Remarks, on the reform of the pharmaceutical nomenclature : and particularly on that adopted by the Edinburgh College, read before the Liverpool Medical Society / by John Bostock.

REMARKS

ON

PHARMACEUTICAL

NOMENCLATURE.

PRICE TWO SHILLINGS.

REMARKS,

ON THE

Reform

OF

THE PHARMACEUTICAL *NOMENCLATURE;*

AND

PARTICULARLY ON THAT

ADOPTED BY

THE EDINBURGH COLLEGE;

READ BEFORE THE

LIVERPOOL MEDICAL SOCIETY.

BY JOHN BOSTOCK, M.D.

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TO

THE MEMBERS

OF THE

LIVERPOOL MEDICAL SOCIETY,

THIS ESSAY,

WHICH

WAS HONOURED WITH THEIR APPROBATION,

IS DEDICATED,

BY THEIR OBEDIENT SERVANT,

THE AUTHOR.

LIVERPOOL,
Clayton-Square, Oct. 8, 1807.

REMARKS

ON

PHARMACEUTICAL

NOMENCLATURE.

THE revolution which has lately taken place in chemical theory, and the extraordinary extension which has been given to chemical knowledge, naturally suggested the formation of a new nomenclature, and the judicious manner in which this task was accomplished by the French philosophers has obtained almost universal concurrence. A reform, founded upon scientific principles, had, not long before, been introduced into the different depart-

ments of natural history, under the auspices of the celebrated Linnæus, and this, although not unexceptionable, possessed so much real excellence, and bore so great an authority, in consequence of the name of its proposer, that it was very generally acquiesced in. The natural result of these innovations was an attempt to introduce the same system of nomenclature into all those sciences, where the terms of chemistry or natural history are employed, and among others, into that of pharmacy. Accordingly, the Edinburgh College of Physicians adopted this plan, in an edition of their Pharmacopeia, which they published in 1803, and, it is reported, that the London College have determined to follow the example. As this reform seems to me likely to be productive of some very considerable inconveniences, I shall make no apology for offering to the society a few observations, first, on the propriety of extending the new nomenclature to the science of pharmacy, and secondly, on the manner in which

the Edinburgh College have executed the proposed alteration.

The chief circumstances which rendered it necessary to reform the nomenclature of chemistry have been already referred to. Many of the terms in common use were framed in consequence of an hypothesis, and this hypothesis being proved to be false, it was desirable to remove it entirely out of sight, lest the mind should be unavoidably led to recur to it, and thus be retarded in the acquisition of knowledge. When, for example, the existence of phlogiston had been disproved, it was obviously absurd to talk of phlogisticated and dephlogisticated air, or to continue the denomination of vitriolic acid to a substance, into the composition of which we are assured, that there does not enter a single particle of vitriol. The adoption of the new nomenclature of chemistry was peculiarly important, because the main object in this science is to discover the composition

of bodies, and the chemical relation which they bear to each other, so that we should have been entering into discussions, and adopting improvements, in which our language would have been directly at variance with the principles that we were endeavouring to illustrate and establish.

Perhaps, however, a still more important reason for adopting a new system of nomenclature in chemistry, may be derived from the multiplicity of discoveries with which the science was every day enriched, which would necessarily require an equal, or even a greater number of new terms, than those already in existence. If these new terms had been entirely arbitrary, it would have required almost inconceivable powers of memory to have retained them, while, at the same time, it would have been in the highest degree improper, to have gone on forming new denominations, which should, like the former,

have been built upon an exploded theory. But the different parts of the science of chemistry are so closely connected together, that we could scarcely have reformed one part of it without extending the reformation to the whole. It would have been attended with the most manifest impropriety, to have denominated part of a class of substances by a series of scientific terms, while the others continued to be designated by names, either altogether arbitrary, or derived from an opposite and discarded hypothesis. From these, and other considerations, almost every man of science readily assented to a change in the chemical nomenclature.

But, however cogent the arguments may be for adopting this change in the science of chemistry, I am of opinion, that the same reasoning will not apply to medicine, and that there are, on the contrary, other considerations of importance which would induce us to adhere, in most cases at least, to the names in ge-

neral use. In medicine it is of comparatively little importance, if the names employed should not suggest correct ideas respecting the composition of substances. This science treats only in an indirect manner of their constitution and chemical properties; without regarding the elements which enter into their composition, or the action which they exercise upon each other, it is principally conversant with the power which they possess over the living body. If a substance, called Glauber's salt, be known to have certain purgative effects, it is of little importance to inquire into its composition; our medical knowledge will not be in any degree encreased, when we learn that it is composed of sulphuric acid and soda. The nitric acid has been lately recommended as an active agent in medicine, and it was of great importance to ascertain how far it possessed the virtues ascribed to it; but this knowledge could not be, in any degree, promoted by our being made acquainted

with the fact, that nitric acid is composed of oxygene and azote. In short, the physician has to do with the substance as it exists, and has only to examine into the effects which it produces; the chemist has to consider the composition of the substance, and the relation which it bears to other chemical compounds. The other argument which has been adduced for the adoption of a new nomenclature in chemistry, it is obvious, is scarcely in any degree applicable to pharmacy; the number of new substances introduced into the materia medica is very small, and in those few instances where a body is, for the first time, employed in medicine, we may be assured, that it must previously have acquired a current name.

