A translation of the table of chemical nomenclature / proposed by De Guyton, formerly De Morveau, Lavoisier, Bertholet, and De Fourcroy ; with additions and alterations ; to which are prefixed an explanation of the terms, and some observations on the new system of chemistry.

A

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OF THE

Table of Chemical Nomenclature.

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G. Pearson
-c

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OF THE

Table of Chemical Nomenclature,

PROPOSED BY

DE GUYTON, FORMERLY *DE MORVEAU*, LAVOISIER, BERTHOLET, AND DE FOURCROY;

WITH ADDITIONS AND ALTERATIONS:

TO WHICH ARE PREFIXED

AN EXPLANATION OF THE TERMS,

AND SOME

OBSERVATIONS

ON THE

NEW SYSTEM OF CHEMISTRY.

ET NOVA FICTAQUE NUPER HABEBUNT VERBA FIDEM, SI GRÆCO FONTE CADENT, PARCE DETORTA. --- --- ---
--- --- --- --- --- --- --- --- --- --- --- ---

VEREAQUE PROVISAM REM NON INVITA SEQUENTUR.

HORACE.

LONDON:

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1794.

A

TRANSLATION

OF THE

Table of Chemical Nomenclature,

PROPOSED BY

DE GUYTON, MORVEAU, DE MORVEAU, LAVOISIER,
BERTHOLLET, AND DE FOURCROY;

WITH ADDITIONS AND ALTERATIONS;

TO WHICH ARE PREFIXED

AN EXPLANATION OF THE TERMS, &c.

AND

OBSERVATIONS

ON THE

NEW SYSTEM OF CHEMISTRY.

TO

SIR JOSEPH BANKS, BARONET,

PRESIDENT OF THE ROYAL SOCIETY,

&c. &c. &c.

A MAN NO LESS DISTINGUISHED FOR THE

ENCOURAGEMENT AND PROTECTION

WHICH HE AFFORDS TO

SCIENCE,

THAN FOR HIS

KINDNESS AND ATTACHMENT

TO THOSE WHO HAVE THE

HONOUR OF HIS ACQUAINTANCE;

