

XXV. *Synopsis of the Genera Camellia and Thea.* By BERTHOLD SEEMANN, Ph.D., F.L.S.

Read May 5th, 1859.

GREAT diversity of opinion exists as to whether the genera *Camellia* and *Thea* ought to be merged into one, or regarded as distinct. The advocates of the union argue that hitherto no difference of generic importance has been pointed out, which, on being put to the test, has not broken down, and that, notwithstanding great authorities have pronounced in favour of keeping them separate, the generic union of *Camellia* and *Thea* is dictated by the stern laws of systematic botany, whilst their opponents have as yet not been able to disprove, with any degree of satisfaction, those sweeping assertions. In order to arrive at an independent opinion, it will be necessary to examine the various generic characters that have from time to time been proposed by authorities on the subject, and to add such critical remarks as a careful study of these plants enables me to make.

Linnæus, who was acquainted with only two species of *Camellia* and one of *Thea*, thus defines them, in his sixth edition of the 'Genera Plantarum' of 1764:—

CAMELLIA, Linn.

Monadelpbia Polyandria.

Cal. Perianthium polyphyllum, subrotundatum, imbricatum; squamis subrotundis, obtusissimis, internis sensim majoribus, concavis, deciduis. *Cor.* Petala 5, obovata, basi coalita. *Stam.* Filamenta numerosa, erecta, coalita in coronam stylo ampliorem, superne libera, corolla breviora. Antheræ simplices. *Pist.* Germen subrotundum. Stylus subulatus, longitudine staminum. Stigma acutum, reflexum. *Per.* Capsula turbinata, lignosa, sulcis aliquot exarata. *Sem.* Nuclei tot quot striæ capsulæ, subrotundi, seminibus minoribus sæpe repletis.

THEA, Kæmpf.

Polyandria Monogynia.

Cal. Perianthium 6-partitum, minimum, planum, foliolis rotundatis, obtusis, persistentibus. *Cor.* Petala 6, subrotunda, concava, æqualia, magna. *Stam.* Filamenta numerosa (ducenta circiter), filiformia, corolla breviora. Antheræ simplices. *Pist.* Germen globoso-trigonum. Stylus subulatus, longitudine staminum. Stigma triplex. *Per.* Capsula ex tribus globis coalita, 3-locularis, apice trifariam dehiscentis. *Sem.* solitaria, globosa, introrsum angulata.

It is unnecessary to dwell much upon the imperfections of these characters. Linnæus, by placing *Camellia* in *Monadelpbia Polyandria*, and *Thea* in *Polyandria Monogynia*, undoubtedly laboured under the belief that in *Thea* all the stamens were free. The greater number of them are, however, as firmly united at the base as those of the typical *Camellia Japonica* are, and the genus ought therefore to have been placed in *Monadelpbia Polyandria*, as has been done by subsequent writers of the Linnean school. But Linnæus had very imperfect specimens of *Thea* at his disposal even when he published the sixth edition of his 'Genera Plantarum.' After the publication of that edition, however, he seems to have had access to better materials; for in one of his copies of that work preserved in our library we find several marginal notes in his own handwriting, emending the

generic character of *Thea*: for instance, the words "Perianthium 6-partitum, planum . . ." are altered into "Per. 5-partitum;" the number "6" assigned to the petals is struck out; to the description of the stamens is added "filamenta corollæ basi inserta," &c.; so that, if he had brought out a seventh edition, these corrections would have been introduced, and they would have tended to improve the limits of the two genera. But even giving Linnæus credit for all these intended improvements, his generic characters of the two contain little that either *Camellia* and *Thea* do not share with other *Ternstræmiaceæ*, or that more ample materials have shown to be correct. There are, however, two characters upon which he relies to distinguish these genera which have never been shaken—the calyx of *Camellia* is termed polyphyllous and deciduous, whilst that of *Thea* is described with a definite number of persistent sepals. Morphologists may possibly object to attach much importance to them, as the calyx of *Thea* is clad with deciduous bracts, and what is termed a polyphyllous calyx in *Camellia* may also be explained as a simple calyx surrounded by bracts. This view of the subject would reduce the whole difference to one of time,—the sepals remaining longer attached to the plant in *Thea* than in *Camellia*. Systematic botanists, however, are compelled to take a practical as well as a theoretical view of such questions, and that is the course here pursued.

DeCandolle, who wrote in 1824, and who looked upon *Camellia* and *Thea* as forming a distinct natural order, chiefly differing from *Ternstræmiaceæ* by the absence of albumen, thus defines (Prodr. i. pp. 529, 530) the genera in question:—

CAMELLIA, Linn.

Calyx imbricatus, nempe bracteis sepalisve nonnullis accessoriis cinctus. Stamina basi polyadelpa aut monadelpa. Antheræ ellipsoideæ. Capsula valvis medio septiferis, axim triquetrum liberum post dehiscentiam relinquentibus.

THEA, Kæmpf.

Calyx 5-6-sepalus. Petala 6-9 ima basi subcoherentia 2-3-serialia. Stamina basi sublibera. Antheræ subrotundæ. Capsula 3-cocca, septis valvaribus, nempe a valvularum marginibus introflexis formatis.

DeCandolle places under *Camellia* one species which has no right to be there, viz. *Camellia axillaris*, Roxb. (= *Polyspora axillaris*, Sweet), while under *Thea* he ranges Loureiro's *Thea oleosa*, which I hold to be the old oil-seeded *Camellia Sasanqua* of Thunberg; and it is possible that in drawing up his generic characters the presence of those plants may have influenced him in some degree, compelling us to make some allowance in criticising them. He terms the stamens of *Camellia* polyadelphous: that term must, I think, be suppressed, as it cannot be applied to those of any true species of that genus, unless we are prepared to apply it to the result of the mechanical rupture of the tube of the monadelphous stamens, witnessed in *Camellia Sasanqua* when the petals begin to fade, bend back, and become detached from the stamens. In *Thea* he describes the stamens as nearly free, but the outer series of them is always monadelphous, as in *Camellia*; and, following Gærtner, he assumes the cells of the capsule, unlike those of *Camellia*, to be formed by the edges of the valves being bent inwards. The latter are, however, exactly formed as those of *Camellia*, the septa being placed on the middle of the valve. DeCandolle has therefore not discovered any additional character by which *Camellia* and *Thea* could be distinguished from each other.

We now come to W. B. Booth, who in 1830 published an able history of the genera

Camellia and *Thea* in the 'Transactions of the Horticultural Society of London,' vol. vii. p. 519. The essential characters which he assigns to them respectively are as follows:—

CAMELLIA, Linn.

Flowers axillary, sessile. Calyx inferior, of 7, 8, or more deciduous imbricated scales, the inner ones the largest. Corolla of 5 petals. Styles united nearly their whole length. Capsule furrowed, having as many cells as furrows, and one or two seeds in each.

THEA, Kæmpf.

Flowers axillary, stalked. Calyx inferior, of 5 deeply divided permanent roundish segments. Corolla of 5, 6, or 9 petals. Styles cohering at the base, dividing towards the point into three distinct bodies. Capsule 3-lobed, 3-celled. Seeds solitary.