The alteration of pharmaceutical terms is not merely unnecessary; it is positively injurious. In the administration of medicines three sets of men are concerned, the physician or surgeon who prescribes,

the apothecary who compounds, and the druggist who sells them. It is obviously of the first importance that these persons should all speak the same language, and it may be confidently asserted, that there are instances, in which the contrary custom might be productive of fatal consequences. Now, without meaning to insinuate what is disrespectful towards any branch of the profession, let me ask, whether it is probable, that the apprentices of druggists or apothecaries, whether it is probable, that druggists or apothecaries themselves, I may add, whether it is probable, that a large part of physicians and surgeons, who are engaged in the most extensive practice, but who are unacquainted with the improvements in modern science: is it probable, I ask, that these persons will adopt either the Linnæan or the Lavoisierean nomenclature? Can we reasonably expect, that chamomile will ever be stiled *anthemis nobilis*, or that red precipitate will ever be called *oxidum hydrargyri rubrum per*

acidum nitricum, by any but professors in universities, or by young practitioners just emerging from the walls of a college? What then will be the consequence? Some individuals, particularly among those entering into the profession, will employ the new nomenclature, and it will probably be adopted by a considerable number of the scientific young men, who may henceforth complete their studies at the university of Edinburgh, while the great majority of physicians and surgeons, either unable or unwilling to abandon their old habits, with the whole class of apothecaries and druggists, will continue to call chamomile, chamomile, and red precipitate, red precipitate. We shall thus have a constant clashing of the two systems: when the different members of the profession meet in consultation, they will speak two languages; the moderns will be as unintelligible to the ancients, as if they were conversing in German, and when a prescription, couched in the new

terms, is sent to the apothecary's shop, either the young men will be obliged to decypher each word by a reference to their Pharmacopeia, or what is perhaps more probable, they will content themselves with forming a conjecture upon the subject, and will mix together those ingredients, which seem the most nearly to represent the uncouth terms employed by the scientific physician.

Another evil, of no small magnitude, which will result from the adoption of the new nomenclature in pharmacy, is the confusion that it will occasion in medical publications. Probably most authors will think it necessary to be at the pains of translating their terms into the language authorized by the College, but by so doing, they will render their works nearly unintelligible to the bulk of their brethren; and the same difficulty will occur to the younger practitioners, who having fully adopted the new system of names, will be equally at a loss to understand

the writings of their predecessors. In either case it will be impossible to read medical books without the assistance of a pharmacopeia, in which the hard words must be searched out, as in a lexicon, a circumstance which cannot always be accomplished, and which at best, would be a burthensome and tedious operation.

The inconveniences which I have now stated, are what may be conceived likely to ensue from the proposed introduction of the new system of nomenclature into the Pharmacopeiæ of both the London and Edinburgh Colleges, upon the supposition, that they both agree in making the same alterations, and in applying the same names to every substance or preparation. This, however, we may very confidently conclude will not be the case, so that there will be two new languages to be acquired, by those who are desirous of understanding the prescriptions, or the writings of the British practitioners. This evil will be particularly

felt by the students of medicine, who, while at Edinburgh, will necessarily become acquainted with the Pharmacopeia of the Edinburgh College, but if they afterwards settle in England, they will have to learn the language of the London College.

A good deal of the force of my reasoning must, I am aware, depend upon the extent to which the alteration of the names is carried. I apprehend, however, that I shall not be thought to have exaggerated the evil, when it is known, that in the first edition of the reformed Pharmacopeia, out of two hundred and twenty articles of which the materia medica consists, twenty-four only bear the same denomination as in the previous edition of 1792, and out of two hundred and eighty-five titles of preparations and compounds, there are only sixty-two of the old names retained.

Another, and perhaps a still more unanswerable objection to the reform of

the Pharmacopeia is that, upon the new plan, the nomenclature can never be stationary. If the object is to produce an uniformity between the names in common use, and those authorized by men of science, it will be necessary to change the names as often as we make new discoveries. Both chemistry and natural history are progressive sciences, and so far from being perfect or complete, we may affirm that they are still in their infancy; and our nomenclature being founded only upon the present state of science, must, of necessity, change with the change of knowledge. In order that we may have an idea of the progressive alteration which takes place, I need only remark, that between the year 1803, when the Edinburgh College published their first reformed edition, and 1805, when the second was published, it was found necessary to alter no less than thirty-two of the titles of the different preparations, and including the verbal corrections in the materia medica, and in

the formulæ, together with the additions and the omissions, the number of alterations in the whole exceeds two hundred. Hence it appears, that if this plan of progressive change be kept up, (and if it be not, the whole object of the reform is counteracted,) a physician, when he prescribes, must not only be obliged to observe scrupulously the terms of the College, but he must be under the necessity of inquiring, whether his apothecary be in possession of the *last* edition of the Pharmacopeia, before he can be certain that his prescription will be intelligible.

There is another objection to the proposed change, which in the present state of science seems to be insurmountable, that there are many substances in constant use, the physical properties of which are well known, while we are, in a great measure, unacquainted with their chemical composition. As an instance of this occurrence may be mentioned, the preparation formerly called *Cuprum Ammoniacum.*

Although we are well acquainted, both with its preparation and its properties, yet it is still doubtful what are its elements, and in what manner they are combined together. Many other of the chemical substances are in a similar predicament, and the objection applies very forcibly to the vegetable articles of the materia medica, as we are yet uncertain respecting the plants from which some of the most active and valuable of them are procured. Whenever, therefore, the composition of the one, or the Linnæan name of the other, is detected, our nomenclature will have to experience a farther alteration, and it is obvious, that this process must go on without any positive, or even probable termination.

