese tea-plant, and of two species of camellia from the Khasiya hills, that there is no difference between thea and camellia, and he has given some drawings which show the perfect identity of the two plants. He is borne out by the opinion of several European botanists, whose authority is quoted by Sir William Hooker, in his account of the tea-plant in the *Botanical Magazine*. Under any circumstances the distinguishing marks must be acknowledged to constitute rather a specific than a generic difference.

Few questions have been more agitated, and less satisfactorily solved, than whether there be two species of thea, from the one of which is exclusively obtained the green tea, and from the other the black, or whether there be not many varieties, from which, according to the mode of preparation, either of the teas may be obtained. To the latter opinion, after much examination, I am inclined to yield. The words of Dr. Lettsom were long considered the authority to which deference was to be paid :—
“ There is only one species of this plant ; the difference of green and Bohea tea depending upon the nature of the soil, the culture and manner of drying the leaves. It has even been observed that a green tea-tree, planted in the Bohea country, will produce

Bohea tea, and so the contrary ;” and he further adds, “ I have examined several hundred flowers, both from the Bohea and green tea countries, and their botanical characters have always appeared uniform.”

This opinion has been supported by many systematic botanists, although several (at the head of whom is to be placed Linnæus) considered that the teas were produced by two distinct species. Most of those who have resided in China believe that there is but one shrub, which is the exclusive source of all the varieties and shades of the tea of commerce. Mr. Pigou states that the Chinese all agree that there is but one sort or species of the tea-tree, and that the difference in tea arises from soil and manner of curing. Mr. Marjoribank observes, that the tea-plants of all the provinces are supposed to be of one species, the difference in the manufactured article arising from difference of soil, climate, and manufacture. Green tea has been made in the districts from whence the black tea comes, and *vice versâ*.

Mr. Crawford says,—“ The tea is known to be botanically one species ; so is the vine, which furnishes almost a complete parallel ; and I believe every distinction between black and green tea to be owing to climate, soil, and cultivation.” Mr. Reeve, on the other hand, whose long residence in China, and whose scientific acquirements obtain for his opinion the highest respect, stated, before the Committee of the House of Commons, that his conclusion was that the green tea was not made from the same

plant as the Bohea ; but that there were two distinct varieties, if not two distinct species.

Chowqua, a Chinaman, who had been eight times in the Bohea country, and who had remained there from four to six months on each occasion, is often quoted, as having said that Bohea may be cured as Hyson, and Hyson as Bohea, and so of all sorts ; but that experience has shown that teas are cured as best suit the qualities they have from the soils where they grow ; so that Bohea will make bad Hyson, and Hyson, though very dear in the country where it grows, bad Bohea : however, in the province of Fokien, which may be called the Bohea province, tea has, for some few years, been made there after the Hyson manner, which has been sold at Canton as such. After such conflicting opinions, it must be acknowledged that it can only be by patient and careful examination of the plant, under all the circumstances of its cultivation, that we can clear up the doubts ; and, until some scientific botanist shall have had opportunities of witnessing on the spot the modifications produced by culture and soil, we must consider, *adhuc sub judice lis*. The plant is an evergreen, growing to the height of five or six feet : if left to itself it would grow to thirty feet ; but this very seldom occurs. Dr. Lettsom has the following note :—
“ Authors widely differ respecting the size of this tree. Le Comte says it grows of various sizes, from two feet to two hundred, and sometimes so thick that two men can scarcely grasp the trunk in their arms.” The description, however, given by Le

Comte, of what he himself saw in the province of Fokien, is very different. He thus speaks: — “ Entering upon the province of Fokien, they first made me observe *thea* upon the declining of a little hill. It was not above five or six feet high: several stalks, each of which was an inch thick, joined together and divided at the top into many small branches, composed a kind of cluster, somewhat like our myrtle. The trunk, though seemingly dry, yet bore very green branches and leaves. These leaves are drawn out in length at the point, pretty straight, an inch or an inch and a half long, and indented in their whole circumference. The oldest seemed somewhat white without: they were hard, brittle, and bitter. The new ones, on the contrary, were soft, pliable, reddish, smooth, transparent, and pretty sweet to the taste, especially after they had been a little chewed.” The bark of the tree is of a chesnut colour toward the top, and below somewhat of the ash colour; the extremities of the twigs are greenish, the branches are numerous, irregular, slender, and of different sizes; the leaves have their lamina smooth, very glossy, the upper surface rising in several places in roundish swellings, hollow underneath, veined, of a firm texture: they are alternate, elliptical, obtusely serrate, with the edges between the teeth recurved. Lettsom observes that the apex is emarginate, and that no author has remarked this obvious circumstance. Even Kæmpfer himself says, “ that the leaves terminate in a sharp point.” They have a footstalk, which is very short, round on the under side, on the upper side flattish, and

slightly channelled. They are like those of the Morella cherry-tree in shape, colour, and size, when full grown. A very striking difference was perceptible in the colour, shape, glossy appearance, and size of the two plants, designated black and green, which were placed before the Medico-Botanical Society by Mr. Loddige. The branches contain a great number of flowers, which bear a very strong resemblance to the wild rose. The number of petals vary much, and by no means bear out the idea of Linnæus and of Sir John Hill, who, in making two distinct species, say that the Bohea flower has six petals, and the green nine petals.

The agriculturist, who thoroughly knows

“ Quid quæque ferat regio, et quid quæque recuset,”

takes care to plant his farm for the growth of tea on the side of a hill, or in a valley sufficiently wide for the due circulation of the atmospheric air, and the collection of the rays of light. His attention is generally repaid by the abundance of his crops. He carefully selects, too, a locality remarkable for the fertility of the soil. Both Barrow and Ellis speak of the luxuriance of vegetation in the neighbourhood of the spots in which the farms were seen. Barrow says, “ There was no want of trees, among which the most common were the tallow-tree and the camphor, cedar, firs, and the tall and majestic *Arbor Vitæ*. Groves of oranges, citrons, and lemons, were abundantly interspersed in the little vales that

sloped down to the brink of the river." Ellis, in his account of the ascent to the summit of the mountains between Ta-long and Ta-ling-shien, tells us, "The route led through a valley where we for the first time saw the tea-plant. It is a beautiful shrub, resembling a myrtle, with a yellow flower, extremely fragrant. The plantations here were not of any extent, and were either surrounded by small fields of other cultivation, or placed in detached spots. We also saw the ginger in small patches." About three days after he observed it in the island of Woo-sha-kya, where the embassy was detained, in consequence of the wind being too strong for the continuance of the navigation. The day was passed in walking round the island, the greater part of which was cultivated with rice, wheat, and vegetables. The cultivation on the opposite bank was cotton, buck-wheat, and beans. One plantation of tea was met with in full flower."

The places that produce fine teas are, like the spots which grow fine wines, extremely limited: those producing coarse teas are widely spread. The proprietor of the tea-farm must not only understand agriculture, but he must likewise be acquainted with the laws that govern vegetable life: he must know the precise moment at which the leaves are imbued with their richest juice; he must judge when they are to be gathered for the delicacy of their flavour, and when for that coarser taste which suits the various palates of his customers. In picking he must be very careful, lest he injure the crop in the early spring, and thus

prevent the development of the second and third gatherings, which, though not of equal value, are of much importance to him. He must likewise be aware of the adjustment of the heat necessary for the drying and curing the leaves; upon which, probably, quite as much depends as upon the state of maturity to which the leaves have arrived. These minutiae, which to the superficial observer appear but of little moment, are of the greatest consequence.

Those who have paid the slightest attention to the collection and the preparation of leaves employed for medicinal purposes, will be aware of the great nicety, and the extreme carefulness, requisite for the preservation of the innate virtues of plants. Some of these are only to be gathered on a dry and sunny day, as soon as the dew is off; for should the slightest portion of moisture remain upon them, after they have ceased to be connected with the parent stem, they become perfectly inert. A particle of fluid upon digitalis or foxglove, one of the most powerful indigenous remedies we possess, and which reduces rapidly the action of the heart, may totally destroy its activity. The deadly aconite, belladonna, henbane, will be useless if they be not dried in a room from which the smallest ray of light is excluded. Hemlock loses, too, its subtle and powerful aroma. However trifling the vast number of manipulations and the endless processes of drying may appear, they are of great importance, especially where the operations are carried on on a large scale. It is only by a practical knowledge of the

delicacy of vegetable matter, of the evanescence of its aroma, of the rapidity with which its component parts enter into new changes, so that fresh principles are developed, that we can form an estimate of the experience and the judgment required in the simplest treatment of leaves for their varied purposes.

At the proper period for the commencement of plantation, the ground is dressed with great care, most probably according to the custom of each particular cultivator, as we find to be the case with other plants useful to man. Any number of seeds suitable to the soil, not usually less than six or more than sixteen, contained in their capsules, are put into a hole four or five inches in the ground, at certain distances from each other: they are then allowed to vegetate, by some, without any other care; by others, the greatest attention is paid to the removal of weeds, the manuring of the land, and occasionally watering. When the shrub has grown about three years, the leaves are ready for picking. This is done with the greatest care: they are not plucked by handfuls, but each leaf separately. They are thus, although the process be somewhat tedious, enabled to collect, in the course of the day, fifteen pounds. The following account has been given of a tea-farm which supplies the imperial family with imperial or bloom tea:—"The plantation is inclosed with hedges, and likewise surrounded with a broad ditch for further security. The trees are planted to form regular rows with intervening walks. Persons are appointed to superintend the

place, and preserve the leaves from injury or dirt. The labourers who are to gather them, for some weeks before they begin, abstain from every kind of gross food, or whatever might endanger communicating any ill flavour: they pluck them, also, with no less delicacy, having on thin gloves." During the tea harvest, it would seem, great attention is paid to the diet of the husbandman.

In the common tea-plant, the commencement of the leaf-gathering takes place in the early spring; and three different crops are obtained during the summer. Scarcely, in the first instance, has the leaf attained its growth, and whilst it is yet budding into life, than the picking commences; and the tea will be fine in proportion to the tender age of the leaf; the most agreeable aroma and the most delicious flavour are then obtained from it. A soft white down covers the first leaflets, which is called, in the Chinese language, Pa-ho, and hence our name Pekoe, the most exquisitely flavoured of those teas with which we are acquainted. Trees, until they reach the sixth year, furnish this tea. A few days' longer growth supplies us with the black leaf Pekoe. In the month of May, the leaves that have grown since the first gathering, having arrived at maturity, are stripped from the trees: these form the Souchong — the Seaouchong, — "the small or scarce sort." About six weeks after this, there is a third gathering of the new crop thrown out; and from the Chinese word, Koong-fou, signifying labour or assiduity, springs our term Congou. From this a particular part is

selected, called Kien-pocy, — a selection which is known to us under the name of Campoy. The tea familiar to us under the appellation of Bohea, should be the produce of the district from which it derives its name: it is a rough preparation of the later-grown leaves, which yield a beverage of little strength and of inferior flavour. Green teas undergo the same kind of harvest. From the tender leaflets is produced Hyson; and a very expensive kind, Loontsing, is more particularly prized: it was called Yutsein, “before the rains;” whilst Hyson is a corruption from “flowery spring.” The Gunpowder is a Hyson gathered with great attention, and rolled with much nicety and care: indeed, it would appear to be a selection of the more delicate leaves. The coarser and yellower leaves remaining after this selection are called Hyson Skin. The Twankay is the last gathered crop, and consists of an older leaf; in which less attention is paid to the manipulations.

The judgment shown in collecting the leaves at the various seasons evinces a great knowledge of vegetable organization, and of the succession of phenomena which are developed during the progress of life. It is in the early spring that the sap or vegetable blood has little to convey to the leaf but the mucilaginous principle, and that aroma, peculiar to each vegetable, of whose existence we are by its effects rendered sensible, but of which our means of examination are so limited. On the first bursting into existence, leaves and flowers are endued with an evanescent odour, which art has at-

tempted to fix, and to diffuse through other bodies. Upon this much of the flavour of the plant depends; and if we would wish to obtain all that strikingly characterises the vegetable, we must gather it as soon as this principle is at all developed. At a later period of the year, not only has the aromatic principle been exhaled, but the mucilaginous properties are exchanged. A great proportion of the earthy phosphates exist in all plants in the month of May, but they are much diminished as the year advances.

When the leaves have been picked, they are left in large bamboo baskets, exposed to the rays of the sun, being only occasionally stirred. After two or three hours, the peasants take the baskets into the house, and in the course of half an hour a series of manipulations commence, during which the manufacturer, at intervals of an hour, rolls the leaves three or four times between his fingers until they have become as soft as leather. When this operation is concluded, they are ready for the application of heat, for the purpose of drying and rendering them crisp. The temperature is adjusted according to the delicacy of the particular tea, and all the apparatus is regulated with the utmost nicety. The ordinary process is to place about two pounds of tea in a hot cast-iron pan, fixed in a small circular mud fireplace, heated by a fire of straw or of bamboo. The leaves are briskly agitated with the naked hand, to prevent their being burnt, and that each may have its due exposure to the proper action of the heat. When they have

become sufficiently hot, they are placed in a closely worked bamboo basket, and thrown from it upon a table, where they are distributed into two or three parcels. Another set of manipulators roll them into balls with great gentleness and caution, and by a peculiar mode of handling them, express any juice they may contain. The leaves after this are again taken back to the hot pans, again turned with the naked hand, and, when heated, again removed. They are then spread on a sieve, rolled again, and then exposed to the action of heat, the whole being placed over a charcoal fire ; during this stage great care is necessary, lest any smoke should affect the tea. In all the varied changes from basket to basket, and they sometimes undergo many, attention is paid lest any receiver should ever be placed upon the ground. The number of exposures to the action of the fire is sometimes very great, and an examination takes place from time to time, to ascertain the state to which the leaves have arrived. When they become crisp, and are easily broken, they are removed from the fire, allowed to cool, and the process again commenced, until the experienced manufacturer is fully satisfied with the condition and the proper appearance of the tea.

Although the names of a great number of teas are familiar to us in this country, it is to be borne in mind that these are almost all arbitrarily applied ; that each one is not the peculiar produce of a particular farm ; nor are the crops of different lands kept as distinct from each other as are the different wines from particular vineyards. The

agents of the Hong merchants visit the farms at the proper periods ; they purchase from the grower his stock ; they mix together the leaves from many farmers, in such proportions as they think most suitable to the predominant taste of their customers. The great discrimination they exercise is between the leaves of young and old shrubs : they employ a number of women and children to distribute these into fine, middling, and common teas ; they then mix them, or they cause them to undergo a process of refiring, and make the crop, which has been gathered from an inferior farm, bear the resemblance of a better tea, or they mingle the two together. These agents possess a great deal of judgment ; and it is generally believed that, notwithstanding they have the cunning and love of profit which belongs to the Chinaman generally, they execute their task with much fidelity. It is also understood that the best teas of particular districts find their way into England. It is not, however, to be disguised, that they have undergone a greater degree of preparation than suits them for a Chinaman's taste ; and the residents at Canton consider that which they have for their own domestic supply to be much more agreeable and delicately flavoured than that which reaches our markets. This, however, may be accounted for from the well-known fact, that all vegetable products must lose a considerable portion of their natural aroma by long keeping, and particularly by transportation across the ocean. A certain degree of heat is absolutely necessary for the tea even in China ; for if it be eat when newly

gathered, or previous to its having undergone any operation, it proves narcotic, and is ranked amongst the deleterious vegetables. It is therefore kept for some time and dried by heat for the use of the Chinese ; but for the European markets it undergoes a much longer process, which, if it do not exert much influence upon the characteristic qualities of the infusion made from it, must decidedly dissipate much of that aroma which gives to plants one of their powers.

The teas that have been collected by the agency of the persons employed by the Hong merchants are made into parcels, containing from one hundred to six hundred chests ; and each of these bears its own peculiar mark or characteristic name, so that the purchaser is enabled to ascertain and to distinguish each particular variety brought into the market. These distinctive marks are known only to those who have been initiated into the mysteries of the trade carried on by the Chinese with the English or American merchants, who are the principal Canton consumers, as the markets of Russia are entirely supplied through Tartary, and are principally dependent on the great fair held annually at Nishni Novogorod, at which are assembled merchants from all the provinces of Asia, who there interchange their commodities upon a scale now unknown in Europe, but for which the great fairs of former days were established. These have since been superseded by the more organized communication which commerce has gradually introduced.

Bohea is the name of a district celebrated for the growth of black tea, and it is in China generally applied to the varieties of black tea brought from that particular part of the country, in contra-distinction to those grown elsewhere; thus, Bohea Congou, Bohea Souchong, or Bohea Pekoe, would imply that they actually came from that part of the country. In England, however, the appellation Bohea was given to all black teas brought to this country, before we admitted our present distinctions. We now apply it to the lowest grade of the black tea; that which was brought into this country by the East India Company, was known by the exporters under the names of Canton Bohea and Fokien Bohea.

The Canton Bohea is composed of the tea which remained unsold by the persons who supply the European market at the close of the season, in consequence of its inferiority to the rest of the supply. To this refused portion, an inferior tea from Wo-ping is added, which previously undergoes fresh firing, to enable it to bear its voyage to England. These two varieties form together a tea, which can be afforded cheaper to the consumers here, in comparison with the better sorts of the article. The composition varies in its quantity of Wo-ping, which is an inferior Congou, according to its price in the market: it has seldom less than five-tenths, but if the Congou happen to be cheap, the quantity is increased. The Fokien Bohea, although it be not a mixture, is not much more valuable; it is made up of the last leaves gathered late in the year, and of the general refuse of the tea leaves, after all the best have been

gathered. When Bohea is brought to market in England, it is frequently mixed with other teas, and is sold under three distinct grades, — ordinary, good, and middling Bohea ; and the better sort of Boheas often approximates very closely to inferior Congou, so that some judgment is necessary to distinguish them. At an early period Bohea was a very much worse tea than it now is, for not only was it composed of the large old leaves, and made up of those which had been damaged during manipulation, but leaves were substituted for it, which had never grown on the tea-shrub. It has gradually improved, and much of that which is now in the country furnishes a tolerably good beverage.