Here another characteristic feature of the two genera is pointed out, viz. that in *Camellia* the flowers are always sessile, while in *Thea* they are stalked, though it can hardly be admitted in the essential characters of the two genera. The styles in *Camellia* are said to be united nearly their whole length: that is certainly the case in all those species with which Booth was acquainted in 1830; but in my *Camellia Hongkongensis* they are entirely free. Applying his generic character to the *Camelliaceæ* known at that time, Booth followed Lindley's suggestion, and transferred *Camellia euryoides*, Lindl., to *Thea*. According to that rule, he ought to have done the same with *Camellia maliflora*, Lindl. The fact that the latter was only accessible to him in a double state may partly be considered the reason why he failed to do so.

The last author who has attempted to frame a character for the two genera under consideration is Choisy, in one of the most elaborate papers that have as yet appeared on the whole order of *Ternstræmiaceæ*. It was published in 1855 in the 'Transactions of the Natural History Society of Geneva.' He defines *Camellia* and *Thea* thus:—

CAMELLIA, Linn.

Calyce à éstivation imbricative, sépales sur plusieurs rangs se recouvrant comme des tuiles. Capsule semi-déhiscente; cloisons séparées en haut du placenta central.

THEA, Kæmpf.

Calyce simple, à un seul rang. Capsule déhiscente dans tout sa hauteur. Cloisons non séparées du placenta central.

It does not appear to me that we are justified in saying the capsule of *Camellia* is semi-dehiscent, and its septa do not separate from the central placenta, and that the capsule of *Thea* is quite dehiscent, and the septa do not separate from the central placenta. The fact is, that in *Thea* the septa do at one time separate from the central placenta, and at another they do not. In normally developed capsules they generally do separate. Hence it follows that the dehiscence or semi-dehiscence cannot be regarded as a character of generic distinction between the two genera.

There is, however, one point which has been quite overlooked by all who have written on this subject, and which seems the more important as it is not one of degree. On examining the stamens, I was struck with the fact that there was in all *Camellias* and *Theas*, besides the outer series of monadelphous stamens of indefinite number, an inner series of free stamens, definite in number. With a little practice the outer series of these stamens is easily removed, and the inner one, closely surrounding the ovary, laid bare. In *Camellia* I found them to be double in number to that of the normal number of petals, and in *Thea* equal to it. I may add, that in the latter respect *Thea* agreed with what I

discovered in *Pyrenaria*. On the other hand, the structure now discovered in *Camellia* (a definite number of free stamens surrounded by a series of monadelphous ones) was known to exist in *Calpandria* of Blume, placed by Endlicher (*Genera Plantarum*, n. 5546) among the "genera dubia" of *Meliaceæ*, and removed to *Ternstræmiaceæ* by Choisy, who, however, did not suspect that it was so intimately related to *Camellia* as to render a generic separation impossible. True, in *Camellia* the filaments of the monadelphous series of stamens are more free towards their upper extremity than those of *Calpandria*; but it must be admitted this is a mere matter of degree; and no one would like to keep up *Calpandria* as a separate genus on that account only, especially as it agrees in habit and all other respects with *Camellia*.

The number of styles in *Thea* I have always found to be *three*, whilst in *Camellia* there are normally five, or by abortion four or three. I here use the term 'styles' for what some authors have called stigmas; and I justify this application by pointing to *Camellia Hongkongensis*, where the styles are quite free to their very base. There is, besides, another feature, which, though it cannot be admitted into the technical characters of the two genera, serves to distinguish them by their habit; I mean that in *Camellia* the flowers are always erect, whilst in *Thea* they are nodding. Thus, if we sum up the distinguishing peculiarities of the two, we have the following:—

CAMELLIA, Linn.	THEA, Kæmpf.
Calyx polyphyllus, sepalis deciduis. Stamina interiora duplo petalorum numero. Styli 5 (abortu 4 v. 3).—Flores sessiles, erecti.	Calyx bracteatus, 5-sepalus, sepalis persistentibus. Stamina interiora petalorum numero æqualia. Styli 3.—Flores pedunculati, declinati.

When we apply these characters to the aggregate body of *Camellias* and *Theas* as it now stands, we are enabled to retain all the older typical species under their respective genera. Thus *Camellia Japonica* of Linnæus, together with *C. reticulata*, Lindl., *C. Sasanqua*, Thunb., and *drupifera*, Lour., are kept under *Camellia*, whilst *Thea Chinensis*, Linn., remains undisturbed under *Thea*. Only four modern species of *Camellia* are placed with *Thea*; and that is all the change required. A few other species, which have nothing to do either with *Camellia* or *Thea*, are referred to their proper systematic position: *Camellia axillaris*, Roxb., is admitted to be the same as *Polysporā axillaris*, Sweet; *C. integrifolia*, Chois., proves itself to be a *Laurinea* (*Actinodaphne Chinensis*, Nees), according to specimens kindly transmitted by Prof. Choisy himself; *C. ? Scottiana*, Wall., is held to be *Andinandra dumosa*, Jack; whilst a plant which had been considered to be allied to the Wild Tea of Assam, and had been distributed by Wallich under the name of *Freziera ? attenuata*, I found to be a species of *Pyrenaria**.

I now proceed to give the generic characters of *Camellia* and *Thea*, and a synopsis of

* *Pyrenaria attenuata*, Seem. in 'Bonplandia,' vii. p. 49 [1859] (name only); foliis obovatis acuminatis serratis basi attenuatis glabris, floribus solitariis pedunculatis, pedunculis medio bracteis lunulatis obtusis alternis instructis, sepalis (5) suborbiculatis obtusis bracteisque ciliolatis, petalis (5) cohærentibus obovatis v. oblongis obtusis, 3 interioribus paulo majoribus, omnibus dorso sericeis, staminibus interioribus liberis 5, exterioribus monadelphis numerosis, omnibus glabris, stylis 5 liberis glabris, stigmatibus capitellatis, ovario ovato acuminato 10-sulcato hirsuto, fructu Affinis *P. masocarpæ*, Korth.—*Freziera ? attenuata*, Wall., an *Camellia ?*, Wall. Cat. n. 1451!—*Thea Assamica affinis sp.*, Chois. in Mém. Soc. Gen. xiv. i. p. 156 (1855).—*Thea viridis*, var. *Assamica ?*, Planch. in Herb. Hook. Chois. l. c. p. 179.—*Hab.* in Tavoy (Gomez ! in Wall. Cat. n. 1451).

their species. I have considerably reduced the number of species, and only describe a single new one; but I trust the smallness of the number of species that remain will be regretted the less, as we may anticipate ere long a considerable increase from China and Japan, since both these countries are now open to a more unrestricted intercourse with Europe. I must also beg to apologize for the many imperfections to be found in my enumeration; but it must be borne in mind that, although the great herbaria of London, Paris, Berlin, and Vienna contain treasures which were carefully examined, yet these materials are in many cases not so complete as could have been wished; and, as all the species are not represented in our gardens, much is left for future investigation. Nor must it be forgotten that the plants under consideration have a tendency to form double or semi-double flowers, and that their normal type is traced out only after a great deal of close study and observation.