I consider it by no means a trivial objection to the new nomenclature, that in many instances, where the chemical composition of a substance is known, the proper title is extremely awkward and inconvenient from its length. We may

take *alum* as an example. It has been discovered that alum consists of sulphuric acid and alumine, the acid existing in excess, and that a quantity of potash or ammoniac, or both, is likewise essential to its constitution. The correct title of alum therefore is, *Super-sulphas aluminæ cum potassa, aut ammonia, aut potassa et ammonia;* nor can its chemical composition be correctly expressed in any fewer words.

I shall conclude this part of my subject with one farther observation, that errors in the reformed nomenclature are of much more importance than in the old one, and really lead to errors as to the composition of the substance, which in the other was not the case. When the salt to which we just referred is called *alum*, we never reflect on its chemical composition, but an idea is suggested of its physical and medical qualities only; but when we find it, in the new Pharmacopeia, designated by the title of *Sul-*

phas aluminæ, we necessarily conclude that it is a neutral compound of sulphuric acid and alumine. This, however, is not the case, and what is worse, there is a substance to which the title *Sulphas aluminæ* strictly applies, but which is possessed of different properties from alum.

It may perhaps be objected to me, that similar inconveniences must have attended the application of the new nomenclature to chemistry, and that I have, notwithstanding, admitted its utility. To this I answer, that the inconvenience which attended the application of the new nomenclature to chemistry was very considerable, but that it was counterbalanced by other considerations. The cases, however, are not altogether parallel. The chemist, in general, writes for chemists only; this is, at least, his direct and primary object; and if the manufacturer thinks that he can profit by his writings, it is not unreasonable to require

that he should make himself acquainted with the terms of the science. Besides, it is of no great importance, if in an experiment on bleaching, a parcel of cotton should be a little injured; but the administration of ten grains of Corrosive sublimate, *Murias hydrargyri*, instead of the same quantity of Calomel, *Sub-murias hydrargyri*, might probably be followed by the death of the patient.

I shall now proceed, to what I pointed out as the second object of this essay, an examination of the manner in which the Edinburgh College have executed the proposed reform of their Pharmacopeia. In doing this it is necessary to bear in mind the specific object which they had in view. We are informed, that many of the old and common names have been changed, in consequence of the improvements in botany and chemistry, and new ones adopted, in order that, from the names themselves, the nature and composition of the substances might be more

readily known. The animal and vegetable substances are designated by the names, that have been imposed on them by the best natural historians and botanists, and in chemistry the terms are employed, that have been sanctioned by the latest experimentalists. The only deviation which they propose from this plan is in those cases of compounded preparations, where the title would have been inconveniently long, if every one of the contents had been enumerated, and likewise, with respect to a few simple substances, which are in the most frequent use, such as opium, manna, musk, and castor, where the old names are still retained[a]. Every one, I presume, will assent to the propriety of these remarks, although, in the latter instance, it may be a little doubtful where the limit is to be fixed. With respect to the last edition of the Pharmacopeia, we are merely informed, that some *errors* are corrected,

[a] Pharm. Edin. 1805, *p.* xiii. xiv. xv.

which had *accidentally crept into* the former[b]. Bearing in mind the objects which the College have proposed to themselves in their alterations, I shall proceed to point out several instances in which they have deviated from them, or where some objection may be made to the names which they have adopted. In doing this, I shall not rest the objections to the present names on my own authority, but I shall point out the source from which I derive my opinion, and shall leave the society to judge what degree of credit is to be attached to it[c].

Following the order of the Pharmacopeia, we begin with the materia medica, and here the first article is incorrectly named, "Acidum acetosum." It seems

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[b] Pharm. Edin. 1805, *p.* xvi.

[c] I must acknowledge the great assistance which I have derived from the elaborate systems of Dr. Thomson and Mr. Murray, and from the valuable dispensatory of Dr. Duncan, jun.

to be proved by the experiments of Adet, Darracq, and Proust[d], that the only difference between the acetous and acetic acids, as they have been called, or between common and radical vinegar, is that the former is less concentrated and less pure, so that the term *Acidum acetosum* leads to a false conception of its nature; its scientific name will be *Acidum aceticum dilutum impurum*, an inconvenient term which is, in every respect, less appropriate and more liable to mistake, than the old word *Acetum*. We have next to object to the first of the botanical terms, "Aconitum Napellus," which it appears ought to be stiled Aconitum Neomontanum; at all events, we may conclude, that naturalists are not agreed which is the species of aconite that is used in medicine[e]. *Page* 4. "Aloe

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[d] Ann. Chim. xxvii, 318. Do. xli, 281. Journ. Phys. lvi, 211.

[e] Willdenow, Sp. Pl. *t.* ii. *p.* 1236. Duncan's Dispens. 1806, *p.* 135.

perfoliata." Willdenow informs us, that the best gum is obtained from the Aloe spicata[f]; the probability is, that what we use in medicine is the produce of several different species. *Page* 4 and 5. "Amomum repens," and "Amomum Zingiber." Here we have new botanical names, for two well-known articles of the materia medica, Lesser Cardamom seeds and Ginger. These plants, being placed in the same genus, bear the same generic name, a circumstance in itself very objectionable; for it is the generic name which, from its position, will first strike the eye, and it is far from impossible, that in such cases, the specific name, which stands second, and which really designates the substance, may be overlooked. But besides this objection, it appears, that although Cardamom seed is a substance so well known to every apothecary, botanists are still divided as

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[f] ii. 185.

to the plant from which it is procured[g], so that we are adopting a name which is both dubious, and not sufficiently discriminative. It appears also, that the denomination of ginger must experience a farther alteration; for, according to Mr. Roscoe's judicious arrangement of the Scytaminean plants, it will have the title of Zingiber officinale[h].