Bohea, which at one period formed about a sixth of the importation made by the East India Company, has gradually diminished. It seldom undergoes such careful examination as do the other teas. That which is ordinarily found amongst tea-dealers presents a mixture of large leaves and small, with a considerable quantity of pieces, either so much broken or crushed as to resemble dust. The colour is a darkish brown ; the best is of a smaller size and a blackish hue : there is occasionally a tinge of green at the edges ; sometimes the larger leaves adhere closely to each other ; those that are yellow are not good. A quantity of stalks may be found amongst them. The aroma is very faint, and has been generally compared to that which emanates from hay kept for a great length of time. If it have a faint smell, it is seldom good. Upon infusion this tea gives a mahogany colour to the water. It has a

bitter taste, and requires much milk and sugar. This tea has not now a very great consumption in this country; for even the humbler classes, if their means at all admit of it, will not purchase it: generally speaking, they are excellent judges of tea. There is on this subject some very interesting information to be collected from the evidence of numerous respectable tea-dealers examined before a Committee of the House of Commons. Most of them were residents in large towns, and had ample opportunity of becoming acquainted with the prevailing taste of the industrious inhabitants. Messrs. Nutter of Birmingham observed, on that occasion, that the improvident poor buy Bohea, not from preference but necessity; whilst the provident and industrious consume scarcely any of the Bohea. Mr. Thorpe of Leeds likewise said, that the working and middling classes always buy the finest tea; and these opinions are amply borne out by the testimonies of Mr. Weatherall of Stockton, Mr. Ridout of Canterbury, Messrs. Macdowell and Trainer of Wiveliscombe, Messrs. Constance and Matthews of Bath, Mr. Bryant of Bristol, Mr. Heming of Perth, and Mr. Watson of Newcastle. Mr. Miller, of the firm of Miller and Lowcock, at one period the largest purchasers of teas at the East India Company's sales, said that they have supplied to their correspondents in England in five years, upon an average, five hundred thousand pounds' weight of all other descriptions of tea, to one hundred thousand pounds' weight of Bohea. In Scotland they have supplied, upon the average, one chest of Bohea to

nine of Congou. In Dublin they have not had a very extensive, but a very respectable, business; and two of their principal friends there have never had a single chest of Bohea; but he believed the average to be, as Mr. Butler, a respectable merchant, stated, one chest of Bohea tea to eight of Congou. He likewise stated that the poor are excellent judges of tea, and have a great nicety of discrimination, preferring good Congou; and that they will walk very considerable distances to purchase at a shop at which they can rely. It would altogether appear, that a very small quantity of Canton Bohea is sold in this country in the state in which it is imported, but that it is mixed by the retailer with the Congou tea, and that it would require a very discriminating eye to judge of the difference between a superior Bohea and an inferior Congou.

Congou, or Cong-fou, is a superior kind of Bohea: the leaves are gathered from the shrub somewhat earlier, or it may be occasionally a selection from the best Bohea: it has a greater variety of qualities than Bohea, and has had considerable attention paid to its preparation for its exportation from China: it does not yield so high a colour to water as Bohea, a pale amber being the general result: the leaf has a blacker appearance, should feel crisp, and be easily crumbled: its smell is agreeable when good, but, when indifferent, it has a heated smell, and a faint and unpleasant taste; much of these qualities will depend upon the selection. In London there are three varieties acknowledged by the trade,—Congou, Campoi Congou, and Ankoï Congou. The

Campoi has an agreeable violet smell, and is remarkable for its pleasant flavour ; it is so little to be distinguished from Souchong, that the East India Company gave whichever name they pleased to the importation, according to the demand for the one or the other in the British market. A great deal of their tea imported as Souchong, should have been brought forward as Campoi ; and it may fairly be stated that, practically, between Souchong and Campoi there is no very intelligible difference ; it may certainly be somewhat fresher, but it does not possess any marked superiority over good Congou. The inhabitants of the district called Ankoy, have exerted themselves much in the cultivation and preparation of tea ; and they convert a good crop of the tea into a very excellent quality, a portion of which they especially attend to for the English market ; although the English residents at Canton do think not very highly of the Ankoy Congou ; nor has it become a favourite in this country : its flavour is said to be lost on the voyage. There seems to have been a prejudice against this tea ; and although the inhabitants of the district have the reputation of endeavouring to make a character, yet they do not appear to have succeeded. It is said that they often mix their products with the leaves of other trees ; and Milburn, in the *Oriental Commerce*, observes, “ that not being much esteemed in London, it should not be taken by the commanders and officers to exchange for such part of their investments as cannot be disposed of by public sale ; it should be rejected if it possibly can,” he continues,

“ and any other tea taken instead of it.” Congou is the tea most consumed in England; but a part of that which is retailed, is a mixture of Congou and of Bohea, which is sold under the general name of Congou. The proportions of these mingled together, vary according to the tea-dealers’ idea of that which may suit his customers generally, and also for the purpose of increasing his profit. The great mass of the inhabitants of London like a good strong-flavoured Congou; and they think very justly, that two spoonful of Congou will go further than three of an inferior class of tea. The wholesale dealer only mixes the tea when called upon to do so by the retail trader; nor would he maintain the high character which belongs to that class of merchants, if he were not to sell as Bohea that which he obtained as such, and Congou without altering its quality; but the tea-dealer upon the smaller scale is constantly called on to suit the caprice of the consumer, and is often obliged to make up a tea to suit a particular part of the country. Since permits have ceased to be required for the transport of tea from one place to another, opportunities occur, which the greedy tea-dealer avails himself of, to mix up teas of various grades, without reproach to his conscience. Some individuals have made large fortunes by the exhibition of great judgment in making mixtures, which have gained the estimation of the consumers; and to this there can be no objection, if it be honestly carried into execution.

Souchong. Seaou-chung, the small kind, is a good tea, well flavoured, and supposed to be some-

what of a higher quality than the best Congou ; it is said to be very carefully dried ; it is crisper and drier than the other black teas ; its smell is more fragrant, and it is a little rough to the palate. It forms a good infusion of a light amber colour, and the leaves change to a reddish brown. There are two kinds of Souchong which do not find their way as generally recognised teas, as does the ordinary Souchong, namely, the Caper Souchong and the Padre Souchong. The Caper Souchong has obtained its name from the leaf being rolled up, so as to resemble the caper ; it is one of the many varieties which was not regularly brought into the country by the East India Company ; the leaves are of a fine black gloss, heavy ; there is a pleasant fragrance attached to them, and they are of a very agreeable flavour ; but the Padre Souchong, or Pow-Chong, is even more highly tasted. It scarcely bears the sea voyage, and what was found in this country was generally brought as presents. There are now very large quantities imported, but of a very inferior quality.

Pekoe, or Pa-ho, is the most valuable of the black teas ; although it may be collected from plants of all ages, yet the tea-tree of three years' standing yields the best. It should be gathered as soon as the leaves are developed, and should be the tenderest. The more flowers found amongst its leaves the better is the sort. Its flavour is very agreeable, but it is rather too strongly marked ; it is taken in a much more palatable form when mixed with Souchong, than when it is drank alone.

The green teas familiar to us are Hyson, Gunpowder, Singlo, and Twankay. The Hyson is the first crop of the green tea-plant ; it has a fine blooming appearance ; the leaf is small, and well rolled up, but on infusion it opens clear and smooth ; should it be shrivelled up, it is not good ; it is dry and crisp, and crumbles easily ; it imparts a green tinge to water, which acquires a strong pungent taste, yielding an agreeable odour. The Hyson Skin is a selection from the ordinary Hyson, of those leaves which are not so strikingly good ; if they are not so well formed, or not so well coloured, they are removed from the fine Hyson, and an inferior quality of this tea is the result. It has a brassy taste, without the fine aroma of Hyson ; nor has it the external characteristics, — there is very little bloom. On the other hand, Gunpowder is a selection from the Hyson of the very best leaves that are found ; these are rolled up into firm hard balls, which resemble small pearls. This tea is of exquisite flavour, and the drinkers of green tea prefer it to all others. The slightest exposure to air, or even the action of the breath, quickly dissipates the fine aroma which is one of its most striking characteristics. Adulterations of this tea have been so common, both in China and in this country, that the lover of this variety seems seldom satisfied that he is drinking it in all its purity : indeed, such are the impositions practised with regard to it, that it is sometimes advertised for sale at a less price than it can be purchased at Canton.

Singlo and Twankay are the last gatherings of the green tea during the summer season, of which the latter is considered the best. These gatherings are distributed into two or three sorts. Great care is taken that the leaves of the first should be thoroughly formed, that they should have their full development, and that they be perfectly clean. After this has been done, the second selection takes place of the leaves, which are in a secondary state of perfection, and what remains forms the inferior quality of these teas. The leaves of this sort are observed to be more pointed, and to be somewhat larger than those of the black tea. The infusion formed by these sorts is of a bright green; the Twankay, however, yields a paler colour than the Singlo. There are many different sorts of both these teas, and either the art of preparation is less thoroughly understood, or they are more easily affected by the variations of temperature, of seasons, and of soil; but certain it is that none of the green teas are so uniform in their characteristics as are the black. Many experienced persons believe that the green tea is altogether artificially prepared; whilst others consider that the black is the same leaf, but that it undergoes the process which gives it colour, and renders it much milder in its effects. The Chinese themselves rarely drink green tea, and then only the produce of particular farms, which have obtained a high character. The leaves of all of them are much more liable to be changed by the action of the atmospheric air, and very speedily lose that beautiful bloom which, amongst many tea-

drinkers, is highly valued. The heavier these teas weigh, the better are they imagined to be ; and they are much oftener scented by some other leaf ; and great is the attention of the factor given to attract his customer by the fragrance and by the appearance. He often gives an additional dryness to the leaf after damp weather ; and generally, immediately before he brings it in the market for sale, he again dries it, to give the crispness which should belong to it. It often happens that those teas which strike the eye at Canton, are found, on their arrival in America, where they are very much esteemed and generally preferred to the black, not to satisfy the consumer, from the changes that have occurred during the voyage.

These teas are often dried over the fumes of burning indigo ; and a very small quantity mixed with powdered gypsum, is delicately sprinkled over them, which adds to the colour. Different modes of flavouring the tea are likewise practised : the blossom buds of fragrant flowers are thrown amongst the finest teas. In the Loontsing Pekoe these are very discernible. After torrefaction has taken place in the iron pans destined for that purpose, the dried leaves are delicately touched with a camel-hair pencil, which has been dipped in spirituous solutions of resinous and aromatic gums ; and for this purpose a number of children are employed. The Chinese distinguish two kinds, more particularly the Boui, or Bou T'cha, and the Soumlo, which are reserved for the invalid. They likewise make it into cakes ; and of this sort there is a particular kind, called Mandarin Tea, which

is an extract from the leaves. This is rarely imported into England. Sir Anthony Carlisle presented, however, a very fine specimen of it to the Royal Medico-Botanical Society; it was in the form of a dry, solid, blackish mass, easily broken and reduced to powder. There are other varieties which occasionally find their way into this country as presents. Ning-yong, Pouchong, Orange Pekoe, Hung Muey, have become within a few years familiar to us; and there is little doubt other names will soon be made known to us, and their characters will be investigated and compared. Amongst those that are brought to the Canton markets are, Quongsow, Heeh Ke, Kee Cheem, Sing Kee, Quang Tay, Quang Fat, Quang Tack, Ka Kee, Cheem Chunn, Wa Chunn, Yock Chunn, and other euphonous names, which may hereafter be as well known to us as any of those which, from their long reputation, have become standard teas.

There is a tea known throughout the north of Europe under the name of Caravan Tea, and in some places under that of Kaiser-tae, or the Emperor's tea, imported into Russia by way of Kiachta. It is seldom found in this country; the leaf is remarkably large, not much dried, and of a deep black colour, mixed with footstalks of the plant, and occasionally slender twigs of the smallest dimensions. These teas are in all respects superior in point of taste and flavour to those consumed in England, France, and Holland. They are not the produce of the provinces which furnish these markets, but of the centre of China.

They are conveyed by land, to which much of their superiority is to be attributed, as the sea voyage deteriorates all teas, and causes them to lose their strength, freshness, and flavour. As Mr. Crawford has observed, the difference between the teas coming sea-wise, and those brought by land through Kiachta is so remarkable, that it is no exaggeration to say,—that a pound of the last goes as far as two pounds of the first. The Caravan tea finds its way into Germany; in Bohemia I have tasted some of a remarkably fine 'quality, but it is difficult to get it genuine. That which is occasionally met with in this country has lost much of its quality, though it still has a considerable share of flavour and aroma. It requires to be infused in much larger quantities than ordinary Souchong, which proves its inferiority to the Caravan tea of Russia. All classes consume the Caravan tea, from the lord to the serf. The course of the Russian trade with China is of excessive tediousness; and the conveyance by water occupies no less a space of time than three years; when it is brought by land a year is consumed. It is, however, to be remembered in the computation of the water carriage, that the actual time in which it is on its journey, is about three or four months in each summer, for the rivers are frozen up and impassable for eight or nine months in each year. The black tea is that which is preferred; for the green tea is not a favourite in Russia. The duty is precisely the same there on all the qualities, whether they be good, bad, or indifferent. The trade is carried on

by the Russian merchants, entirely in barter, for the productions of Russia: hence the price of tea at Kiachta is unknown. All persons engaging in the traffic pay a sort of corporation tax, which licenses this employment: they are for the most part inhabitants of Muscovy, but any person may obtain the requisite permission on paying the *droits des guildes*.

My own experience of the excellence of tea in Russia arose out of a curious incident, which occurred to me during a hasty visit I made to that highly interesting country. Previous to this adventure, I had been in the habit of taking coffee, as my ordinary beverage, and was by no means satisfied with it. I had no idea of the prevailing habit of tea-drinking previous to my arrival at Moscow. In the course of the afternoon I left my hotel alone, obtaining from my servant a card, with the name of the street, La Rue de Demetrius, written upon it. I wandered about that magnificent citadel, the Kremlin, until dark, and I found myself at some distance from the point from which I started, and I endeavoured to return to it, and asked several persons the way to my street, of which they all appeared ignorant. I therefore got into one of the drotzskis, and intimated to my Cossack driver that I should be enabled to point out my own street. Although we could not understand each other, we did our mutual signs: and with the greatest cheerfulness and goodnature this man drove me through every street, but I could no where recognise my hotel. He therefore drove me to his

humble abode in the environs ; he infused the finest tea that I had ever seen in a peculiarly shaped saucepan, set it on a stove, and this, when nearly boiled, he poured out ; and a more delicious beverage, nor one more acceptable after a day's fatigue and anxiety, I have not tasted. He gave me the provision his humble cot afforded, and seemed delighted that I cheerfully partook of it. I could not avoid becoming impatient, and expressing some anxiety lest I should not recover my hotel. He left the house, making me understand that he should not long be absent ; and in about ten minutes he returned with a comrade, who evidently was an Asiatic, and addressed me in various dialects, all unintelligible. They seemed to give up the hope of understanding me, and again left me, to return with another person, who was a German, to whom I made myself easily understood, told him my tale, to which he listened with great attention, but had no idea there was such a street as La Rue de Demetrius. My Cossack friend, in no way expressing the slightest impatience or neglect, set out upon another expedition, and returned with a Frenchman, who immediately translated my address into "Mettrifsky," which was no sooner made known to my Cossack, than he cheerfully prepared his horse and his drotzki, again sallied forth, and brought me safe to my hotel, accepting the little gratuity I offered him almost reluctantly. When he understood, through the German, that I was English, his joy seemed great : he gave me as a reason, through the interpreter, that the Emperor Nicholas (of whom he

spoke as a deity amongst men) loved the English. If the blessings of the poor inhabitants of his empire are dear to a monarch, none can more experience delightful sensations than the Emperor of Russia. Whatever may be the political feeling existing against an absolute monarch, it must be softened towards the individual, when we find him recognised by his people as a beneficent father.

That damaged black leaves can be manufactured into green, an anecdote related by Mr. Davis fully proves. The remission of the tea duties in the United States, occasioned, in the years 1832 and 1833, a demand for green teas at Canton, which could not be supplied by the arrivals from the provinces. The Americans, however, were obliged to sail with cargoes of green teas within the favourable season; they were determined to have these teas, and the Chinese were determined they should be supplied. Certain rumours being afloat concerning the manufacture of green tea from old black leaves, Mr. Davis became curious to ascertain the fact, and with some difficulty persuaded a Hong merchant to conduct him, accompanied by one of the inspectors, to the place where the operation was carried on. Upon reaching the opposite side of the river, and entering one of these laboratories of factitious Hyson, the parties were witnesses to a strange scene.

In the first place, large quantities of black tea, which had been damaged in consequence of the floods of the previous autumn, were drying in baskets with sieve bottoms, placed over pans of char-

coal. The dried leaves were then transferred in portions of a few pounds each to a great number of cast-iron pans, imbedded in chunam or mortar, over furnaces. At each pan stood a workman, stirring the tea rapidly round with his hand, having previously added a small quantity of turmeric, in powder, which of course gave the leaves a yellowish or orange tinge ; but they were still to be made green. For this purpose some lumps of a fine blue were produced, together with a white substance, in powder, which, from the names given to them by the workmen, as well as their appearance, were known at once to be Prussian blue and gypsum. These were triturated finely together with a small pestle, in such proportion as reduced the dark colours of the blue to a light shade ; and a quantity, equal to a small tea-spoonful, of the powder being added to the yellowish leaves, these were stirred, as before, over the fire, until the tea had taken the fine bloom colour of Hyson, with much the same scent. To prevent all possibility of error regarding the substances employed, samples of them, together with the specimens of the leaves in each stage of the process, were carried away from the place. The tea was then handed in small quantities, on broad shallow baskets, to a number of women and children, who carefully picked out the stalks and coarse or uncurled leaves ; and when this had been done, it was passed in succession through sieves of different degrees of fineness. The first sifting was sold as Hyson Skin, and the last bore the name of Young Hyson. The Chinese seemed quite con-

scious of the real character of the occupation in which they were engaged ; for, on attempting to enter several other places where the same process was going on, the doors were speedily closed upon the party.