CAMELLIA, Linn.

CHAR. GEN. EMEND.—*Calyx* polyphyllus, foliolis imbricatis, interioribus sensim majoribus, deciduis. *Corollæ* petala 5 (vel in floribus semiplenis et plenis 6–plurima), hypogyna, imbricata, interiora majora. *Stamina* hypogyna biserialia, exteriora numerosa petalis adhærentia in tubo concreta, interiora petalorum numero dupla, libera; *filamenta* subulata, *antheræ* incumbentes, biloculares, oblongæ, connectivo crassiusculo, loculis longitudinaliter dehiscentibus. *Pollen* sphaericum vel ovato-oblongum. *Ovarium* liberum, 5- (vel abortu 4- vel 3-) loculare. *Ovula* in loculis 4–5, angulo centrali alternatim inserta, pendula. *Styli* 5, abortu 4 vel 3, liberi vel plus minusve connati; *stigmata* capitellata. *Capsula* 5- (abortu 4- vel 3-) locularis, dehiscentis, loculicide 5-, vel in abnormis 3–4-valvis, valvis medio septiferis, axi centrali persistente, faciebus seminifero. *Semina* in loculis abortu solitaria, rarius gemina, inversa, *testa* nucamentacea, umbilico apicali impresso. *Embryonis* exalbuminosæ cotyledones crassæ, inæquales, radícula brevissima, supera.

Arbores vel *frutices* sempervirentes, Indiæ orientalis, Cochinchinæ, Chinæ et Japoniæ; *foliis* alternis, petiolatis, coriaceis, nitidis, serratis, gemmis magnis, perulis distiche imbricatis, floribus solitariis vel aggregatis, axillaribus, erectis, sæpe speciosissimis, albis, roseis vel purpureis.

Camellia, Linn. Gen. Plant. n. 848; Endl. Gen. n. 5425 (excl. sp.); DeCand. Prodr. i. p. 529 (excl. sp.).

Sasanqua, Nees in Sieb. Nipp. ii. p. 13 (excl. sp.).

Calpandria, Blum. Bijdr. bl. 178; Endl. Gen. n. 5546.

Obs. Nees von Esenbeck has proposed to divide *Camellia* into two genera (*Camellia* and *Sasanqua*), adopted as subgenera (*Kissi* and *Sasanqua*) by Endlicher; to the one is assigned a dehiscent, to the other an indehiscent fruit; but as all *Camellias* have a dehiscent fruit, though in *Camellia Sasanqua* the dehiscence takes place rather late, they fall to the ground.

1. C. JAPONICA; arborea; ramulis petiolisque glabris, foliis ovatis vel ovato-oblongis acutis vel acuminatis, subtus subaveniis, floribus inodoris, petalis (rubris, albis, flavidis variegatisve) rotundatis emarginatis (vel in var. hortens. fimbriatis), staminibus, ovariis, stylis connatis capsulisque glabris. (v. s. sp. et v. c.)

Camellia Japonica, Linn. Sp. Plant. p. 698 (1753), non Champ.; Thunb. Fl. Jap. p. 272 (1784); De Cand. Prodr. i. p. 529 (1824); Booth in Hort. Soc. Trans. vii. p. 529. t. 14 (1830); Sieb. et Zucc. Fl. Jap. p. 155. t. 82 (1835–44); Chois. in Mém. Soc. Gen. xiv. p. 147 (1855); Seem. in Bonplandia, vi. p. 278 (1858).

Thea Chinensis pimentæ Jamaicensis folio, flore roseo, Petiver, Gazophylacium, t. 33. f. 4 (1702).

San sa, vulgo *Jamma Tsubakki*, Kæmpf. Amœn. Exot. p. 850, cum ic. p. 851 (1712).

Thea Camellia, Hoffm. ex Steudl. Nom. Bot. i. p. 265 (1841).

Camellia Kæmpferiana, Reboul, Atti della Tercia Riunione, p. 494, ex Wlprs. Ann. ii. p. 178 (1851-52).

Nomina vernacul. In Japonia, "*Tsubaki*, *Jabu tsubaki*" (i. e. *Camellia sylvestris*), a Chinensibus "*San tsja*" (i. e. *Thea montana*) vocatur.

Geogr. Distr. Throughout Japan (*Kæmpfer!* *Thunberg!* *Siebold!*), forming dense woods, which, according to *Siebold*, look like those of our young Beeches; cultivated in China and in European gardens.

I have not seen wild specimens of this species from China, nor am I acquainted with any account of its having been found wild there. Champion thought he discovered it at Hongkong; but the species he took for *Japonica* turns out to be quite a distinct one (*C. Hongkongensis*, Seem.). The Chinese have from time immemorial cultivated *C. Japonica* in their gardens. In Europe it became known in the beginning of the eighteenth century, and the first figure of it was published in 1702 in Petiver's 'Gazophylacium.' Strange to add, though there are thousands of representations of the various varieties of this *Camellia*, yet we do not possess a single plate exhibiting the normal state of it. The form figured by Siebold and Zuccarini in their 'Flora Japonica' has semi-double flowers.

2. *C. HONGKONGENSIS* (Tab. LX.); arborea; ramulis petiolisque glabris, foliis ovato-lanceolatis vel lanceolatis acuminatis, subtus venis tenuibus distinctis, floribus inodoris, petalis (rubris) obovatis emarginatis, staminibus glabris, ovario stylisque liberis lanatis; capsula (glabra?). (v. v. sp.)

Camellia Hongkongensis, Seem. MSS.

C. Japonica, Champ. in Hooker's Journ. of Bot. and Kew Misc. iii. p. 309 (1851), non Linn. !; Champ. in Trans. Linn. Soc. xxi. p. 112 (1853); Seem. Bot. Herald, p. 367. n. 68 (1857).

Geogr. Distr. Cochinchina-Tourane (*Gaudichaud*, n. 271, in Herb. Par. !); Island of Hongkong (*Eyre!* *Bowring!* *Champion!* *Hance!* *Seemann!*).

This species was discovered in January 1837 by Gaudichaud in Cochinchina, and about 1849 by Lieut.-Colonel Eyre, of the Royal Artillery, in the island of Hongkong, where it grows in company with *Castanea concinna*, *Quercus bambusæfolia*, *Thea salicifolia*, &c.; it was afterwards collected by Bowring, Champion, Hance, and myself. Only three trees are known to exist in Hongkong. In a paper read November 5, 1850, before the Linnean Society, and published in 1853 in our Transactions, Capt. Champion took it for the true *Camellia Japonica* of Linnæus; and so did Mr. Bentham and myself in our respective enumerations of the plants of Hongkong. A more recent examination and comparison with a large set of specimens of the genuine *C. Japonica*, Linn., has, however, led me to consider the *Camellia* found by Gaudichaud and Eyre as indeed allied to, but very distinct from, *C. Japonica*, Linn. It differs from *C. Japonica* in the shape and dark-green colour of its leaves, in its free styles and woolly ovary; otherwise it has very much the habit of the common single pink variety of *C. Japonica*, and is easily mistaken for that species if the important differences pointed out be overlooked. Champion describes the capsule as "smooth," thereby meaning most probably "glabrous," as he has previously described that of *C. spectabilis* as "sericeous," and he adds that it is more than an inch in diameter.