In order to prevent repetition, I shall remark in this place, that among the articles of the materia medica, there are forty-nine instances of vegetable substances, in which the specific name, that which is placed second in order, is the one properly descriptive of the plant, as in the above instance of the Amomum Zingiber[i]. And the generic name is not

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[g] Roscoe on the Scytamineæ, *p.* 23, 4. Willdenow, i. 8. Duncan, 151.

[h] *p.* 19.

[i] Æsculus *Hippocastanum*, Amomum *Zingiber*, Anethum *Fœniculum*, Anthemis *Pyrethrum*, Apium *Petroselinum*, Arbutus *Uva ursi*, Aristolochia *Serpentaria*, Artemisia *Absinthium*, Artemisia

always merely superfluous; for there are thirty-six instances, in which the same generic term is applied to two or more substances, as in the above example of the two kinds of Amomum[k].

Santonica, Astragalus *Tragacantha*, Atropa *Belladonna*, Bitumen *Petroleum*, Bubon *Galbanum*, Carum *Carui*, Cassia *Senna*, Chironia *Centaurium*, Convolvulus *Scammonia*, Convolvulus *Jalapa*, Cucumis *Colocynthis*, Daphne *Mezereum*, Datura *Stramomium*, Delphinium *Staphisagria*, Dianthus *Caryophyllus*, Dorstenia *Contrajerva*, Ferula *Assa fœtida*, Ficus *Carica*, Juniperus *Sabina*, Laurus *Camphora*, L. *Cassia*, L. *Cinnamomum*, L. *Sassafras*, Leontodon *Taraxicum*, Mentha *pulegium*, Mimosa *Catechu*, Momordica *Elaterium*, Myrtus *Pimenta*, Origanum *Majorana*, Pimpinella *Anisum*, Polygala *Senega*, Polygonum *Bistorta*, Polypodium *Filixmas*, Punica *Granatum*, Quassia *Simarouba*, Rhus *Toxicodendron*, Rumex *Acetosa*, Sysimbrium *Nasturtium*, Smilax *Sarsaparilla*, Styrax *Benzoin*, Swietenia *Mahagoni*. In all these cases it is by the second, or specific name only, which is here printed in italics, that the substance is known. To this list ought to be added Callicolla *Ipecacuanha*.

[k] Amomum repens, A. Zingiber; Anthemis nobilis, A. Pyrethrum; Artemisia Absinthium, A. San-

Page 5. " Anethum Fæniculum." The word *anethum* is generally used to signify *dill*, and was so employed in the former editions of the Edinburgh Pharmacopeia; the College have, however, now excluded dill, but have applied the generic word anethum to *fennel*, which now stands " Anethum Fæniculum;" so that it is not improbable, that these substances may be confounded. *Page* 6. " Artemisia Santonica." This denomi-

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tonica; Cassia Fistula, C. Senna; Citrus Aurantium, C. Medica; Cochlearia Armoracia, C. officinalis; Convolvulus Scammonia, C. Jalapa; Juniperus Communis, J. Lycia, J. Sabina; Laurus Camphora, L. Cassia, L. Cinnamomum, L. Nobilis, L. Sassafras; Mentha piperita, M. Pulegium; Mimosa Catechu, M. Nilotica; Pterocarpus Draco, P. Santalinus; Quassia excelsa, Q. Simarouba; Quercus Cerris, Q. Robur; Styrax Benzoin, S. officinalis; Swietenia febrifuga, S. Mahagoni. In this enumeration I have not included those substances, where both the terms are so little appropriate, as when taken singly, to afford no ground of discrimination; such for example as the two kinds of pepper, and the three species of rose.

nation is intended for the plant that furnishes the worm seed, but it is doubtful whether it be correctly named[l]. *Page* 7. "Boras Sodæ." This term is applied to the substance usually stiled *Borax;* but this is the sub-borate of soda, i. e. a combination of the boracic acid and soda, with the alcali in excess; the new name therefore conveys a false idea of the nature of the substance[m]. *Page* 8. "Carbonas potassæ impurus." The same error occurs here as in the former instance; the alcali is only in part saturated by the acid, and therefore the proper term is sub-carbonas potassæ; the carbonate of potash is a different salt[n]. The same remarks apply to "Carbonas sodæ impurus," which, according to Dr. Thomson, is only a sub-carbonate

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[l] Duncan, 180.

[m] Fourcroy, systeme, iii. 325. Thomson's Chemistry, 3d. ed. ii. 561.

