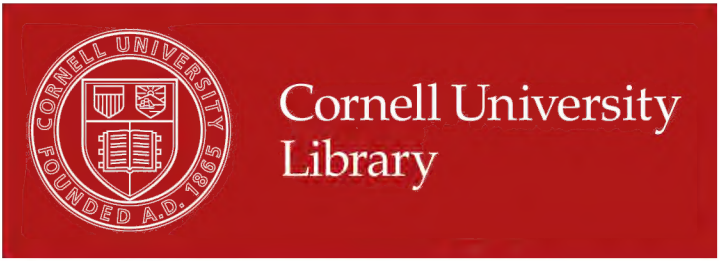

LAWS

OF

BOTANICAL NOMENCLATURE

ADOPTED BY THE

International Botanical Congress

HELD AT PARIS IN AUGUST, 1867;

TOGETHER WITH AN

HISTORICAL INTRODUCTION AND A COMMENTARY.

BY

ALPH. DE CANDOLLE,

EDITOR AND PARTLY AUTHOR OF THE 'PRODROMUS SYSTEMATIS NATURALIS VEGETABILIUM.'

(TRANSLATED FROM THE FRENCH.)

LONDON:
L. REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.
1868.

PRINTED BY J. E. TAYLOR AND CO.,
LITTLE QUEEN STREET, LINCOLN'S INN FIELDS.

NOTE BY THE TRANSLATOR.

In the following translation of M. de Candolle's 'Lois de la Nomenclature Botanique,' precision has been my chief object. I have, on this account, adhered as literally as I could to the original text, only departing from it where the idioms of the French language did not admit of a close rendering into English. It may not be superfluous to add, that in complying with the request of the author that I should undertake the translation, I was actuated rather by a desire to oblige him, than by the hope of being able to do full justice to his work. For the revision of the MS. and proofs, I have to offer my sincere thanks to some kind friends at Kew.

H. A. WEDDELL, M.D.,

Foreign Member of the Linnean Society of London.

Poitiers, *December*, 1867.

PRELIMINARY NOTICE.

THE International Botanical Congress, held in Paris from August 16th to August 26th, under the auspices of the Botanical Society of France, was attended by about a hundred and fifty botanists of different European nations, and even by some few from America.

I had the honour to lay before it a body of 'Laws of Botanical Nomenclature,' drawn up with the view of promoting a systematic discussion, and printed a few days before in Geneva. This work, of which the Botanical Society had taken a certain number of copies for distribution among the members present, consisted of an introduction, of the laws proposed for the regulation of nomenclature, and, lastly, of a commentary, elucidating obscure points, or such as are frequently subjects of debate amongst botanists and zoologists.

The Congress decided on referring my project to a committee consisting of MM. Dumortier, President of the Botanical Society of Belgium, Cosson, Planchon senior, Eichler, Bureau, Weddell, and myself. M. Boreau, of Angers, who had likewise been nominated, was only able to attend the fourth and last sitting. The articles were examined one by one, and I am happy to say that we agreed on almost all of them. Where there was a divergence of opinion, which did

not, however, occur on points of importance, it was decided that less stringent rules should be proposed to the Congress; that authors might be left at liberty to adopt what course they may think most suitable, and the way might remain open to further improvement.

The discussion in congress was remarkably well conducted by M. Dumortier, one of our honorary Vice-Presidents, whilst the President himself, author of the scheme, acted as reporter. In the course of the debates, carried on through several sittings, some useful modifications were introduced into the original text; but no article of primary importance underwent any essential change. Generally speaking, when it was found necessary to vote, a large majority showed how much opinions had been conciliated by discussion. Finally, after a long sitting, on the 23rd of August, at 11 o'clock at night, the following decision was carried all but unanimously, and with manifest satisfaction, by about a hundred botanists of all countries.

The Botanists assembled at Paris, in International Congress, in August, 1867, *having examined the collection of 'Laws of Botanical Nomenclature,' laid down by M. Alph. de Candolle, upon the Report of a Committee appointed by them, resolve :—*

> *"That these Laws, as adopted by this Assembly, shall be recommended as the best Guide for Nomenclature in the Vegetable Kingdom."*

The account of the discussions will be published *in extenso* in the 'Actes du Congrès,'[1] together with the text of the laws that have been adopted; but it would have been difficult, on account of the number and length of other scientific papers presented, to reproduce the Introduction and the Commentary, which are, nevertheless, of evident importance for the better understanding of the articles. Besides which, to ensure a somewhat general application of the adopted rules, it has appeared very necessary, not only that they should be translated into several languages, but also that

[1] 1 vol. 8vo, Paris, 1867, at the office of the Botanical Society, Rue de Grenelle Saint-Germain, n. 84.

they should be published in a shape that will place them within everybody's reach. The volume of 'Proceedings,' edited in French only, and entirely made up of papers on special matters, could not serve this purpose. I have consequently made up my mind to publish, with the assent of the Committee, this second edition of my pamphlet, in French, in German, and in English.

The Introduction does not differ from that of the first edition. The text of the articles is the one adopted by the Congress. The Commentary has been modified in accordance with the changes made in the text of the articles, and completed by the addition of fresh information, or of considerations that have suggested themselves since the sittings. Those who wish to examine the different questions more particularly will do well to consult the volume of 'Proceedings,' together with the present treatise. The details of the discussion, published in the 'Proceedings,' necessarily complete my work, in which, on the other hand, are to be found the Introduction and the Commentary, that do not appear in the official volume. Moreover, the two works being of the same form, it will be easy, for any one so disposed, to annex this pamphlet, printed in any one of the three languages above mentioned, to the volume of the 'Proceedings.'

GENEVA, *October* 15, 1867.

INTRODUCTION.

The system of nomenclature of organized beings, founded by Linnæus, was looked upon, till the middle of this century, as extremely ingenious, and has been thought, by some authors, a most admirable one. It was quoted in philosophical lectures, and found superior to that of chemical nomenclature, on account of its adapting itself more readily to changes necessitated by the progress of discovery. Botanists professed for it the greatest veneration. They boasted of having developed a better nomenclature than zoologists, which was not surprising, as the most illustrious botanists, thirty or forty years ago, gave infinitely more attention to this subject than zoologists.

Nevertheless, of late years, a change has been perceptible; opinion is wavering, enthusiasm abated. Here and there, in different countries, doubts have arisen and complaints have been made regarding the system of botanical nomenclature. Horticulturists are oftentimes at a loss to find their way in the midst of new names and accumulated synonyms, or are eager to get out of the chaos they have themselves created in the nomenclature of cultivated varieties. Botanists, on the other hand, alarmed at the increase of names proceeding from the different views taken of genera and species, are on the look-out for a nomenclature that shall be

independent of the constant changes in known facts, and modes of viewing them. Botanists and horticulturists exchange jokes on the oddity of garden names, and on the instability of a nomenclature which might well be deemed to possess fixity, having been said to be positive and logical. Happily, they likewise exchange polite and serious requests, with a view of being useful, if possible, or at any rate not hurtful, to one another. I have myself appealed to horticulturists[1] not to give to simple cultivated varieties or subvarieties, Latin names, similar in form to those of genuine species, in order to avoid a source of error in botanical works; while M. Charles Koch, taking advantage of the International Botanical Congress, held in London, in 1866, proposed that such meetings should be utilized for the examination of doubtful questions of nomenclature, and for the introduction of such reforms as should reduce synonymy.[2]

In London, we had only two meetings at our disposal, the *programmes* of which were already very full; besides which, there was no text of propositions to form the basis of a discussion. We separated, in consequence, without having even touched upon the subject. But the words of M. Koch were not lost. He who had then the honour of presiding at the sittings has frequently reflected on the matter since; and when he made known to the Committee for the Organization of the Botanical Congress in Paris his desire specially to treat questions relating to nomenclature, the Committee engaged him to prepare a "code" of laws, so as to facilitate the discussion of those points which might more particularly engage the attention of the meeting.

I have attempted to comply with this desire. Long practice in systematic botany, continuous intercourse with many able men who assist me in working out the 'Prodromus,' and, added to this, the valued recollection of the tendencies imparted to me in my youth, made the task more easy, perhaps, for me than for many others. The subject is so fami-

[1] Bulletin du Congrès horticole à Bruxelles, 1864, p. 171.

[2] Report of the Proceedings of the Botanical Congress, 1866, p. 188.

liar to me, that I have been able to take a very direct course. Without imitating or copying any author, I began by laying down the laws and customs, such as they are followed, or ought, according to me, to be followed in botany, distributing my matter into chapters and sections, so as to put the leading principles in relief, and to bring together closely connected articles. I then read attentively Linnæus's 'Fundamenta' and 'Philosophia Botanica;' the criticism of the first of those works by Heister,[1] Linnæus's contemporary; the chapter on nomenclature in De Candolle's 'Théorie Élémentaire;' Lindley's chapters on nomenclature and synonymy, in his 'Introduction to Botany;' the repertory of laws on zoological nomenclature, presented to the British Association, in 1842, by some very distinguished naturalists, chiefly zoologists,—Strickland, Owen, Darwin, Phillips, Waterhouse, Westwood, etc.;[2] the remarkable preface on the nomenclature of genera in Agassiz' 'Nomenclator Zoologicus;'[3] and, finally, the chapter "De Denominatione Animalium," in Van der Hoeven's 'Philosophia Zoologica;'[4] purposing, besides, to consult other authors on special points more or less subject to controversy. Their perusal enabled me to make some additions, but, to my great satisfaction, it seemed to me I had obtained certain advantages over analogous works of my predecessors. Linnæus and Heister hardly advert to anything but generic names, for all they say in reference to the specific phrases formerly in use is now inapplicable.[5] The English Committee had principally

[1] Systema Plantarum, etc., cui annectuntur regulæ de nominibus Plantarum a cel. Linnæi longe diversæ, 1 vol. in 8vo, 48 pages, 1748.

[2] Report of a Committee, etc., in Report of the British Association for 1842, p. 105.

[3] One vol. in 4to, Soloduri, 1842–46.

[4] One vol. in 8vo, Lugduni-Batav. 1864.

[5] Linnæus's 'Fundamenta' appeared in 1736; his 'Philosophia' in 1751. The first edition of the 'Species' was published in 1753; but Linnæus had already made use of specific names, systematically reduced to a single word, as far back as June, 1745, in his dissertation on *Amphibia Gyllenborgiana* (Amœn. Acad. i. p. 107), and in botany; and again, in December, 1745, in his dissertation on *Passifloræ* (Amœn. Acad. i. p. 211). What appears to us, to-day, to be the happiest and

zoology in view. M. Agassiz likewise; and he had not, besides, to deal with species. Lindley, and especially De Candolle, are very explicit, considering the period when they wrote; but many questions have arisen since then. Every author is necessarily led by certain tendencies, by certain exigencies of the times in which he lives; whence it follows that it is useful—every twenty years, for instance—to revise the *ensemble* of received rules. Advantage is taken of this revision to abandon useless rules, and to replace them by more suitable ones. Without going far back, it is easy to see that, since the end of the eighteenth century, botanists have endeavoured to free themselves from many useless shackles put on by Linnæus, and tightened by his disciples; above all, with relation to the choice of generic names. De Candolle was ruled by the idea of having the law of priority properly respected,—a law which, fifty years ago, was often unscrupulously infringed. Authors next aimed at greater precision, and at making nomenclature answer to the growing necessity of dividing the vegetable kingdom into more numerous groups, comprehended one within another.

In the present day, the nomenclature of cultivated species, and of their innumerable modifications, requires special attention. I do not propose any serious innovations in this respect, only recommending botanists to choose, among the various courses in use, those which seem most appropriate, and to establish as close a correspondence as possible be-

most important of Linnæus' ideas, was, for a long time, deemed by him to be of secondary importance; and thus it is that, in the different editions of the 'Philosophia,' all anterior to 1745, he expatiates on the phrase *nomina specifica*, and only mentions what we, to-day, call specific names (his *nomina trivialia*). Among the 186 dissertations of Linnæus, there is not a single one on the names now termed specific. In his dissertation of June, 1753, 'Incrementa Botanices' (Amœn. Acad. iii. p. 377), where he takes the title of reformer of science, and where his works, even the 'Species' that had just appeared, are referred to, he does not advert to the use of the binominal nomenclature. He speaks of it, at last, in his dissertation, 'Reformatio Botanices' (Amœn. Acad. vi. p. 315), in December, 1762, but not to lay down any rules for these names, and merely to insist on the very great advantages offered by them.

tween those variations of species that interest botanists as well as horticulturists, and their more minute subdivisions that interest horticulturists only. The quotation of authors' names after generic and specific names, when changes have taken place, has become an important question, arisen within the last twenty years; and I have even been obliged to turn my attention to the manner in which authors' names are abridged. This detail may appear puerile, but as there are botanists who have fallen into the way of abridging names in an unintelligible manner, it is needful to warn them of it, and to remind them how words are abridged in all dictionaries.

My work consists of a text, followed by a commentary, in which will be found explanations, examples, or reasons in support of the several articles.