3. *C. RETICULATA*; arborea; ramulis petiolisque sericeo-pubescentibus, foliis oblongis vel lanceolatis, subtus reticulatis, floribus inodoris, petalis (albis vel in var. fl. pl. variegatis) rotundato-obovatis emarginatis, staminibus glabris, ovario, stylis subliberis capsulaque sericeis (v. s. sp. et v. c.).

Camellia spectabilis, Champ. in Hook. Journ. of Bot. and Kew Misc. iii. p. 310 (1851); Champ. in Trans. Linn. Soc. xxi. p. 111 (1853); Chois. in Mém. Soc. Genève, xiv. i. p. 148 (1855); Seem. Bot. Herald, p. 367. t. 78. p. 432 (1857); Seem. in Bonplandia, vi. p. 276 (1858).

Var. *flore pleno*; *fl. pleno*, Hook. Bot. Mag. t. 4976 (1857); Van Hout. Fl. des Ser. t. 1282-3 (1857).

C. reticulata, Lindl. Bot. Reg. t. 1078 (1827); Booth in Hort. Soc. Trans. vii. p. 528 (1830); Chois. in Mém. Soc. Genève, xiv. i. p. 147 (1855).

Geogr. Distr. Island of Hongkong (*Eyre! Champion!*). Cultivated in European gardens.

The double state of this *Camellia* was first figured and described by Dr. Lindley in the 'Botanical Register,' t. 1078, from living specimens imported from Chinese gardens, while the normal state (with single flowers) was entirely unknown till discovered about twenty years afterwards in the woods of Hongkong by Capt. Champion. The discoverer did not, however, recognize it as such, but mistook it for a new species, to which he gave the name of *C. spectabilis* in a paper read November 1850 before the Linnean Society, and published in our Transactions. Bentham enumerated it under Champion's name in his 'Florula Hongkongensis.' When I went over the same ground (Bot. Herald, p. 367), I was struck with the great resemblance existing between *C. reticulata*, Lindl., and *C. spectabilis*, Champ.; but not having at that time good specimens for comparison, I contented myself with remarking, in the Supplement to my Hongkong Flora (Bot. Herald, p. 432), of *C. spectabilis*—"This species is closely allied to *C. reticulata*, Lindl." Afterwards I was fortunate enough to obtain complete specimens of *C. reticulata*, Lindl., through the kindness of my friend Mr. Edward Otto of Hamburg, and was thus enabled to establish (Bonplandia, vi. p. 276) the identity of *C. spectabilis* and *C. reticulata* as species: as varieties they are distinct: the form described by Champion, having single white flowers, is the normal state, while that described by Lindley, having double red flowers variegated with white, is the abnormal state. In a horticultural point of view, this identification is of some importance. Although our florists have as yet taken little notice of *C. reticulata*, we have already the two principal tints displayed by its ally the *C. Japonica*, viz. the white and the red. It therefore now behoves them to take this species in hand, and endeavour to raise it in horticultural eyes to a standard of perfection; for although the flowers of *C. reticulata* are destitute of that compactness peculiar to *C. Japonica*, and rather remind us of a Pæony, yet they have this in their favour, that they are of much arger size than those of *C. Japonica*—some specimens of the double variety observed by Sir W. J. Hooker actually measuring 20 inches in circumference, and being the largest floral development as yet recorded among the Camellias.

4. *C. SASANQUA*; fruticosa vel arborescens; ramulis petiolisque puberulis, foliis ellipticis vel ovato-lanceolatis acutis, subtus subaveniis, floribus inodoris, petalis (albis) obcordato-emarginatis vel bilobis, staminibus glabris, ovario lanato, stylis connatis, capsula pubescente. (v. s. sp. et v. c.)

Camellia Sasanqua, Thunb. Fl. Japon. p. 273. t. 30 (1784); Cav. Diss. vi. p. 306. t. 160 (1790); Staunt. Embas. to China, ii. p. 466 cum ic. (1797); Bot. Reg. t. 12 (1815), t. 1091 (1827); Lodd. Bot. Cab. t. 1275 (1827); Booth in Hort. Soc. Trans. vii. p. 521 (1830); Sieb. et Zucc. Fl. Jap. p. 158. t. 83 (1835-44); Choisy in Mém. Soc. Genève, xiv. i. p. 147 (1855); Seem. in Bonpl. vi. p. 278 (1858).

Sasanqua, Kämpf. Delineat. plant. Japon. (MSS. in Mus. Brit.) fig. 25; Amœn. Exot. p. 853, ex parte (1712).

Camellia oleifera, Abel, Journ. in China, p. 174 cum ic., App. p. 363 (1818); Lindl. in Bot. Reg. t. 942 (1825); Lodd. Bot. Cab. t. 1065 (1825); Booth in Trans. Hort. Soc. vii. p. 524 (1830); Choisy in Mém. Soc. Genève, xiv. i. p. 147 (1855); Seem. in Bonpl. vi. p. 278 (1858).

Thea oleosa, Lour. Fl. Cochinch. p. 339 (1790); Choisy in Mém. Soc. Genève, xiv. i. p. 156 (1855).

Thea longifolia, Nois., et *Thea Sasanqua*, Nois., teste Steudl.

Nomina vernacul. Nomen Cochinchinense, teste Loureiro, "Yeu-cha." Nomen Chinense, teste Abel, "Tscha-Yeoa," teste Loureiro, "Che-deau," et teste Staunton, "Cha-whaw." Nomen Japonicum, teste Siebold, "Sasankwa." Nomen Japon.-chinense, teste Siebold, "Tsja-bai."

β. var. *flore semi-pleno*, Lindl. Bot. Reg. t. 12 (1815), t. 1091 (1827); Lodd. Bot. Cab. t. 1275 (1827).

Geogr. Distr. Japan (*Thunberg* in Mus. Brit.! *Siebold*). China, Prov. of Kiangsi (*Sir George Staunton* in Mus. Brit.!); Prov. of Kwangton (*Sir G. Staunton* in Mus. Brit.! *Abel*, *Loureiro*); Chusan (*Dr. Cantor* in Herb. Bth.!); Loo-choo (*C. Wright*, n. 28!). Cultivated in European gardens.