[n] Fourcroy, iv. 30. Thomson, ii. 590. Murray's Chemistry, ii. 361.

of soda*. I think an objection may be made to the term *impurus*, as forming a part of the titles of the materia medica. The word *pot-ashes* or *pearl-ashes* conveys the idea of a substance possessed of a particular set of properties, procured by a particular process, and generally consisting of the same constituents, whereas the title, *impure carbonate of potash*, applies equally to any mixture, in which potash exists in considerable proportion, whatever may be its properties, or whatever may be the nature of its other ingredients. The same remarks apply to "Carbonas sodæ impurus," to "Supertartris potassæ impurus," and still more powerfully to "Carbonas zinci impurus," and to "Oxidum zinci impurum," which are very indeterminate and inaccurate designations for Lapis Calaminaris and Tutty. There are likewise further objections to the term *Carbonas zinci*

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* Thomson, ii. 592.

impurus, as applied to Lapis Calaminaris; this substance, almost in every instance, contains a quantity of oxygene, and, not unfrequently, is entirely without carbonic acid. Some species of Calamine also contain silex, and others water, so that it would be impossible to form any denomination, which should comprehend the chemical composition of the substance, without a great degree of circumlocution[p].

Page 8, "Caryophyllus Aromaticus." It appears that this substance is procured from the Eugenia Caryophyllata; the title must therefore be changed accordingly, although the present name was first introduced into the edition of 1803[q]. *Page* 12. "Gambogia." It is probable, that this gum-resin is the produce of several different plants; the Stalagmitis Gambogioides, and the Garcinia Gambo-

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[p] Smithson, Phil. Trans. 1803.

[q] Willdenow, ii. 965. Duncan, 245.

gia have been especially mentioned as affording it[r]. *Page* 14. " Ipecacuanha." The plant that affords this valuable drug, has not, until very lately, been ascertained, and botanists are still undecided by what name it is to be called. It was described as belonging to the genus of Callicolla, and received this denomination in the Pharmacopeia, but as the genus Callicolla has, by Willdenow, been united to that of Cephaelis, it must now appear under this title*. It is easy to conceive how much confusion may arise from such a state of uncertainty. *Page* 14. " Kino." There is reason to suppose that this substance is the produce of several plants; one species of it is said to be procured from the Coccoloba Uvifera, and probably another from the Eucaliptus Resinifera, but the College, contrary it must be confessed to their usual custom, have acted

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[r] Willdenow, ii. 848. Duncan, 346.

* Duncan, *p*. 205.

prudently in not altering the old term[s]. *Page* 16. "Mimosa Catechu." This substance, is supposed to be the produce of more than one plant. *Page* 18. "Oxidum Arsenici." Perhaps, in strict propriety, this substance should be called Acidum Arsenosum; it is not decided whether its properties are those of an acid or of an oxide[t]. "Oxidum plumbi album." It is generally admitted that ceruse contains carbonic acid, although it is not determined whether it be a simple carbonate of lead, or a mixture of the carbonate and oxide. The term adopted by the College is, at all events, erroneous[u]. "Oxidum plumbi semivitreum." This substance, like the last, is not, as the name would imply, a simple oxide,

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[s] Duncan, 269.

[t] Fourcroy, v. 76. Thomson, i. 315. Murray, iii. 442. Duncan, 175.

[u] Bergmann's Essays, i. 55. Thomson, i. 262. and iii. 256. Murray, iii. 353. Duncan, 318. Proust. Journ. Phys. lvi. 207.

but contains a quantity of carbonic acid[v]. *Page* 20. "Pterocarpus Draco." It is not certainly ascertained whether this is the plant from which dragon's blood is obtained[w]. *Page* 23. "Sub-acetis cupri." This name is, in the first place, incorrect, as implying the existence of the salts formed by the acetous acid; it ought to be *Sub-acetas cupri*. But still this term does not express the composition of verdegris, which, from Proust's experiments, appears to consist of two salts, the acetate, and the sub-acetate of copper, so that its composition can only be expressed by a long periphrasis; the name now adopted is incorrect, and gives an erroneous idea of the constitution of the substance[x]. "Sulphas aluminæ." This term is employed to signify what is commonly called alum, but it is a very improper mode of denominating this salt.

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[v] Thomson, i. 266.

[w] Duncan, 323.

[x] Ann. Chim. xxxii. 39. Thomson, iii. 196.

The sulphate of alumine is a salt in which the earth and the acid are in a state of mutual saturation, whereas it is essential to alum, that there should be an excess of acid, besides which a quantity of potash or ammoniac is necessary to its formation, and according to circumstances, one or both of the alcalies is always present in the alum of commerce. According to the new nomenclature, alum must have the long title which was mentioned above[y]. *Page* 24. "Sulphas cupri." This salt has been conceived by Proust to be a super-sulphate of copper[z]. *Page* 25. "Triticum hybernum." The starch of more species of wheat than the one here mentioned is in common use.

Besides the substances that have been

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[y] Fourcroy, iii. 54. Vauquelin, Ann. Chim. xxii. 276. Chaptal, Ann. Chim. xxii. 294. Thomson, ii. 616. Murray, iii. 579. Duncan, 351.

[z] Ann. Chim. xxxii. 33.

enumerated, the titles of which are either clearly incorrect, or not sufficiently ascertained, there are several important articles of the materia medica, derived from the vegetable kingdom, respecting the origin of which we are yet entirely ignorant. Among others may be enumerated, Gum Ammoniac, Angustura, the yellow and red Bark, Colomba, and Myrrh. Now whenever we shall discover from what plants these substances are produced, it will, most probably, be found necessary to change their names, and at all events, in order to preserve uniformity, it will be necessary to make an addition to them.

We now arrive at the second part of the Pharmacopeia, containing the prepared and compounded medicines. The first chapters consist, almost entirely, of different preparations taken from the vegetable kingdom. Every one, I conceive, must be impressed with the extreme awkwardness of many of the new names, the

frequent occurrence of useless generic or specific terms, and what is more objectionable, a want of uniformity in the method of employing them; in most instances they are both introduced, while in other cases, the one or the other of them is omitted. It would be tedious and useless to point out the whole of these defects; I shall only mention one or two instances, in order to illustrate the nature of the censure which I have passed upon this part of the work.