I said that some perplexity is arising from the ever-increasing complication of synonymy. Of course, experienced botanists do not feel very anxious on this score. They adopt no new names without having themselves discovered the necessity for so doing,—or, at least, without being sure that they have been approved of, after due examination, by competent men. Moreover, they do not consider synonymy to be without merit. It constitutes the history of the science. Given fully and according to date, it is both curious and instructive. But it must be acknowledged that many people are alarmed at the increase of synonyms, and that, in practice, a multiplicity of names is inconvenient. Some improvements in the system of nomenclature may have a certain influence in this respect. We must, however, learn to face the evil, and to understand that the causes from which it proceeds are very numerous, and partly inevitable. Here are a few comparisons that have not been made before.

In the first four volumes of the 'Prodromus,' published from 1824 to 1830, the proportion between accepted genera and synonymous ones was, approximately,[1] 100 to 55. This

[1] The calculation has been made on the letters A and B of Buek's tables, comprising 277 genera and 154 synonyms, belonging to several distinct Orders, not including synonyms anterior to Linnæus.

amounts to saying that, at that time, about half the number were synonyms. In the 'Genera Plantarum' of Bentham and Hooker, fascicles 1 and 2, published in 1862 and 1865, comprising almost the same series of Orders, I found, by making the same approximative calculation,[1] 117 synonyms for 100 accepted genera. It would seem, then, that the proportion of generic synonyms has been doubled in thirty-six years.

That this increase will long continue in the same ratio does not seem at all probable. As we become acquainted with a larger number of species, it is found more easy to group them naturally, to say nothing of our resources for analysis, which are better than they were formerly, nor of the general improvement of descriptions. For the last forty years a great number of genera have been made from defective materials, but this will be less common henceforth; besides which, we are drawing near the limits of discovery in point of genera. In every fresh volume of the 'Prodromus,' I remark a decrease in the proportion of new genera. There are Orders in which the number of genera hardly varies. Lindley, in 1853, estimated the number of genera of *Euphorbiaceæ* at 191; and it so happens that, in the recent monograph of M. Boissier and Dr. Müller (Prodr. xv, sect. 2), it is precisely 191. I have shown elsewhere[2] that the mean geographical area of genera is about $\frac{5}{1000}$ of the solid surface of the globe. Notwithstanding the exceptional smallness of certain areas, it may be supposed that collectors have now crossed most of the countries occupied by each genus, and that we are thus pretty nearly acquainted with all existing genera. Surely nothing is more uncommon nowadays than the proposal—and, above all, the admission—of a new genus in the floras of the northern hemisphere, without the tropics. For some time longer we shall see genera remodelled,—genera will frequently be formed into sections, or *vice versâ;* but, if we may judge from European floras,

[1] Taking letters A and B of the same index, comprising pretty nearly the same Orders.

[2] 'Géographie botanique raisonnée,' p. 1142.

there will be a limit even to these changes. A plentiful source of synonyms will thus be exhausted.

I just said that we are fast approaching the epoch when all genera will be known. Here is a proof of this, taken from the volumes of the 'Prodromus' that have appeared since 1844, and in which I have taken a special part as author or editor. I divided these into series of three volumes, according to the date of publication, and then counted how many accepted genera there were in each series, and how many of these were new.[1] I computed also the number of accepted and of new species, considering only as new such as had not been described before. I next calculated the percentage of new genera and of new species. The figures show a regular decrease in the proportion of new genera, and a slight increase in that of new species.

Volumes of the 'Prodromus.'	Date of the volumes.	Genera.			Species.		
		total.	new.	percent.	total.	new.	percent.
VIII., IX., X.	1844–46	840	130	15·4	8495	1636	19·1
XI., XII., XIII.	1847–52	602	65	10·7	8308	1783	21·4
XIV., XV., XVI., sect. 2, fasc. 1.	1857–66	476	35	7·3	7832	1864	23·7
	Totals .	1918	230		24,635	5283	

As regards species, the 'Nomenclator' of Steudel, first edition, of 1821, had about 55 synonyms for every 100 admitted species.[2] The second edition, of 1840, gives the proportion of 75 to 100.[3] There is no third edition, to allow of the comparison being continued. The indexes of the 'Prodromus' published by Dr. Buek, for volumes vii. part 2, to

[1] A genus detached from another is looked upon as new, but not so that of which the name only has been changed. The same for species. Genera and species described for the first time had often received names in lists or herbaria. I have considered as new genera and species described for the 'Prodromus,' though sometimes published a short while before in journals, for the sake of priority.

[2] The calculation has been made on the left column of pages 10, 20, 30, etc., to 400, comprising 893 accepted species and 451 synonyms, belonging to a very large number of genera taken at random.

[3] Calculating in like manner, the forty columns comprise 927 accepted species and 702 synonyms.

xiii., which appeared (taking the mean of the years of publication) in 1845, give the proportion of 102 synonyms for 100 accepted species.[1] This divergency from Steudel, in so short a period, may be explained by the circumstance that Steudel did not examine his species one by one, and laid down as admissible all those that had not been done away with by other authors; whereas the writers of the 'Prodromus,' having treated their subject monographically, have been able to revise every species, and have reduced many to the rank of simple synonyms. The detailed indexes of Dr. Buek for the last volume have not yet appeared, but I have no doubt that the proportion of synonyms will be very considerable. According as the volumes of the 'Prodromus' appear, the proportion of synonyms increases. This may continue for a long time yet. The settlement of genera will certainly do away with an important source of synonyms, but there will still be published many carelessly-made species; some botanists will still need the necessary materials for sound work; the conception of species will long vary; and there will always be but few authors that will give themselves the trouble to study every form of a species, or every species of a genus, in the principal herbaria of Europe,—which is indispensable for the avoidance of errors. Works got up in special localities, or devoted to isolated species or small groups of species, or from herborization over limited tracts, or founded upon details from insufficient herbaria; and more general works by incompetent authors, will still continue to be sources of synonyms.

In all this it is clear that nomenclature plays a very secondary part. It facilitates working, by establishing order in facts and ideas, but it does not prevent diversity of opinion as to the limits of genera and species, nor does it place obstacles in the way of superficial, fragmentary works, where the author, shut up in a single country or in a single herbarium, accumulates a number of ill-made genera, and

[1] Calculating in a similar way on pages 10, 20, 30, etc., to 400. They include 816 accepted species and 831 synonyms.

especially of ill-made species, which subsequently fall to the ground.

The time must, however, come when, actually existing vegetable forms having all been described, herbaria containing undoubted types of them,—botanists having made, unmade, or oftentimes remade, elevated or lowered, and, above all, modified some hundred thousand groups, from Orders downwards to simple varieties of species,—the number of synonyms having become infinitely greater than that of admitted groups,—it will become necessary to effect some great revolution in the formulæ of science. This nomenclature that we are striving to improve will then have the appearance of an old scaffolding, made up of parts laboriously renewed one by one, and surrounded by a heap of more or less embarrassing rubbish, arising from the accumulation of pieces successively rejected. The edifice of Science will have been constructed, but it will not be sufficiently clear of all that has served to raise it. Perhaps there will then come to light something very different from the Linnæan nomenclature,—something will have been devised for giving definite names to definite groups.

This is the secret of futurity, of a yet very distant period.

In the meanwhile, let us improve the system of binominal nomenclature introduced by Linnæus. Let us endeavour to accommodate it to the continual and necessary alterations that take place in science, and, for this purpose, let us diffuse, as well as we can, the principles of the method; let us attack slight abuses, slight negligence, and let us come, if possible, to an understanding on debated points. We shall thus have prepared, for some years to come, the way for better carrying out works on systematic botany.

LAWS OF BOTANICAL NOMENCLATURE

ADOPTED BY THE CONGRESS.

CHAPTER I.

GENERAL CONSIDERATIONS AND LEADING PRINCIPLES.

ARTICLE 1. Natural History can make no real progress without a regular system of nomenclature, acknowledged and used by a large majority of naturalists of all countries.

ART. 2. The rules of nomenclature should neither be arbitrary, nor imposed by authority. They must be founded on considerations clear and forcible enough for every one to comprehend and be disposed to accept.

ART. 3. The essential point in nomenclature is to avoid or to reject the use of forms, or names, that may create error or ambiguity, or throw confusion into science.

Next in importance is the avoidance of any useless introduction of new names.

Other considerations, such as absolute grammatical correctness, regularity or euphony of names, a more or less prevailing custom, respect for persons, etc., not-

withstanding their undeniable importance, are relatively accessory.

ART. 4. No custom contrary to rule can be maintained if it leads to confusion or error. When a custom offers no serious inconvenience of this kind, it may be a motive for exceptions, which we must, however, abstain from extending or imitating. In the absence of rule, or where the consequences of rules are questionable, established custom becomes law.

ART. 5. The principles and forms of nomenclature should be as similar as possible in botany and in zoology.

ART. 6. Scientific names should be in Latin. When taken from another language, a Latin termination is given to them, except in cases sanctioned by custom. If translated into a modern language, it is desirable that they should preserve as great a resemblance as possible to the original Latin names.

ART. 7. Nomenclature comprises two categories of names:—1. Names, or rather terms, expressing the nature of the groups comprehended one within another. 2. Names particular to each of the groups of plants or animals that observation has made known to us.

CHAPTER II.

ON THE MANNER OF DESIGNATING THE NATURE AND SUBORDINATION OF THE GROUPS THAT CONSTITUTE THE VEGETABLE KINGDOM.

ART. 8. Every individual plant belongs to a species (*species*), every species to a genus (*genus*), every genus

to an order (*ordo*, *familia*), every order to a cohort (*cohors*), every cohort to a class (*classis*), every class to a division (*divisio*).

ART. 9. In many species we distinguish likewise *varieties* and *variations*, and in some cultivated species, modifications still more numerous; in many genera *sections*, in many orders *tribes*.

ART. 10. Finally, if circumstances require us to distinguish a greater number of intermediate groups, it is easy, by putting the syllable *sub* before the name of the group, to form subdivisions of that group; in this manner suborder (*subordo*) designates a group between an order and a tribe, subtribe (*subtribus*), a group between a tribe and a genus, etc. The *ensemble* of subordinate groups may thus be carried, for uncultivated or spontaneous plants only, to twenty degrees, in the following order :—

Regnum vegetabile.
Divisio.
Subdivisio.
Classis.
Subclassis.
Cohors.
Subcohors.
Ordo.
Subordo.
Tribus.
Subtribus.
Genus.
Subgenus.
Sectio.
Subsectio.
Species.

Subspecies (vel Proles, Angl. *Race.*)
Varietas.
Subvarietas.
Variatio.
Subvariatio.
Planta.

ART. 11. The definition of each of these names of groups may vary, in a certain degree, according to individual opinion and the state of science, but their relative rank, sanctioned by custom, must not be inverted. Any classification containing inversions, such as the division of genera into Orders, or of species into genera, is inadmissible.

ART. 12. The fertilization of one species by another gives rise to a hybrid (*hybridus*); that of a modification or subdivision of a species by another modification of the same species produces a half-breed (*mistus*, *mule* of florists).

ART. 13. The arrangement of species in a genus or in a subdivision is made by means of typographical signs, letters, or figures. Hybrids are classed after one of the species from which they originate, with the sign × prefixed to the generic name.

The rank of subspecies under species is marked by letters or figures; that of varieties by the series of Greek letters α, β, γ, etc. Groups below varieties and half-breeds (mule of florists) are indicated by letters, figures or typographical signs, according to the will of the author.

ART. 14. Modifications of cultivated species should, where possible, be classed under the wild or spontaneous species from which they are derived.

For this purpose the most striking are treated as subspecies, and when constant from seed, they are called races (*proles*).

Modifications of a secondary order take the name of varieties, and if there be no doubt as to their almost constant heredity by seed, they are termed subraces (*subproles*).

Modifications of minor importance, more or less comparable to subvarieties, variations or subvariations of uncultivated species, are indicated according to their origin in the following manner :—1. *Satus* (seedling ; Gall. semis ; Germ. Sämling), for a form obtained from seed. 2. *Mistus* (blending ;[1] Gall. métis ; Germ. Blendlinge), for a form arising from cross-fertilization in a species. 3. *Lusus* (sport ; Germ. Spielart), for a form originating from a leaf-bud or from any other organ, and propagated by division.

CHAPTER III.

ON THE MANNER OF DESIGNATING EACH GROUP OR ASSOCIATION OF PLANTS.

Section 1.

General Principles.

Art. 15. Each natural group of plants can bear in science but one valid designation, namely, the most ancient, whether adopted or given by Linnæus, or

[1] Since the meeting of the Congress, the author of this pamphlet has, together with the translator, turned his attention to the choice of a significant English term for the French *métis*. The word *blending* does not perhaps indicate quite clearly enough the existence of a mixture, and does not allude to its nature. The term *half-breed*, used by agriculturists,

since Linnæus, provided it be consistent with the essential rules of nomenclature.