THIS

ATTEMPT TO EXPLAIN THE TERMS

OF THE

NEW SYSTEM OF CHEMISTRY

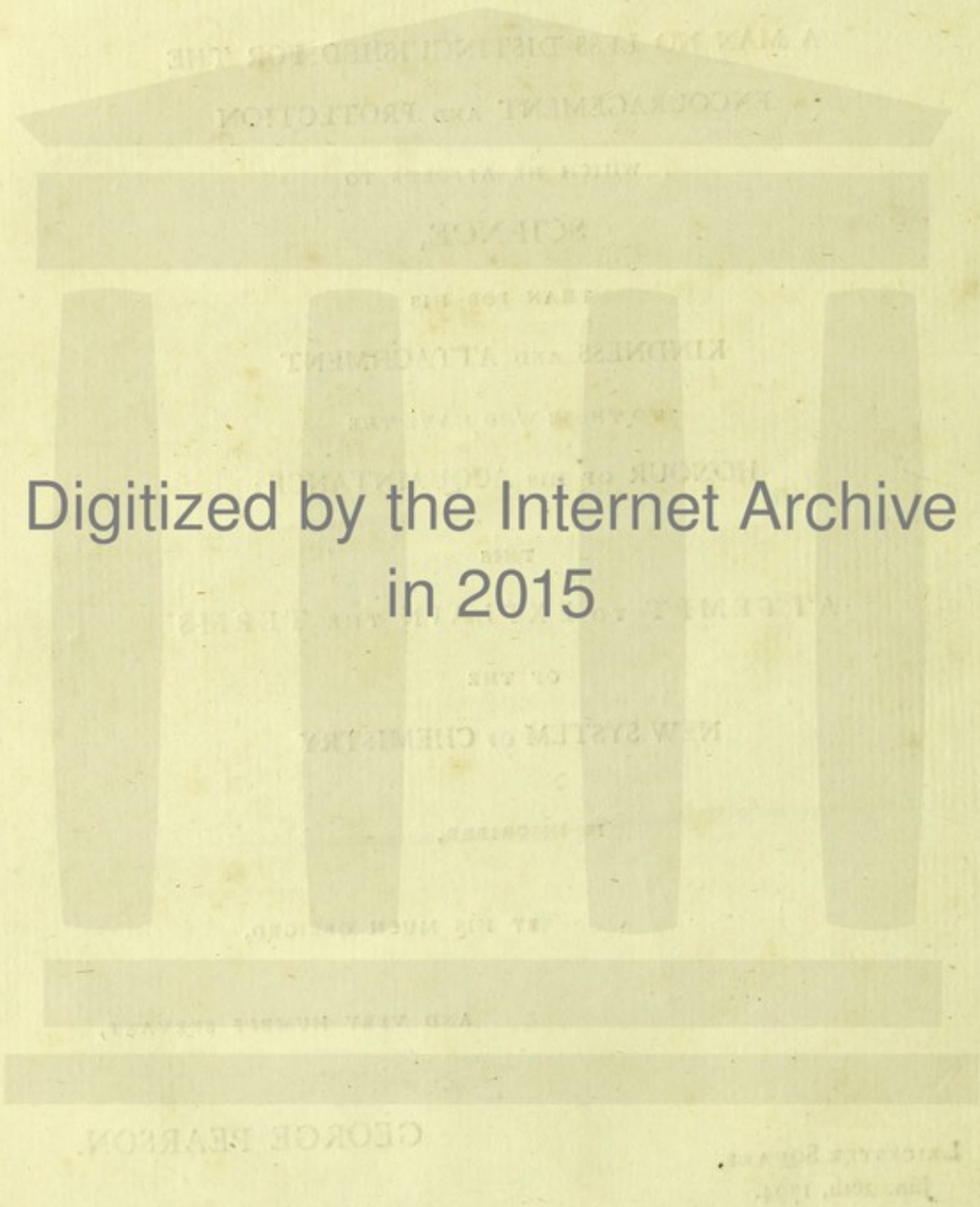
IS INSCRIBED,

BY HIS MUCH OBLIGED,

AND VERY HUMBLE SERVANT,

GEORGE PEARSON.

LEICESTER SQUARE,
Jan. 26th, 1794.



ADVERTISEMENT.

THE preſent Table of Chemical Nomenclature was originally intended only for the uſe of ſtudents who ſhould have the opportunity of hearing it explained in lectures; but in compliance with the ſuggeſtion of ſome of the author's friends, that it might tend to make the new ſyſtem of Chemiſtry more generally underſtood, he has been induced to ſubmit this work to the eye of the public.

THE

TABLE

OF

CHEMICAL NOMENCLATURE, &c.

IF the terms employed in any ſcience imply the moſt eſſential properties of the things which thoſe terms are intended to ſignify; and if theſe terms be as few and as ſhort, as is conſiſtent with the meaning to be conveyed; the acquiſition of knowledge in ſuch ſcience will be greatly facilitated.

Chemiſtry conſiſts in the knowledge of certain properties of different ſpecies of ſubſtances, which properties principally ariſe from the action of the chemical attraction or affinity of theſe ſubſtances upon one another: and this attraction takes place either between different kinds of ſimple ſubſtances, or between ſubſtances compounded of different kinds of ſimple bodies.

The eaſieſt mode of attaining this knowledge is, *firſt*, to acquire notions of the properties ariſing from the chemical attraction of *undecompounded* ſubſtances upon each other: *ſecondly*, to acquire notions of the properties ariſing from the chemical attraction between *compound* bodies and *ſimple* bodies: and, *laſtly*, to acquire notions of the properties ariſing from the chemical attraction between *compound* ſubſtances and *compound* ſubſtances.

Theſe notions relating either to *undecompounded* bodies, or to bodies *compounded*, it is proper here to obſerve, that the moſt important chemical properties of the *former* ariſe eſpecially from their *affinities*; and the moſt important chemical properties of the latter ariſe from their *compoſition* and their *affinities*: conſequently the terms employed to denote the different ſubſtances ſhould, for the *former*, imply chiefly their *affinities*; and for the *latter*, their *compoſition* and *affinities*.

The following inſtances may ſerve to exemplify the advantages to be obtained by the uſe of terms, which imply the moſt important properties of the ſubſtances intended to be denoted by thoſe terms:

There is a ſubſtance in the *Gaz* ſtate which is moſt commonly denominated VITAL AIR: now this term implies merely that this ſubſtance is *neceſſary to life*; but this is not a chemical property; and conſequently, in chemiſtry, this term is improper. The moſt important chemical property of this ſubſtance is, that of *producing acid* by uniting with certain other bodies: and therefore the term OXYGEN, (which implies this acidifying property,) with the addition of the term GAZ, (which implies the ſtate of elaſtic fluidity,) muſt excite a more juſt chemical notion of this ſubſtance than the term VITAL AIR.