In *page* 38 we have a preparation called "Emulsio amygdalæ communis;" if the object be merely to inform the prescriber or the apothecary of the nature of the preparation, the word *communis* is an unnecessary addition, but if, on the other hand, the intention is to express at full length every particular respecting the composition, we should certainly have been informed whether sweet or bitter almonds are employed, a circumstance by no means unimportant in pharmacy,

although the bitter and the sweet almond happen to belong to the same botanical species. When we observe such titles given to the preparations as "Oleum lini usitatissimi," "Infusum digitalis purpureæ," and "Infusum rhei palmati," where the words *usitatissimi*, *purpureæ*, *and palmati* can only be introduced for the sake of uniformity, and still more, where we observe such titles as "Mucilago astragali tragacanthi," "Decoctum daphnes mezerei," and "Decoctum smilacis sarsaparillæ," where the addition of the generic terms "*astragali*, *daphnes*, and *smilacis* are really objectionable, as leading to a possible mistake respecting the nature of the preparation, we may fairly inquire, why in the article "Infusum tamarindorum cum senna," the first substance is deprived of its specific, and the second of its generic term. I can scarcely suppose that the framers of the new nomenclature will plead either convenience or brevity, after the numerous instances

in which both of these have been sacrificed to system.

It may perhaps be considered as not philosophical, or even candid, to call in the aid of prejudice in the discussion of a scientific question, but where persons are concerned, whom we know to possess certain prejudices, I apprehend we are justified in paying some respect to them. Now with what feelings but those of ridicule, will the great bulk of the profession apply such denominations as "Mucilago mimosæ niloticæ," "Decoctum anthemidis nobilis," or "Decoctum hordei distichi," to the mucilage of gum arabic, chamomile tea, or barley water? I shall not, however, dwell longer on this part of the subject, but shall proceed to examine the chapters, which more particularly refer to chemical preparations.

In the 19th chapter we have an account of the salts. The two first arti-

cles, "Acidum acetosum distillatum," and "Acidum acetosum forte," are both erroneously named, for reasons which have been already detailed; the first of them, which is distilled vinegar, cannot be expressed in the new nomenclature without considerable circumlocution; the second is the pure acetic acid. *Page* 90. "Acidum nitrosum." It is now generally admitted, that the term *nitrous acid*, which was originally given to this substance, from the idea of its being a compound of oxygene and azote, in which the oxygene exists in less proportion than that which constitutes nitric acid, is incorrect. It is in fact a mixture of nitric acid and nitric oxide[a]. The next title, "Acidum nitrosum dilutum," is of course likewise improper; and it is so for the additional reason, that upon mixing together, what has been called nitrous acid and water, the greatest part, or the whole of the nitric oxide is expelled, and the fluid be-

[a] Davy's Researches, *p*. 30. Thomson, ii. 215.

comes a diluted nitric acid. *Page* 94. "Carbonas potassæ," and "Carbonas potassæ purissimus." These titles are both erroneous; as we remarked above, in neither case is the salt in the state of a perfect carbonate; they are either sub-carbonates, or mixtures of the carbonate and sub-carbonate. *Page* 95. "Aqua potassæ." In order to preserve uniformity, this preparation should be stiled Solutio potassæ, or in strict propriety, Solutio aquosa potassæ. If, however, the word *aqua* be preferred to express a watery solution, in this case, we must use the term in those places, where at present *solutio* is employed, as "Solutio acetitis zinci," "Solutio calcis," &c. *Page* 97. "Aqua super-carbonatis potassæ." I think there is reason to suppose, that this denomination is not correct, and that the additional quantity of carbonic acid, which is thrown into the fluid, does not form any union with the alcali, but that this still remains in the state of carbonate or sub-carbonate. To render the present

name proper, it would be necessary that all the acid and alcali should unite together, and form an uniform neutral salt, in which the acid properties should predominate. "Acetis potassæ." This name must be changed to Acetas potassæ, for reasons assigned above. *Page* 99. "Sulphas potassæ cum sulphure." This is one of those instances, in which the properties of a substance are well known, and yet it is not easy to give an account of its composition, at least, without employing a tedious circumlocution. The name at present adopted by the College is certainly not adequate to the purpose; it simply denotes the mixture of the sulphate of potash with sulphur. Probably in this salt, a part, or the whole of the acid is reduced to the state of sulphureous, by the abstraction of oxygene, so that the preparation will be a mixture of the sulphate of potash, with the sulphite of potash[c]. *Page* 100. "Tartris potassæ."

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[c] Duncan, 431.

This should be Tartras potassæ. "Carbonas sodæ," in the same page, should be Sub-carbonas sodæ, and the same remarks apply to the "Aqua super-carbonatis sodæ," as to the analogous preparation of potash. The "Tartris potassæ et sodæ," in *page* 101, should be Tartras potassæ et sodæ. *Page* 103. "Carbonas ammoniæ," "Aqua carbonatis ammoniæ," "Aqua ammoniæ." The same objection occurs to the first of these terms as to the carbonates of potash and soda, that either the whole or a part of the salt is only in the state of a sub-carbonate. The same objection also applies to the second, and in both the second and third we have to object to the word *aqua*. The word *aqua* again occurs in *p.* 105. "Aqua acetitis ammoniæ," where I have to observe, that *acetitis* is again employed for *acetatis*. *Page* 107. "Sulphas aluminæ exsiccatus." I have already pointed out the impropriety of the term *Sulphas aluminæ*. *Page* 111. "Carbonas magnesiæ." Here, as in the case of the alcalies, the

acid does not fully saturate the base; its proper denomination therefore is Subcarbonas magnesiæ[d].