ART. 16. No one ought to change a name or a combination of names without serious motives, derived from a more profound knowledge of facts, or from the necessity of relinquishing a nomenclature that is in opposition to essential rules (art. 3, first paragraph, 4, 11, 15, etc.: see sect. 6).

ART. 17. The form, the number, and the arrangement of names depend upon the nature of each group, according to the following rules.

SECTION 2.

Nomenclature of the different kinds of Groups.

§ 1. Names of Divisions and Subdivisions, of Classes and Subclasses.

ART. 18. The names of divisions and subdivisions, of classes and subclasses, are drawn from their principal characters. They are expressed by words of Greek or Latin origin, some similarity of form and termination being given to those that designate groups of the same nature (Phanerogams, Cryptogams; Monocotyledons, Dicotyledons, etc.).

ART. 19. Among Cryptogams, the old family names, such as *Filices*, *Musci*, *Fungi*, *Lichenes*, *Algæ*, may be used for names of classes and subclasses.

appears to answer much better to the sense of *métis; breed* precisely implying a *race*, and *half-breed* the mixture of two races. It may, however, likewise be suggested that the shortness of the French word *métis*, analogous to the Spanish *mestizo*, and evidently derived from the Latin *mistus*, or *mixtus*, will perhaps induce English botanists to adopt it, together with the word half-breed. The latter is undoubtedly more expressive, but metis has over it the advantage of being intelligible in several tongues. The term *mule*, as applied to the mixture of varieties or races, is in constant use amongst English florists; but is too obviously erroneous to be sanctioned by scientific writers. (*Translator.*)

§ 2. Names of Cohorts and Subcohorts.

ART. 20. Cohorts are designated preferably by the name of one of their principal Orders, and as far as possible with a uniform termination.

Subcohorts (rarely used) may be designated in the same manner.

§ 3. Names of Orders and Suborders, of Tribes and Subtribes.

ART. 21. Orders (*Ordines*, *Familiæ*) are designated by the name of one of their genera, with the final *aceæ* (*Rosaceæ*, from *Rosa*; *Ranunculaceæ*, from *Ranunculus*, etc.).

ART. 22. Custom warrants the following exceptions:—

(1.) When the Latin name of the genus from which is taken that of the Order ends in *-ix* or *-is* (genitive *-icis* or *-idis*), the termination *-iceæ*, or *-ineæ*, or *-ideæ* is admitted (*Salicineæ*, from *Salix*; *Tamariscineæ*, from *Tamarix*; *Berberideæ*, from *Berberis*).

(2.) When the genus from which the name is derived has an unusually long name, no tribe in the Order taking its appellation after the same genus, the termination in *-eæ* is admitted (*Dipterocarpeæ*, from *Dipterocarpus*).

(3.) Some large Orders, named long since, have retained the exceptional names under which they are generally known (*Cruciferæ*, *Leguminosæ*, *Guttiferæ*, *Umbelliferæ*, *Compositæ*, *Labiatæ*, *Cupuliferæ*, *Coniferæ*, *Palmeæ*, *Gramineæ*, etc.).

(4.) An old generic name, which has become that of a section or of a species, may be preserved as the foundation of that of the Order (*Lentibularieæ*, from *Lentibularia*; *Hippocastaneæ*, from *Æsculus Hippocastanum*; *Caryophylleæ*, from *Dianthus Caryophyllus*, etc.).

ART. 23. The names of suborders (*subordines*, *subfamiliæ*) are derived from the name of one of the genera that form part of them, with the final *-eæ*.

ART. 24. The names of tribes and subtribes are taken from that of one of the genera included in the group, with the final *-eæ* or *-ineæ*.

§ 4. Names of Genera and of Divisions of Genera.

ART. 25. Genera, subgenera, and sections, receive names, commonly substantive, which may be compared to our own proper family names.

These names may be derived from any source whatsoever, and may even be arbitrarily imposed, under the restrictions mentioned further on.

ART. 26. A name may be given to subsections, as well as to inferior generic subdivisions; or these may simply be indicated by a number, or by a letter.

ART. 27. When the name of a genus, subgenus, or section is taken from the name of a person, it is composed in the following manner:—

The name cleared of titles or of any accessory particle, takes the final *-a* or *-ia*.

The spelling of the syllables unaffected by this final, is preserved without alteration, even with letters or diphthongs now employed in certain languages, but not in Latin. Nevertheless *ä*, *ö*, and *ü*, of the German language become *æ*, *œ*, and *ue*, whilst *é* and *è* of the French language become *e*.

ART. 28. Botanists who have generic names to publish show judgment and taste by attending to the following recommendations:—

(1.) Not to make names too long or difficult to pronounce.

(2.) To give the etymology of each name.

(3.) If they have formerly made a name that has not been accepted, not to establish another genus under the same name, particularly in the same Order, or in a neighbouring one.

(4.) Not to dedicate genera to persons in all respects strangers to botany, or at least to natural history, nor to persons quite unknown.

(5.) Not to draw names from barbarous tongues, unless those names be frequently quoted in books of travel, and have an agreeable form that adapts itself readily to the Latin tongue, and to the tongues of civilized countries.

(6.) If possible, by the composition or the termination of the word, to call to mind the affinities or the analogies of the genus.

(7.) To avoid adjective nouns.

(8.) Not to give to a genus a name whose form is more properly that of a section (*Eusideroxylon*, for example).

(9.) To avoid taking up names that have already been used, but have not been approved, and applying them to genera different from the former, unless it be wished again to dedicate a genus to a botanist; but, even in this case, it is desirable—1, that the nullity of the first genus should be unquestionable; 2, that the order in which it is proposed to re-establish the name be quite distinct from the former one.

(10.) To avoid making choice of names used in zoology.

Art. 29. Botanists constructing names for subgenera or for sections will do well to attend to the recommendations of the foregoing article, as well as to these:—

(1.) Give, where possible, to the principal division of a genus a name that, by some modification or addition, may call the name of the genus to mind (for instance, *eu* at the beginning of the name, when it is of Greek origin; *-astrum*, *-ella*, at the end of a name, when Latin, or any other modification consistent with the rules of grammar and the usages of the Latin language).

(2.) Avoid calling a section by the name of the genus it belongs to, with the final *-oides* or *-opsis;* give, on the contrary, the preference to this final for a section having some resemblance to another genus, by adding, in that case, *-oides* or *-opsis* to the name of that other genus, if it be of Greek derivation, so as to form the name of the section.

(3.) Avoid taking, as a sectional name, one already in use as such, in another genus, or which is that of a genus.

ART. 30. When it is required to express the name of a section, together with a generic name and that of a species, the name of the section is put between the two others in a parenthesis.

§ 5. Names of Species, of Hybrids, and of Subdivisions of Species, either spontaneous or cultivated.

ART. 31. All species, even those that singly constitute a genus, are designated by the name of the genus to which they belong, followed by a name termed specific, more commonly of the adjective kind.

ART. 32. The specific name ought, in general, to indicate something of the appearance, the characters, the origin, the history, or the properties of the species. If derived from the name of a person, it usually calls to mind the name of him who discovered or described it, or who may have been otherwise concerned with it.

ART. 33. Names of persons used as specific names have a genitive or an adjective form (*Clusii* or *Clusiana*). The first is used when the species has been described or distinguished by the botanist whose name it takes; in other cases the second form is preferred. Whatever be the form chosen, every specific name derived from the name of a person should begin with a capital letter.

ART. 34. A specific name may be an old generic name, or a substantive proper name. It then takes a capital, and does not agree with the generic name (*Digitalis Sceptrum*, *Coronilla Emerus*).

ART. 35. No two species of the same genus can bear the same specific name, but the same specific name may be given in several genera.

ART. 36. In constructing specific names, botanists will do well to give attention to the following recommendations :—

(1.) Avoid very long names, as well as those that are difficult to articulate.

(2.) Avoid names that express a character common to all, or to almost all the species of a genus.

(3.) Avoid names designating little known or very limited localities, unless the species be very local.

(4.) Avoid, in the same genus, names too similar in form,—above all, those that only differ in their last letters.

(5.) Readily adopt unpublished names found in travellers' notes or in herbaria, unless they be more or less defective (see Art. 17).

(6.) Avoid names that have been already used in the genus, or in some nearly allied genus, and have become synonyms.

(7.) Name no species after any one who has neither discovered, nor described, nor figured, nor studied it in any way.

(8.) Avoid specific names composed of two words.

(9.) Avoid specific names having, etymologically, the same meaning as the generic name.

ART. 37. Hybrids whose origin has been experimentally demonstrated are designated by the generic name, to which is added a combination of the specific names of the two species from which they are derived, the name of the species that has supplied the pollen being placed first with the final *i* or *o*, and that of the species that has supplied the ovulum coming next, with a hyphen between (*Amaryllis vittato-reginæ*, for the Amaryllis proceeding from *A. reginæ*, fertilized by *A. vittata*).

Hybrids of doubtful origin are named in the same manner as species. They are distinguished by the absence of a number, and by the sign × being prefixed to the generic name (× *Salix capreola*, Kern.).

ART. 38. Names of subspecies and varieties are formed in the same way as specific names, and are added to them according to relative value, beginning by those of the highest rank. Half-breeds (*mules* of florists) of doubtful origin are named and ranked in the same manner.

Subvarieties, variations, and subvariations of uncultivated plants may receive names analogous to the foregoing, or merely numbers or letters, for facilitating their arrangement.

ART. 39. Half-breeds (*mules* of florists) of undoubted origin are designated by a combination of the two names of the subspecies, varieties, subvarieties, etc.,

that have given birth to them, the same rules being observed as in the case of hybrids.

ART. 40. Seedlings, half-breeds of uncertain origin, and sports should receive from horticulturists fancy names in common language, as distinct as possible from the Latin names of species or varieties. When they can be traced back to a botanical species, subspecies, or variety, this is indicated by a succession of names (*Pelargonium zonale*, Mrs. Pollock).

SECTION 3.

On the Publication of Names, and on the Date of each Name or Combination of Names.

ART. 41. The date of a name or of a combination of names is that of its actual and irrevocable publication.

ART. 42. Publication consists in the sale or the distribution among the public of printed matter, plates, or autographs. It consists, likewise, in the sale or the distribution, among the leading public collections, of numbered specimens, accompanied by printed or autograph tickets, bearing the date of the sale or distribution.

ART. 43. The communication of new names in a public meeting, and the placing of names in collections or in gardens open to the public, do not constitute publication.

ART. 44. The date put to a work is presumed to be correct, till there is evidence to the contrary.

ART. 45. A species is not looked upon as named unless it has a generic name as well as a specific one.

ART. 46. A species announced in a work under generic and specific names, but without any informa-

tion as to its characters, cannot be considered as being published. The same may be said of a genus announced without being characterized.

ART. 47. Botanists will do well to conform to the following recommendations:—

(1.) To give accurately the date of publication of their works or portions of works, and that of the sale or the distribution of named and numbered plants.

(2.) To publish no name without clearly indicating whether it is that of an Order or of a tribe, of a genus or of a section, of a species or of a variety,—in short, without giving an opinion as to the nature of the group to which the name is given.

(3.) To avoid publishing or mentioning in their works unpublished names which they themselves do not accept, especially if the authors of such names have not expressly authorized them to do so. (See Art. 36, 5.)

SECTION 4.

On the Precision to be given to Names by the Quotation of the Author who first published them.

ART. 48. For the indication of the name or names of any group to be accurate and complete, it is necessary to quote the author who first published the name or combination of names in question.

ART. 49. An alteration of the constituent characters, or of the circumscription of a group, does not warrant the quotation of another author than the one that first published the name or combination of names.

When the alteration is considerable, the words: *mutatis charact.*, or *pro parte*, or *excl. syn.*, *excl. sp.*, *excl. var.*, or any other abridged indication, are added

to the quotation of the original author, according to the nature of the changes that have been made, and of that of the group that is dealt with.

ART. 50. Names published from a private document, such as an herbarium, a non-distributed collection, etc., are individualized by the addition of the name of the author who publishes them, notwithstanding the contrary indication that he may have given. In like manner names used in gardens are individualized by the mention of the author who first publishes them.

The herbarium, the collection, or the garden, should be fully quoted in the text. (*Lam. ex Commers. ms. in Herb. Par.; Lindl. ex horto Lodd.*)

ART. 51. When a group is moved, without alteration of name, to a higher or lower rank than that which it held before, the change is considered equivalent to the creation of an entirely new group, and the author who has effected the change is the one to be quoted.

ART. 52. Authors' names put after those of plants are abbreviated, unless they be very short.

For this purpose, preliminary particles or letters that do not, strictly speaking, form part of the name, are suppressed, and the first letters are given without any omission whatsoever. If a name of one syllable is long enough to make it worth while to abridge it, the first consonants only are given (*Br.* for Brown); if the name has two or more syllables, the first syllable and the first letter of the following one are taken; or, the two first, if they are both consonants (*Juss.* for De Jussieu; *Rich.* for Richard).