Camellia Sasanqua, Thunb., and *C. oleifera*, Abel, are in most works regarded as distinct species. They are here united, because I could not find a single character by which they could be distinguished from each other. I have also added as a synonym the doubtful *Thea oleosa* of Loureiro, which, from the description given by its author, agrees tolerably well with the old *C. Sasanqua*. I am the more convinced that this identification is correct, as there are only two Camelliaceous plants that yield seeds sufficiently oily to be used for economic purposes, viz. *Camellia Sasanqua* and *C. drupifera*; and Loureiro states emphatically that his *Thea oleosa* yields an oil and grows wild in the province of Canton,—a fact fully agreeing with what we know of *C. Sasanqua*. What is preserved in the Parisian Museum as the original specimen of *Thea oleosa*, Lour., is *Thea Chinensis*, var. *Bohea*. The latter plant (I mean *T. Chinensis*, var. *Bohea*) was well known to Loureiro, and named by him *Thea Cantonensis*; and, as it neither yields an oil nor grows wild in Canton, I do not think that we are far wrong in assuming that the specimen preserved at Paris as *Thea oleosa* has obtained that name by a misplacing of the label, and that the genuine specimens of *Thea oleosa*, Lour., like those of *Camellia drupifera*, Lour., and *Thea Cochinchinensis*, Lour., have been lost. The genuine *C. Sasanqua* has always white flowers; and when Kämpfer, who first brought it into notice, attributed pink ones to it, he undoubtedly confounded another species with it (viz. *Thea maliflora* = *Camellia maliflora*, Lindl.), which, until Lindley pointed it out as distinct, was always regarded as a variety of *C. Sasanqua*. Siebold and Zuccarini, in their 'Flora Japonica,' still kept up this old error. There are no specimens of *C. Sasanqua* in Kämpfer's herbarium; but in a collection of manuscript drawings of that author, preserved in the British Museum, there is a figure of his 'Sasanqua,' which represents the genuine *C. Sasanqua* of Thunberg. (Conf. *Thea maliflora*, Seem.)

5. *C. DRUPIFERA*; arborea; ramulis petiolisque puberulis, foliis lanceolatis vel ovato-lanceolatis longe acuminatis, subtus venis tenuibus distinctis, floribus odoratis, petalis

(albis) obovatis emarginatis, staminibus glabris, ovario lanato, stylis subliberis, capsula pubescente. (v. s. sp. et v. c.)

Camellia drupifera, Lour. Fl. Cochinchinen. p. 411 (1790); DeCand. Prodr. i. p. 529 (1824).

Camellia Kissi, Wall. in Asiat. Res. xiii. p. 429 (1820); DeCand. Prodr. i. p. 529 (1824); Wall. Cat. n. 977 (1828); Booth in Trans. Hort. Soc. vii. p. 525 (1830); Wall. Plant. Asiat. Rar. iii. p. 36. t. 256 (1832); Lodd. Bot. Cab. t. 1815 (1832); Chois. in Mém. Soc. Genève, xiv. i. p. 147 (1855); Seem. in Bonplandia, vi. p. 278 (1858).

Camellia Chamgota, Ham. MSS. (1814), teste Wall. in Asiat. Res. xiii. p. 429 (1820); Chois. in Mém. Soc. Genève, xiv. i. p. 147 (1855).

Camellia Keinia, Hamilt. MSS. in Don Fl. Nepal. p. 224 (1825).

Camellia ? oleifera, Wall. Cat. n. 976 (1828).

Camellia symplocifolia, Griff. Itin. Notes, p. 40, n. 652 (1848), et Notulæ ad Plant. Asiat. iv. p. 560. t. 604. f. 2 (1854).

Camellia (Thea) Mastersiana, Griff. Notulæ ad Plant. Asiat. iv. p. 559 (1854).

Mesua bracteata, Sprengl. Syst. Veg. iii. p. 127 (1826).

Nomina vernacula. In Cochinchina, teste Loureiro, "Cay Deau so;" in Sylhetia, teste Hamilton, "Chamgota;" in Nepalia, teste Wallich, "Kissi" seu "Kissi-Soah," et, teste Don, "Keng-na" vocatur.

Geogr. Distr. Nepal (Wallich! E. Gardner!); Khasia Mountains, 3-5000 feet (Hooker and Thomson!, Griffith!, Th. Lobb!); Bootan (E. Ind. Comp. Herb.!); Sikkim (Hooker and Thomson!); Assam (Griffith!, Jenkins!); Cochinchina (teste Loureiro). Cultivated at the Botanic Garden, Ham-burgh.

This species was discovered by Loureiro in Cochinchina, and has since been found in different parts of the East Indies; as it has an extensive geographical range, and grows both in the high and low lands, it looks so different in different localities, that we can scarcely be surprised if one and the same author has not recognized it again when he met with it in a new place. Its nearest ally is *Camellia Sasanqua*, Thunb., and, like that species, it yields an oil. There are no original specimens of *Camellia drupifera*, Lour., either in London or Paris,—a misfortune the more to be regretted, as, owing to the very imperfect description given by Loureiro, this species has always been regarded as a doubtful one. I endeavoured to show (Bonplandia, vii. p. 48) that the characters furnished might be reconciled with those of *Pyrenaria serrata*, Blum.; but I am now convinced that the balance of evidence inclines more to *Camellia Kissi*, Wall.; *Pyrenaria serrata*, Blum., possessing no oleiferous properties, as I have since learned. That *Camellia drupifera*, Lour., has nothing whatever to do with *Mesua*, to which it has been referred by Sprengel, it is hardly necessary to demonstrate.

6. C. LANCEOLATA; arborescens; ramulis petiolisque puberulis, foliis lanceolatis vel ovato-lanceolatis acuminatis, subtus discoloribus, venis obscuris, floribus inodoris, petalis (albis) obovatis obtusis, staminibus glabris, ovario stylisque connatis lanato-pubescentibus, capsula (v. s. sp.)

Camellia lanceolata, Seem. MSS.

Calpandria lanceolata, Blum. Bijdr. 178; Korth. Verhandl. p. 148. t. 31.

Geogr. Distr. Borneo (teste Korth.); Sumatra (Marsden, in Herb. Bth. et Hook.!).

7. C. QUINOSAURA; arborescens; ramulis petiolisque, foliis oblongo-ovatis acutis,

subtus , floribus inodoris, petalis (albis) , staminibus , ovario stylisque connatis glabris, capsula

Camellia quinosaura, Seem. MSS.

Calpandria quinosaura, Korth. Verhandl. p. 149.

Geogr. Distr. Java (teste Korth.).

I have not seen any specimens of this plant.

Species exclusæ :

C. assimilis, Champ. = *Thea assimilis*, Seem.

C. axillaris, Roxb. = *Polyspora axillaris*, Sweet.

C. Banksiana, Lindl.*.

C. Bohea, Griff. = *Thea Chinensis*, Linn.

C. caudata, Wall. = *Thea caudata*, Seem.

C. euryoides, Hort. = *Thea maliflora*, Seem.

C. euryoides, Lindl. = *Thea euryoides*, Booth.

C. integrifolia, Chois. = *Actinodaphne Chinensis*,
Nees.

C. maliflora, Lindl. = *Thea maliflora*, Seem., fl. pl.

C. rosæflora, Hook. = *Thea maliflora*, Seem.

C. salicifolia, Champ. = *Thea salicifolia*, Seem.

C. Sasanqua fl. incarnato multiplici, Sims = *Thea maliflora*, Seem., fl. pl.

C. Sasanqua fl. rubro simplici, Sims = *Thea maliflora*, Seem.

C. Sasanqua rosea, Hort. = *Thea maliflora*, Seem.,
fl. pl.

C. Sasanqua stricta, Edw. = *Thea maliflora*, Seem.,
fl. pl.

C. ? Scottiana, Wall. = *Andinandra dumosa*, Jack.

C. Thea, Link = *Thea Chinensis*, Linn.

C. theifera, Griff. = *Thea Chinensis*, Linn.

C. viridis, Link = *Thea Chinensis*, Linn.

THEA, Kæmpf.