There was an idea once prevalent, that the colour of the green tea was to be ascribed to the drying the leaves on copper ; but nothing can be more unfounded than such an opinion, as the pans, one of which was sent home by an officer of the East India Company, are of cast-iron. That copper may be detected in tea is true ; but Bucholz has shown that it exists in several vegetables ; indeed, there are proofs that it enters into the composition of a great proportion of animal and vegetable matter. It is found in coffee in very striking quantities ; from ten ounces of unroasted coffee there may be obtained, by the proper manipulations, a dense precipitate, which will coat two inches of harpsichord wire with metallic copper. And he who eats a sandwich, has much more to fear from the poisonous effects of this metal, than the drinker of green tea ; for the two slices of bread, the beef, and the mustard, all have been proved, by the examination of the chemist, to be capable of forming in the stomach a metallic crust ; indeed, the only safe food would be potatoes, for in three pounds no copper could be traced. Dr. O. Shaughnessy, with a view of elucidating a question, as to the possibility of mistaking the symptoms of death by poison, took two eggs, three cups of strong coffee, and eight ounces of bread and butter ; he formed these into a

mass, he dried it, and after incinerating it, submitted it to the proper tests, and the metallic copper was distinctly obtained. I have, in a lecture which appeared in *The Lancet* of last year, shown that there is little reason to doubt of its existence even in the human blood ; the proportion, however, is very minute.

A Chinese, whose treatise on teas attracted considerable attention in Canton, and whose opinions were given in *The Canton Register* in 1838, states that the difference of the black and green colours arises from the different processes that the teas undergo ; he says, —

“ The tree which produces the green teas is the same as that which produces the black teas : there is no difference between the trunks of the two trees ; but there is a slight difference in the leaves. The black tea leaf is long and pointed ; the green tea leaf is short and round : and this difference is occasioned by the diversity of the two soils ; the cause of the difference between the colours of the black and green teas proceeds from the different methods used in frying 炒 and firing 焙 the leaves. Frying is the first process ; and it is conducted in iron pans, which are placed over bright charcoal fires, and the leaves are stirred about quickly by the hand. Firing is the second process ; then the leaves are put into bamboo baskets, which are placed over slower charcoal fires, and the leaves are not stirred.

“ The green teas are only fried over slow fires ;

the leaves are not afterwards fired in bamboo baskets.

“The black teas are roasted in highly-heated iron pans, in quantities of only one to two taels (ounces) at a time, and until each particular leaf is thoroughly dry and crisp: the leaves are afterwards fired over slower fires; hence the blackness of the leaf. Thus, although green teas can easily be made into black teas, black teas cannot be converted into green: because another colour can be given to green but not to black teas.”

That adulterations and mixtures of inferior teas with higher qualities are constantly practised in China, some of the importations which have recently been made fully prove; and that impositions have been frequently detected, there can be no doubt; but it is at home that we too often have had reason to complain of the want of honesty in the mercantile speculator, and the total forgetfulness of his own honour, and of the confidence which society reposes in its members.

In every occupation of life there will be found individuals who, from base and sordid motives, will practise gross or scandalous impositions upon the public, regardless of the health and welfare of those who are unfortunately dependent on them. As a body, the dealers in tea bear as high a character as any tradesmen in this great community; but the numerous trials and convictions that have taken place for the substitution of a spurious compound for genuine tea, prove that there have been mercenary wretches, who not only have manufactured an ar-

ticle of doubtful quality, but have even sold deleterious and poisonous mixtures. Various have been the prosecutions which have taken place in the Court of Exchequer, by which have been unveiled the infamous frauds practised by some of these nefarious persons. In the year 1828 public attention was much excited by the disclosure of a regular manufactory of this fabricated tea : it appeared in evidence in court, that certain parties hired labourers to furnish them with the leaves of the white and black thorn tree, who were paid at the rate of two-pence per pound for the produce. These leaves, that they might be converted into an article resembling black tea, were first boiled, then baked upon an iron plate, and, when dried, rubbed with the hand, in order to produce the curl which belongs to the genuine tea ; the colour was given by logwood, so that the infusion of logwood was drunk instead of tea ; this was, however, a harmless preparation in comparison with that which the artificial green tea was made to undergo. In this manufacture the leaves, after being pressed and dried, were laid upon sheets of copper, where they received their colour from an article known by the name of Dutch pink, one of the component parts of this powder being white lead ; to which was added, for the purpose of producing that fine green bloom visible in good green tea, verdegris : thus it appeared, that, whilst the purchaser believed he was drinking a pleasant and nutritious beverage, he was swallowing the produce of the hedges round the metropolis, prepared in the most noxious manner. The persons

who delivered their evidence stated only what they saw ; and their evidence was sufficient, as may be seen by the report of the trials given in the public journals of the day, to produce a most extraordinary sensation ; or, to use the words employed on one occasion, “ a feeling of horror seemed here to pervade the whole court.” The penalties which followed in this case upon the verdict for the crown, amounted to $\$10\%$; a sum by no means large, when considered in relation to the enormity of the offence.

Several informations were laid at the same time against tea-dealers and grocers ; and the solicitor of the Excise had in court a box, containing upwards of twenty samples of different qualities of tea, from the most costly to the most common. During one investigation Mr. Hyslop of Croydon stated, that in his perambulations through his woods and grounds, his notice was attracted by several women, who, he observed, were daily picking ash, sloe, and elder leaves from the trees. He was fearful they would damage the young trees and hedges, and his curiosity led him to inquire for what purpose they wanted those leaves. One of the women informed him that they came every day from London, a distance of about twelve miles, to pick those leaves, and returned every evening with a bag full ; that they were paid at the rate of one penny a pound for them ; and that they were, as they understood, intended for an eminent chemist and druggist in town, who used them in some patent medicines ; for, by a late discovery, ash

leaves, particularly of young branches, were found in every respect a substitute for senna; and that a great quantity were exported both to the East and West Indies. Mr. Hyslop further stated that, taking compassion on the poor women who came such a distance, and finding they picked the leaves carefully, without doing any injury to the trees or hedges, he permitted them to pick as much as they chose; and that he likewise gave one of the women a shilling two or three times: but he did not in the least suspect that those leaves were intended to be imposed on the public for tea. On one occasion an excise officer gave evidence before the magistrates, that he found in one house a quantity of leaves, half of them were ash, and a great part sloe leaves. The weight of what he found was about 166lbs.; some of them being in a green state, the others manufactured: such as were green appeared to him be sloe leaves, or ash. Part of the leaves were laid out upon screens, and some on stoves, for the purpose of drying. He also found some sieves, upon which the manufactured article was spread out; there was also an iron pot, in which was deposited a sort of colouring matter. In this pot he also found some leaves. The manufactured article found in the house very much resembled tea. In another house he found, with other excise officers, twelve casks of fabricated tea, nailed down; they were examined, and contained the article he had seen on the former occasion. The casks were such as American flour was commonly imported in, and the surface was covered

with paper. The leaves were brought before the magistrates in their varied stages of manufacture. One sort was made to be mixed with ordinary Bohea, in the proportion of six pounds of the spurious kind to two pounds of real tea. Some of the persons employed for this process were Prussian blue manufacturers.

In order to allay the excitement of the public, as well as to do justice to themselves, the more respectable tea-dealers not only disclaimed all knowledge of the parties implicated in the frightful disclosures which had occurred, but strenuously pointed out how much their own interests would lead them to defend the public from the shameful impositions so practised. Amongst those who took an anxious part on the occasion, was Mr. Richard Twining: at one of the sales of the East India Company's teas, he dwelt forcibly upon the odium that would rest upon the whole body of tea-dealers, instead of a few obscure individuals, if they did not positively deny the reports in circulation, that nine-tenths of the tea-trade adulterated their tea with ash, sloe, and other leaves. He felt satisfied that no respectable house in the City of London was guilty of such illegal practices, and therefore they ought not to suffer an imputation of so serious a nature to pass unnoticed. At first he and other persons, the heads of the trade, thought that the falsehood of so general a censure was so glaring, that no person would give credence to it, and therefore it would be best not to notice the aspersion: but this statement

had gained such belief, that he thought it necessary that a committee should be appointed by the general body of the tea-trade, with a view to examine what course should be pursued to expose the perpetrators of such an abominable fraud. This proposition was seconded, and the appointment of highly influential persons to act as a committee was made; but the determined manner in which the state prosecutions were carried on, quickly exposed and punished the real practisers of the deceit, the Board of Excise feeling, that, not only for the sake of the revenue, but for the satisfaction of the people, it was necessary to take immediate and decided steps.

Sloe leaves have been more generally employed in this nefarious practice; and in the year 1778, there was a printed circular, signed by the chairman and secretary of a company of grocers at Norwich, stating that they had seen a small quantity of green tea, of which one fourth-part was avowedly sloe leaves. In the reign of George II. an act of Parliament recites, that “several ill-disposed persons do frequently fabricate, dye, or manufacture very great quantities of sloe leaves, liquorice leaves, and the leaves of tea that have before been used, or the leaves of other trees, shrubs, or plants, in imitation of tea, and do likewise mix, colour, stain, and dye, such leaves with terra japonica, sugar, molasses, clay, logwood, and with other ingredients, and do sell and vend the same as real tea, to the prejudice of the health of his Majesty’s subjects, the diminution of his revenue,

“and to the ruin of the fair trader:” the act then declares, “that the dealer in and seller of such “sophisticated teas, shall forfeit the sum of ten “pounds for every pound weight.” In a report of the Committee of the House of Commons, in 1783, it is stated that the quantity of fictitious tea annually manufactured from sloe, liquorice, and ash tree leaves, in different parts of England, to be mixed with genuine teas, is computed at four millions of pounds; and that, at a time when the whole quantity of genuine tea sold by the East India Company, did not exceed more than six millions of pounds annually.

In a pamphlet on the tea-plant it is stated, that a gentleman had made the most accurate inquiries on the subject of the adulteration of tea; which had led to his ascertaining the circumstances connected with this iniquitous manufacture. He found that the *smouch* for mixing with black teas is made of the leaves of the ash. When gathered they are first dried in the sun, then baked; they are next put upon a floor and trod upon until the leaves are small, and afterwards sifted and steeped in copperas with sheep’s dung. When the liquor is strained off, they are baked and trod upon until the leaves are still smaller, when they are considered fit for use. The quantity manufactured in one small village, and within eight or ten miles of it, cannot be ascertained, but it is supposed to be about twenty tons in a year. One man acknowledged to have made up six hundred weight in every week for six months together; the fine was sold at four guineas

per cwt., equal to nine-pence per lb.; the coarse at two guineas per cwt., equal to four-pence half-penny per lb. Elder buds are manufactured in some places to represent fine tea. Among the herbs that have occasionally been employed, are some of the most deleterious, such as the black and the deadly nightshade, ivy leaves, the leaves of the alder and of the potato; mountain sage, and the husks of wheat, have likewise been similarly applied. Besides these noxious vegetables, various minerals have been employed, either to give a curl to the spurious leaf, or to dye it; vitriolic preparations, verdgris, and copperas, have been thus made use of. There are various pamphlets in existence, published at the latter end of the last century, under the names of *The Tea Purchaser's Guide*, and *The Lady's and Gentleman's Tea Table and Useful Companion*, which contain some curious histories of the importation of damaged teas, and their sale by government. It would appear that great quantities were captured on board some Dutch vessels, and sold; they were little better than dirt, and so exceedingly disgusting (according to these authorities) to the eye, that few would have thought them worth acceptance; the smell of them was a musty brackishness, occasioned by the salt water having got to them while at sea, in which state they were for a considerable time. These, however, underwent the operations of fumigating, greying, and dyeing, with so much success, that they deceived persons conversant with tea; and even on a trial, good tea and some of this recovered tea were pro-

duced, to enable a jury to decide upon the comparative qualities.

The Chinese have been accused of themselves adulterating the tea, and undoubtedly this has been the case; they have, when discovered, repaired the evil as far as they could, by exchanging that which has been declared bad. The brokers in the English market are generally upon their guard, and it would be a matter of the greatest difficulty for any bad trash to find its way into the market. They examine with great attention, and report with undeviating fidelity, that which they have observed, as to the character and appearance, as well as the weight, of the contents of every chest offered at the general sales.

The deceptions practised in the tea trade have been long a subject of great notoriety and frequent complaint; but some of those persons who have written most vehemently against tea-dealers, have singularly enough promoted their schemes by giving recipes on the art of mixing one quality of tea with another, and entering into minute rules for improving indifferent teas by the addition of the more highly flavoured qualities. These writers have stated that Pekoe is seldom agreeable to tea-drinkers alone, and recommend that one ounce of Pekoe should be added to a pound of fine Souchong. That Souchong or Congou may be improved by such means, there can be no doubt; but those who have been in the habit of taking good Pekoe, would never think of such an admixture. It is, when used unmixed, delicious; it must however, to be fairly judged

of, be tasted without sugar, or with the smallest possible quantity, and likewise without milk. We are almost unacquainted with the delightful qualities of what may be designated a natural tea. Such changes, such mixtures, and such metamorphoses, go forward in various quarters, that we have an artificial compound of a very doubtful character constantly presented to us. Those who are the advocates of this system, and the artists of this manufacture, excuse themselves on the plea that they must gratify the acquired taste of the people, who are for the greater part fond of a strong beverage, and of a tea that can be tasted in spite of the sugar and milk. They likewise dwell upon the fact, that even in our wines we prefer too often a mixture to a natural growth. Thus the claret, which is so highly prized in England, is a particular manufacture, called *Travail à l'Anglaise*, made up of several stronger wines. We are accused in this country of wanting the power of appreciating those delicate flavours to which some other people are so completely alive. We are declared to be ignorant of the nice art of administering gratification to the palate; strong stimuli are required, whilst the more agreeable, yet lightly flavoured objects escape our attention. The tea sold under the name of Howqua's Mixture is formed from several teas; they are of a good quality, and have evidently been mingled with much knowledge of the prevailing taste of the tea-drinkers of this country; this mixture has therefore become a favourite with many individuals.

Various importations of a doubtful character were made when the East India Company's privileges first expired, and great fears were entertained that the country would be inundated by an article of inferior quality. Some teas brought over in 1834, were indeed of a miserable description, and doubtless found vent amongst the different classes of consumers. This evil corrected itself; the great competition in trade inducing the merchant to exert himself, and the tradesman to bring before the public that only which meets with a ready sale.

The necessity of avoiding an entire dependence upon China for tea, has long struck some of our most intelligent statesmen; and the idea of rearing the tea plant in India, of a quality and in quantity to satisfy the English market, was sanguinely entertained: the wealth that would accrue to Bengal had been estimated, after making every allowance for the fall in price, from two to three millions annually; whilst the prospect of seeing the sandy and barren slopes of rugged mountains the seats of agricultural industry, was painted in glowing colours. The experiments, alike instructive in their failure and their partial success, which had been instituted by other nations, proved that in many parts of the globe the tea-plant vegetated and arrived at a state of the utmost perfection; for it had been reared in Java, St. Helena, Brazil, Penang, Carolina, Rio Janeiro, and even in Paris and in Corsica it had been obtained, equal in appearance to the tea of commerce. Nor was the reflection absent from the minds of considerate men, that to China the commerce

carried on with this country was by no means so important to the government that they would make any very great effort to retain it: the suspension of the trade might produce serious inconvenience to the parties concerned, and might diminish the revenues; but the government reposes confidence in her enormous population, in the certainty that the empire contains within its own limits every thing necessary for the welfare of her people; whilst the difficulties which her deserts, her mountains, and her seas, interpose, would prevent hostile aggression. It was remembered, and the fact was quoted by Mr. Walker, in an able paper containing a proposition for the cultivation of tea in the Nepaul Hills in 1834, that the trade between Russia and China was interrupted in the reign of the Empress Catherine. This interruption caused the cessation of the importation from Russia to China of woollens and calicoes, and the industry of England supplied the want. The empress was first obliged to sue for a renewal of the intercourse, after a lapse of seven years. The Emperor Kein Lung replied, in a despatch, which is said more to have mortified the empress than any untoward occurrence during her reign, by calling the Russians beasts, dogs, and 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. The Russians, too glad to avail themselves of the trade, were obliged to submit to receive, in exchange for their Siberian furs, the mouldy tea, mildewed calicoes, musty rhubarbs, which had been

collected at Kiachta during the suspension; their remonstrances meeting with the reply, that as these goods had been brought for them from an immense distance, they must take them or none.

There is no region of this earth that demands a more thorough investigation of its capabilities than does that magnificent portion of Asia, which this country has, by the exertion of its prowess in arts and in arms, rendered subservient to her prosperity. Every day develops further powers for the use of man; a new era has dawned upon India; industry and ingenuity will speedily avail themselves of the mighty resources which she presents; and the men of science, who are now investigating the agricultural produce of that immense territory, will, ere long, demonstrate to what a state of perfection may be brought some of those materials which have remained unexplored or forgotten. Amongst the vast number of subjects which were canvassed, and again neglected, at the end of the last century, was the possibility of introducing the tea-plant into India, and the practicability of preparing it in such a manner as to obtain supplies equal to the demand in the European markets. Sir Joseph Banks made a communication to the Court of Directors of the Honourable East India Company in 1778, and it was forwarded to Bengal. In the year 1793, when Lord Macartney was ambassador to China, he transmitted some plants from China to Bengal, his excellency having been informed that there were districts adapted for their cultivation.

Dr. David Scott sent, in 1826, from Munipore,

specimens of the leaves of a shrub which he believed to be real tea. Mr. Corbyn, the highly intelligent editor of *The India Review, and Journal of Foreign Sciences and the Arts*, found in the year 1827, at Sandoway in Arracan, a tea-tree, which appeared to him quite as fine as those in the neighbouring country of China. He observed it abundant on heights and in valleys. He noticed that one of the most luxurious *petit* dishes of the Sandowayese is a preparation of the tea leaf. They procure a considerable number of the leaves, and steep them in a pan for some time, after which they are beaten into balls ; with these are mixed oil and garlic. He forwarded a specimen of the leaves, and a plant in its natural soil, for the governor-general's gardens at Barrackpore. His report was at that time considered to be of sufficient importance to induce Lord Amherst to place it on the public records, and to forward a copy for the Honourable the Board of Directors. In the year 1834, for the first time, the subject of producing tea in India became the subject of the consideration of the Government there ; and Lord William Bentinck laid before his Council two memoirs, the one which his lordship had received from Mr. Walker of London, the other from Dr. Wallich, the superintendent of the Botanical Garden near Calcutta. In February of that year, the Committee, which consisted of eleven English and two native gentlemen, was formed to collect information as to the soils and situations best adapted to the tea-plant ; and that Committee deputed their secretary, G. J. Gordon,

Esq., to ascertain the nature of the soils in China, to collect tea-plants and seeds, and to procure a few Chinese cultivators and tea manufacturers. Of his mission that gentleman has published a very interesting journal, the result of an attempted ascent of the river Min, to visit the tea-plantations of the Fokien provinces; his party, however, met with so much opposition, that they were compelled to return. An excursion to the tea-hills, which produce the tea known under the designation of Ankoy tea, was more successful, in company with Messrs. Gutzlaff, Rider, and Nicholson; and he had opportunities of gaining information of considerable importance.