When it is found necessary to give more of a name,

for the sake of avoiding confusion between names beginning with the same syllables, the same system is to be followed. For instance, two syllables are given, together with the one or two first consonants of the third; or else one of the last characteristic consonants of the name is added (*Bertol.* for Bertoloni, so that it may be distinguished from Bertero; or *Michx.* for Michaux, to prevent confusion with Micheli). Christian names or accessory designations, serving to distinguish two botanists of the same name, are abridged in the same way (*Adr. Juss.* for Adrien de Jussieu, *Gærtn. fil.* or *Gærtn. f.* for Gærtner son).

When it is a settled custom to abridge a name in another manner, it is best to conform to it (*L.* for Linnæus, *St.-Hil.* for Saint-Hilaire).

Section 5.

On Names that are to be retained where a Group is divided, remodelled, transferred, or moved from one rank to another, or when two Groups of the same rank are united.

Art. 53. An alteration of characters, or a revision carrying with it the exclusion of certain elements of a group or the addition of fresh ones, does not warrant a change in the name or names of a group.

Art. 54. When a genus is divided into two or more genera, its name must be retained, and given to one of the chief divisions. If the genus contains a section or some other division which, judging by its name or by its species, is the type or the origin of the group, the name is reserved for that part of it. If there is no such section or subdivision, but one of the parts detached contains, however, a great many more spe-

ties than the others, it is to that part that the original name is to be applied.

ART. 55. In case two or more groups of the same nature are united into one, the name of the oldest is preserved. If the names are of the same date, the author chooses.

ART. 56. When a species is divided into two or more species, if one of the forms happens to have been distinguished earlier than the others, the name is retained for that form.

ART. 57. When a section or a species is moved into another genus, when a variety or some other division of a species is given as such to another species, the name of the section, the specific name or that of the division of the species, is maintained, unless there arise one of the obstacles mentioned in Articles 62 and 63.

ART. 58. When a tribe is made into an Order, when a subgenus or a section becomes a genus, or a division of a species becomes a species, or *vice versâ*, the old names are maintained, provided the result be not the existence of two genera of the same name in the Vegetable Kingdom, two divisions of a genus, or two species of the same name in the same genus, or two divisions of the same name in the same species.

SECTION 6.

On Names that are to be rejected, changed, or altered.

ART. 59. Nobody is authorized to change a name because it is badly chosen or disagreeable, or another is preferable or better known, or for any other motive, either contestable or of little import.

ART. 60. Every one is bound to reject a name in the following cases :—

(1.) When the name is applied, in the Vegetable Kingdom, to a group that has before received a name in due form.

(2.) When it is already in use for a class or for a genus, or is applied to a division or to a species of the same genus, or to a subdivision of the same species.

(3.) When it expresses a character or an attribute that is positively wanting in the whole of the group in question, or at least in the greater part of the elements it is composed of.

(4.) When it is formed by the combination of two languages.

(5.) When it is in opposition to the rules laid down in Section 5.

ART. 61. The name of a cohort, subcohort, Order, suborder, tribe, or subtribe, must be changed if taken from a genus found not to belong to the group in question.

ART. 62. When a subgenus, a section, or a subsection passes as such into another genus, the name must be changed if there is already, in that genus, a group of the same rank, under the same name.

When a species is moved from one genus into another, its specific name must be changed if it is already borne by one of the species of that genus. So likewise when a subspecies, a variety, or some other subdivision of a species is placed under another species, its name must be changed if borne already by a form of like rank of that species.

ART. 63. When a group is transferred to another, keeping there the same rank, its name will have to be changed if it leads to misconception.

ART. 64. In the cases foreseen in Articles 60, 61, 62, 63, the name to be rejected or changed is replaced by the oldest admissible one existing for the group in question; in the absence of this, a new one is to be made.

ART. 65. The name of a class, of a tribe, or of any other group above the genus, may have its termination altered so as to suit rule or custom.

ART. 66. When a name derived from Latin or Greek has been badly written or badly constructed, when a name derived from that of a person has not been written consistently with the true spelling of that name, or when a fault of gender has carried with it incorrect terminations of the names of species or of their modifications, every botanist is authorized to rectify the faulty names or terminations, unless it be a question of a very ancient name current under its incorrect form. This right must be used reservedly, especially if the change is to bear upon the first syllable, and, above all, upon the first letter of the name.

When a name is drawn from a modern language, it is to be maintained just as it was made, even in the case of the spelling having been misunderstood by the author, and justly deserving to be criticized.

SECTION 7.

On Names of Plants in Modern Languages.

ART. 67. Latin scientific names, or those that are immediately derived from them, are used by botanists preferably to names of another kind, or having another origin, unless these are very intelligible and in common use.

ART. 68. Every friend of science ought to be opposed to the introduction into a modern language of names of plants that are not already there, unless they are derived from a Latin botanical name that has undergone but a slight alteration.

COMMENTARY.

1. The object of Article 1 is to establish the principle of universality for botanical nomenclature. Article 6 is a consequence of it.

2. The rules laid down by Linnæus were quite arbitrary, and he did not even seek to justify them. (See Phil. Bot. §§ 225, 226, 229, 230, 231.) His antagonist, Heister, followed the same course. Nowadays no one likes to submit to the will even of a man of genius, while many might feel inclined to side with the majority. Article 2 intimates, among other things, that a congress of scientific men may throw light upon a question, or may express an opinion by vote, but cannot impose a rule or prohibit a method.

3. In nomenclature, as in all other branches of science, it is impossible to accept that which implies anything equivocal or false. All rules, or at least all necessary rules, may be considered a development of this fundamental principle. If a doubt arises on a question of nomenclature, the way to clear it is generally to ask oneself whether, by taking one course rather than another, there might result from it ambiguity, false assertions, immediate or possible error. The answer indicates what is or is not allowed.

4. It is impossible to deny a certain right of *custom;* the maintenance of well-known names, of forms in frequent use, often gives clearness or precision, and does away with the necessity of new ones. It would not, however, be right to

sanction any gross error merely for the sake of adhering to habit. It must likewise be borne in mind that exceptions established by custom, being exceptions after all, must neither be imitated nor extended. This is one of the common principles of law.

8. The word *family* has been found a happy one; the genus is, however, that which bears most analogy to a human family, all the individuals that compose it bearing the same name, each of them having, besides, a Christian name analogous to a specific one. Linnæus used the word *familia*, which has the fault of not being very good Latin. The generality of botanists have preferred the term *ordo*, though, in ordinary language, the French and the Germans say *family*. The English alone commonly employ the word *order*. The objection that may be made to it is its double signification in all languages. In French, at least, where style and precision of terms are so much attended to, a phrase such as this, "Le jardin de . . . est arrangé dans l'ordre des Ordres de Jussieu," would appear somewhat ridiculous. A more serious objection has been made to the use of the word 'order' as a synonym of 'family,' namely, that zoologists apply it to a group superior in rank to families. *Orders*, in zoology, answer to what some botanists call *cohorts*; to what Lindley termed *alliances*. This divergency was clearly pointed out by M. Gustav Planchon,[1] and the word *ordo* had been previously employed by M. Dumortier[2] in the same sense as it is used by zoologists; but nevertheless the custom of assimilating the words order and family, especially the Latin word *ordo* to the word 'family' in French and in German, has

[1] G. Planchon, 'Les Principes de la Méthode Naturelle,' Thesis, 8vo. Montpellier, 1860.

[2] Dumortier, 'Analyse des Familles des Plantes,' 8vo, Tournay, 1829. See likewise a note of the same in the Proceedings of the Congress, on occasion of the discussion on this point. Independently of what is relative to the use of the word Order, this able author sets forth ideas on the manner of characterizing groups of families by means of what he terms synthesis; but this is a question quite independent of nomenclature.

prevailed among botanists. The works of Hooker, De Candolle, Endlicher, Martius, R. Brown, etc., being habitually consulted, inconvenience would arise from any change in the signification of the names applied by them to the groups, supposing that a change could be effected, which appears very doubtful. In general, it is easier to introduce a new name than to alter the meaning of old ones. From these different motives the majority in the Committee, and afterwards the Congress itself, maintained the proposal to give to associations of Orders the name of Cohorts, and to apply to Orders the names of Ordines or Familiæ, indifferently.

The word Cohort, *Cohors*, unquestionably good Latin, was employed in this sense as far back as 1818, by De Candolle ('Systema,' i. p. 125), and in 1835 by Von Martius (Conspectus Regni Veget.). Messrs. Bentham and Hooker have adopted it in their 'Genera Plantarum.' We think it preferable to the word *class*, usually taken for divisions of greater importance, and to the word *alliance*, of Lindley, which cannot be so conveniently translated by an analogous word in Latin, *fœdus* having quite another form. *Cohors* is of easy introduction into modern languages, without alteration or with a slight change in the final.

9. Division of species acquires every day more importance. Some botanists call in question the characters attributed to the Species by others, but no one can deny the existence of collective groups of the nature of those called species by Linnæus; and they cannot but allow, at the same time, that there are many other inferior groups, especially among cultivated plants. If the heredity of the forms was always clear and well determined, the division of species would be easy. We should have, firstly, races that might likewise be termed chief varieties, or subspecies; and secondly, non-hereditary varieties. But there is a tendency to heredity in all the forms, only it may be more or less constant, more or less complete. When a modification of a species is habitually hereditary, it becomes, properly speaking, a *subspecies*, in other words, there may be hesitation as to whether it ought not to be called a

species, and many would call it so. If its characters be less striking, and transmission by seed less frequent, every one would then call it a *variety*. A slighter degree in character and in heredity constitute divisions of varieties or subvarieties. Lastly, there are *variations* proceeding from one and the same individual, variations which have a certain tendency to propagate themselves by seed, as may be seen by collecting seed from the branch that produced them. From this step we descend, among cultivated plants, to modifications so numerous and so complicated, that there is no possibility of denominating them, unless we employ peculiar processes, such as we shall mention further on (Article 14).

9, 10. The introduction of the terms *divisio* and *subdivisio*, made by the Congress, has improved the original text. The Committee sought for a Latin word answering to the word *embranchement* used in French by zoologists. No better one was found than *divisio*, which has the advantage of admitting the addition of the particle *sub* for a further degree of distinction. In the actual state of science it is difficult to ascertain whether the scheme indicated in Article 10 will be quite suitable to Cryptogams, but it adapts itself satisfactorily to the ideas generally entertained of Phanerogams. Considering the vegetable kingdom to be formed of two divisions (Phanerogams and Cryptogams), the first would comprise two subdivisions (Monocotyledons and Dicotyledons). Dicotyledons would be divided into two classes (*Angiospermæ* and *Gymnospermæ*); *Angiospermæ* into several subclasses (*Thalamifloræ, Calyciflorœ*, etc., or *Polypetalæ*, etc, according to the author); these into Cohorts, and the Cohorts into Orders.

There may be some hesitation between the terms *sectio* and *subgenus*, as designating the natural divisions of some genera. *Subgenus* is more expressive, but *sectio* has the advantage of allowing a double degree of division, which is sometimes necessary; for *subgenus* can readily be placed between *genus* and *sectio*, so that, by making use besides of the word *subsectio*, genera rich in species or of varied organization, may be subdivided, with great clear-

ness, according to the importance of their characters. It may be added that the word *sectio*, in the sense of subgenus, has become familiar on account of its being adopted in the 'Prodromus.'

The numerous subdivisions indicated in Article 10 may, in many obscure or contestable cases, prevent making new generic and specific names. You scruple to create a genus? make a subgenus or a section. You hesitate about making a species? let it be a subspecies, or a variety. These are general terms, on which all botanists are likely to agree, both those who are inclined to attach importance to slight differences, and those who are not. By this means a multitude of new names, above all of species, that would be contested are avoided.

11. This Article will appear too absolute if we consider the variety of significations given to some words, such as section, class, tribe, in different botanical works; but it is impossible not to admit the pre-eminence of certain works as regards the use of words and forms. A botanist may have ideas in nomenclature preferable, in certain points, to those of Linnæus, Jussieu, De Candolle, Endlicher, etc.; but if he has published no general works to which everybody is obliged to have recourse, the forms that he has used will scarcely be resorted to. This can neither be called injustice nor voluntary exclusion,—it is inevitable. Had Linnæus proposed his binominal method in ephemeral treatises, instead of in his 'Species Plantarum,' it is probable that it would have attracted little attention. The arrangement of the groups which we have given, is very nearly the same as that followed in all the large works that are in botanists' hands. The closer we keep to this unity, the better, however conventional it may be.

12. We have tried to find a Latin word for the well-known and very precise French word *métis*. Dictionaries indicate *bigener*, but the word 'genus' having in natural history a peculiar acceptation, to apply *bigener* to a hybrid, and *à fortiori* to a *métis*, would produce error and confusion. The word *mistus* exists; it answers almost literally to *métis*.

The word has not, it is true, in Latin, the precise sense that we propose to give it, but the same may be said of *genus* and *species*. It is a necessity in science to limit the sense of Latin words, in order to render ideas clearer and more precise.