CHAR. GEN. EMEND.—*Calyx* bracteatus, 5-phyllus, foliolis imbricatis, interioribus majoribus, persistentibus. *Corollæ* petala 5, 7 vel 8, hypogyna, imbricata, cohærentia, interiora majora. *Stamina* hypogyna, biserialia, exteriora numerosa petalis adhærentia et in tubo concreta, interiora petalorum numero æqualia (5-7-8) libera; *filamenta* subulata, *antheræ* incumbentes, biloculares, oblongæ, connectivo crassiusculo, loculis longitudinaliter dehiscentibus. *Pollen* rotundato-oblongum lineatum vel globoso-subtrigonum. *Ovarium* liberum 3-loculare. *Ovula* in loculis 4-5, angulo centrali alternatim inserta. *Styli* 3, connati vel subliberi, *stigmata* capitellata. *Capsula* 3-locularis, dehiscentis, loculicide 3-valvis, valvis medio septiferis, axi centrali persistente, faciebus seminifero. *Semina* in loculis abortu solitaria, rarius gemina, testa nucamentacea, umbilico apicali impresso. *Embryonis* exalbuminosæ *cotyledones* crassæ, carnosæ, inæquales, radícula brevissima, supra.

Frutices vel arbusculæ sempervirentes, Indiæ orientalis, Chinæ et Japoniæ; foliis alternis, petiolatis, coriaceis, nitidis, serratis, floribus pedunculatis, pedunculis bracteatis, axillaribus, solitariis vel aggregatis, nutantibus, albis vel roseis.

Thea, Kæmpf. Linn. Gen. (edit. vi. 1764) p. 269. n. 668; DeCand. Prodr. i. p. 530 (excl. sp.); Endl. Gen. Plant. n. 5426.

Camellia, sp. auct.

1. THEA MALIFLORA; ramulis petiolisque puberulis; foliis ovatis vel ovato-lanceolatis acuminatis, utrinque glabris, pedunculis imbricato-bracteatis, sepalis ovatis obtusis, dorso pubescentibus, petalis 7-8 obcordato-emarginatis erectis glabris (roseis), staminibus, stylis ovarii capsulisque glabris. (v. v. cult.)

* "*Camellia Banksiana*, Lindl. (mentioned by Champion in Hook. Journ. and Kew Misc. iii. p. 310), is a nonentity, as neither Lindley nor any other botanist has ever published such a name."—Seem. Bot. Herald, p. 367; Bonpl. vi. p. 278.

Thea maliflora, Seem. MSS.

Camellia rosæflora, Hook. Bot. Mag. t. 5044 (1858).

Sasanqua, Kæmpf. Amœn. Exot. p. 853! ex parte (1712).

Camellia Sasanqua α , *flore rubro simplici*, Sims, Bot. Mag. sub t. 2080! (1819).

Camellia euryoides, Hort. Germ. et Angl. ! (non Lindl.!).

Var. *flore pleno*, Seem.

Camellia Sasanqua, β . *stricta*, *fl. pl. carneo*, Edwards, Bot. Reg. t. 547! (1821); Lodd. Bot. Cab. t. 1134 (1826).

Camellia Sasanqua, β . *flore incarnato multiplici* = *Palmer's Double Sasanqua*, Sims, Bot. Mag. t. 2080! (1819).

Camellia Sasanqua rosea, Hort.!

Camellia maliflora, Lindl. Bot. Reg. sub t. 1078! (1827); Booth in Hort. Soc. Trans. vii. p. 526! (1830); Chois. in Mém. Soc. Phys. de Genève, t. xiv. pt. i. p. 147! (1855).

Geogr. Distr. Japan. Cultivated in European gardens.

Kæmpfer (Amœn. Exot. p. 853) was the first who noticed the normal state of this species under the name of "*Sasanqua*," though he does not seem to have preserved any specimens of it, for the only species of *Camellia* to be found in his herbarium at the British Museum is *C. Japonica*, Linn. (Herb. Kæmpf. fol. 23. n. 2, et fol. 32. n. 2). He distinctly states that it has single *red* flowers. Thunberg (Flora Japon. p. 273), although he ascribed to his *Camellia Sasanqua* *white* flowers, quoted Kæmpfer's "*Sasanqua*" as an entire synonym of it (though it is only so in part), and thus, by confounding two very distinct species, laid the foundation of an endless series of mistakes committed by subsequent authors. DeCandolle, too (Prodr. i. p. 529), quoted Kæmpfer's "*Sasanqua*" as a synonym of *C. Sasanqua*, Thunb., further remarking that the latter species varied with white, flesh-coloured, pink and red flowers,—a remark not borne out by facts, as the true *C. Sasanqua*, Th., never bears any but white petals. Sims (Bot. Mag. t. 2080) figured, from garden specimens introduced by Capt. Rawes in 1816, the double state of the species under consideration, which he mistook for a variety of *C. Sasanqua*, Thunb.; but he felt the necessity of bringing the various synonyms, supposed to belong to *C. Sasanqua*, Thunb., into some kind of order, by arranging them as follows:—

Camellia Sasanqua.

Var. α . *flore rubro simplici* = "*Sasanqua*," Kæmpf. Amœn. Exot. p. 853.

Var. β . *flore incarnato multiplici* = *Palmer's Double Sasanqua*, Bot. Mag. t. 2080.

Var. γ . *flore albo simplici* = *C. Sasanqua*, Thunb. Fl. Jap. p. 273. t. 30 [excl. syn. Kæmpf. ex parte! he ought to have added.—B. S.]; Bot. Reg. t. 12; Staunton. Emb. to China, ii. p. 466, cum icon.

Of these three varieties only α . and β . belong to *Thea maliflora*, γ . appertaining to, or rather being, the veritable *C. Sasanqua*, Thunb. The double state of our plant was again figured from the same garden plant in the Bot. Reg. t. 547, under the name of *C. Sasanqua* β . *stricta*, *fl. pl. carneo*. At last (1827) Lindley (Bot. Reg. sub tab. 1078) pointed out that this so-called double pink variety of *C. Sasanqua* was in reality a distinct species, to which he gave the name of *C. maliflora*. Booth (Hort. Soc. Trans. vii. p. 526) adopted this view, and at the same time drew attention to the very different habits of *C. maliflora* and *C. Sasanqua*. Unfortunately, Siebold and Zuccarini (Fl. Jap. p. 158) overlooked the

result of Lindley's investigation, and probably misled by the name which Kæmpfer had adopted for two plants, they quoted, like Thunberg, DeCandolle, Sims, and others, Kæmpfer's "Sasanqua" as quite synonymous with *C. Sasanqua*, Thunb., and in their detailed description ascribed to *C. Sasanqua* "petalis puniceis vel albis." Meanwhile the normal state of this species, *i. e.* the single-flowered variety, had found its way into our gardens, and was cultivated for many years, both in England and on the Continent, under the name of *C. euryoides*, Hort. (non Lindl.!), until (1858) Sir W. J. Hooker described it (Bot. Mag. t. 5044) as *C. rosæflora*.