In the year 1834 the Bengal Government appointed a Committee for the purpose of submitting a plan for the introduction and cultivation of the tea-plant. This Committee commenced its operations by issuing a circular, which contained a general outline of such information as it had been enabled to collect, relating to the climate and to the soil of China most congenial to the growth of the tea-plant, and they requested to be put in possession of such knowledge as had as yet been obtained of any districts in India which resembled the tea-districts of China. A letter from Dr. H. Falconer, superintendent of the Botanical Garden at Serampore, to G. J. Gordon, Esq., the secretary of the Committee, was published in the Journal of the Asiatic Society for that year, in which he pointed out the aptitude of the Himalayan range for tea culture; he explained that, although there was no part of the

Company's territories in India that could supply all the conditions of the tea-districts of China in respect of climate, yet there are situations which approach it so nearly, as strongly to bear out the conclusion that tea may be so successfully produced as to be an object of commercial importance; he thought that the plains of India were not adapted for it, for the mean annual heat of the climate, from 30° N. lat. down to the parallel of Calcutta, was much beyond that of the tea cultivation in China. In addition to an excessive summer heat, with either hot winds or a close scorching air during the day, they have a barely temperate winter, and heavy periodical rains. Though some Chinese fruits, such as the leche, the loquat, the wampee, succeed, yet the tea-plant requires a greater cold to thrive in. He thought there was a great similarity between the climate of the tea-districts of China and that of the lower heights, or the outer ridges of the Himalayas, in the parallel of $29^{\circ} 30'$, the chief difference perhaps being more moisture in this country. To his superintendence, after his very able report, was committed the charge of some tea-farms in the localities which he pointed out; and results of the most satisfactory kind were obtained, and anticipations of the most sanguine success were indulged in.

Whilst a series of very important investigations and trials were going forward, a discovery took place, which, in the language of the Agricultural Society of Calcutta, in an address to Lord William Bentinck, "we do not hesitate to pronounce as one of a most interesting and important nature, as con-

nected with the commercial and agricultural interests of this empire. We allude to the existence of the real and genuine tea-plant of China, indigenous within the Honourable Company's dominions in Upper Assam. This shrub is no longer to be looked upon as a plant of doubtful introduction. It exists, already planted by the hand of Nature, through a vast extent of territory in Upper Assam, bordering on the Chinese and Burmese provinces of Shore and Yunnan, where it is at present cultivated for its leaf, both for consumption and exportation."

The indefatigable researches of Captain Jenkins, the political agent, and Lieutenant Charlton, proved that the tea-shrub was indigenous to Upper Assam, which had been conquered from the Burmese; and that it was found from Sadeya and Beesa to the Chinese frontier province of Yunnan, where the shrub is cultivated for the sake of the leaf. They forwarded samples of the fruit and leaves.

The Tea Committee, knowing that several species of *Camellia* were native in the mountains of Hindostan, and that these were indigenous to the north-eastern frontier provinces, were disposed to expect that the tree which had excited the attention of these gentlemen would prove to be some species of *Camellia*; but the examination of the specimens which were placed before them fully convinced them that it was the identical tea of China, the exclusive source of all the varieties and shades of the tea of commerce. The Supreme Government then came to a determination of having the tracts of country producing the plant properly explored. The

officers selected for this interesting object were Dr. Wallich and Mr. Griffith as botanists, and Mr. Maclelland as geologist. They were joined by Mr. Bruce as guide, who had acquired an intimate knowledge of the chiefs in whose country the researches were to be carried on. On the 29th of August, 1835, the Deputation left Calcutta, and arrived at Sadeya, the frontier station of Upper Assam, early in January, 1836. On the eleventh of the month they quitted Sadeya for the tea-tracts. They arrived at Kufoo on the 15th; on the following day they, for the first time, saw the tea in its native state. They found it at a distance of about two miles to the south of the village, in a jungle, its extent scarcely equalling 200 yards square measurement: to the eastward it terminated abruptly; in other directions it ceased by degrees. The ground was intersected with numberless small ravines: there were curious looking mounds, chiefly round the bases of the larger trees or the clumps of bamboos. The soil was light, loose, and of a decided yellow; the situation was low and damp. It was in this locality that the Deputation observed trees of higher stature than those which they found in other stations. There were five places at which the tea-plant was examined in its native state: they were comprehended in a tract of country, situated between the parallels of about $27^{\circ} 25'$ and $24^{\circ} 45'$ north latitude, and $96^{\circ} 94'$ of east longitude.

Mr. Griffith, in his very valuable report, has enumerated the localities, and described their extent with great precision. From this appears

the incorrectness of the term which has been applied to them, of tea-forests. The tea-plant in none of these places exceeded the size of a small tree, and almost invariably occurred as an ordinary sized shrub: the term patches, as applied by Ellis, is more descriptive of their appearance, than any other. They are all clothed with excessively thick tree-jungle, the trees being of a moderate size. So thick are these jungles, that Mr. Griffith doubts whether the tea-plants, not even excepting the arborescent ones, ever receive the direct rays of the sun. The tea seems to struggle for existence amongst many other trees, and becomes tall and slender, with most of its branches high up. All the tea-plants in Assam have 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. Mr. Bruce, in his account of the manufacture of the black tea, as now practised at Sudeya, has explained this by means of a diagram. The Deputation left the country on the 9th of March, after having collected the most satisfactory information, which was laid before the proper authorities. The consequence of these inquiries was a determination on the part of the Government to cultivate the tea, and to commit to Mr. Bruce the superintendence and complete management of the tea-tracts. He has furnished a map of all the tracts which he has discovered: there are many on the south side of the Debreë river,

called the Muttuck country, which appears to be one vast tea-district, its whole soil being adapted for the growth of the shrub. The inhabitants, ignorant of its value, have cut it down, and converted the tracts into paddy ground : but they have now learnt to prize it ; and when they bring to the superintendent a branch from any new tract, they are rewarded. This country belongs to an independent native Rajah, but is under the control of the British authority. Some of the tracts are in the Singpho country, considerably within the British boundary. The tea-tracts in the Singpho country are much larger than those in the Muttuck. The inhabitants have long used tea, and profess to be good judges of it : they drink it, but prepare it differently from the Chinese. They pluck the young and tender leaves, and dry them a little in the sun ; some put them out in the dew, and then again in 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. All the tea-tracts are in the valleys.

Few subjects are more deeply interesting, or involve more important considerations, although not immediately evident to common observation, than the laws which apportion the distribution of

the different tribes of vegetables over the face of the globe. The influence which temperature, humidity, light, elevation, aspect, and soil, have upon these beings is such, that, without some knowledge of them, the naturalist cannot estimate the value of such a discovery, as the existence of a particular vegetable in any district. If it can be proved that the greater number of these causes, which exercise an immediate influence upon the growth of plants generally, are nearly similar in two situations, we should draw the conclusion that a particular vegetable of the same species would be endowed with the same characteristic qualities, if grown on either of these situations; an examination, therefore, of the vegetation with which the tea-plant is associated, both in China and in Assam, becomes most interesting. The data upon which this is founded are unfortunately somewhat meagre. Mr. Griffith, however, has admirably availed himself of the materials that have been placed in his hands; and although much requires to be filled up, yet a fair conclusion may be drawn, that the Flora of Upper Assam approaches to a considerable extent to that of certain portions of China; he has shown the singularity of the Flora of Upper Assam, which is of such a nature and such an extent as not to be met with elsewhere in India, at the same elevation, even as far north as the thirty-first parallel. He has given a list of 780 species for Assam, and 623 for China. The chief features of the Flora of either are tropical, and the singularity of either consists in the existence of forms in tolerable

frequency, which could not have been expected from the latitude, and the small elevation above the sea. It is singularly remarkable, that of the eight genera adduced by Dr. Royle in proof of the similarity of the Flora of the mid region of the Himalayas with that of the central provinces of China, five are found in the plains of Assam. Neither the climate of China, nor that of Upper Assam, is yet sufficiently known to us to enable us to form a comparison between them. In Assam there would seem to be great humidity: the rains are of long continuance; they commence in March, and last till about the middle of October. Altogether we may fairly, however, draw the inference, that a very striking similarity in humidity, temperature, soil, and in all the leading features, exists between the province of Upper Assam and Keangnan and Kiangsoo, two districts of China most remarkable for the production of tea.

Mr. Bruce has raised several plantations, and given a very interesting narrative of his proceedings, and of the effects of sun and shade. About the middle of March he brought three or four thousand young plants from their native soil in the Muttuck country, about eight days' journey, and planted them in tree-jungles, 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 he 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, he brought from the same

place 17,000 more young plants, and planted them in deep shade; they threw out new leaves and flourished as much as could be expected, although the soil was nothing like that from whence they were taken—in which point alone the places differ. He converted a jungle into a tea-garden, on account of the Government; where there was formerly one tea-plant, there were 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 he permitted to stand, with slender trunks and a few branches only at the top. This tract or garden has yielded more tea than twelve times the same space of ground in the jungles would have done. He 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 wore off, and the leaves became as green as those in the shade. As this tract answered so well by being cut down and set fire to, he tried the same experiment upon another tract close by; and it came up to what he 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, he 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 he could not set fire to, he threw into the water-courses. These tea-

plants did well, but still each plant remains single, consequently has not many leaves, and is much in the same condition as when under shade. He has not had sufficient time to show what effect the sun may have on the leaves, and the tea made from them. This tract had a curious appearance, the plants appearing hardly strong enough to support themselves now they are deprived of their friendly shade. He has some other tracts under experiment ; some in which he 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. He has cut off branches of the tea-plants and laid them horizontally in the ground, with an inch or two of earth on them, and these threw out numerous shoots the whole length of the branch ; other branches were simply pushed into the earth, and they have grown. This was all in the shade, nor does he think they would answer so well in the sun.

Several samples of two sorts of black tea, which had been prepared from the leaves of the shrub discovered in Upper Assam, were received in England in August, 1838, and in the following November an additional supply was received.

It appears that this consignment arrived in Calcutta on the last day of January, 1838. In a letter, dated the 20th March following, the Tea Committee observed that, "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 portion of the

tea was either wholly spoiled, or so much deteriorated, that no process could have restored it to any thing like a fair quality. They had, 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 any thing that might add to the many disadvantages under which they must necessarily arrive at a destination, where they would, in all probability, have to be subjected to the severe test of examination by the first tea inspectors in London.

“The Committee begged most particularly to urge on the consideration of Government, that not only were 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 may reasonably be expected will be diminished and progressively 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.”

The appearance which is presented by the Assam tea is that of a large leaf, jet black, or dark brown,

much curled ; there are many pak-ho points in it ; some stalks are found in it ; its flavour very much resembles that of a burnt Caper Souchong ; it has a delicate and agreeable smell ; it makes a very pleasant infusion, of a deeper colour than ordinary Souchong ; it has every quality that belongs to a good, sound, unadulterated tea. There cannot be the slightest doubt of its being the genuine produce of the real tea-plant ; and when all the facts are known relating to the preparation of tea, we shall have introduced into this country many varieties obtained from the farms which are now in cultivation ; the sample already imported holding forth the promise of an excellence which will yet be obtained.

This lately acquired territory of Assam is situated at the extreme north-east frontier of Bengal ; it is almost in immediate contact with the empires of China and Ava, from each of which it is separated by a narrow belt of mountainous country, inhabited by barbarous tribes of independent savages, and which may be traversed in ten or twelve days. From this mountain range navigable branches of the great rivers of Nankin, of Cambodia, of Martaban, of Ava, and of Assam, derive their origin, and appear designed by nature as the great high-ways of commerce between the nations of Ultra Gangetic Asia. Mr. M'Cosh has contributed to the Journal of the Asiatic Society of Bengal an interesting paper, compiled from original manuscripts placed in his hands by Captain Jenkins, the indefatigable agent to the Governor-General on the

north-east frontier, and from the letters of Major White, political agent for Assam. He observes that this beautiful tract of country, though thinly populated by straggling hordes, and allowed to be profitless in primeval jungle, or run to waste with luxuriance of vegetation, enjoys all the qualities requisite for rendering it one of the finest in the world. Its climate is cold, healthy, and congenial to European constitutions; its numerous crystal streams abound in gold dust and masses of the solid metal; its mountains are pregnant with precious stones and silver; its atmosphere is perfumed with tea growing wild and luxuriantly; and its soil is so well adapted to all kinds of agricultural purposes, that it may be converted into one continued garden of silk, cotton, coffee, sugar, as well as tea, over an extent of many miles. This valuable tract is inhabited by various races, some of them acknowledge the authority of the Burmese, and some that of China. The Chinese have long carried on a commercial intercourse with the Singphos of Assam, and it would even appear that many thousand maunds of tea are manufactured at a place called Polong, and exported to China. Mung-kung, the chief depôt of Chinese trade, situated on the Mugaum river, is from fifteen to twenty days' journey only from Assam.

Amongst the recent discoveries made in the remarkable province of Assam, and which lead us to believe that it may rival, in its productions, the Celestial Empire, are six varieties of silk-worms, three of which are different from the well-known

Bombyx Mori, and from the two others indigenous to India, which are worked in Bengal. India may therefore yet provide Europe with a material which may be made to supply the place of cotton and woollen cloth ; and the disappointment, which has so often been expressed by so many highly ingenious men, may yet be obviated by the production of a silk, which may vie with any that could be brought to market. A communication on the silk-worms and silks of Assam by Mr. Hugon, and another upon the indigenous silk-worms of India by Dr. Helper, which was read at two meetings of the Royal Asiatic Society of Bengal, lead to hopes that Assam may yet be found one of the most valuable acquisitions to the British empire. Still further to assist in the development of the vegetable treasures of the province, supplies of coal can be obtained. Three specimens of Assamese coal have been transmitted to Calcutta, which turned out to be of a very respectable quality ; they burn with a rich flame, being highly bituminous, and therefore suitable for steam-engine fires. There are four places in which large supplies are found. On the south bank of the Burhampootur river they are easily conveyed to the neighbouring streams, so that steam navigation may be carried on upon a great scale, and thus convey to the most distant points the natural productions of this highly favoured spot. All these points are of the deepest moment to this country ; and deserve the most zealous investigation from a Government, whose object it must be to dif-

fuse knowledge and truth throughout the civilised world.

The tea-plant being distributed so extensively over large portions of Upper Assam, there can be no doubt that an ample supply for European consumption can be obtained thence. Even the present tea-tracts may be enlarged almost to any extent, from the numerous seedlings found amongst the tea-plants, from the great number of seeds that can be collected annually, and from the number of cuttings that may be planted. There appears in one district a formidable enemy to combat with, there is scarcely a plant that has not some parasitic insect living upon it, and destroying the hopes of the cultivator; thus the tobacco often becomes the source of disappointment to the planter, for a worm attacks it in the month of July, and in an incredible short space of time destroys a whole field of plants, and his inroads are almost unknown until the mischief is complete. The hop-grower, too, has many such difficulties to encounter; his plantation is often ruined by a "fly," which commences its attacks early in the spring, followed somewhat later by a winged fly, which not only commits a series of ravages, but is the precursor of another, which appears not to eat, but to poison the leaf. The enemy of the Assam tea-plant, it would appear from Mr. Bruce's narrative, has some singular characteristics: he had sown numerous seeds at Sudeya, in the sun; they appeared to thrive very well for the first year, but an insect, which he thinks is called a mole-cricket,

nipped off the young and tender leaves, carried them into a hole under ground near the root of the plant, the consequence of which was that he did not succeed in rearing a single plant. This may be attributed to the exposure of the plant to the rays of the sun ; for, he observes, that he sowed some seeds in his garden under the shade of trees and bushes, where they succeeded remarkably well.

The idea of Auguste de Candolle is, that the Burmese do not drink the tea of their own frontier, but import from China what they use ; and he employs this as an argument against the excellence of the Assamese tea, which he says is used as a pickle ; this is founded upon the valuable evidence of Mr. Crawford, who observes, "In the Burman empire they consume very little tea, besides what they grow themselves ; this last, although a genuine tea botanically, is a peculiar variety. The Burmese mix with it oil of sesamum and garlic, and give it to their guests as a token of welcome. There is a very large consumption of it, and it is a considerable branch of trade." De Candolle, however, although he thinks the Assamese tea will prove of inferior quality, does not consider the discovery of less importance to Great Britain, and acknowledges the necessity of paying every attention to its cultivation.

The tea of Assam may be obtained at a cheap rate, when once the establishments for its growth and preparation are placed upon a proper footing. The land is of easy cultivation, and as the necessaries of life are purchased at a cheap rate, labour

will not be expensive. The cultivators will, of course, at the outset, be obtained from China; but as they have no objection to give their instructions to others, or to answer candidly any questions upon the manufacture in China, there will be no difficulty in instructing labourers capable of undertaking the general and particular management of the plantations. The facility of transmitting the tea to Calcutta is another striking feature in the advantages which Assam presents; and although during the water carriage down the Burhampootur, a consignment of tea, owing to some faulty arrangement, was damaged, the river affords means of transport, which can be easily rendered available. One of the peculiar features of the lower and central divisions consists in tracts of sands stretched along the Burhampootur, called "churs:" their breadth in some places is from eight to ten miles; they are, throughout the whole of their extent, clothed with dense grass-jungle. These grasses are mostly of a gigantic size, some of them often measuring twenty feet in height; they consist of four or five species of *Saccharum* and a species of *Arundo*. As the genus *Saccharum* preponderates over the others, and is, perhaps, during the efflorescence, the most conspicuous of the order, the appearance of the churs during the flowering of these plants must be very striking. Mr. Griffith in a valuable paper has given a useful list of the plants collected from Upper Assam, and pointed out such tracts of sand and belts of jungle as he had become acquainted with in the neighbourhood of Sadeya, near

the confluence of the Dihong with the Burham-pootur.