14. When botanists give their attention to cultivated species, they find no difficulty in designating certain leading forms as races or sub-species, and others less important as varieties or sub-varieties. As a case of this we may mention the paper on *Brassica*, by De Candolle (Trans. of the Hort. Soc., vol. v.), rewarded, in 1821, by the Horticultural Society of London, and recapitulated, under a strictly botanical form, in the 'Systema,' vol. ii., p. 583. In this work races are named in Latin *stirps*, but the word *proles* appears to us better to indicate propagation by heredity. It conforms itself likewise more readily to the addition of *sub*, which has the advantage of designating a sub-race.

Another very remarkable work is that on wheats, by Louis Vilmorin ('Essai d'un Catalogue des Froments,' pamphlet, 8vo, 1850.) Its value as to essential points is evident; but the author has designated the principal forms of *Triticum vulgare*, first by the term *varieties*, and then by that of *sections*. Would it not have been better to call these essentially hereditary forms *races* and *subraces*, the word *section* having already another signification in botanical works?

The important work of Dochmal on fruit-trees[1] offers a still stronger example of this kind of mistake. Genera are there divided into tribes, and species into genera. What would be said of an army having its companies divided into regiments or battalions? or of a country, if certain parishes were to think proper to divide themselves into provinces or counties? of a town if its streets were to be called quarters?

Matters would evidently be improved were agriculturists and horticulturists to adopt the terms used in botany for the

[1] 'Der sichere Führer in d. Obstkunde,' 4 vols. 8vo. Nuremberg, 1855–60. See vol. iv. p. 201, 213, etc.

chief subdivisions of species. With respect to extreme forms of cultivated plants they do not require to be limited. In many cases they are so numerous, so slight, so uncertain as regards origin, and so often complicated by hybridization, that a regular and satisfactory arrangement cannot be expected. Certain species are sought after by amateurs on account of the infinite variety of their shades, spots, size of petals, etc. Many forms spoken of are ephemeral, or very nearly so. They either pass away of themselves, or because fashion changes. To regulate the nomenclature of these many thousand garden productions, would be as impossible as to classify the stuffs that manufacturers produce and name every year. The words *seedling* and *sport*, used in horticulture, have the advantage, first, of being known; secondly, of designating the important fact of their origin; thirdly, of not being too precise as to the degree of fixity and importance of their characters, which are always slight. The words alluded to are easily translated into Latin by *satus* and *lusus*, found in all dictionaries. The English word *sport* (*lusus*) can easily be introduced into the French tongue, where it is already more or less known, its shortness, moreover rendering it convenient. *Spielart* in German corresponds to *lusus*.

It may be further observed that sports and seedlings sometimes become hereditary, and then take the name of race, or subrace. Sports and seedlings may be crossed, their half-breeds propagated by grafts, cuttings, etc., having all the appearance of sports. There results an almost inextricable complication, interesting in a physiological point of view, but which cannot possibly be subjected to a regular method of classification. Let us then do what we can to have the chief divisions of cultivated species assimilated to those of spontaneous ones. This would be gaining a great step, in the present state of things; and one of which horticulturists would be quite as sensible as botanists.

15. In the time of Linnæus, some naturalists of great merit blamed, and not without reason, the arbitrary manner in which he changed the names of existing genera. These

abuses are now legitimized by the custom of a century. There is what jurists term prescription. As to specific names, Linnæus being the first to use them, he has an undeniable right to those he has made—that of priority.

Article 15 must not be an impediment to quoting Tournefort, or any other, for a generic name made by him before Linnæus, and adopted by the last-named author, nor to quoting Lobel for a specific single-worded name adopted by Linnæus; but in cases where Linnæus, by an arbitrary act, has adopted other names, these must remain; this usurpation being, as it were, legitimized by habit and by general assent, and admitted, besides, on account of the evil consequences of a further change.

20. The final *-ales* for cohorts was first proposed in 1835 by Lindley.[1] That in *-ineæ*, employed somewhat later in several works, has the defect of wanting boldness, of having been already made use of for several Orders, and of being rather like a diminutive. In this point of view, it is more adapted to suborders than to agglomerations of Orders. The form in *-ales* is adopted by Messrs. Bentham and Hooker in the 'Genera Plantarum.'

Our proposed scheme formally recommended the final *-ales;* but the Committee not being unanimous on this point, asked the Congress not to restrict authors in this matter.

22. The derivation in *-aceæ* is in perfect conformity with the genius of the Latin tongue; but that in *-ineæ* was used in an analogous sense, as has been explained to me by an able professor of ancient tongues; *in,* in Latin radicals, being used in the same sense as *ac.* Euphony decided sometimes for one form, sometimes for another, and botanists have done the same.

Exceptions to the use of these two finals are warranted in some Orders by a long-standing custom, and sometimes by custom and euphony together. The leading principle of changing names as little as possible is applicable here. Added

[1] 'A Key to Botany.'

to this, in some large, very conspicuous, old Orders, bearing names of quite another form, the difficulty of choosing one genus among many hundreds, and making it, as it were, the standard of the Order, is a real obstacle. Why should *Leguminosæ* be called *Fabaceæ* rather than *Trifoliaceæ* or *Astragalaceæ*, or by fifty other names? In thinking of most Orders, one of their genera frequently offers itself alone to the mind; but if we be thinking of *Leguminosæ*, a multitude immediately come to memory, not *Faba* rather than any other. The objection, that some *Leguminosæ* have no legumes, that certain *Compositæ* have isolated flowers, is not a very strong one, when compared to the advantage attached to old and well-known names. Fixity of names is a principle of superior order (Art. 3).

25. What is said of our patronymic names may be said equally of the names of genera or of sections. Certainly many names of persons are inconvenient, or even ridiculous, either because they have an adjective form with some particular meaning, or because they are difficult to pronounce, or for some other reason; but when they do exist, why change them? The aim of Science is not making names. Names are used by her to distinguish things. If a name is sufficiently distinct from others, that is the essential point.

Generic names are drawn from certain characters, from certain appearances, from localities, from the names of persons, from vulgar names, and even from combinations of letters that are quite arbitrary. All that is required of a name is that it shall lead neither to confusion nor to error. As long as this very general principle was overlooked, the rules laid down had the defect of being accepted by some and rejected by others.

It has sometimes happened that very distinct generic names have been made in honour of the same person, or of persons bearing similar names, when those names allowed it, as *Pittonia* and *Tournefortia* for Pitton de Tournefort, *Brownea* and *Brunonia* for Browne and Brown, etc. We think these names are to be preserved, for they cannot be confounded in an index; nor can they be so in conversation.

Assuredly if, since *Brownea* was made, there had appeared a botanist of the name of Brunon, no one would have criticized a genus called *Brunonia;* the generic name *Brunonia* is, consequently, admissible.

28. (3.) Nothing can be more inconvenient, in synonymy, than to have to explain why such a genus of such an author is not such another genus under the same name of the same author at another period. If this occurs in the same Order the difficulty is still greater, and confusion is to be apprehended.

28. (4.) By dedicating genera to grand personages who are strangers to botany, even to illustrious learned men who have taken no interest in natural sciences, you flatter persons who are oftentimes in no way obliged to you for your attention; you do not encourage young botanists, who are pleased at a distinction reserved for botanists; and, perchance, you may shock national or religious susceptibilities that have surely nothing to do with science. Thus the idea of naming the greatest of trees *Wellingtonia* is doubly to be regretted. In the first place, it has been found that the genus cannot be distinguished from *Sequoia,* which has necessarily been retained; and then the name of *Wellingtonia* has called forth a useless synonym—*Washingtonia;* in imitation of which every nation might have set to framing a name from that of its favourite hero.

28. (6.) We find it advantageous to have several genera of Ferns with names ending in *-pteris;* several among fossil plants in *-ites;* several of the Order of *Lauraceæ* in *-daphne,* etc.

29. (2.) Sectional names have sometimes been formed by the addition of *-oides* or *-opsis* to the name of the genus itself. Such a pleonasm may be considered rather weak, as the characters of the section being included in those of the genus, their resemblance is implied. To annul names of this kind would, however, offer more inconvenience than advantage; for, on the one hand, the names of sections are seldom quoted; and, on the other, by changing them, you create fresh synonyms.

29. (3.) Repeating the same sectional name in several genera gives rise to no great inconvenience, especially in different Orders, the name of a section not being quoted independently of that of the genus. It is nevertheless better to avoid so doing, on account of the embarrassment that it might occasion if, at a later period, the sections had to be made into genera.

33. This article has been added by the Congress, at the request of several members. When the last paragraph of Article 60 came afterwards to be discussed, the inconvenience of having to change all the specific names that have been made, up to this day, regardless of the rules there given, was not thought of. I think it would have been better merely to *recommend* observing the forms indicated in Article 33; or rather to have placed these rules under Article 36. I am inclined to believe there was, at that moment, some inattention on the part of the assembly, as sometimes happens in public bodies, and in cases of much more importance. As reporter, the blame must fall upon me before any one else. The spirit of our code lies in the maintenance of existing names, unless there be capital objections to it (Art. 16). Starting from this principle, and notwithstanding our vote, I confess that I should hardly dare change or modify a specific name, and especially a name of long standing, because it is formed in opposition to Article 33.

34 to 38. The numbers of these articles were different in the draft, on account of the addition of Article 33; but the ancient Art. 38 having been annexed to Art. 37, the numbers that follow, beginning by 39, have remained the same.

36. (6). By "nearly allied genus," I wished to imply a genus so nearly allied to another that it might one day be annexed to it. In fact, when this takes place, the duplicate specific names render changes obligatory, and complicate synonymy.

37. The article in our original text differed considerably from this. The manner of combining the names of the male and female parents, so as to designate their hybrid off-

spring, has been long since called into question ; and this was one of the motives for which De Candolle (Physiol. Bot. p. 719), in 1832, was averse to that system of nomenclature. I fancied I could do no better than propose the mode recommended by Gærtner fil., in his classical work on cross fertilization ('Versuche über die Bastarderzeugung,' 1849, p. 600). There is frequently less difficulty in ascertaining the female parent; whence it seemed natural to mention it first. The name becomes thus a simple contraction of the common phrase: such a species fertilized by such another. On my arrival in Paris, several botanists, especially French and German, conversant with questions of hybridization, assured me that the contrary usage, that of mentioning the male parent first, had generally prevailed. As, after all, much of this is mere convention, I, and all of us, sided with the method in common use. On my return home, I wished to ascertain whether the authors, who have described a great many hybrid plants, had really followed the custom of placing the name of the male parent first. I was astonished to see that many of them had said nothing about it. Perhaps this may be attributed to their having been oftentimes ignorant of the real parentage of the hybrids, especially among wild plants. Some, perchance, may have supposed that the male parent ought to be the species with which the offspring had most points of resemblance; other botanists appear rather to suppose the contrary, and the degree of similitude is, besides, often questionable.

This showed the wisdom of another modification of my original text made by the Congress. It requires that the combination of the two names shall be only employed when the origin of *the hybrid has been experimentally demonstrated;* that is to say, when both parents are known. In all other cases, and these are undoubtedly the most numerous, the name must be analogous to ordinary specific names. This will tend to reduce the number of double names, of which the application is, moreover, inconvenient, and the resemblance too great to certain specific names belonging to plants that are not hybrid, such as *Lithospermum*

purpureo-cæruleum. In another point of view the motive which prompted this decision is an excellent one: too much cannot be done to oblige authors to be accurate; now, to assert that an offspring is of such or such a parentage, when no evidence can be produced, is anything but accuracy.

40. The system we recommend for cultivated plants (Art. 14 and 40) may be recapitulated as follows:—

(1.) Adopt for the principal modifications of species the names and forms in use for uncultivated species, that is, class subspecies, varieties and subvarieties according to importance; say, where possible, which are habitually hereditary (races, comparable to subspecies), which are less constantly so (subraces, varieties), which are rarely so (subvarieties): employ for all these degrees, as well as for their half-breeds, Latin adjectives, as in the case of ordinary species.

(2.) For modifications of a lower kind, the number of which is unlimited (seedlings, half-breeds of low degree, sports), take names from modern tongues, entirely different from Latin ones, such as horticulturists are in the habit of applying.

By means of this double combination the chief modifications, interesting to general natural history, are brought into connection with scientific forms, whilst at the same time the innumerable unimportant modifications produced in gardens bear distinctive names. In books there will be no longer a possibility of confounding them with botanical species. This is a necessary precaution; horticulturists, for the sake of abridging, being wont to drop the names intervening between the generic name and that of the seedling or sport. Instead of saying, *Brassica oleracea, acephala, vulgaris, viridis, Cavalier*, expressing thus completely the relations of the cavalier-cabbage with other species of *Brassica*, they must needs say Cavalier cabbage. If, instead of *Cavalier*, there was such a name as *grandis*, they would infallibly call it *Brassica grandis*, and it might then very well be taken for a spontaneous species.

This source of ambiguity must be avoided henceforth.