The 20th chapter is on the metallic preparations, and begins with the "Nitras argenti," a title which gives an erroneous idea of the nature of the compound, which appears to be only a subnitrate of silver, as part of the acid is expelled in the fusion to which the preparation is always subjected[e]. *Page* 114. "Oxidum an imonii cum sulphure vitrificatum." If we are to adopt the opinion of Proust, this title does not convey a correct idea of the nature of the preparation. The present name would indicate a compound of an oxide of antimony and sulphur, whereas the substance consists of an oxide of antimony and a sulphuret of antimony[f]. *Page* 115. "Oxidum antimonii cum phosphate calcis." It

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[d] Fourcroy, iv. 44.

[e] Murray, iii. 122.

[f] Journ. Phys. lv. 335.

is doubted whether this preparation consists of oxide of antimony united to the phosphate of lime, as the present title would denote, or whether it be not properly a triple salt, composed of phosphate of antimony and of lime[g]. *Page* 116. "Sulphuretum antimonii precipitatum." This title obviously does not explain the nature of the substance to which it is prefixed. Considerable difficulty has been experienced in determining its composition, but from the experiments of M. Thenard, which appear to have been performed with much accuracy, this substance is a sulphurated hydroguret of antimony[h]. "Oxidum antimonii cum sulphure, per nitratem potassæ." This long and cumbersome name does not, after all, express the composition of the substance, which is a compound of the oxide and the sulphuret of antimony. It also contains a quantity of potash, derived

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[g] Chenevix, Phil. Trans. 1801. Thomson, iii. 299.

[h] Ann. Chim. xxxii. 268. Proust, Journ. Phys. lv. 342.

from the nitre, which the most assiduous washing will not remove[i]. The addition of the words, *per nitratem potassæ*, explaining how the substance is procured, without throwing any light upon its constitution, I cannot but regard as altogether unscientific. *Page* 117. "Murias antimonii." This is supposed by Dr. Thomson to be an oxy-muriate, and the same may be inferred from what Mr. Murray remarks respecting the action of the nitro-muriatic acid upon antimony[k]. "Tartris antimonii." The name given to this celebrated preparation is doubly erroneous. In the first place, the word *tartris* should be *tartras;* but, what is of much greater importance, there is no indication of the presence of potash, which is universally admitted to be a constant and essential ingredient[l]. It is a circumstance

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[i] Duncan, 467. Murray, iii. 476.

[k] Thomson, iii. 295. Murray, iii. 475.

[l] Thenard, Ann. Chim. xxxviii. 39. Fourcroy, vii. 249.

too remarkable to be passed over without particular notice, that so active and important a preparation should have received so inadequate a denomination. *Pag* 118. "Vinum tartritis antimonii." This title will, of course, require correction, it should be called, Vinum tartratis antimonii et potassæ. "Ammoniaretum cupri." This is an instance of a substance, with the nature and properties of which we are acquainted, and are yet in doubt respecting its chemical constitution. It appears to contain oxide of copper, ammoniac, and sulphuric acid, and therefore, if these substances are chemically combined, it ought to be stiled, Sub-sulphate of copper and ammoniac[m]. *Page* 119. Carbonas ferri præparatus." Although this substance certainly contains carbonic acid, it does not seem to be ascertained that it is a simple carbonate. Mr. Murray supposes it to be a sub-carbonate, and Dr. Thomson an oxy-carbo-

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[m] Murray, iii. 272. Duncan, 487.

nate, and it is probable that there is always a portion of oxide mixed with the other ingredients[n]. *Page* 120. "Carbonas ferri præcipitatus." The same remarks in part apply to this, as to the former preparation, and it may also be observed, as has been done on similar occasions, that the title does not designate the composition of the substance, but describes the method in which it is prepared.

Page 122. "Acetis hydrargyri" should be Acetas hydrargyri. *Page* 123 and 124. "Murias hydrargyri," and "Sub-murias hydrargyri." There are no two preparations in the whole Pharmacopeia, for which it is so important to have clear and distinct names, as these two combinations of muriatic acid and mercury. They are both in frequent use, and both active medicines, yet the one is so much more powerful than the other, that a

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[n] Thomson, iii. 221. Murray, iii. 308.

mistake between them might be productive of fatal consequences. The old names, *Corrosive sublimate*, and *Calomel*, were sufficiently distinct and well known, led to no hypothesis, and could not be confounded. In order, however, to preserve the principles of the scientific nomenclature, it has been thought proper to assign to them names which differ from each other only by one syllable, and which are, on that account alone, obviously improper. But it appears from the experiments of Mr. Chenevix, which are the last that have been performed, and are generally considered to be accurate, that the names assigned by the Edinburgh College are, after all, not correct, and what is still more unfortunate, that the name which they have given to one of the substances properly belongs to the other. They are both in fact muriates of mercury, but in the corrosive sublimate, the mercury is in a higher state of oxidation than in the calomel; the first, therefore, constitutes an

oxy-muriate, and the second a muriate of mercury[°]. Now even admitting, that these experiments of Mr. Chenevix's should not in their turn be controverted by future discoveries, it would certainly be improper to permit substances, possessed of properties so very dissimilar, to be denominated by titles that might so easily be confounded, and still more objectionable are the terms proposed by the College, which are not only as liable to be confounded, but also obviously incorrect. *Page* 124. "Sub-murias hydrargyri præcipitatus." To this title the same remarks apply as to the last, besides that the word *præcipitatus,* is objectionable, as not marking any difference in the substance itself, but only in the mode of preparing it. If it differ in any respect from calomel, the difference ought to be expressed in the title; if it be exactly similar, its insertion is useless. Mr. Murray thinks that it contains the sub-nitrate