The Tea Committee arrived at the same conclusion with Mr. Bruce that the indigenous tea of the Singpho country was of the green tea species. The circumstance that seemed to weigh principally with Mr. Bruce appears to have been the quality of preventing sleep attributed to it. The Committee, however, state, that they were predisposed to do so from the knowledge, that in point of locality and of soil there is a correspondence between those, in which the Singpho plant is produced and the green tea, but 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. The tea, however, was dried in the fashion of black tea, and arrived in Calcutta under the denomination of Paho and Souchong. Of course many were the difficulties to be contended with in the first experiment: the plants from which the leaves were gathered were in their wild and uncultivated state; and the preparation was managed with great care, under the auspices of Mr. Bruce, over a nicely regulated coal fire, covered with ashes in baskets purposely made, having the form of two inverted cones with their ends truncated, as minutely described and figured by Mr. Bruce in his memoir, a portion of which has been republished in England. The Tea Committee express their obligations to Dr. Wallich, their secretary, for the skill and exceeding trouble he took

in the despatch of the consignment. This distinguished botanist having learnt that it was customary in China to pay great attention, lest any cargoes consisting of articles of strong flavour might be likely to impregnate the delicate and fugacious aroma of the tea, and that they even planked off the spaces allotted for the chests, recommended this caution. The Assam tea was embarked on board the *Calcutta*, Captain Bentley; and as ox-hides had for a long time formed part of the cargo of all homeward bound vessels, measures were taken for the preservation of the tea, and for the introduction of it to the East India Company at home, in a perfect and unimpaired condition.

Anxious to obtain for the tea which had been imported into England a proper reception, and at the same time to give as great a number of persons as possible an opportunity of judging its real merits, the East India Company transmitted samples to all parts of the empire, and it was distributed amongst scientific persons, and individuals distinguished either by their station or by the estimation in which they were held. The great majority of those who tested its merits expressed their opinions in writing; and the consequence has been a collection of a mass of favourable evidence, which has been carefully preserved, and will most probably be published amongst the parliamentary documents which will be laid before the House of Commons. At the January tea sales the East India Company submitted for competition the last importation, consisting of eight chests, each containing 320 lbs.

The novelty of the supply excited great attention amongst the brokers and tea-dealers, who were naturally anxious to obtain some portion of the tea. A competition of an unusual character was carried on, which raised the price far beyond the most sanguine expectation that had been entertained. Although the tea was known to have been slightly deteriorated by the inattention during its transit, and by the firing it had gone through at Calcutta, it was generally acknowledged to be equal to the ordinary Souchong of the market, and it was expected that a price somewhat higher would be given for it, as an article of curiosity; but such was the anxiety manifested to get possession even of a chest, that from 16s. to 34s. was the selling price; and it afterwards appeared that the whole had become the property of Captain Pidding, the proprietor of the Howqua Mixture, who was detertermined to be the means of spreading wide this novel exportation from a British colony; he has since distributed small samples, for which the sum of 2s. 6d. was charged. The extraordinary impetus given to this sale has prevented the East India Company from ascertaining the marketable value of the commodity; but it has been of infinite importance, by drawing public attention to the subject.

The Dutch have been anxious to naturalise the tea-plant at Java, and have formed plantations at Bentenzong and at Garvet, where they have been successful, and have proved that Java can produce tea in sufficient quantity, if proper means be taken for its cultivation. Their present plantation has

been reared from seeds obtained from Japan ; but the Committee of Agriculture has sent for some seeds from China, and is using every exertion to improve the quality and quantity of the growth. Mr. Jacobson, the inspector of the cultivation, has the most sanguine expectations that he will be enabled to import tea, prepared precisely as is done in China, and quite equal in all its qualities. This gentleman has shown the greatest zeal and anxiety to carry into effect this object : at the hazard of his life he obtained from China a number of experienced labourers, who have been employed at the various farms. He has likewise imported some millions of tea-plants, with machines and tools in use in China. The teas sent to Holland have been spoken of as equal in flavour to any that have been imported from Canton : their qualities have been various, some black and others green — samples of Souchong and Pekoe amongst them. The different plantations have yielded different qualities, some of them much better than others. Some months since there was a public sale in Amsterdam of 218 chests of Java tea, which brought very high prices. The Pekoe was sold for 500 cents per lb., and Souchong from 265 to 300 cents. The newspaper called the *Handelsblad* observes, — “ It is true that the high prices must be considered rather as a proof of the interest taken in the new production of our colonies, which every body wishes to possess, than as a criterion of the value of the tea. We are, however, happy to learn, that competent judges consider this Java tea to be excellent ; and affirm that it not only

is very nearly equal to that of China, but that many of the sorts sold there were of a very fine kind, such as are very rarely sent from China." The success that has followed upon the plantations in Java ought to be a stimulus to exertion in India; for Java does not offer such advantageous circumstances for cultivation as does Assam. The persons who have superintended the introduction into the former country have exerted themselves to import annually the choicest seeds, and to procure cultivators and factors who had a thorough knowledge of all the points connected with its growth and preparation. With industry, zeal, and attention, there is no doubt that the Assam plant will be found superior to any that may be imported into any other climate from seed; for Nature has done that which art in vain attempts to imitate, and man has only to reap the benefits which she has planted for him.

“ Now stir the fire, and close the shutters fast ;
Let fall the curtain, wheel the sofa round ;
And while the bubbling and loud-hissing urn
Throws up a steamy column, and the cups
That cheer, but not inebriate, wait on each,
So let us welcome peaceful evening in.”

Thus sang one of our most admired poets, who was feelingly alive to the charms of social life; but, alas! for the domestic happiness of many of our family circles, this meal has lost its character, and many of those innovations which despotic fashion has intro-

duced, have changed one of the most agreeable of our daily enjoyments. It is, indeed, a question amongst the devotees to the tea-table, whether the bubbling urn has been practically an improvement upon our habits; it has driven from us the old national kettle, once the pride of the fire-side. The urn may fairly be called the offspring of indolence; it has deprived us, too, of many of those felicitous opportunities of which the gallant forefathers of the present race availed themselves, to render them amiable in the eyes of the fair sex, when presiding over the distribution

“ Of the Soumblo, the Imperial tea,
Names not unknown, and sanative Bohea.”

The consequence of this injudicious change is, that one great enjoyment is lost to the tea-drinker—that which consists in having the tea infused in water actually hot, and securing an equal temperature when a fresh supply is required. Such, too, is what those who have preceded us would have called the degeneracy of the period in which we live, that now the tea-making is carried on in the housekeeper's room, or in the kitchen, —

“ For monstrous novelty, and strange disguise,
We sacrifice our tea, till household joys
And comforts cease.”

What can be more delightful than those social days described by Tate, the poet-laureate? —

“ When in discourse of Nature's mystic powers
And noblest themes we pass the well-spent hours,

Whilst all around the Virtues — sacred band,
 And listening Graces, pleased attendants stand.
 Thus our tea conversations we employ,
 Where, with *délight*, instructions we enjoy,
 Quaffing, without the waste of time or wealth,
 The sovereign drink of pleasure and of health.”

The first allusions to the Chiai Catai of the Chinese are to be found in the voyages and travels by *Battista Ramusio*, in some observations upon the books of *Marco Polo*, in *Maffei*, and in *Giovanni Botero*, who in his treatise on the causes of the magnificence and greatness of cities, uses language to this effect : — “ The Chinese possess an herb from which they press a delicate juice, which serves them for drink instead of wine ; it also preserves their health, and frees them from all those evils which the immoderate use of wine produces.” After these authors a whole list of writers may be named, who mentioned the subject incidentally. Amongst these, the most remarkable were *Linschoten*, *Texeira*, *Jarric*, *Trigault*, *Caspar Bauhin*, *Bontius*, *Olearius*, *Mandeslo*, *Moriset*, *Varenius*. A catalogue of these authors, and of more modern authorities, has lately been collected with great industry and personal attention to the contents of their volumes by a young student of great merit at *Utrecht*, *Adrian Bergsma*. Not satisfied with a mere enumeration of authors, he has marked in his little essay all such books as he had consulted, and given the page of the volume in the best edition, in which may be found the subject to which he refers. To *Kæmpfer*, who resided two years in *Japan*, and who published

in 1726 two volumes, which have been translated into most languages, is to be looked as the best authority on the most important points, more particularly for the best engraving that had been given of the shrub before it had been seen in Europe. In the *Acta Hafniensia* is to be found the first delineation of the tree; but it had been taken from a dried specimen; and however accurate, it furnishes us with but a faint idea of the living plant. Bontius in 1648 published a narrative of his voyage with Admiral Matelief in the East Indies and China, in the shape of a quarto, distinct from the two volumes of which this account had formed a part; and it contained the representation of the plant. Plukenet published a better engraving; Breynius one still more perfect: but the first authentic figure is that of Tillæus, drawn from the one introduced by Linnæus. Besides the writers who mentioned the subject in travels and in botanical works, there were many eminent men, whose attention was drawn to it by the increasing taste of the people of Holland, of Germany, and of England, for tea. Great curiosity was excited by the learned to obtain specimens of the various parts of the plant. A report existed that there was one in England, the property of an East India captain, who kept it for some years, and refused to part with either cuttings or layers. Its certain introduction, however, was reserved for the greatest genius the world has yet produced; one who combined industry with sagacity — who was the most attentive observer and recorder of every thing in Nature, and who has done more for man than any

who have preceded or succeeded him — who has led the way in knowledge, from whom, at this hour, society is reaping the richest treasures.

It was in the year 1763 that Linnæus had the satisfaction of receiving from China a living tea-plant. The delight with which he hailed the stranger, is painted in that interesting diary which he has left us, and which gives us such an insight into the enthusiastic character of that illustrious man. His words are, “At last, Linnæus received tea alive from China, which he had tried to succeed in for so many years, and which nobody before had been able to procure, as neither the seeds nor the root would bear the voyage. Linnæus desired that the moment before the ship set sail from China, the seeds should be put in earth, and watered as a hot bed. God blessed him even in this point, that he was the first who had the satisfaction to see tea imported into Europe alive; it was by means of Ekeberg. He looked upon nothing to be of more importance, than to shut the gate through which all the silver went out of Europe.” In the volumes, called *Amanitates Academicæ*, seven of which were published by Linnæus himself, is the dissertation by Tillæus, entitled *Potus Theæ*. It was at the period at which it was published the most complete history of the tea-shrub; he describes it, gives the synonyms, the mode of preparing the leaves, its sensible qualities, its virtues; but likewise states, that it is hurtful in some states of body, such as palsy, colic, and ophthalmia: he quotes the authority upon these points of Kalm,

who declared that, until the introduction of tea into North America, carious teeth and debilitated stomachs were unknown. He concludes this essay, which has been the foundation of most of those that have since appeared, by a view of the circumstances which might promote its naturalisation in other countries. The death of the plant that was in the possession of Linnæus was recorded; but the example of its introduction led to care and attention on the part of others. Accustomed as we now are to see it occasionally in our conservatories, we can judge with difficulty of the rapture which Linnæus felt: nor can we enter into the pleasurable feelings which the amiable Letsom expresses, after alluding to the fact that many strong and good plants, which were shipped at Canton, during their voyage grew sickly, and one only survived the passage to England, he says, a few young tea-plants have been lately introduced into some of the most curious botanic gardens about London, so that it seems probable that this very distinguished vegetable will become a denizen of England, and such of her colonies as may be deemed most favourable to its propagation: his own drawing, which, for the period it was done, is of great elegance, was taken from a plant at Sion House, belonging to the Duke of Northumberland; it was the first that ever flowered in Europe.

We are now become familiar with that which was hailed as a great improvement in our botanic knowledge; and at the gardens of Messrs. Loddige will be found, at the proper season, the plants in full

flower, and growing to a height of six feet. In France attempts have been made to naturalise and to introduce it on a large scale; and a gardener published a prospectus, which promised to subscribers an early supply of what he named *Xenophonia Thea Sinensis*; but as the art of drying it was unknown, the scheme was quickly abandoned.

Nicolaus Tulpius was about the first medical man who wrote professionally upon tea, but they were not original observations; they were the opinions of the most eminent men he had collected to give to the world. But in 1678 appeared the first edition of a book which speedily ran through three large impressions, and had a considerable influence upon the introduction of tea: it was entitled *Cornelio Bontekoe, Tractaat van het excellenste Kruid Thee*. Although this work was, from the extravagance of its commendations on tea, severely handled by some of the critics, it was translated into many languages, and quoted as the highest authority. He pronounced tea to be the infallible cause of health, and that if mankind could be induced to drink a sufficient quantity of it, the innumerable ills to which man is subject would not only be diminished, but entirely unknown. He thinks that 200 cups daily would not be too much. He is said to have been rewarded for his judgment by the liberality of the Dutch East India Company. Heydentrik Overcamp, who wrote the life of Bontekoe, states that his inducement to write was to recommend himself to his fellow-citizens, and to defend himself against his col-

leagues, who did not follow his theory or his practice. Etmüller recommended tea as a fine stomachic cephalic and antinephritic. Pechlin wrote a dialogue on tea, which he entitled *Theophilus Bibaculus*; and several poets indulged themselves in its praise. Petit wrote a poem; Peter Francius, two Anacreontics; Heinrich, a Doric Melydrion; and our poet-laureate, Tate, joined the melodious bards. Whilst it met with so much approbation, there were likewise those who were not equally satisfied with its merits. Boerhaave, Van Swieten, and others, attempted to stem the tide that was setting in its favour, but they have proved themselves incapable of resisting the general impression; for no beverage that has ever yet been introduced sits so agreeably on the stomach, so refreshes the system, soothes nervous irritation after fatigue, or forms a more grateful repast. It contributes to the sobriety of a nation; it imparts all the charms to society which spring from the enjoyment of conversation, without that excitement which follows upon a fermented drink. Raynal has observed, that it has contributed more to the sobriety of the Chinese than the severest laws, the most eloquent harangues of Christian orators, or the best treatises of morality. The people on the Continent are reverting to the habit of tea-drinking, which they had abandoned during the long war, when they were shut out from the possibility of obtaining it, and therefore sought a substitute in coffee. In Holland, in Germany, and in Russia, tea is much prized; whilst even in France, where for so many

years coffee was considered the only good beverage, and was used either strong or mixed with milk, according to the meal that was taken, our favourite shrub is beginning to be as much in use as long established custom has rendered it in England.

The introduction of tea-drinking into England has been ascribed to Lord Arlington and Lord Orrery ; and the year 1666, the *annus mirabilis* of Dryden, has been assigned as the exact date : but in the diary of Mr. Pepys, secretary to the Admiralty, the following is registered,—“ I sent for a cup of tea, a Chinese drink, of which I had never drank before.” In the diary of Henry, Earl of Clarendon, there is a memorandum,—“ Pere Couplet supped with me, and after supper we had tea, which he said was really as good as any he drank in China.” The first historical record, however, is an act of Parliament, passed in the year 1660, 12 Carl. II. c. 23. which enacts, that a duty should be laid of eight-pence per gallon on all tea made and sold in coffee-houses ; which were visited twice daily by officers, whose duty it was to ascertain what quantity had been made. In 1668, the Court of Directors, in the despatch to their factory at Bantam in Java, ordered them “to send home by their ships one hundred pounds’ weight of the best *tey* they could get ;” and the following year appears the first invoice of tea received by the East India Company, amounting to two canisters of 143½ lbs. The Directors had previously presented to her Majesty, the Queen, who, as Princess Catherine of Portugal, had been in the habit of taking this

beverage, twenty-two pounds of tea. It is to this present on her birthday that Waller has alluded in the beautiful lines that may be so often quoted, both for their merit and for the historical facts recorded by them. There is a curious bill preserved in the British Museum in a volume of pamphlets, collected by George III. and presented by George IV. which is well worthy of being reprinted, as the first account of the early use and the estimation in which tea was held. It unfortunately has no date; but from the price it may be fairly inferred, that it was printed about 1660. There is every reason to believe that Garway has been gradually changed into Garraway, and that he must have been the predecessor of the present holder of that well-known coffee-house:—

“ *An exact Description of the Growth, Quality, and Virtues of the Leaf Tea*, by Thomas Garway, in Exchange Alley, near the Royal Exchange, in London, Tobacconist, and Seller and Retailer of Tea and Coffee.

“ Tea is generally brought from China, and groweth there upon little shrubs and bushes, the branches whereof are well garnished with white flowers, that are yellow within, of the bigness and fashion of sweet-brier, but in smell unlike, bearing thin green leaves, about the bigness of Scordium, myrtle, or Sumack; and is judged to be a kind of Sumack. This plant hath been reported to grow wild only, but doth not; for they plant it in their gardens, about four foot distance, and it groweth about four foot high; and of the seeds they main-

tain and increase their stock. Of all places in China this plant groweth in greatest plenty in the province of Xemsi, latitude 36°, bordering upon the west of the province of Namking, near the city of Lucheu, the Island de Ladrones, and Japan, and is called ‘Cha.’ Of this famous leaf there are divers sorts (though all one shape), some much better than others, the upper leaves excelling the other in fineness, a property almost in all plants; which leaves they gather every day, and drying them in the shade or in iron pans, over a gentle fire, till the humidity be exhausted, then put close up in leaden pots, preserve them for their drink *tea*, which is used at meals, and upon all visits and entertainments in private families, and in the palaces of grandees: and it is averred by a padre of Macao, native of Japan, that the best tea ought to be gathered but by virgins, who are destined for this work, and such ‘*quæ non dum menstrua patiuntur: gemmæ quæ nascuntur in summitate arbuscula servantur Imperatori, ac præcipuis ejus dynastis: quæ autem infra nascuntur ad latera, populo conceduntur.*’ The said leaf is of such known virtues, that those very nations, so famous for antiquity, knowledge, and wisdom, do frequently sell it among themselves for twice its weight in silver; and the high estimation of the drink made therewith hath occasioned an inquiry into the nature thereof amongst the most intelligent persons of all nations that have travelled in those parts, who, after exact tryal and experience by all wayes imaginable, have commended it to the use of their several countries, and

for its virtues and operations, particularly as followeth; viz. —

“The quality is moderately hot, proper for winter and summer. The drink is declared to be most wholesome, preserving in perfect health until extreme old age.

“The particular virtues are these: —

“It maketh the body active and lusty.

“It helpeth the head-ache, giddiness and heaviness thereof.

“It removeth the obstructions of the spleen.

“It is very good against the stone and gravel, cleaning the kidneys and ureters, being drank with virgin’s honey, instead of sugar.

“It taketh away the difficulty of breathing, opening obstructions.