There is undoubtedly a certain resemblance in the foliage of *Camellia Sasanqua*, Thunb., and *Thea maliflora*, Seem., that of both being coriaceous and almost glabrous, but on closer inspection the difference between the leaves becomes as evident as is that in their habit. The characters by which the two species may instantly be distinguished are, that *Camellia Sasanqua* has white petals and a woolly ovary, while *Thea maliflora* has pink petals and a glabrous ovary. When some authors ascribe flesh-coloured and red flowers to the latter species, they mean pink, the pink being more or less intense.

I have not seen any wild specimens of *Thea maliflora*. Whence and how the single state came into our gardens, is a matter of uncertainty; but as Kæmpfer met with it in Japan, it is probably indigenous to that empire. The double variety was introduced (1816) from Chinese gardens, and the Chinese may perhaps have obtained it from Japan.

2. *THEA EURYOIDES*; ramulis petiolisque pilosis; foliis ovato-lanceolatis acuminatis, subtus sericeis, pedunculis imbricato-bracteatis, sepalis ovatis obtusis, dorso pilosis, petalis 7-8 obovatis obtusis erectis glabris (albis), staminibus stylis ovarisque capsulisque glabris. (v. s. sp.)

Thea euryoides, Booth in Hort. Soc. Trans. vii. p. 560 (1830); Chois. in Mém. Soc. Phys. de Genève, xiv. i. pp. 149, 156 (1855).

Camellia euryoides, Lindl. Bot. Reg. t. 983 (1826); Lodd. Bot. Cab. t. 1493 (1828); Seem. Bonpl. vi. p. 278 (1858).

Geogr. Distr. Chusan (*Dr. Cantor*, in Herb. Benth.!).

I have only seen a single specimen of this species, from China, preserved in Bentham's herbarium. It was first imported in a living state by the Horticultural Society of London in 1822, and again in 1824, and is used by the Chinese for grafting upon it their varieties of *Camellia Japonica*. It seems to have entirely disappeared from our gardens, what goes by the name of *Camellia euryoides* amongst horticulturists being the normal state of *Thea maliflora*.

3. *THEA CAUDATA*; ramulis petiolisque puberulis; foliis lanceolatis longe acuminatis, utrinque glabris, pedunculis imbricato-bracteatis, sepalis ovatis obtusis, petalis 5 obovatis obtusis, dorso villosis, patentibus (albis), staminibus stylis ovarisque villosis, capsula glabra. (v. s. sp.)

Thea caudata, Seem. MSS.

Camellia caudata, Wall. Cat. n. 978 (1828); Wall. Plant. Asiat. Rar. iii. p. 36 (1832); Wlprs. Rep. Bot. Syst. i. p. 375 (1842); Chois. in Mém. Soc. Phys. Genève, xiv. i. p. 148 (1855); Griff. Itinerary Notes, p. 40. n. 651 (1848); Griff. Notulæ ad Plant. Asiat. iv. p. 559. t. 601. fig. 2 (1854).

Geogr. Distr. Khasia Mountains and Sylhet from the sea-level to 4000 feet (*Wallich! Griffith! Hooker and Thomson!*).

4. *THEA SALICIFOLIA*; ramulis petiolisque pubescenti-villosis; foliis ovato-lanceolatis longe acuminatis, supra (nervo medio except.) glabris, subtus pubescenti-villosis pallidioribus, pedunculis imbricato-bracteatis, sepalis ovato-lanceolatis longissime acuminatis, petalis 5 obovatis obtusis vel acuminatis, dorso villosis, patentibus (albis), staminibus stylis ovariisque villosis, capsula rostrata glabra. (v. v. sp. et cult.)

Thea salicifolia, Seem. MSS.

Camellia salicifolia, Champ. in Hook. Journ. of Bot. and Kew Misc. iii. p. 309 (1851); Champ. in Trans. Linn. Soc. xxi. p. 112 (1853); Chois. in Mém. Soc. Genève, xiv. i. p. 148 (1855); Seem. Bot. Herald, p. 367. t. 76 (1857); Seem. in Bonplandia, vi. p. 278 (1858).

Geogr. Distr. Island of Hongkong (*Champion! Hance! Seemann! Wilford! C. Wright*, n. 63!). Cultivated at Kew.

5. *THEA ASSIMILIS*; ramulis petiolisque adpresso-pilosis; foliis lanceolatis acuminatis, supra glabris, subtus ad nervos adpresso-pilosis, pedunculis imbricato-bracteatis, sepalis rotundatis obtusis, petalis 7 obovatis emarginatis patentibus (albis), dorso sericeis, staminibus stylis ovariisque villosis, capsula rostrata glabra. (v. s. sp.)

Thea assimilis, Seem. MSS.

Camellia assimilis, Champ. in Hook. Journ. and Kew Misc. iii. p. 309 (1851); Champ. in Trans. Linn. Soc. xxi. p. 112 (1853); Chois. in Mém. Soc. Genève, xiv. i. p. 148 (1855); Seem. Bot. Herald, p. 367. t. 77 (1857); Seem. in Bonpl. vi. p. 278 (1858).

Geogr. Distr. Island of Hongkong (*Champion! C. Wright*, n. 61!).

6. *THEA CHINENSIS* (TAB. LXI.); ramulis petiolisque glabris vel sericeo-puberulis; foliis lanceolatis, obovato-lanceolatis vel ovato-oblongis acuminatis, utrinque glabris vel ad nervos plus minusve puberulis, pedunculis 2-3 bracteatis, sepalis rotundatis obtusissimis, glabris vel sericeis, petalis 5 obovatis obtusis patentibus (albis) dorso glabris vel pubescentibus, staminibus stylisque glabris, ovario villosa, capsula glabra. (v. s. sp. et v. v.)

Thea Chinensis, Linn. Spec. Plant. edit. i. p. 515 (1753); Sims, Bot. Mag. t. 998; DeCand. Prodr. i. p. 530 (1824); Chois. in Mém. Soc. Genève, xiv. i. p. 155 (1855).

Thea Bohea, Linn. Sp. Plant. edit. ii. p. 735 (1762).

Thea viridis, Linn. Sp. Plant. edit. ii. p. 735 (1762).

Thea Cantoniensis, Lour. Coch. i. p. 339 (1790).

Thea Cochinchinensis, Lour. Coch. i. p. 338 (1790).

Thea Japonica, Kæmpf. Amœn. Exot. p. 605 (1712).

Thea Assamica, Masters. *Thea stricta*, Heyne.

Camellia Bohea, Griff. Notul. ad Plant. Asiat. iv. p. 553. t. DCII. fig. 1 (1854).

Camellia theifera, Griff. Not. ad Plant. Asiat. iv. p. 558 (1854).

Camellia Thea, Link., ex Steudl. nomen. bot.

Camellia viridis, Link., ex Steudl. nomen. bot.

Nomina vernacula. In Japonia, teste Kæmpfer, "Tsjä," in China, teste Wach, "Ta," "Sa" vel "Cha," et in Cochinchina, teste Loureiro, "Chè ân nām" vocatur.

Geogr. Distr. Upper Assam (*Griffith! Masters!*); cultivated in the East Indies, China, and Japan; also in European gardens.