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[°] Chenevix, Phil. Trans. 1802. 157.

of mercury[p]. *Page* 125. "Oxidum hydrargyri cinereum." This is another instance in which an inadequate and erroneous title has been employed. The chemical composition of this substance does not appear to be well ascertained, but it is certainly not a mere oxide. Dr. Duncan conceives it to be a sub-nitrate of mercury and ammoniac[q], or, as it is usually prepared, it would seem to be a mixture of the sub-nitrate of mercury and the black oxide. Mr. Murray also conceives it to be a triple salt, consisting of the oxide of mercury, of ammoniac, and of nitric acid[r], and I think there is some reason to suspect, that it may also contain a quantity of carbonic acid[s]. *Page* 126. "Oxidum hydrargyri rubrum per acidum nitricum." I cannot but think the length of this title a valid ground of objection to it, but in-

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[p] iii. 233.

[q] *p.* 510.

[r] iii. 216.

[s] Thomson, iii. 168.

dependent of this circumstance, there is some reason to doubt whether it be correct, as in the opinion of some eminent chemists, it still retains a portion of nitric acid, and in this respect differs from the red precipitate formed by heat alone[t]. Indeed, if it were identical with this substance, the additional words, *per acidum nitricum*, would be useless, and therefore improper. "Sub-sulphas hydrargyri flavus." It appears that the mercury which enters into this composition, is in the highest state of oxidation, or what has been called an oxy-sulphate; the nature of this preparation would probably be better expressed by the term, "Sub-oxy-sulphas hydrargyri[u]; I conceive the additional word *flavus* is unnecessary. *Page* 127. "Sulphuretum hydrargyri nigrum." This is probably the correct name for this preparation, but it is proper to remark, that different opinions have been

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[t] Thomson, i. 173. Murray, iii. 215.

[u] Thomson, iii. 167. Murray, iii. 208.

entertained respecting its nature and properties; it has been supposed to contain both oxygene and hydrogene, by chemists of the highest authority[v]. "Acetis plumbi." This title is doubly erroneous; the acid appears to exist in excess, and it is the acetic acid which enters into its composition; it ought therefore to be called super-acetas plumbi[w]. *Page* 128. "Carbonas zinci impurus præparatus," and "Oxidum zinci impurum præparatum." I have already given my reasons for objecting to the terms *impurus* and *impurum*, as attached to pharmaceutical preparations. *Page* 129. "Sulphas zinci." This salt has been supposed to contain an excess of acid, and therefore it ought to be named Super-sulphas zinci[x]. The name of the next preparation must, of course, be changed to Solutis super-sulphatis zinci, and the "Solutio acetitis zinci," to Solutio acetatis zinci.

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[v] Fourcroy, v. 298. Thomson, i. 174.

[w] Nicholson's Journ. xi. 79. Thomson, iii. 258. Duncan, 523.

[x] Thomson, iii. 278.

The 21st, 22d, 23d, and 24th chapters, which contain the powders, electuaries, pills, and troches, principally consist of different preparations of vegetable substances. I shall not think it necessary to examine them with the same minuteness as the saline and metallic preparations, nearly the same remarks being applicable to them as to the former part of the pharmacopeia. The terms employed are frequently long and incommodious, and so remote from those in common use, that we can scarcely conceive the possibility of their being adopted by the generality of practitioners. The two last chapters, which describe the liniments, ointments, cerates, and plaisters, are also, in many instances, erroneous; but as I have already noticed most of the errors, when treating of the metallic preparations which enter into their composition, I think it unnecessary to go through the whole detail of them. I may, however, mention one inaccuracy, which occurs in the title of the common

mercurial pills, called "Pilulæ hydrargyri." It is now generally admitted, that during the trituration of the mass, a portion of oxygene becomes united to the metal, so as to convert it into the lowest state of oxidation; the title therefore should have been, Pilulæ oxidi hydrargyri nigri[y]. The same remarks apply to the "Unguentum hydrargyri."

From the survey which I have taken of the Pharmacopeia[z], I conceive that the most powerful objection against the introduction of the new nomenclature is derived, from the imperfect manner in which the reform has been executed, although undertaken by gentlemen so well qualified for the attempt, as the

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[y] Fourcroy, v. 292. Murray, iii. 205.

[z] I think it necessary to remark, that I do not profess to have noted *all* the objections that may be urged against the new terms; my object has been rather to illustrate my argument, than to write a regular critique on the Pharmacopeia.

Edinburgh College of Physicians. If the co-operation of their abilities has not been able to prevent the admission of so many errors and inaccuracies, we may fairly conclude that the present state of chemical science does not admit of the projected improvement, and that it is very doubtful, whether the advantages resulting from it will ever counterbalance the inconvenience that must necessarily attend the change.

THE END.

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