“It is good against tipitude, distillations, and cleareth the sight.

“It removeth lassitude, and cleanseth and purifieth acrid humours, and a hot liver.

“It is good against crudities, strengthening the weakness of the ventricle, or stomach, causing good appetite and digestion, and particularly for men of corpulent body, and such as are great eaters of flesh.

“It vanquisheth heavy dreams, easeth the frame, and strengtheneth the memory.

“It overcometh superfluous sleep, and prevents sleepiness in general, a draught of the infusion being taken; so that, without trouble, whole nights may be spent in study without hurt to the body, in

that it moderately healeth and bindeth the mouth of the stomach.

“ It prevents and cures agues, surfets, and fevers, by infusing a fit quantity of the leaf, thereby provoking a most gentle vomit and breathing of the pores, and hath been given with wonderful success.

“ It (being prepared and drank with milk and water) strengtheneth the inward parts, and prevents consumption ; and powerfully assuageth the pains of the bowels, or griping of the guts, and looseness.

“ It is good for colds, dropsys, and scurvys, if properly infused, purging the body by sweat and urine, and expelleth infection.

“ It driveth away all pains of the collick proceeding from wind, and purgeth safely the gall.

“ And that the virtues and excellencies of this leaf and drink are many and great, is evident and manifest by the high esteem and use of it (especially of late years) among the physicians and knowing men of France, Italy, Holland, and other parts of Christendom ; and in England it hath been sold in the leaf for six pounds, and sometimes for ten pounds the pound weight ; and in respect of its former scarceness and dearness, it hath been only used as a regalia in high treatments and entertainments, and presents made thereof to princes and grandees till the year 1657. The said Thomas Garway did purchase a quantity thereof, and first publicly sold the said tea in leaf and drink, made according to the directions of the most knowing merchants and travellers in those eastern countries ;

and upon knowledge and experience of the said Garway's continued care and industry in obtaining the best tea, and making drink thereof, very many noblemen, physicians, and merchants, and gentlemen of quality, have ever since sent to him for the said leaf, and daily resort to his house in Exchange Alley *aforesaid*, to drink the drink thereof.

“And that ignorance nor envy may have no ground or power to report, or suggest that which is here asserted, of the virtues and excellencies of this precious leaf and drink, hath more of design than truth, for the justification of himself, and the satisfaction of others, he hath here enumerated several authors, who in their learned works have expressly written and asserted the same and much more in honour of this noble leaf and drink, viz. Bontius, Riccius, Jarricus, Almeйда, Horstius, Alvarez Semeda, Martinivus in his *China Atlas*, and Alexander de Rhodes in his *Voyage and Missions*, in a large discourse of the ordering of this leaf, and the many virtues of the drink ; printed at Paris, 1653, part x. chap. 13.

“And to the end that all persons of eminency and quality, gentlemen and others, who have occasion for tea in leaf, may be supplied, these are to give notice, that the said Thomas hath tea to sell from sixteen to fifty shillings in the pound.

“And whereas several persons using coffee, have been accustomed to buy the powder thereof by the pound, or in lesser or greater quantities, which if kept two days loseth much of its first goodness ; and forasmuch as the berries, after drying, may be kept,

if need require, some months ; therefore, all persons living remote from London, and have occasion for the said powder, are advised to buy the said coffee-berries ready dried, which being in a mortar beaten, or in a mill ground to powder, as they use it, will so often be brisk, fresh, and fragrant, and in its full vigour and strength, as if new prepared, to the great satisfaction of the drinkers thereof, as hath been experienced by many in this city, which community, of the best sort, the said Thomas Garway hath always ready dried, to be sold at reasonable rates.

“ All such as will have coffee in powder, or the berries undried, or chocolata, may, by the said Thomas Garway, be supplied to their content ; with such further instructions and perfect directions how to use tea, coffee, and chocolata, as is or may be needful, and so as to be effecacious and operative according to their several vertues.”

There is no date to this handbill, but as Hanway ascertained that the price was 60s. per lb. in 1660, this bill must have been distributed about that period.

The physician does not confine himself to the knowledge of the power he possesses to restore health and to alleviate pain ; he must likewise give the information he has been enabled to glean relative to that which can preserve it, and may enable man to encounter all the varied circumstances and accidents of life, from the period of his birth to the moment of his decay. Yet how seldom has he given to the public the conclusions to which he

may have arrived, after a long observation of the effects which habits of life produce upon the states of well-being and of longevity. The few works upon diet are by no means sufficient guides to the various classes of society. They are for the most part composed of a few maxims and observations upon the nutritive qualities of each of the aliments of prevailing use. There is, however, an extensive field of research to be traversed by those who may be disposed to direct their attention to the influence of different aliments upon the human body; the circumstances under which they are best adapted for use, and the times at which one or other is to be preferred. The quality of food, the hours at which it is to be taken, must materially differ amongst the great classes of rich and of poor; but the different pursuits and occupations of life demand that there should be a similar distinction in diet. The individual engaged in the highest intellectual pursuits, who is frequently called upon, either in the senate or at the bar, to exert his powers of reasoning, and of conveying his thoughts to others, must follow very dissimilar habits of life from those of the man who, engaged in commercial speculations, goes to his counting-house at a certain hour, and there awaits intelligence which may either gratify or annoy him. The nervous systems of both are constantly in a high state of excitement, but that excitement varies in its character, and has different channels by which it is relieved. In the one instance there is an immediate vent to the feelings, and the pleasurable or painful emotions are quickly

displayed ; whilst in the other case, both joy and grief must be suppressed, and more especially the causes of anxiety : the mind therefore is more preyed upon, and the depressing passions gradually lead to a despondency which preys upon the health. The student in his chamber, the shopkeeper, the mechanic, each has his peculiar habits, which demand for him a knowledge of the effects of the ordinary aliment to which he is to have recourse, according to the circumstances of his life. Nor is it less necessary for the idle man to be familiar with the best mode of securing to himself, by a proper attention to his diet, the inestimable blessings which result from a well-ordered state of body. The particular aliment which is now under discussion, is not to be considered merely as affording some degree of nutrition, but with a view to its effects upon the different classes of society ; and likewise as to its combination with other portions of the diet, on which health so much depends.

The more simple the fluid which man takes as his ordinary beverage, the greater will be its facility of digestion, and of conversion into the component parts of the human system. There are many states of existence in which water, the common drink of all vegetating bodies, would be preferable to any other ; but besides its insipidity, there are circumstances which render it unpalatable, and there are also very valid reasons for avoiding its constant use as an aliment. There are districts and cities that cannot furnish a water fit for daily drinking, as well from the minerals that are held in solution in it, as

from the minute ova of plants and animals existing in the most extraordinary quantities. In a drop of water in some states may be discovered myriads of forms of living beings, of a soft transparent gelatinous and almost homogeneous texture, which have been called infusoria: these abound in some waters, rendering them unfit for common drink, or, as in some instances, may assist as medicinal agents. Thus some chalybeate waters have their surface covered with a crust of infusorial animalculæ, having a coat of mail investing their bodies; in sulphureous springs another race of these animalculæ cover their bodies with a coating of sulphur. It was most probably owing to the necessity of boiling the water, which in China is remarkable for its impurity, for the purpose of destroying all vegetating and prolific power, that the Chinese owe their present system of tea-drinking. In all warm climates a most uncomfortable sensation of thirst is constantly experienced, to relieve which, sipping some fluid not absolutely tasteless is constantly demanded. The salivary glands have it not in their power to yield any of that fluid which in a temperate climate constantly lubricates the mouth, and which is one of the most decided indications of general health, proving that the upper portion of the alimentary canal is in its wonted state, that no inordinate state of temperature marks the blood, and that the nervous system is fully adequate to meet collision with the world. The dry mouth and the white tongue are the first signs of indigestion; and almost all the disorders of the alimentary canal exhibit, as their

first symptom, some unwonted state of the salivary glands : whilst these are dry there can be no hunger ; and when their secretion becomes morbidly altered, or when, as life advances, it becomes impregnated with salts, the whole system partakes of the influence. Although the saliva under ordinary circumstances is insipid, yet either in a hot climate or in age it becomes capable, if it be not properly diluted, of actual fermentation ; thus the Indians obtain a fermented liquor by causing the toothless old women of their tribe to masticate maize, and to spit out the saliva into a receptacle for fermentation. M. Texier, in a highly interesting narrative of his visit to Afoum Kara Hissar, for the purpose of inspecting the celebrated poppy-farms of Asia, from which the opium was obtained, was astonished to find that the labourers when they had scraped off the opium in the form of a viscid jelly, placed it in earthen jars, and spit into them ; he told them that he thought water would be a proper substitute, but they assured him that the goodness of the opium was materially influenced by their secretion ; in fact that a species of fermentation goes forward, which materially assists the development of the meconic acid, which Nature has united with the alkaline base or morphia, the narcotic principle.

In almost all warm climates, those who have previously lived in more temperate regions, constantly sip or drink large draughts ; but if the first of these habits be acquired, and a bland, slightly bitter fluid such as tea be employed, health will be promoted, and the comfort that it produces will become

apparent. If this be not the case, large draughts of cold drink are necessary, which are determined to the surface of the skin, the perspiration becomes enormous, whilst the liver has its secretions materially altered, and the foundation for disease is laid. In India, in most of our settlements, the dangerous cup of brandy-and-water is too often before the parched sufferer: at first he naturally drinks it very weak, and limited to "a little;" after a time the draught becomes delicious; it is not only a luxury, but necessary to him; the spirit is increased, and, for a time, the skin is the channel by which the extra quantity of fluid is carried off: but this is most mischievous, and habituates the system to a stimulus which at last loses its effect, and the very re-action which results from it is a depressing power. In Spain, more especially in Madrid, cold water is almost necessary to existence. The saunterer upon the *prado* in the evening buys his glass of cold water, his *aqua frigida*, or he is ill; he passes a night of febrile excitement, and his *meridiana* on the following day is harassed by frightful dreams and cold perspirations. The smoker of the cigar, who has had his salivary glands dried up by the narcotic power of the tobacco, does not feel this thirst, and vaunts the virtue of the weed; and if that state of the salivary glands were not an unwholesome one, reducing his appetite, and postponing the calls of hunger, he would have reason for approval of the habit. It is, however, to tea that the considerate man should direct his attention; and he should in warm climates follow the

habit of the sagacious Chinese, who invariably prepares his cup of tea, which he unceasingly sips, and only in such quantities as gently to excite the salivary glands, and keep up a feeling of equal moisture and of warmth during the heat of the day: his cup is small, and, unlike ours, it is never without its attendant cover; it is kept warm, and the grateful aroma is preserved. On a warm day in this country, where the mind is much occupied, where the body has little action, sipping tea might be found highly serviceable; and instead of taking ice, which momentarily relieves, but afterwards produces only a fresh desire for cold and for draught, the practice of sipping is to be recommended. When, however, the dryness of the mouth and fauces is produced by excitement of the nervous system, and has lasted for any length of time, sipping has rather an irritating influence, from calling too frequently the muscles of deglutition into action. The public speaker, however much he may desire to moisten his mouth, should, during his exertions, avoid it; it produces an irritation about the glottis which often excites cough, and then a viscid secretion of impeding mucus.

It has been believed, in consequence of some observations made by Mr. Abernethy, that during eating there should be no drinking; and certainly this rule, in some of the diseases of the digestive organs, is important; but it is not to be applied to a state of health. A due admixture of fluid and solid matter is absolutely necessary for healthy action; not large and copious draughts of any

fluid whatever, but sufficient to stimulate the salivary glands into their proper secretion, and also enough to propel the already digested mass from the stomach. A gentle stimulus of three or four glasses of wine during the great meal of the day, is the common habit of life of those engaged in occupations which do not demand any very extraordinary exertions, either of body or of mind; and the general state of health, and the longevity of those who do not trespass further upon the limits of moderation, are evident proofs of the propriety of such a system; after the meal, when some little time has elapsed, two or three glasses of Port produce no ill effects. Some individuals only take their wine after the dinner: but this is by no means so serviceable; for the stomach becomes suddenly stimulated, its action is hurried, and the slow and gradual development of heat is exchanged for a sudden excitement, which leaves a greater degree of collapse behind. About two hours after this a diluent may be advantageously taken; then it is that tea imparts a grateful glow of warmth, assists the stomach to unload itself from the digested food, which it gently propels; soon after it has been taken, the languor which is usually attendant upon a full meal disappears, the propensity to slumber so apt to prevail is dissipated, the body feels light, and the mind capable of either gathering fresh information, or of indulging in the recreation which society affords. Coffee-drinking has, since the great intercourse with France, much increased; and thus persons have acquired the

habit of most injudiciously taking the strongest coffee after their dinner as well as tea. A beverage formed of coffee has great charms, and likewise energetic power over the system, but it must be taken with caution. In France, where wines of the lighter qualities are preferred, a strong infusion of the berry may be demanded for the assistance of the stomach; but where Port, Sherry, or Madeira, have been taken, coffee may be said to be injurious. Excitement follows upon its use; watchfulness of a long duration, and a feverish re-action, are amongst its immediate results: its distant ones act upon the extreme capillary vessels of the body, which it seems to constrict, affecting the skin, giving it a peculiar hardness, and it has been affirmed to impart its colour; the sallowness of the skin of the Parisians has been, by more than one medical author, ascribed to it. Many authors have affirmed that paralytic affections, and general debility, follow its use. After dinner, in the form of very strong infusion, the *café noir* is often taken without sugar, sugar-candy, cream, or milk, and is almost an essence of the berry. The individuals to whom it is useful, are those whose breathing is performed with difficulty; they find the greatest relief from drinking strong coffee, and many escape the midnight paroxysm of asthma, by taking their cup about four hours before the usual hour of retiring to rest.

Tea, as the morning beverage, when breakfast forms a good substantial meal, upon which the

powers for the day of meeting the various chances and changes of life depend, provided it be not too strong, is much to be recommended: but when individuals eat little, coffee certainly supports them in a more decided manner; and, besides this, tea, without a certain quantity of solid aliment, is much more likely to influence the nervous system. Some persons, if they drink tea in the morning and coffee at night, suffer much in animal spirits and in power of enjoyment of the pleasures of society; but if they reverse the system, and take coffee in the morning and tea at night, they reap benefit from the change; for the coffee, which to them in the morning is nutrition, becomes a stimulus at night; and the tea, which acts as a diluent at night, gives nothing for support during the day. Nothing can be more injurious than the habit of taking spirits at breakfast in tea; and this is a very seductive custom, which is followed by persons who complain, that two or three hours after breakfast they feel, without their dram, an uncomfortable sinking at the stomach, a general depression, sometimes palpitation of the heart, and a sense of languor and incapability of moving the limbs, which renders them quite incapable of pursuing their daily avocations. A train of miserable symptoms, to which the term "nervousness" is given, and which is most difficult to be described, attends this state, for which brandy or rum in the cup of tea is often permitted, in the dose of one or two tea-spoons; this lays the foundation for dram-drinking, with all its pernicious consequences. An individual thus affected will do

well, to renounce tea altogether, and to substitute for it a beverage half coffee, half warm milk, and if possible to acquire the habit of taking a substantial breakfast, which alone can dissipate this symptom of uneasiness. As a simple and salutary diluent, no fluid is to be compared with the infusion of tea; although milk, milk porridge, gruel, broth, cocoa, coffee, infusion of sage, of balm, of juniper berries, of aniseed, of fennel, of hay, of coriander, of betony, of rosemary, of ginger, and even sugar and water, have all had their advocates, and have all been tried, they none of them form so grateful and useful a diluent with the ordinary meal, and they none of them are so uniformly agreeable; and though there may be peculiar idiosyncrasies, in which it may not altogether agree, yet it is innocent beyond all other drinks with which we are acquainted.

It may be thought that, whether food be taken warm or cold, the effect is precisely the same upon the digestive and nutritive powers: such, however, is not the case; and from infancy to manhood great attention is necessary to apportion the temperature of that which is taken to the state of the system. True it is, that for a great length of time a person in high health and exercise does not require all that nice care and attention to diet necessary to the individual mingling in the world, who lives almost in an artificial state, and is bound to follow the common habits of life, whether they be hurtful to him individually, or be useful; he is the more interested that society generally should follow such

customs as are most likely to prove salutary. Early as the days of Galen it had been remarked, how necessary to the proper digestion of the aliment was a certain degree of warmth; and that, if the stomach cannot produce it naturally, an artificial heat must be obtained through the medium of the food. When the anatomy of the human body was but imperfectly understood, and the functions of its various organs little known, vague theories supplied the place of scientific inquiry. The stomach was then compared to a culinary vessel, in which that which was taken was prepared for nutrition by means of heat and fermentation. The heart, the liver, and the spleen, were singularly enough supposed to be organs destined, by the temperature of the blood they contained, to act as the fire. Science, whilst it has proved the fallacy of these views, has scarcely substituted any satisfactory explanation of the facts. We know that an increase of temperature is necessary for the due digestion and preparation of the nutrient matter, but we are ignorant of the laws upon which this development of heat depends. Within a certain time after a meal, it is evident that the system exerts its energies; and that, under some circumstances, a febrile state is produced, marked by flushing of the face, by headache, by increased action of the pulse: this is followed by a reaction, in which sluggishness and sleep are often prevalent.

These are the consequences of the attempt of the blood to assimilate that which it has imbibed to its own temperature; if this be performed with

facility, ease and order in the performance of the functions are visible ; but if there be a laboured action, disease and disorder ensue. A cold diet persevered in for any great length of time debilitates the system, though it at first excites it. The stomach is ordinarily the first organ that exhibits an unwonted state ; a sense of weight, of acidity, of heartburn, and of flatulence, are soon experienced ; and though at first indigestion be the only effect, speedily some of the other organs have their functions impeded ; the liver, the nervous system, or the heart suffers ; and if their structure be not changed, such is the impediment to their due action, that they labour under affections which wear the appearance of the most frightful disease, so that the most skilful are deceived, and organic mischief is proclaimed to exist : indeed, the effects are nearly the same ; for the viscus most predisposed to debility sympathises first ; and thus the lungs, the liver, or any other organ becomes irrevocably diseased. To remedy the first stage of indigestion, the sufferer often has recourse to vinous or spirituous drinks, which for a moment relieve his sufferings, raising the temperature of the stomach ; but, as it is only a momentary stimulus, no lasting benefit can be experienced, whilst the reaction or debility consequent upon it is even worse than the first symptoms. The example of fish, whose blood is scarcely warmer than the fluid in which they move, may be adduced as an argument against the necessity of a warm diet. The most voracious of them feed upon beings of a similar structure to themselves, cold-blooded ; but

these do not require the same process for their digestion, for they are quickly converted into a slimy mass; the lowest grade of active decomposition, which is putrefaction, is all that is required. The warmth, therefore, conveyed to the stomach of man by tea-drinking at his various meals becomes essential to him; and though at his dinner he takes some fermented liquor, at other meals some warm beverage is of essential service to him. Nor would the crystal stream of the poet suffice for the healthy powers of digestion in the artificial state of existence in which we are placed.