There are, however, already such unlucky names as *Rhododendron papilionaceum, Camellia planipetala,* etc., that seem as if they belonged to species, and that will insinuate themselves into botanical works. What they represent would be vainly sought either in nature or in herbaria. These garden products are factitious; let them be treated as such, and do not let us be exposed any more to confound plants of this kind with those that are spontaneous. Moreover, after a few years fashion changes. No one then cares anything about these innumerable horticultural creations that have been the delight of amateurs. Where are the two or three thousand Dahlias of this or that catalogue issued thirty years since? Most of them no longer exist; their names are forgotten. It is fortunate that the greater number were named after some celebrated General or lady, rather than by a Latin name that would have been preserved in books.

43. Communications made in public meetings, until they have been followed by the publication of a report, may be but imperfectly remembered. Commonly, the author is at liberty to make alterations in his manuscript before it is printed, or in the proofs. If the communication has been a verbal one, it may be modified when the author prepares it for the press. Persons with good memories, or who have taken notes, may find fault; the first publicity may consequently be accounted insufficient for conferring rights. Labels in public collections or in gardens may be transposed or removed at any moment. In all these cases the *fact* of publication is not sufficiently undeniable.[1]

45, 46. A specific name without that of the genus, a combination of a generic and a specific name without any kind of explanatory matter, are tantamount to nothing. They are words without meaning. They acquire value only from the day that some one gives them meaning by completing them. It may, perhaps, be said that some specific phrases are so short, so badly made out, that they are almost void of sense; that, in consequence, all such incomplete publications ought to be looked upon as null; else, if it was

[1] See Bentham, Address to the Linn. Soc. 1867.

thought proper to accept them, mere names ought to be accepted as well. It must be remarked, however, that these cases differ. The fact of the absence of any kind of character added to a name is a well-defined and positive fact, whereas the insufficiency of a description is something vague, and that can be called into question; besides, does it not sometimes occur that an apparently insignificant word is precisely that which allows you to hit upon a species?

47. (1.) It would be very useful to publish in journals and in bibliographical works the exact date of several books and plates, respecting which we are misled by the title-pages, or left in doubt on account of there being no date given. This is particularly the case with works published in numbers. In well-kept herbaria the labels of the collections that have been distributed bear the date of their reception, which generally indicates that of their distribution.

47. (3.) Publishing a name that cannot be adopted is uselessly throwing a synonym into circulation; at least, in indexes and dictionaries. Steudel's 'Nomenclator' would be as bulky again if all names existing in gardens, in herbaria or in travellers' notes, even those that are known to be of no value, were added to it. Names of this kind, when published, are *stillborn*. Why increase their number, unless in exceptional cases, when, for instance, an author requires that they should be made known?

48. For a long time it was the universal custom among botanists to quote for a combination of two names, generic and specific, the author who had first applied it to a species. Some zoologists have followed another method, recommended in 1842 by a committee consisting of Messrs. Strickland, Owen, etc., at the British Association (Report, § D.), but strongly combated from the beginning by M. Agassiz ('Nomenclator,' p. xxvi). Various botanists, MM. Fries, Fr. Schultz, Kirschleger, etc., having introduced the same method into botany, have likewise met with a brisk opposition, and the Publishing Committee of the Botanical Society of France even issued on the question an explanatory note, which produced some sensation. (Bull. 1860, p. 438.)

The newly-proposed method consists in always quoting for a species the name of the author who first named and described it, laying aside, as it were, the name of the genus to which that species has been referred by the botanists that have followed. Among the advocates of this method, some are satisfied with quoting the author of the species, without any explanation whatsoever; others, especially zoologists, add (*sp.*) to the name, implying that the author has made the species only; and others, more conscientious, *sub* such a genus. Thus, *Matthiola tristis* (L. sub *Cheirantho*) implies the species that Linnæus named *Cheiranthus tristis*, and that another (the synonymy tells us that it was Brown) called *Matthiola tristis*. Let us take the method under this last form, evidently the most perfected, and let us see in what way it has been supported and attacked. We will afterwards give our own opinion.

The Committee of the British Association expressed itself in the following manner, through the medium of Mr. Strickland[1]:—"We conceive that the author who *first* describes and names a species which forms the groundwork of later generalizations, possesses a higher claim to have his name recorded than he who afterwards defines a genus which is found to embrace that species, or who may be the mere accidental means of bringing the generic and specific names into contact. By giving the authority for the *specific* name in preference to all others, the inquirer is referred *directly* to the original description, habitat, etc., of the species, and is at the same time reminded of the date of its discovery." According to this, *Muscicarpa crinita* L., since referred to the *genus Tyrannus*, ought to be indicated thus, *Tyrannus crinitus* L. (sp.), and, says a note at the foot of the page, *Tyrannus crinitus* L. would perhaps be preferable, from its brevity.

In the preface of his 'Nomenclator Zoologicus' (p. xxv), M. Agassiz strenuously resisted this. He first praises Linnæus for having said, "Nomen specificum nil est nisi distinctio specierum sub suo genere. Nulla dari potest differentia

[1] Report of the Brit. Assoc. for 1842, p. 120.

specifica ubi nullum genus." "This evidently shows," says M. Agassiz, "the importance that was attached by Linnæus to the *union* of the specific with the generic name. For no one to be harmed, as desired by the learned Englishmen, a new authority ought to be quoted for every new combination of names. Now, I do not hesitate saying that Linnæus would have formally rejected the expression *Tyrannus crinitus* L. (*sp.*). He had put this species in his genus *Muscicarpa*, and he would have kept it there as long as no doubts had arisen." . . . "The method proposed by the learned Englishmen," says again M. Agassiz, "suggests the idea that works undertaken with a view of constituting genera are less valuable than those undertaken for the sake of distinguishing species, which would not advance science." . . . "An excessive inconvenience would likewise result from this: we could not turn back to the original sources without much fastidious labour. How are we, in effect, to find out in Linnæus's works what he says of *Muscicarpa crinita*, without being told under what genus he has spoken of it ?[1] And how inextricable will the synonymy become if we have, some time afterwards, a *Tyrannus crinitus* L. (*sp.*), *according to Swainson*, and a *Tyrannus crinitus* L. (*sp.*), *according to another author*, who will have confounded some new species with the old *crinita!* We must then say, *Tyrannus crinitus, L.* (*sp.*) Swains., and *Tyrannus crinitus*, L. (*sp.*) x." Agassiz concludes by begging the authors of the new method, in behalf of the interests of science, which they have at heart as much as he has himself, "ut propositum deserant, schisma novum in scientiam non introducant, systema vero Linnæi simplicissimum illud, et erroribus babylonicæque in nomenclatura confusioni omnium minime obnoxium æquo animo

[1] The advocates of the method would perhaps say to this that Linnæan tables might be drawn up by *species*. Thus, at the word *crinitus* would be found references to all the pages of zoological and botanical works in which Linnæus has made a species bearing the name of *crinitus*, in much the same way as if, in a directory, individuals were to be classed under their Christian names. We admit that such a thing might be done, but it would be very inconvenient.

repetant." Mr. Shuttleworth, in a work on Malacology,[1] devotes a chapter to the support and development of the same ideas.

Let us now pass from zoologists to botanists, their opinion being to us of greater importance.

M. Kirschleger, in 1852, after mentioning the genera *Ranunculus* and *Batrachium*, in the preamble to his 'Flora of Alsace,' expresses himself as follows:—

"A very simple process has enabled us to render unto every one the honour that he is entitled to. To the author of the new genus detached from the old one we have left the merit (if there be any) of having raised an ancient subgenus to the rank of a genus, by appending his name to it. But we let the specific name be followed by that of the author who made it, or who first applied it, taking care to place it in a parenthesis: thus, *Cephalaria pilosa* (L. sub *Dipsaco*). We are aware that this may offend the conceit of some authors, but we like better not to fail in sentiments of justice and gratitude towards our elders."

In 1858, M. Questier, addressing himself to the Botanical Society of France (Bull., vol. v. p. 37), protested against this new method. He cites M. Billot as having written, *Mulgedium alpinum* L. Sp. 1117 (sub *Sonchus*); Less. Syn. 142, etc. "Are we not immediately shocked," says M. Questier, "to see the genus *Mulgedium* attributed to Linnæus? True it is that the corrective is to be found in the parenthesis, but did not the nomenclature in general use until now tell us the same thing more clearly, and with less risk of error? If now you wish to learn, and natural enough it is that you should, to whom belongs *Mulgedium alpinum*, you may perhaps guess, or perhaps, by dint of researches in books, if you have them, you may find out that it is to the author first quoted after the parenthesis. Suppose that, suitably to the works where the new system is followed, it be necessary to make an index, a list, a catalogue, a local flora, a synopsis, a compendium, in which little room can be given to the development of synonymy, is it not to be feared that both

[1] Shuttleworth, 'Notitiæ malacologicæ,' Heft i. Berne, 1856, p. 21.

parenthesis and anything that may follow will be neglected, and that we should merely have *Mulgedium alpinum* L., *Asterothrix Hispanica* Willd., etc.? What becomes then of the history of botany? Is it not altered and violated? And on whom can the fault be thrown but on those who have introduced this dangerous system?

M. Kirschleger again takes up the pen in 1860, and says, in the 'Bulletin de la Société Botanique' (vol. vii. p. 437) :—

"I believe in the necessity of restoring a multitude of species to their true authors and owners. Botanists write, *Cota altissima* Gay, and not Linnæus. What merit has M. Gay in this case? He has established the genus *Cota* (good or bad, no matter). Let him, then, enjoy the whole honour that the genus may shed upon him. But what pretensions can he have to the epithet *altissima*, which belongs to Linnæus or to Tournefort? It is of the *species* that I am speaking, not of the *genus*; and if I write, "Cota Gay; *altissima* L. (sub *Anthemide*)," I have at once given to each his due of justice, glory, and merit. If this notation be found too long,—in a catalogue, for instance,—the name of the author of the new genus may be left out, and that of the author of the species put into a parenthesis." M. Kirschleger adds ironically, "The orthodox notation has the immense advantage of encouraging authorities," by which he implies *mihis* and *nobises* added to long-standing names, or the satisfaction of seeing one's name in print.

The Publishing Committee of the Botanical Society answered in the following article of the 'Bulletin' (vol. vii. p. 438) :—

"The Committee[1] think it right to preserve without any alteration whatsoever in the Society's publications the notation to which M. Kirschleger gives the name of *orthodox* (that is, the ancient notation). This regular manner of indicating the name of the authors of Orders, genera, species, or varieties, consecrated by its adoption, in the two most

[1] This consisted of MM. Cosson, Duchartre, and Prillieux. M. de Schœnefeld, Secretary of the Society, took likewise an active part in the declaration of the Committee.

important works of systematic botany of this century, the 'Prodromus' of De Candolle and the 'Genera' of Endlicher, is at the same time the most simple, the shortest, and the clearest. Every other system, however equitable it may seem to be as regards the first author of each group of vegetable forms, will always have the great inconvenience of throwing a fresh element of doubt and confusion into the already too intricate labyrinth of synonymy.

"There is, moreover, according to our way of thinking, either error or exaggeration in the idea that this kind of signature habitually placed after the name of any group that has been established, restricted, extended, subdivided, or transposed, is solely a homage paid to the *merit* and to the *glory* of its author. The author's name thus placed is not only the acknowledgment of a right exercised by that author, it is also the recognition on his part of a responsibility that he is to undergo. The improvement of the natural system is (as Linnæus himself has said) the supreme aim of systematic botany. This being so, every change in taxonomy (creation, restriction, extension, subdivision, transposition of Orders, genera, species, or varieties) is true or false, good or bad. If it be good, it perfects the method in some way or other, and it is but just that the author should have the merit of it. If it be bad, the method is more or less impaired, and its author must suffer for it. In both cases the author's name, regularly placed, indicates, for each innovation, the share of merit and the share of responsibility belonging to each; nothing more, nothing less."

Finally, we may cite M. Boissier, who, in the preface recently published of the first volume of his 'Flora Orientalis,'[1] supports the new system. "Two motives," he says, "have led me to this mode of nomenclature, already adopted by several authors,—one of justice, the other of utility. There are, in effect, two kinds of characters in a plant; some, that are individual, constitute, as it were, the essence of the species, and allow of its being distinguished from neighbouring species; they are as constant as the species itself,

[1] One vol. 8vo, Geneva, 1867.

—they are termed specific characters. Then we have other characters that are collective, common to several species, frequently expressing some real relation between organized beings, when we have to do with natural genera, but also frequently understood in a very different way and in a very variable one by botanists, according to their particular turn of mind, and to the relative importance given to this relation; these are generic characters. It seems to me that in the name of a species, specific characters stand higher than generic ones, and that it is both just and logical to append as an authority to the specific name (which expresses the first and is not subject to change), the name of the author who first made the plant known, rather than that of the botanist who has understood its generic affinities in such or such a manner. This method relieves the memory and, at the same time, strengthens the immutability of names, while it allows serious botanists to make changes, if they think proper, in the classification of species for the sole benefit of science, without running the risk of being confounded with those authors who let themselves be led into interested innovations, in which vanity has a greater share than the love of truth."