I agree with Choisy, that there is only one species of the plant yielding the tea of commerce, for which I adopt the name of *Thea Chinensis* given to it by Linnæus in the first edition of his 'Species Plantarum,' and afterwards sanctioned by Sims and others as a collective one for *Thea Bohea*, *viridis* and *Assamica*. The propriety of taking the name "*Chinensis*" may be open to discussion, since we have no wild specimens of Tea from China, but only from Upper Assam, and a Chinese tradition of great antiquity states that the Tea-plant was introduced from India by the Buddhist priests, so that it is possible that we may term a species "Chinese" that is in reality "East-Indian" in its origin, and thus furnish another instance of "lucus a non lucendo." Dr. Hooker, to whom I communicated these doubts, thinks that the plant may yet be found wild in North-western China, and his intimate knowledge of the Flora of India renders that opinion of the utmost value.

Respecting the varieties of *Thea Chinensis*, I think that they are supposed to be much more marked than they really are. There is indeed a vast difference between the narrow-leaved forms of what is called *Thea Bohea* in our gardens, and the broad-leaved specimens of the wild Tea of Assam (figured in our Plate LXI.); but the transition from *Thea Bohea* to *Thea viridis*, and thence to *Thea Assamica*, is so gradual, that it is almost impossible to draw up any precise definition of these three great varieties. Besides, it must not be supposed that when we have furnished characters for these three principal varieties, our labours have terminated. As in all cultivated plants, there are minor varieties, and forms of the highest agricultural and commercial value, that claim our attention, and for the working up of which but limited materials are at present at hand. The belief so long entertained that *Thea Bohea* yielded the black, *Thea viridis* the green tea of commerce, has long been exploded; but a slight doubt seems still to linger in some quarters whether the fact that *Thea Bohea* suffers less from frost, and begins to put forth its young leaves later than *Thea viridis*, does not prove a specific difference between them. The reply to this is, that *Thea viridis* of the gardens does certainly begin to grow earlier than *Thea Bohea*, and therefore is apt to suffer more from night frost than *Thea Bohea*; but it does not follow that it must on that account be specifically distinct, as, according to the same rule, we should have to make species of all the early and late sorts of our kitchen vegetables and of our fruit-trees*.

Species exclusæ :

Thea Assamica, affin. Chois. = *Pyrenaria attenuata*,
Seem.
Thea Camellia, Hoffmsg. = *Camellia Japonica*,
Linn.

Thea imperialis, Hort. = *Micromeria obovata*, Bth.
Thea longifolia, Nois. = *Camellia Sasanqua*, Thunb.
Thea oleosa, Lour. = *Camellia Sasanqua*, Thunb.
Thea Sasanqua, Nois. = *Camellia Sasanqua*, Thunb.

* For an interesting paper on the tea of commerce, by Charles Wach, see Ed. Otto's 'Hamburger Gartenzeitung,' xiv. p. 451 (1858).

ADDENDA. (October 1859.)

After the foregoing paper had been printed off, a fine specimen of Fortune's "Yellow Camellia" flowered at Kew, affording me an opportunity for examination. It proves to be a variety of *Camellia Sasanqua*, Thunb., of the Warratah or Anemone Class, and may be termed

CAMELLIA SASANQUA, var. γ . ANEMONÆFLORA; foliis ovato-lanceolatis longe acuminatis, floribus plenis, petalis exterioribus (albis) obovato-oblongis bilobis, staminibus fere omnibus in petalos spathulatos (flavos) exterioribus multo breviores mutatis, stylis 5 (rarissime abortu 4) liberis vel connatis, fructu (v. v. cult.).

Camellia Sasanqua, Thunb., var. γ . *anemonæflora*, Seem. MSS.; Bot. Mag. t. . (ined.).

Yellow Camellia, R. Fortune, Journ. to Tea Countr. p. 339 (1852); Gard. Chron. for 1852, p. 259; Seem. in Gard. Chron. for 1859, p. 807.

Fortune's Gelbe Camellia, Bonplandia, vii. n. 19 (1859).

"Those who have read my 'Wanderings in China,' says Mr. Fortune (Journey to the Tea Countries, p. 339. London, 1852), "may remember a story I told of my endeavours to find a *Yellow Camellia*,—how I offered five dollars for one,—how a Chinaman soon found two instead of one,—and how he got the money and I got taken in! In one of those nurseries (about ten or twelve miles eastward of Shanghai), however, I found a Yellow Camellia, and it was in full bloom when I bought it. It is certainly a most curious plant, although not very handsome. The flowers belong to the Anemone or Warratah Class; the outer petals are of a French white, and the inner ones of a primrose-yellow. It appears to be a very distinct species in foliage, and may probably turn out more hardy than any of its race."

Fortune's supposition that his "Yellow Camellia" might be a distinct species has not been verified, nor is the plant in question to be regarded as a variety of *Camellia Japonica*. The latter flowers towards the spring, and has quite glabrous leaf-buds, petioles, leaves, and ovaries; whilst the Yellow Camellia flowers in the autumn, and has pubescent leaf-buds, petioles, and veins of the leaves, and a woolly ovary, characters agreeing with *C. Sasanqua*, and it may therefore be safely referred to that species as a Warratah or Anemone-flowered variety, the stamens of which are nearly all transformed into short spathulate petals of a primrose colour. Hitherto the Warratah state was only known to occur in *C. Japonica*; and the yellow colour is certainly quite a new feature in this genus, deserving the greatest attention of horticulturists. That *C. Sasanqua* has a tendency to assume a yellow tinge is evident even from the single flowering state, as will be seen from the figure in the 'Botanical Register,' t. 942, where the outer series of stamens displays the primrose colour peculiar to the Yellow Camellia. I may add that the plate quoted represents the form nearest approaching the plant under consideration,—the leaves of the Yellow Camellia always being more acuminate than those of the ordinary form usually found in the gardens, and the styles generally (not always) entirely free. This latter particular Fortune's novelty shares with *C. Hongkongensis*, Seem., and *C. drupifera*,

Lour. (*C. Kissi*, Wall.). As a cause of the sickly appearance generally presented by the Yellow Camellia in our gardens, I have assigned (*Gardeners' Chronicle* for 1859, p. 807) its being grafted upon *C. Japonica*, and, as a cure, recommended its being grafted upon its nearest ally, *C. Sasanqua*.

EXPLANATION OF THE PLATES.

TAB. LX.

Camellia Hongkongensis, Seem.

Fig. 1. Petal. Fig. 2. Stamens of the monadelphous series. Fig. 3. Ovary and styles. Fig. 4. Ovary cut across. All, with the exception of Fig. 1, magnified.

TAB. LXI.

Thea Chinensis, Linn.

Fig. 1. Petal. Fig. 2. Stamens of the monadelphous series. Fig. 3. Ovary and styles. Fig. 4. Ovary cut across. Fig. 5. Ripe fruit. Fig. 6. A seed. Figs. 1, 2, 3, and 4 magnified.



Seemann, Berthold. 1859. "XXV. Synopsis of the Genera Camellia and Thea." *Transactions of the Linnean Society of London* 22, 337–352.

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