A warm infusion is therefore at particular meals to be preferred to cold drink, although the latter may be taken in high health. That we may run into the contrary extreme, and take the liquor much too hot, there can be no doubt; and, although much exaggeration has been indulged in, there is every reason to believe that mischief has sprung from this source. Boerhaave, the celebrated physician, was much struck in his latter days with the appearance of induration of the glands of the œsophagus or passage from the mouth to the stomach. He believed this disease to be unknown to the ancients, and somewhat hastily concluded that it must be the result of drinking tea too hot; and various affections of the stomach have been ascribed to a similar cause. There were many of the leading physicians of Hamburgh and of Amsterdam, who, when tea was first introduced, took up strong prejudices against it, and threatened the world with an aggression of a host of diseases: they more particularly

spoke of leucorrhœa, which was not denied by some of their brethren as occurring after much indulgence in this beverage; but they attributed it to the prevailing fashion of drinking it hot. Ribe has written a very ingenious treatise, entitled *Usus Fervidorum et Gelidorum*. He ascribes carious teeth to hot food, and various chronic states of debility to the custom of drinking hot tea: he also animadverts upon the use of iced creams, jellies, and particularly a custom at that time prevalent in Sweden, afterwards abandoned, and now revived in France, of eating congealed oysters.

There are very many states of the system, more especially when there is a tendency to spasm, to cramp, or to spasmodic affections, in which warm fluids are absolutely necessary, and in which cold will produce considerable mischief. Warm tea during dinner is a very agreeable stimulant, when there is great delicacy of the digestive organs; but the habit should not be persevered in for any length of time, for its effects are never permanent, and not unfrequently the stomach loses its natural tone for some period afterwards, and emaciation has been the result. After exercise, such as dancing, warm tea is most grateful, and at the same time salutary; and when there has been a checked perspiration, arising from the application of sudden cold, few even of the more powerful sudorifics exert such an influence upon the skin, causing an exhalation from the surface of a large portion of that carbonic acid, whose retention in the system is a constant source of disease.

Tea is more particularly adapted for the ordinary beverage of young women; and the individual who, until the day of her marriage, has never tasted wine, or any fermented liquor, is the one who is most likely to preserve her own health, and to fulfil the great end of her existence, the handing down to posterity a strong and well organised offspring, capable of adding to the improvement and to the welfare of the community. To preserve the form and beauty of the sex is a duty that man owes to himself, not for his sake alone, but for that of future generations. The Spartan legislator, who banished from their use all luxuries, who regulated with strict discipline their diet, was fully aware of the influence their habits of life must have upon the youth who were to maintain the glory of his commonwealth. His maxims, as long as they were rigidly enforced, were successful; and, when they were allowed to pass into oblivion, a degenerate race quickly succeeded to bold warriors.

When the frame of the female has nearly obtained its full growth, and some time previous to its arrival at a state of perfection, a vast variety of changes occur, which prepare it for the functions for which it was so wonderfully and beautifully constructed, and for which its complicated mechanism is so admirably adapted—the reproduction of the species—the preservation and nutrition of her offspring. At this time preparation is making, by the bounteous hand of Providence, for the full development of her system. Woman must pay the strictest attention to a well regulated and abstemious diet,

to proper exercise, and to the keeping up a due action upon the surface of the skin. The efforts of Nature are almost invariably successful, and the greater number of females are prepared to fulfil the destiny for which they are ordained; yet it is at this moment, however fair may be the external form, that it is most fragile. Too soon is superabundant health exchanged for suffering and for sorrow, if the quantity of nutrition which is intended, not only for herself but for her offspring, be too great. If, instead of eating moderately, of drinking the lightest and most innocent fluids, she be permitted to indulge the fancies of her palate, and in the indiscriminate use of every article of food that is placed before her, bitter will be the repentance that must follow; and inattention to the observations which have been made by those who have preceded her in the paths of life must lead to sorrow, and to the most acute suffering and disappointment.

The quantity of fluid taken is not of such importance as the quality of it; for nature has many channels by which she can relieve herself from such superfluity, but the grosser particles she cannot so easily expel. Every thing that is taken tends to increase the circulation, yet there is a wonderful adaptation of means to carry it on, without endangering the functions of the various organs. Congestions do not occur; but the tendency is to fill every minute capillary vessel, which, if the blood be in its proper state, quickly again relieves itself. It is not only the arterial system that is thus replete, but the venous system partakes

of the fulness ; so that nutrition is at its utmost point : then is a woman in the full possession of her bodily attractions and her mental charms. Of the fulness of the blood-vessels, the eye exhibits a striking and peculiar instance ; its white coat exhibits a most beautiful hue ; there is an exquisite tint of blue, which gives to the pearly membrane a shade that approaches the azure of a serene sky : it has occasionally something so supernatural in it, that Byron's line,

“ That eye was in itself a soul,”

appears not only poetic but descriptive. This depends upon the minutest venous channels of the coat of the eye being charged with the blue coloured blood which circulates in the venous system, and at no other period of life is this visible. Not only must this plethora be duly watched, but the circulation which is also too readily accelerated. In an instant the heart quickens with an unnatural throb ; the face is quickly flushed ; the mind like the body is in an electric state ; they react upon each other ; every chord is tremblingly alive to the touch, its tension is irresistibly strong ; every vibration is conveyed through the whole system ; the pulse exhibits the mental emotion, the cheeks are crimsoned with a native glow, or the neck deeply suffused ; the eyes sparkle with the illumination of genius, beam with the fondest and truest filial affection, or radiate with the light of love ; a gentle warmth is diffused throughout the frame, and all that can betoken the

highest health gives hope and expectation of joy and life. Yet how quickly is this happy state exchanged for one of misery and disappointment, when any of the dictates of prudence are forgotten: exposure to cold may produce consumption, or retardation of the actions of the economy; a full and gross diet will give rise to plethora or inflammation of the most important organs by which life is sustained.

There are some females upon whom green tea produces very nearly the same effect as digitalis or foxglove; and it has been medicinally employed in the diseases for which that herb has so decidedly obtained a high reputation. Desbois of Rochfort has, by the use of it, cured numerous nervous diseases which have arisen from accelerated circulation. Dr. Percival had an idea that green tea possessed nearly the same power as does digitalis, of controlling and abating the motion of the heart. It is a singular fact that there are several instances recorded, in which green tea has restored regularity to a pulse which has been habitually intermittent; and it has often relieved the severe paroxysms which occur where water exists in the chest. In diseased lungs in young females it has been found of essential service; and even when consumption has made advances, when suppurative fever, attended with great restlessness and hurried circulation, has produced its highest excitement, green tea has been found to alleviate the worst symptoms. In these instances its action has much resembled the foxglove; in the gentler sex those palpitations for

which this herb has been found valuable will derive relief from green tea. It forms an agreeable medium for aromatic spirits of ammonia; for harts-horn, in many states of nervousness and of hysteria. When the duration of what was supposed to be a slight cold is longer than usual; when the pulse varies in quickness at different periods of the day; when there is a slight cough, which is aggravated on going to bed; when the heart beats violently on going up or down stairs; when there is a slight difficulty of breathing in a horizontal position, and we observe the individual to be of delicate habits, and under twenty years of age, she must be watched with great tenderness and anxiety; her food must be closely investigated, and attention to diet enforced. Green tea is oftentimes highly to be recommended; but its administration must be watched. After marriage a diet of a different description is at various times necessary; then all that is nourishing is to be sought for, and every thing that can lower the general system must be avoided. Although wine has been up to this period of life proscribed, it may be now rationally and cautiously used; and that which of all others affords the greatest assistance to the frame is the wine of Champagne. Of this an occasional glass or two during the dinner is one of the most important means of imparting strength; for the venous system requires to be more than ordinarily carbonised. Neither during lactation, nor in the early period of child-bearing, is tea the most desirable beverage; but at any other time it is useful, as determining to the

surface of the skin, and acting as a gentle diluent, and imparting an agreeable sensation of warmth and comfort to the whole system, care always being taken that there be no exposure to cold after the evening meal, at which time there is a great susceptibility to morbid impression.

It is about the age of forty-two that the habits of life demand attention from those who would secure a healthy old age. It is the period, however, in which the activity of the mind impels each individual onward in his career, and renders him careless of his frame, unless immediate suffering urgently require his conformity to the regimen and the diet best adapted to him. The stomach commences to have an irresistible aptitude to form acid ; and this is increased by the use of fermented liquors. In some persons the paroxysms of gout occasionally show themselves, though these are, from the more cautious habits of life, less common than they formerly were ; deposits in the urinary excretion are to be observed ; or indigestion, with its train of miserable symptoms ; or that still greater foe to human happiness, nervousness, exhibited in a thousand various forms, will be present, unless there be a due attention to dietetic precepts. The early breakfast and the late dinner, without some light meal between them, is at this period highly objectionable, more particularly as the latter is too frequently a complete indulgence in all the richest viands and the stronger wines, whilst the stomach has been left empty for some period. There is in general too great carelessness as to the luncheon ; and the more active is the employ-

ment of the mind, the greater is the necessity for some support. The lighter it is, certainly the better ; for the loading the stomach with food in the midst of the occupation of the faculties is not desirable : but whilst the barrister sips his tea with toast or rusk, the merchant may take his glass of sherry with water, and the tradesman may enjoy his hearty meal. Magnesia added to the cup of tea in the middle of the day is the best antidote to the development of acid, and prepares the digestive organs for the due performance of their functions.

There are many persons who are perfectly sensible of all the agreeable qualities of black tea, and are in the daily habit of drinking it, who cannot take even a very small quantity of green tea. It seems to produce upon them the most distressing effects. On some individuals it acts almost as a narcotic poison, depressing the system in a very singular manner. Very shortly after they have drunk a cup prepared in the usual form, they experience a train of very distressing symptoms ; and though they seldom last long, or leave any permanent influence, still, whilst they are present, they are of a most striking character ; they recur each time the tea is taken ; nor will the stomach habituate itself to its use. It is to be observed that, notwithstanding the sensations that are thus produced, there are individuals who persevere in its use, and even find some degree of pleasure in the first stage, or that of excitement which usually precedes the depression. The common signs attendant upon its disagreeing with the system are a distressing nausea, a sense of

constriction of the chest, and palpitation of the heart. The face becomes pale, the skin is cold, the pulse altered, both in frequency and in strength ; in some cases it is weak and slow, in others fluttering or intermitting : this state of depression of the circulating system occasionally becomes more alarming. The hands and feet are cold as marble, and bedewed with a clammy perspiration : violent pain in the head, giddiness, dimness of sight, incapability of using muscular action, and a sensation of suffocation, have been superadded to the other symptoms. In the worst instances that are on record, the fluttering of the heart has been succeeded by a momentary suspension of its action ; and long-continued swoonings have occurred. These symptoms usually disappear without requiring any medical assistance ; for although the sufferings are evidently great, there is throughout them a constant effort of Nature to recover the lost equilibrium. As the stomach is the centre of sympathy, so is it the first organ to which the *vis medicatrix* applies itself in its moments of disordered action, and most strenuously does it exert itself to relieve. Some of those who are partial to green tea suffer much from its effects, and are often induced to take a stimulus which affords them a momentary pleasure, but is the source of much future misery. They complain, about two hours after indulging themselves in their green tea, of a sensation of sinking at the stomach, a craving, an emptiness, and a fluttering in the chest ; they feel this particularly after the morning meal ; they are rendered incapable of following any avocation ; they are miserable for the first hours of

the day; are feverish, irritable, and in a highly nervous state. With a view of preventing these miserable sensations, they add at first a small quantity of brandy, of rum, or of some spirituous liquor, and at last a large quantity; this habit is gradually acquired; it takes such full possession of the unfortunate person that it is not to be shaken off; and at last he gives way to the pernicious custom of dram-drinking, and the glass of brandy an hour after tea becomes indispensable to relieve the gnawing of the stomach.

There have been many ingenious men and learned physicians who have been struck with the bad effects of tea upon particular persons; and the annals of the science of medicine present us with many instances of such peculiar idiosyncrasies, upon which the leaves of the shrub act as a poison of the most deleterious character, though not proving actually fatal. Dr. Percival has narrated an interesting case of this kind in the first volume of *The Dublin Hospital Reports*, — acute spasmodic pain in the region of the stomach, a constant state of fainting, with slight fits of suffocation occurring every five or six minutes, were induced by green tea drank in some quantity before retiring to rest: these symptoms were relieved by two grains of opium and a glass of cold water; sleep followed this treatment; but in about two hours it was again interrupted by the same state of agitation, which required the same means for its relief. In *The Glasgow Medical Journal* is to be found a case related by Dr. Lucas, of a female who was attacked with excruciating pain at the stomach, with a sens-

ation of extreme distension. She exhibited some of the most striking symptoms that are usually attendant upon hysteria ; these were in a degree as extraordinary as they were alarming. She writhed as if suffering the most excruciating agony, uttering the most dreadful shrieks, and perspiring most profusely from the forehead. This state was relieved by the administration of large doses of opium. The paroxysms returned on a succeeding day, and demanded an enormous dose of opium for their alleviation — no less than six grains of solid opium and four drachms of the tincture were required before any sensible effect was produced. These attacks were the consequence of taking in the morning, before any other kind of meal, a large quantity of strong green tea, without the addition of either cream, milk, or sugar. Mr. Cole read before the London Medical Society a very interesting paper on the deleterious effects produced by tea and coffee in excessive quantities ; he detailed some very important cases, illustrative of his views. He narrated instances in which severe spasms, disturbance of the functions of the heart, pain and violent action of that organ, syncope, sudden attacks of insensibility, headach, and convulsions, had occurred. His essay excited considerable attention, and elicited a long discussion amongst the members of the society ; some of whom pointed out instances that had come under their own notice, in which green tea had been found productive of temporary ill consequences. The symptoms that show themselves are apparently alarming, but they pass away almost as instantaneously as they present them-

selves. Of this class is a case narrated by Dr. Harvey. A medical gentleman knocked at his door, and requested permission to come into his house and die. He appeared in a state of the greatest alarm and agitation ; his pulse was scarcely perceptible and extremely irregular : he felt confident that he was dying. Having stated that he had sat up the whole of the preceding night, taking nothing but green tea, a stimulant was given him, simply a glass of cherry brandy : he was put to bed ; he slept well for two hours, and awoke perfectly recovered.

The ordinary effect of green tea taken late at night is incubus or night-mare in its most formidable shape ; and many persons, who after a hearty dinner have taken green tea, wake in the midst of the night in a state of the most fearful agitation and excitement : the head is oppressed, a sensation of approaching death is felt, or sometimes the person seems to be dragged from the lowest abyss of darkness back to the world, from which during his paroxysm he had felt gradually to sink. Although none of these symptoms are permanent, and after they have passed away they are forgotten, yet a frequent recurrence of them must lay the foundation of mischief, and ultimately tend to the shortening the duration of life. Many individuals, who have to undergo fatigue, drink quantities of green tea as an antisoporific : certainly it has much power in this way ; indeed, it has been successfully employed as an auxiliary to resist the narcotic effects of opium, when it has been too largely taken ; but, as the action is that of a sedative upon the heart and arteries, it is injurious, and coffee is much to be preferred, which

produces arterial excitement, and thus influences the brain and nervous system, even to the production of exhilaration, which is rarely, if ever, the consequence of the employment of tea.

In loss of muscular power dependent upon nervous influence, as exhibited either in local or general palsy, or where the voluntary motions are irregularly or prematurely performed, as in St. Vitus's dance, or in epilepsy, or wherever there may exist the slightest predisposition to them, tea is to be avoided; for, although the opinion that has been expressed by some authors, that this beverage has caused these diseases to arise, is erroneous, yet, where they are latent in the constitution, they may be brought into action from any debilitating cause; and that which in a person in health produces little or no effect enfeebles him who is already weak; and hence any watery drinks become sources of depression. Where the system has been debilitated by long and anxious watching, by excessive fatigue, by loss of blood, or any thing that has had a tendency to diminish the natural tone of the constitution, tea must be exchanged for some more substantial beverage. Tissot has observed how injudicious is its use, or rather its abuse, after long literary labour; and although the opinion of Dr. Johnson in favour of tea is so often quoted, who firmly believed that his power of resisting mental exhaustion was attributable to it; still it is by no means a judicious habit to drink the large number of cups which have been greedily swallowed during intellectual employment.

Much has been said of the increase of nervous

diseases in England, and this supposed increase has been attributed to indulgence in this beverage. Jonas Hanway published a series of letters against the use of tea and gin, which contain some of the bitterest anathemas against both of these beverages that ever were penned by man: he ascribes almost every sorrow to which the human species is subject, to these fertile sources. Misery, poverty, suicide, and murder, he thinks, spring from them. The nervousness which he describes is, however, much less known than it was in his days; and the state which Dr. Cheyne has described under the name of "the English malady," has been almost banished from amongst us. That fearful malady of mind lasting for so many years, painted in such glowing language, is scarcely met with by the physician of the present day; and although he may meet with hypochondriasis in many most striking forms, he seldom observes it with all that melancholy train of harassment it once exhibited.

Nervous disorders, though they still commit their ravages, have not undergone that increase which was threatened from the introduction of tea. Another disease which was foretold would be the scourge of the tea-drinkers has also diminished, both in frequency and in violence — the scurvy. A ridiculous experiment made by Dr. Hales, "on the thickest end of a small sucking-pig's tail," which was inserted into a cup of green tea, and thus scalded, is adduced by Hanway to show how hurtful the warm infusion of tea is to the stomach. Still nothing that has yet been written can either persuade the public that tea, properly taken, is

decidedly injurious, or that the increase of disease is attributable to its general introduction.