After these quotations, which, for impartiality's sake, we have made *in extenso*, we have to give our own opinion, which has never varied on this question.

The custom of quoting an author's name immediately after the names of plants has not arisen, as some think, from a desire to do homage or to exercise an act of justice. Of course we must not be unjust in attributing, for instance, to an author a name he has not made, an idea that is not his own; but the process of quoting authors' names is, above all, an *orderly measure*. Its end is, 1st, to distinguish two or more genera, two or more species which have perhaps, unfortunately, received in science the same name; 2ndly, to facilitate the research of an exceedingly important detail: the date of the publication of a name, or of a combination of names, one generic, the other specific.

When it is wished to do homage to a botanist, a genus may be dedicated to him. If he is to be praised or to be

blamed on account of a species or a genus, his opinions may be mentioned and appreciated either in the text of a description, or by means of a parenthesis in the synonymy; but the citation of a name after the name or names belonging to a plant expresses in itself neither merit nor demerit. It is the mere laying down of a fact, namely, that such an author was the first to give such a name to a genus, or was the first to refer such a species to such a genus. In continuation it may be mentioned that another author has made such another combination of the specific and generic names. Each of them may be right or wrong; the question is not there. We want, before anything else, to know when a name has been made, or when a combination of names has been made, so as not to propose similar ones. Now to get at the date we must know who the author is. The date might have been given instead of the name, but this would not be so explicit, as two persons might, in the same year, accidentally give the same name to two different genera or to two different species. It is on this account that the custom of quoting the name of the author rather than the date has prevailed, this name being in itself no more than the expression of a fact.

But, it will be said, there are oftentimes two facts to set down; the species has been referred first to one genus, then to another. In this case, we think it is clearer to tell the things in succession: author A has made such a combination of names; author B another. Generally speaking, to be perfectly understood, each idea must be expressed in a distinct phrase or in a distinct member of a phrase. For two things to be clearly expressed, they must be separated. Linnæus made a species called *Cheiranthus tristis*, out of which Brown afterwards made *Matthiola tristis*. To express this it is more intelligible to say, *Cheiranthus tristis*, L., and then, in the next line, or after a stop, *Matthiola tristis*, Br., than to say, by way of condensation, *Matthiola tristis* (L., sub *Cheirantho*). With this over-contracted style,

"Brevis esse laboro, obscurus fio."

In the example above, it has been wished to say all in few

words, and a very important fact has been omitted in so doing, that of Brown's having created the combination *Matthiola tristis*, which allows you to turn back to the date, and to the motives which led Brown to refer the species to his new genus *Matthiola*. The expression L. sub *Cheirantho*, has a double and even a triple sense. It either conveys the sense that is intended, or signifies that Linnæus, in some note under the genus *Cheiranthus*, has spoken of the genus *Matthiola*, or, again, that he has mentioned a species called by him *Matthiola tristis*.

The indication under the form L. sub *Cheirantho*, offers, at any rate, this advantage, that every one knowing two words of Latin may translate it, and try to understand what it is intended to imply. Whereas if, instead of this, we have "*Matthiola tristis* L. (*sp.*)," the unversed will necessarily want to have explained to them that Linnæus did not make a *Matthiola tristis*, that the parenthesis signifies that he made the species only, and furthermore that 'sp.' is no allusion to Linnæus's classical work, 'Species Plantarum.' If we have "*Matthiola tristis* (L.), Brown," the parenthesis has first to be explained; and the reader, having learnt that Linnæus only made the specific name, wishes to know under what generic name. Finally, if it be "*Matthiola* Br.; *tristis* L.," the quotation, although very complicated, does not enlighten us the more as to the generic name under which the species is to be met with in Linnæus; nor does it tell us that, in creating the genus *Matthiola*, Brown referred to it the species *tristis*,—an essential point nevertheless as regards both precision and date.

The partisans of the proposed method ask for just dealing; but, in our opinion, they are mistaken in the application of this excellent principle.

Nothing can be more unjust than to attribute to Linnæus, for instance, a combination of names that he did not make, that he had no idea of, and that he would perhaps have blamed had he been acquainted with it. It may be said that the expression *Matthiola tristis* (L. sub *Cheirantho*) does not attribute the combination of names to Linnæus. That

is true when the sense of the parenthesis is perfectly understood, and when it is copied or uttered textually; but then there are ellipses and forced abbreviations, alluded to above by M. Questier. As the parentheses cannot be put entire into indexes, as they cannot be employed in conversation, nor in the text of discussions on species, they are omitted. There is a proof of this in the index of the 'Flora Orientalis' of M. Boissier, where we find *Matthiola tristis*, L.; *Gypsophila acerosa*, Boiss.; *Tunica prolifera*, L., etc.; although Linnæus never made a *Matthiola tristis*, nor a *Tunica prolifera*; nor M. Boissier a *Gypsophila acerosa*. So many inaccuracies, or perhaps injustices! For who can affirm that Linnæus would have approved of the genera *Matthiola* and *Tunica*, or that acknowledging the genera to be good, he would have referred there the above-named species?

If we hold, above all, to being just, we ought to do a great deal more than is proposed. We ought not to be looking out for the author who first named a genus or a species, or who first referred a species to a genus, but for the one who has given the best description of the genus or of the species, who has best made their affinities known, etc. When a botanist creates a perfectly natural genus on characters that had been before overlooked, it is to him that ought by right to be attributed all the species that are annexed to the genus at a later period, he having been the intelligent cause of what was done after him. Tell a scholar that such a plant is called *grata*, what does that teach him? Nothing. Tell him that it belongs to the genus *Clematis*; that will be going a great way, as he may then easily find the species in books, and he may perhaps know already to what Order the genus belongs. Tracing a variety to a species is oftentimes a work of more merit than was the description of the variety by the first who spoke of it. If merit is the chief point, it must be made out everywhere and in every case; and this being acknowledged once for all, then it would be time enough that the name of the author might be cited, even if it were necessary to turn as far back as Theophrastus; and if it happened that some one else afterwards rendered still

greater services, then the name of the genus or species would have to be transferred to another claimant. Interminable and contestable inquiries, impracticable for any one who has not given himself up specially to the history of science! The partisans of the new method cannot but be thoroughly averse to quoting the first author of a species when he has misunderstood it and described it wrong, as it frequently occurs. The fact is, that neither the new nor the old method are equal to do sufficient justice in the quotation of authors. But the old method is at least exact; all that is expected from the quotation of authors' names, it gives with precision. On this account we give it the preference.

Some persons are grieved to see the masters of science—Linnæus, for example—less often quoted, since certain genera established by them have been divided. "Think," says a Belgian botanist, "of the great name of Linnæus disappearing from our lists of species! Think of our no longer seeing the name of any plant followed by that famous L., that venerated sign," etc.[1] Our opinion is that Linnæus's ideas of species and genera were generally so just, that, after many divisions and subdivisions, we are obliged to return to them. Besides this, the reputation of a man does not depend upon the number of citations that are made of him. Theophrastus, Aristotle, Cæsalpinius, are rarely quoted, but are not the less considered very great naturalists. Among modern authors, some could be mentioned who are perhaps cited more often than Linnæus, but commonly for their blunders. Great botanists will always maintain their place in lists of synonyms, and especially in the history of science. The same may be said of great chemists, of great astronomers, though their names are not put after every terrestrial or celestial body that they have discovered.

It may be asserted that the method in common use encourages amateurs of glorification, such as are pleased to see their name in print. This is but a low view of the question. We have only to say that the very character of these ama-

[1] Crépin in Bull. Soc. Bot. de Belgique, iii. p. 223.

teurs must needs render them somewhat apprehensive of ridicule ; now, the making of names that are immediately to be reduced to the rank of synonyms, the letting oneself be called a *species-monger* by serious botanists,—is not this ridiculous enough, and more likely to touch self-love than any other process ?

We cannot, however, but admit that there are naturalists who have the weakness to demand that their names be affixed for ever to the species that they have described, or referred to their genera. Their desire is complied with by citing synonyms. To go further: to quote the name of the author who, you think, has improperly referred a species to a genus, is to encourage superficial people to describe and to name without troubling themselves about the genus,—that is, to overlook much more important characters than those of species, and to neglect the study of affinities.[1]

Another word on an argument brought forward by one of the last authors we have quoted.

It is to be regretted that genera should not all be self-evident, and that, by their not having been distinguished from the very first, we should frequently be obliged to hesitate, to create, or to overthrow such or such a genus, to move species from one to another, etc. But, may we ask, are species immutable ? Not in any way. They are diversely understood ; they are divided, they are united, etc., as are genera, perhaps more so than genera. The characters given of them in books are not determined. They have to be altered when a species is transferred to another genus, as it has then to be compared with other species. Of these two things, the species and the genus, neither of which unhappily is well determined, the genus is nevertheless to be considered as the stand-point, because the characters on which it is founded are more apparent, more important, and less variable, and because the number of genera being less considerable than that of species, we are nearer knowing all those that exist ; we mean, of course, all natural genera, for we do not allow of any others.

[1] Shuttleworth, l. c.

This discussion was again taken up in Congress (see Proceedings), but, when voting was resorted to, an immense majority stood in favour of the old system, as supported by us.

49. It is not quite correct to say that a genus or a species is of such an author, when the signification attributed to such groups by that author has been altered. It is on this account that Robert Brown, as well as several other authors after him, and still more recently Dr. Müller, of Argovia,[1] have considered as being made by them groups whose name was ancient,—of Linnæus, for instance, —but whose characters or composition they had sensibly modified. Thus R. Brown (Prodr. Fl. Novæ Holl., p. 494) gives a genus *Myosotis*, without any author's name (which signifies in this work that the genus is his own; see, p. 495, *Exarrhena*, and elsewhere), and adds, as a synonym, *Myosotidis* sp., L. In like manner, he makes a genus *Cynoglossum* (p. 495), which has for synonym *Cynoglossi* sp., L. He attributes *Convolvulus* to Jacquin (p. 482), with the synonym *Convolvuli* sp., L., because he takes the genus such as it was after being modified by Jacquin. In like manner, De Candolle (Prodr. iii. p. 121) attributes his genus *Rhexia* to Brown, because he comprehends it as Brown did; and as a synonym he gives *Rhexiæ* sp., L. Thus, too, he says *Crassula*, Haw. (see Prodr. iii. p. 383), and gives as a synonym *Crassulæ* sp., L. Dunal, in the 'Prodromus,' writes *Solanum*, Sendtn. Such examples could easily be multiplied.

It must be allowed that the process is rigorously exact. The genus *Myosotis* of Brown is not precisely that of Linnæus. Linnæus would, perhaps, not have understood it in the same way as Brown; consequently, it is neither exact nor proper to attribute it to him. On the other hand, this system has the great defect of acknowledging a multitude of genera bearing the same name, but scarcely differing one from another,—an encumbrance to synonymy, and still more so to indexes! In the course of fifty years or a century, botanists would be quite lost in the midst of so many names;

[1] In the *Euphorbiaceæ* of the 'Prodromus,' xv. sectio 2.

in *Borraginaceæ*, for example, there would be as many genera *Myosotis* or *Cynoglossum* as of authors having rather differently defined those genera. The same as regards species. Every author who has limited a species somewhat otherwise than his predecessors, so as to exclude or include a form more or a form less, may be considered to have destroyed the ancient species, and to have created another under the same name. In a few years the indication of authors would no longer signify anything, and works such as that of Steudel would be so full of similar names that there would be no clue to them. We must not pretend, then, to such absolute exactness. There is a simple means, and one in frequent use, of obtaining the greatest part of the desired precision; to this we cannot do better than resort. It consists in adding to the name of the author of the genus or of the species something indicating a restriction, an extension, or a modification of the primitive sense. The words *pro parte, reformatis characteribus, exclusis speciebus, exclusa varietate*, etc., which may be abridged, are quite sufficient to advise the reader of the change. By using them the writer is not exposed to affirm that a group is of such an author when it is not rigorously true. After all, what is of most importance is the name, because of the authenticity of that name, which must be justified by a date. You may change what you like in the genus *Xerotes*, Br., for example, but what cannot be changed is the fact of Brown's having made, in 1810, a genus under that name. In this point of view, which is the most important one, Brown must always be cited for *Xerotes*.

50. The publication of the name is the essential fact, for it is that which prevents the name being changed without good cause. He who publishes has acted the principal part. The traveller who gathered the plant, who perhaps gave it a provisional name in his herbarium, is no doubt indebted to the gratitude of botanists. He is oftentimes more deserving of this gratitude than the publisher of the name; it is on this account very proper to cite him for the native place or for the herbarium; but it is not he who gave publicity to the name. Had he been consulted, he might perhaps have published it under another name.

The consequences of the Article are not, however, so great as might be thought, many travellers or collectors *publishing* their names when they distribute their plants (Art. 42). Spruce, Kotschy, Wallich, and a number of others, have published their names by means of labels or catalogues, which are to be cited. Others have put no names, or have not distributed their plants; in those cases, the only names to be cited are those of the authors who have published them. It is proper, for instance, to cite Spruce for a species named and published by him, and then described by Bentham, and to quote Bentham for one of Hartweg's plants, distributed by him without a name, but afterwards named by Bentham. To act otherwise would be incorrect, and, as regards ancient travellers, it would not be equitable. Commerson, for instance, has left names of plants in herbaria, without publishing them. Those who publish them now cannot conscientiously attribute them to Commerson; for, botany having undergone many changes since the time of that zealous collector, he would not, in the present day, give his plants the names he gave them formerly; and who knows whether he himself had not already discovered that some of his names were erroneous?

51. A rather common error, but not the less to be regretted, is to quote, as the author of a sectional name, the botanist who applied that same name to a genus, or *vice versâ;* or, again, to quote as the author of a species him who had named the variety that is raised to that rank. Through this negligence the opinion of the original author is wrongly represented, and the reader is deceived as to the date of the section or of the genus, or of the collective names of the species or varieties.

52. The rule laid down was followed by Linnæus, Jussieu, De Candolle, Endlicher, Steudel, and all other botanists till of late years. Many botanists have now, for some time, got into the habit of abridging by the suppression of vowels, even in the first syllable, the result being—1st, that many of these abbreviations are unintelligible; 2ndly, that if it be required to search for the name in an alphabetical list of

authors, or in the classical work of Pritzel, which comprises all botanists anterior to 1841, one is obliged to read over all the names that begin by the first letter of the abbreviation, there being frequent hesitation between this or that, or even impossibility to arrive at finding out the true one.

Here are, for instance, some unguessable abbreviations taken from recent works:[1]—

Ktzsch.	H. Bn.	Brm.
Brghtw.	Brn.	Btt.
HK.	Hsch.	Spng.

We know by experience that in certain works Örd. signifies Örsted; that Bth. signifies Bentham, rather than Booth; that Sz. signifies Schultz rather than Steetz or Szovics; but that a young botanist should know this by intuition is out of the question.

If, at least, the last letter of the name were to be placed above, as Ör^{d}, we should understand the abbreviation much better; but between *r* and *d*, in Örd., you may imagine that there are several vowels or diphthongs, and it may be thought there are more vowels after the *d*.

In an abbreviation such as Krst. (for Karsten?), nothing can lead you to suppose that there is a vowel after the first letter; it might, with just as much probability, be after the second.

What renders this mode of abbreviation so enigmatical, is the great number of vowels or diphthongs employed in different tongues. We are not only obliged to look among Latin names, or among those belonging to Latin tongues, but also among German, Danish, Hungarian, Bohemian, Russian names, etc., which have different letters and different combinations of vowels. If you write Hook. for Hooker, any beginner will understand you; the signification will easily be found by referring to Pritzel, as few botanists' names begin by those four letters. But only

[1] We could easily say what works and at what pages, but out of respect for the authors, we think the citation of these hieroglyphics quite sufficient.

let an innovator take it into his head to write Hkr, nothing is to prevent you supposing that the name begins by one of the following combinations, even laying aside some of the most unlikely :—Ha, Hæ, Hä, He, Hi, Ho, Hö, Hœ, Hu, Hü, Hy, Haa, Hae, Hai, Hao, Hau, Hea, Hee, Hei, Heo, Heu, Hey, Hii, Hia, Hie, Hiæ, Hio, Hiœ, Hiu, Hoo, Hoa, Hoe, Hoi, Hou, Hoy, Hua, Huæ, Hue, Hui, Huu, Huy, Hya, Hyæ, Hye, Hyo, Hyö, Hyu (total 47). Between the *k* and the *r*, you may hesitate between the same vowels; and finally after the *r*, there might likewise be found some one of the 47 kinds of vowels or diphthongs. If, however, there is no stop after the *r* it will be thought that the name ends there. $47 \times 47 = 2209$. There may then be 2209 names hidden under the abbreviation Hkr. The process of quoting completely the first syllable and the beginning of the second is decidedly the clearest, and is not sensibly longer.

In a compound abbreviation, the omission of a stop where letters are left out is always a fault; to put, for instance, RBr., for Robert Brown; HBK., for Humboldt, Bonpland, Kunth.

Some defective abbreviations introduced into books have become so common that there is hardly any one unacquainted with them; it would, consequently, be both difficult and useless to give them up. The name I bear, for example, ought to be abridged either DeC., or D.C., or more regularly Cand., instead of DC. which has prevailed. If any one were to think of abbreviating Du Petit-Thouars by DP., he would not be understood.

The rules of abbreviation, as well as most others, suffer exceptions which we are obliged to admit for the sake of perspicuity, or of avoiding certain inconveniences that might offer. It is customary, for instance, to abridge the word Saint by S^t, Sanctus by S^{us}; consequently, it is natural that the name of Saint-Hilaire should be abridged by S^t Hil. When a name has been abridged thousands of times in an exceptional manner, beginners must be made acquainted with it. Using a correct method would not undo what already exists, and the same author would thus be designated in two dif-

ferent ways, which had better be avoided. There are also some scarce combinations of letters which would render an abbreviation incommodious and almost null, were the rule to be followed strictly. The name of Decaisne, for instance, would not be sufficiently designated by Dec.; while it is very clearly so if you write Decsne, especially if in the series of synonyms care is taken not to put a stop after the final *e*. In effect, a very frequent cause of obscurity in books is the typographical fault of putting a stop after the final letter of a name, when putting one is not rendered obligatory by the termination of a phrase, or by the suppression of letters. Compositors in printing-offices are not aware that the names of Re, Blume, Don, Ker, Blytt and others are not abridged; that in Michx the *x* is the final letter; consequently, that those names ought not to be followed by a stop implying an abbreviation. Some botanists abridge when it is unnecessary. Blume does not take up more place in a text than Blum.; and very little time is gained by skipping a letter or two in names of a single syllable.

Precise rules have sometimes been proposed for abbreviations, which would be identical were they to be made in the ordinary form; for instance, in the case of two botanists of the same family, or bearing the same name, or names beginning by the same letters; but there can be no harm in letting each author do what he pleases in each particular case. That Gærtner son, or *filius*, should be abridged by Gærtn. f., and Jussieu son, by Adr. Juss., is tolerably indifferent, both abbreviations being clear enough. If, to distinguish Michaux from Micheli, you put Michx, or better, Mich^{x}; if, to avoid the hesitation that might result from the many names that begin by Reich, you abridge Reichenbach by Reichb.; if, to prevent Marschall von Bieberstein from being confounded with other Marschalls, it be indicated by M. Bieb. or even by Bieb.,—something is gained in the way of clearness, and the value of the principal rule is in no way lessened.

54. According to Linnæus, the name of a genus that has been divided must remain with the most common species,

or with that which is officinal (*vulgatissimæ et officinali*),—an ambiguous expression in all cases where there is one of the species that is very common and another officinal. Subsequent authors say that, in general, the name ought to be left to the oldest species, to those that constitute the most ancient type, etc.; but it is impossible not to take into consideration the relative number of the species. *Convolvulus sepium* and *Erica vulgaris* were very common species, and very anciently named, when Brown made out of one of them his genus *Calystegia;* and De Candolle, out of the other, his genus *Calluna*. In so doing they surely acted more wisely than if they had changed the names of a hundred *Convolvuli* and two hundred *Ericæ*.

57, 58. The contents of these Articles will appear new to some botanists, at least so far as modifications of species are concerned. They are, however, useful for preventing the multiplication of names, as well as for assisting the memory in cases where there is a change of place or of rank. Several exact authors have observed them for some time.

59. May an author change a name that he regrets having published? Yes, but only in the cases in which any other botanist may do so. In short, publication is a fact that the author cannot annul.

See also the Commentary on Article 25.

60. (1.) We say *in the vegetable kingdom;* thus, according to us, the same name may be employed in both kingdoms. This is contrary to one of the rules of Linnæus (Phil. Bot. 230); but in this question we must turn back to the fundamental principle (Art. 3) of every nomenclature, which is to avoid error, ambiguity, confusion. Is it possible now for confusion to arise from a group of plants bearing the same name as a group of animals? Evidently not. If a group of plants was by chance to receive the name of Psittacus, nobody would ever take the species for parrots. Strictly speaking, there might be some doubts in certain obscure categories of beings which have been rejected from one kingdom to another.. But the only conclusion to be drawn from this is that, in these doubtful classes, a naturalist does well to avoid names that are common to the two kingdoms.

60. (3.) Applies to names that are flagrantly, completely false, whose falsity no interpretation can ameliorate; for instance, in the case of a species called *annua*, but which is perennial, or of a species bearing the name of a country where it does not grow, of a genus whose name expresses a character that is wanting in all, or almost all the species, especially a character opposed to those which distinguish the genus from neighbouring ones. The inconvenience of changing names is, however, so evident, that the application of this rule is avoided wherever it is possible. For instance, *Plantago major* is not the largest of all, but it is larger than such a one;—that is enough; *Circœa Lutetiana* is found over the greater part of Europe, but it grows round about Paris;—that is enough; all *Chrysanthema* have not yellow flowers, but almost all have;—that is enough. Many species of the Andes, or of Himalaya, have been called *alpina*, but the word 'alps' has been improperly taken in the sense of lofty mountains; so *alpina* may pass, etc.

60. (4.) We may hardly think ourselves authorized to do away with names of sections made out of a personal name with *eu*, *-oides* or *-opsis*, notwithstanding names of persons being Latinized and not *Grecified*. They are not of Latin origin; that must be considered sufficient, as we must avoid changing names: only an attentive botanist will avoid making such uncouth names. *Eu* placed before a genuine Latin name is a barbarism; *-ides* or *-opsis* at the end of the word are scarcely more tolerable. I do not know whether I would dare change those faulty names where they exist, because of the essential principles of Article 3, second paragraph, and of Article 16; I hope, at any rate, I have none to reproach myself with. In botany we ought to aim at some correctness in Greek and Latin names, and try to avoid making such ill-constructed words as *millimetres*, *centimetres*, *bureaucracy*, *panslavism*, *pan-Anglican*, etc., of our modern languages, and which all have the defect alluded to.

60. (5.) See the commentary on Article 33.

66. Changing the first letters, especially the first letter of a name, may occasion much inconvenience, on account of

tables, catalogues, and dictionaries arranged according to alphabetical order. It is very inconvenient, for instance, that several generic names beginning by *E* should have been altered into *He*, on account of a hard accent in Greek. Such names must be looked for in two different parts of the tables. Greek accents varying with the dialect, we do not see why we should be more rigorous than the Greeks themselves. Changing names that are well known under a certain autograph offers inconvenience likewise. At the Botanical Congress held in London in 1866, it was proposed to modify the name of Cinchona on the ground that the genus had been dedicated to Countess Chinchon, but the majority of the botanists present were of opinion that the already established custom was to be maintained. *Gundelia* is very far from Gundelsheimer; but as ancient botanists have allowed themselves this licence, which is now consecrated by a hundred years' habitual use, why change it? Purists have only to forget Gundelsheimer, and to accept the name of *Gundelia* for an arbitrary one. In these kinds of questions, it must be borne in mind, first, that the fixity of names is of superior importance; secondly, that a botanist has the right to construct a name in any way he pleases, something in the form of a man's name, for instance.

Vulgar names, above all in barbarous tongues, are frequently uncertain, and the manner of spelling them is oftentimes doubtful. When turned into scientific names, nothing can be easier than to subject them to alteration under pretence of rigorous precision. *Coffea*, for instance, might become *Covea*, *Cavea*, *Caufea*, etc., according to the idea you may have of the spelling of the Arab word. It frequently happens that the same property exists in several nearly allied species, whence the same name has been given to them by different tribes. A botanist attributes the name to one of those species; no matter, else we might be perpetually contending and changing.

67. It is desirable that the use of Latin should be maintained in botany for descriptions, and more especially for

names. These, like our proper names, are to serve in all languages. No doubt some names of cultivated plants, or of such as are very well known, are found more current in common language than botanical names; and it would be ridiculous, for instance, in an English text, always to say 'quercus' instead of 'oak.' Laying aside such cases, nothing can be more convenient than Latin names, used with or without some slight modification. The public adopts them promptly, even if they be eccentric. It is a matter of habit. No one can object to names such as Fuchsia, Rhododendron, etc., now in common use in all countries.

There are in every language names of plants the meaning of which is not very precise, or which are so seldom used, that the greater part of the inhabitants of the country are unacquainted with them. It is best not to make use of them in books, but rather to habituate the public to names taken from the universal tongue.

68. With still greater reason ought the fabrication of names termed vulgar names, totally different from Latin ones, to be proscribed. The public to whom they are addressed derive no advantage from them, because they are novelties. Lindley's work, 'The Vegetable Kingdom,' would have been better relished in England had not the author introduced into it so many new English names, that are to be found in no dictionary, and that do not preclude the necessity of learning with what Latin names they are synonymous. A tolerable idea may be given of the danger of too great a multiplicity of vulgar names, by imagining what geography would be, or, for instance, the Post-office administration, supposing every town had a totally different name in every language.