That tea is the most agreeable and the most salutary diluent that has yet been introduced into Europe, would appear from the general improvement that has followed upon its use ; and although many plants have been used as substitutes, none have so long maintained their character. The common sage, *Salvia officinalis*, the wild marjoram, *Origanum vulgare*, the Arctic bramble, *Rubus Arcticus*, the sloe-tree, *Prunus spinosa*, the goat-weed, *Capraria biflora*, Mexican goose-foot, *Chenopodium ambrosioides*, common speedwell, *Veronica officinalis*, wild germander, *Veronica Chamædrys*, have been tried, but the most sanguine commenders of these herbs have soon become tired, and have abandoned their use. Chocolate has been found most serviceable to the low-spirited, to those who are emaciated, to those who suffer from hæmorrhoids ; and there are certain states in which coffee may be preferred, but that these and herbs, in the state of infusion and decoction, ought to be the sole drink of man, neither appears from the history of the past, nor a consideration of the adaptation of man for the various climates to which he is exposed, the labour he has to undergo, nor to the immense variety of food which necessity and habits of life have introduced. The vicissitudes of human existence, sometimes in a state of the utmost simplicity, at others of unbounded luxury, demand that aliment suitable to the general wants, as well as to each individual member, should be obtained ; that fermented liquors, if injudiciously taken, pro-

duce diseased stomachs and livers, consumption, dropsy, madness, is universally acknowledged; and the prudent man, who fears that he may be betrayed into a single excess that may overpower his reason, is perfectly right in shunning the means of mischief. But good wine is a good cordial, a fine stomachic, and taken at its proper season invigorates mind and body, and gives life an additional charm. There can be found no substitutes for the fermented liquors, that can enable man to sustain the mental and bodily labour which the artificial habits of society so constantly demand. Temperance and moderation are virtues essential to our happiness, but a total abstinence from the enjoyments which the bounteous hand of Nature has provided, is as unwise as it is ungrateful. If, on the one hand, disease and sorrow attend the abuse of alcoholic liquors, innocent gaiety, additional strength and power of mind, and an increased capability of encountering the ever-varying agitation of life, are amongst the many good results which spring from a well regulated diet, in which the alcoholic preparations bear their just proportion and adaptation.

Of the effect of the aroma issuing from tea, the following observations are to be found in Dr. Lettsom's work:—

“ An eminent tea-broker, (Mr. Marsh, he means,) after having examined in one day upwards of one hundred chests of tea, only by smelling at them forcibly, in order to distinguish their respective qualities, was the next day seized with giddiness, headach, universal spasms, and loss of speech and memory. By proper assistance the symptoms

abated, but he did not recover; for though his speech returned, and his memory in some degree, yet he continued, with unequal steps, gradually losing strength, till a paralysis ensued, then a more general one, and at length he died. Whether this was owing to the effluvia of the tea may, perhaps, be doubted. Future accidents may possibly confirm the suspicion to be just or otherwise."

Dr. Lettsom then relates,—“An assistant to a tea-broker had frequently, for some weeks, complained of pain and giddiness of his head, after examining and mixing different kinds of tea. The giddiness was sometimes so considerable, as to render it necessary for a person to attend him, in order to prevent any injury he might suffer from falling, or other accident. He was bled in the arm freely, but without permanent relief; his complaint returned as soon as he was exposed to his usual employment. At length he was advised to be electrified, and the shocks were directed through his head. The next day his pain was diminished, but the day after closed the tragical scene. I saw him a few hours before he died; he was insensible; the use of his limbs almost lost, and he sunk very suddenly into a fatal apoplexy. Whether the effluvia of the tea, or electricity, was the cause of this event, is doubtful. In either view, the case is worthy of attention.”

Dr. Thornton, however, says, in his *Herbal*, “In addition to the above, let me add the testimonies of Mr. Venn and Mr. Wright, who are smellers and tasters to the East India Company of the teas which have been imported, and place

marks on each chest of tea, as good, very good, superlatively good, best, very best, extraordinary, fine, incomparable, the bloom, and so on, in degrees of comparison, which we grammarians are unacquainted with, but which direct the purchase; and these gentlemen have been employed upwards of forty years, sometimes in a morning tasting seventy cups, of all sorts, and after that smelling often from seven to eight hundred chests of tea; and these gentlemen never found any thing in teas at all prejudicial to their health. The former asserts, that Dr. Lettson's account of Mr. Marsh losing his life by smelling of teas is founded upon mistake; and Dr. L. promised him to alter the mis-statement."

At the first formation of Temperance Societies the total abandonment of spirituous liquors was not contemplated, their occasional use being permitted to their members; their abuse only being strictly forbidden. It was in the United States, in the city of Boston, that, for the first time, a union was entered into, and those who formed it were associated together by the common bond of sobriety; but it was ten years later that, in the same city, many of the most influential inhabitants entered into a determination, which they most strictly adhered to themselves, of avoiding all fermented liquors, and of discountenancing their use in others. In 1828, two years after the first enrolment of the names of those who formed a society of this nature, there were no less than 220 similar institutions, comprising nearly 30,000 persons, all animated with one spirit, not that "of Bacchus and Mars, two of the most mischievous maniacs that ever

made their escape from Bedlam, but of Temperance and Sobriety." The effect upon the mortality of persons under the age of forty, was visible in the following year; and wherever the system has been pursued, a decrease in the number of deaths has rapidly followed. In the year 1834, a central body was formed in Philadelphia, with associations in every town in the United States; from the great body of the people, the determination quickly spread throughout the army and the navy. In 1832, 500 vessels quitted the American ports without a supply of spirits on board; and such was the feeling of increased safety to the vessels, that the underwriters lowered their rate of assurance, and that they were borne out in their estimate of diminished danger, was fully proved. It has been satisfactorily demonstrated that vessels which were strictly upon the Temperance System, have made more prosperous and more rapid voyages than others. One fact is of the most extraordinary character, that 168 whaling vessels out of 186 employed, took not a drop of spirit on board; and although they had to encounter the cold, the privations, the miseries of a north sea, they returned healthier, happier, and more successful, than did those who repudiated the opinions and the customs of this vast and prevailing sect.

It is stated that in the year 1835, 4000 distilleries were abandoned in America, and that 8000 persons, who had previously obtained their livelihood by the sale of spirits, were compelled to discontinue their trade. The example of the people of the United States was soon followed by those of other

countries; and, to the honour of Ireland, the town of New Ross was the first place in Europe, in which a Temperance Society was established. Since that period, almost every large village in England has founded a similar institution. Tea has in most instances been substituted for fermented or spirituous liquors, and the consequence has been a general improvement in the health and in the morals of a vast number of persons. The tone, the strength, and the vigour of the human body are increased by it; there is a greater capability of enduring fatigue; the mind is rendered more susceptible of the innocent pleasures of life, and of acquiring information. Whole classes of the community have been rendered sober, careful, and provident. The waste of time that followed upon intemperance, kept individuals poor, who are now thriving in the world, and exhibiting the results of honest industry. Men have become healthier, happier, and better for the exchange they have made. They have given up a debasing habit for an innocent one. Individuals who were outcast, miserable, abandoned, have become independent, and a blessing to society. Their wives and children hail them on their return home from their daily labour with their prayers and fondest affections, instead of shunning their presence, fearful of some barbarity, or some outrage against their better feelings. Cheerfulness and animation follow upon their slumbers, instead of the wretchedness and remorse which the wakening drunkard ever experiences.

The beauty, the harmony, and the vigour of the human frame, are soon altered by intemperance;

her fearful characters are legibly impressed upon the countenance, the figure, voice, and gait. The good complexion, the manly bearing, the air of sincerity, visible in him who is guided by well-disciplined habits, strongly contrast with the down-cast look of the sensualist, with his listlessness, his sluggishness, his swollen and harsh features, his leprous skin : the bloated face, the purple nose, the blotched cheek, the blood-shot eye, the host of papulous and pustular eruptions, the loss of hair, the increased secretions from the mucous membranes of the nose, the faded and the haggard look, which bespeak the drunkard, may even harass him who does not actually intoxicate himself, but has daily potations beyond the limits of good sense. These are traits which are read by every eye ; but there are more minute characters, which reveal to the attentive observer truths which the art of dissimulation would in vain attempt to conceal ; there are miseries which are consequent upon drunkenness, which the physician has seen and known, which the drunkard doubts, or to which he turns a deaf ear. A physiognomist has said, — “Every face is a seal with truth engraved upon it ;” it is indeed too often “a book where men may read strange matter.” How often does it betray, not only the mischievous propensity, but the beverage to which the drunkard is attached ! The gin-drinker exhibits a sad picture : his haggard countenance is of a leaden hue, his forehead is gathered into premature and unsightly wrinkles, his eyes are dead, and lack lustre — they are anxious, restless, —they cannot meet the anxious look of their dearest

friend; the cheek is sallow; emaciation, misery, are stamp'd visibly in every line. Brandy gives a fiery redness, a fierce turgescence to the cheek; every vessel of the face is loaded to repletion; the eyes are blood-shot, they glare ferociously; every look betokens that in a moment a paroxysm of violence, rage, or madness, may burst forth; whilst he who besots himself with beer exhibits all the marks of idiocy: his face bears evident proofs of the ravages this beverage produces; it has a yellow hue; the cheeks are bloated; the nose and the lips are purple; the saliva streams from him; the feebleness with which he lifts his arm to his mouth, to brush away with the sleeve of his coat the accumulated froth, is a true indication of the sluggishness the liquor induces, which differs essentially from the increased energy and brutal violence of the brandy, or the paralytic motion of the gin-drinker. The lover of vinous potations has his red nose, his rosy eruptions on the face, his heavy eyes, his parched lips, and purple cheek, as evidence of his Bacchanalian joys. The gin and the wine drinker becomes "maudlin" in his cups; him apoplexy threatens: and the individual who flies to brandy for relief, and becomes furious and violent, may also thus terminate life suddenly; whilst he who becomes depressed, anxious, and melancholy, after the first stage of exhilaration is passed, will most probably be the victim of palsy.

Dropsy, scirrhus liver, gall-stones, epilepsy, a tendency to mortification on the slightest wound, varicose veins, gout, indurations of the important organs which assist digestion,—all threaten misery

to the intemperate, and should awaken him to the sad folly of being led, for a transient pleasure, to lasting agony and grief.

One of the most frightful maladies consequent upon the abuse of vinous or spirituous drinks, is delirium tremens, which bears with it a melancholy train of symptoms which are closely allied to some of the most aggravated forms of disease which the sad catalogue of human afflictions presents us with. Sometime previous to the development of this disorder there are observed weakness, languor, emaciation ; there is no appetite for breakfast or for dinner ; there is a peculiar slowness of the pulse, coldness of the hands and feet, a cold moisture over the whole surface of the body, cramp in the muscles of the extremities, giddiness, nausea, vomiting. To these signs succeed a nervous tremor of the hands, and likewise of the tongue ; the spirits become dejected, a melancholy feeling pervades the mind ; the sleep is short and interrupted : this may constitute the first stage ; after which a second comes on, attended with the highest degree of nervous irritation, ending in mental alienation. Objects of the most frightful nature are present to the imagination ; the eye acquires a striking wildness ; the person cannot lie down ; he fancies he sees faces of extreme hideousness before him, beings enter into a conspiracy against him : sleep is altogether banished. This disorder sometimes bursts forth after a debauch with tremendous violence, and in an unmanageable form ; it is sometimes characterised by the exhibition of a furious delirium ; the eyes become ferrety, the perspiration

enormous, and the want of sleep is almost painful to the attendant. Oftentimes the paroxysm is of a melancholy kind: the appearance of the sufferer is very striking from his total helplessness; his incoherence of ideas, and his refusal to drink, which produces almost as striking an effect as hydrophobia, excite the utmost alarm. Death is sometimes sudden. Dr. Pearson witnessed a distressing incident in a patient who, for a considerable time before his death, imagined he saw the devil at the ceiling above his bed; and as the disease increased, he fancied the evil spirit approached him with a knife to cut his throat, and actually expired, making violent efforts to avoid the fatal instrument.

That the best of men may soon be degraded into the most abject of creatures by that which, if moderately taken, dispels sorrow, invigorates the mind, and is a grateful cordial in pain and in disorder, all must allow; and that, sooner or later, anguish and torment of the most frightful kind will afflict the body of the sensualist who indulges in habitual intoxication. During wine or spirit drinking, the first hint that the constitution gives, that it can receive no more with impunity, should immediately be taken. The kidneys, faithful to the brain and to the heart, secrete from the blood that which would be noxious to them. As soon as they commence their increased action, the prudent man discontinues his enjoyment, or he mixes his wine with a diluent: he has recourse to a cup of warm and grateful tea. Some individuals have their kidneys more instantaneously called into action than others; and if it is from actual quantity of

fluid, that relief by excretion is demanded, this indication that more wine is dangerous, should never be forgotten, and many miseries are obviated by attention to one of the most important channels which nature has destined to carry away that which is not useful to man's constitution.

Although the abuse of wine and of fermented liquors is so dangerous to man, yet a moderate indulgence in these gifts of Providence is a source of happiness, of joy, and of health, to him. The rigid laws that have been so loudly proclaimed and widely disseminated, are not adapted to every stage of society, nor to every member of the great commonwealth. If, on the one hand, disease and affliction follow upon intemperance, additional strength and power of mind, and an increased capability of encountering the ever-varying agitations of life, are among the many good results which spring from a well-regulated diet, in which beer, wine, and tea, bear their just proportions; nor are the alcoholic fluids to be altogether banished, though they are most objectionable if often taken, and more especially in their undiluted state.

In a climate of great vicissitude, where the winters are uncertain, moist, and foggy, in constitutions where mind and body are equally liable to depression, something beyond a mere diluent, or even a nutritive, is required; and it is better that the system should acquire a regular habit of daily taking a sufficient quantity for its support, than that there should be occasional fits of excitement by the stimulus of drink, and then a consequent depression. Nothing was more injurious to health, and was more

productive of gout and of nervous disorders, than the system pursued by our immediate progenitors, in their early life. The wine was not daily placed upon the table, and three or four glasses taken at the dinner meal; but once or twice in the week, either at home or at the house of a friend, there was a dinner party, at which each person was accustomed, nay, sometimes obliged, to drink to intoxication. The consequence was, that in a certain rank of life, every person was expected to be laid up by a fit of the gout, a disease which is much less known than it formerly was; and those only who have it handed down as an hereditary disease suffer in the present day; but the most abstemious person who has had it transmitted to him is more likely to have it developed if he do not drink with great regularity a small quantity of wine, for upon some accidental indulgence he will feel the ill consequences of his father's habits. A person who has abstained for months from wine has, from two glasses of champagne, suffered a paroxysm of gout, whilst he who has habituated himself to a regular glass of good wine escapes his enemy. When there is great activity of mind during the winter months there is a necessity for a stimulus, which is hurtful during the summer. The port, the sherry, the ale, so proper at Christmas, and the cup of tea quickly following it, must be exchanged, in summer, for the claret or hock, or for tea alone. The damp and uncertain states of the atmosphere of this country, independent of all other considerations, point out the necessity of obtaining an artificial bodily heat. The glow and animation that follow upon a proper

stimulus are serviceable to man, more particularly when they are excited late in the day, when the nervous energy is somewhat exhausted ; for the same quantity of fluid, if taken at the time of the day when it is not required, will impair the health, and prevent the mind from exertion. It is, therefore, to be remembered, that it is not indiscriminate wine or beer drinking that is to be recommended—it is as a regular systematic beverage at due intervals, and at proper times, that it is to be taken. It is not as a vicious indulgence, it is not as a weak propensity that it is to be sought ; but wine is to be considered as an agreeable stomachic, a necessary aliment, and a gentle stimulant to mental energy. The varieties of beer renovate the system, enable it to bear fatigue, are serviceable during moist and cold weather, where impure air exists, where occupations are either laborious or unhealthy, and it is as an article of diet, and not of luxury, that beer is to be estimated. During excessive fatigue, it should be permitted as an unusual stimulant ; and although the whale-fisher has denounced it even in his greatest exposures to the inclemencies and perils to which he is subject, it is to be remembered that, amongst the records of facts, we have the narrative of the sad state of the crew of the unfortunate men who, with Captain Bligh, had the most frightful privations and the most overpowering hardships to encounter, and their preservation was owing to the administration daily of a tea-spoonful of rum. As life advances, when the meridian is past, the vinous and fermented beverages prove a valuable cordial ; they keep up the warmth of the circulation ;

they assist digestion, produce cheerfulness, enable the aged to partake of the pleasures of the young, recall the pleasures of the past, and give to the imagination pictures of future happiness.

A meal in the morning of tea and of simple food will enable man, with faculties unclouded, to pursue the varied walks of life, to receive or to give instruction, to obtain that which he requires to make his home peaceful and prosperous: something light and nutritious is required to support his nervous energy during the hours of his occupation; and at the close of the day, when his toils are over, he should take a repast of agreeable food, duly mingled with wine and diluted by tea, to appease his appetite, to nourish his body, and to induce sleep. The precepts of life are temperance, sobriety, and chastity. These are best followed with regularity: tranquillity, a long existence, serenity of temper, and equanimity, are secured by them; and although the tea-drinker cannot know the transient excitement of intemperance, he is likewise ignorant of its fearful collapse; but let us use all things, as they were given to us, for moderate enjoyment, in this state of existence in which pleasure is to be derived from all by which we have most graciously been surrounded by our great Creator.

It is not at all unlikely that, when English industry and knowledge are properly applied to the cultivation and preparation of tea, there will be a uniformity in different teas; and, though they may not be superior to China, that there will be less mixture of bad and good teas together. The consumption must necessarily increase; and, as Mr. Walker has

observed, it is most likely that in the territories of the East India Company it would be prodigious. It is now used as a luxury and a medicine in cases of sickness there. 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. All that requires to be done is to prepare the herb in such a manner as to convince the people of England that it is not merely simple cultivation that has been attended to. Under the guidance of Mr. Bruce, every thing that good sense could suggest, and industry and attention supply, has been most rigidly enforced. The 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, which has been laid before the House of Commons, contains a mass of intelligence, which cannot fail to make an impression upon the public at home, that science and skill have alike been directed towards carrying into effect an establishment, which, from a combination of causes and occurrences, is at the present moment more likely to be beneficial to the empire than the most brilliant discovery, or the most splendid achievement.

THE END.

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