Again there is a ſubſtance popularly known by the term GLAUBER's SALT, which term barely implies that this ſubſtance was diſcovered, prepared, or uſed by *Glauber*; but it denotes no diſtinguiſhing chemical property whatever. Now the moſt important chemical property of this ſubſtance is, its compoſition, namely, that it conſiſts of SODA united with SULPHURIC ACID; or of OXYGEN, SULPHUR, and SODA united: for SULPHURIC ACID is compounded of OXYGEN and SULPHUR, and SODA is an undecompounded body. Now if the term SULFATE be under-

ſtood (as in the new ſyſtem of chemiſtry) to mean a ſubſtance compoſed of SULPHURIC ACID, and a BASIS which is a METALLIC OXYD, EARTH, or ALKALI; and if it be underſtood that the term ſignifying the particular baſis is added to denote the particular ſpecies of SULFATE, then a juſt notion of GLAUBER's SALT will eaſily be conveyed and recollected by the term SULFATE of SODA.

I have likewiſe ſaid that as few and as ſhort terms ſhould be employed as is conſiſtent with the notions to be conveyed. It is particularly advantageous to obſerve this rule in chemiſtry, on account of the vaſt number of ſubſtances whoſe chemical properties are the objects of this branch of natural knowledge. The practice of this rule may be very extenſive in chemiſtry; becauſe, among the great number of different ſubſtances to be known, one kind of component or undecompounded body frequently ſerves to compoſe a number of theſe very different ſubſtances; many different ſpecies of things have one, or more, eminent property in common, and there are other, though more remote, analogies in the properties of different kinds of ſubſtances. A ſingle example, taken from the New Syſtem of Chemiſtry, may explain clearly how much brevity and ſimplicity in terms, provided the terms have a proper import, facilitate the acquiſition, retention, and communication of chemical knowledge.

SULPHUR may be a component of a great number, at leaſt three hundred, different ſpecies of ſubſtances; for, in the *firſt place*, SULPHUR may unite with OXYGEN, by which combination it is rendered into the ACID STATE; but this ACID is of three different ſpecies, according to three different quantities of Oxygen which may combine with a given quantity of Sulphur, and theſe three ſpecies are named the *Sulphu*REOUS, the *Sulphu*RIC, and the OXYGENATED *Sulphu*RIC Acids.

Secondly, each of theſe Acids may unite with at leaſt twenty-ſix different kinds of ſubſtances, which are metallic Oxyds, Earths, and Alkalies, and conſequently produce ſeventy-eight different compound bodies. Theſe compound bodies may be denoted by analogous words correſponding to the analogies of the compoſition of the bodies which they denote. Accordingly, the word *Sul*FITE denotes compounds conſiſting of the *Sulphu*REOUS Acid and each of the above twenty-ſix different kinds of ſubſtances; *Sul*FATE implies compounds conſiſting of *Sulphu*RIC Acid and the above twenty-ſix baſes; and OXYGENATED *Sul*FATE ſignifies compounds conſiſting of the OXYGENATED SULPHURIC Acid and the above twenty-ſix different baſes.

The particular ſpecies of compound ſubſtances belonging to each of theſe three genera, named *Sul*FITE, *Sul*FATE, and OXYGENATED *Sul*FATE, are ſignified by ſubjoining the name of the baſis as an adjective to theſe generic names. Accordingly the meaning of the names *Sul*FITE of Soda, *Sul*FATE of Soda, OXYGENATED *Sul*FATE of Soda, will, without difficulty, ſuggeſt the compoſition of theſe ſubſtances.

Different ſpecies of ſubſtances are alſo produced by different quantities of Sulphuric Acid uniting with given quantities of Alkalies, Metallic Oxyds, and Earths; and when ſuch compounds poſſeſs acid properties they are generally named ACIDULOUS *Sul*FITE, ACIDULOUS *Sul*FATE, ACIDULOUS OXYGENATED *Sul*FATE. The ſpecies comprehended under theſe three generic terms are denoted (as already mentioned on the ſubject of the genera *Sul*FITE, *Sul*FATE, and OXYGENATED *Sul*FATE) by ſubjoining the name of the ſpecies of baſis to the generic name.

Thirdly, SULPHUR may unite with Metals, Earths, Alkalies, Hydrogen Gaz, and other baſes which are not acidified or are not

acidifiable. The compound bodies produced by theſe combinations are denominated SULPHURETS, and by ſubjoining to the word Sulphuret the name of the particular ſpecies of baſis, the compoſition of the particular ſpecies of Sulphuret will be clearly implied.

By the names SULPHURET OF POTASH, SULPHURET OF SODA, SULPHURET OF IRON, SULPHURET OF LIME, SULPHURET OF HYDROGEN GAZ, &c. a juſt notion may be acquired of the compoſition of the compound juſt mentioned to conſiſt of SULPHUR AND CERTAIN BASES NOT ACIDIFIED or NOT ACIDIFIABLE.

Fourthly, SULPHUR may combine with a ſet of ſubſtances, called OXYDS OF METALS; which conſiſts of a Metal united to Oxygen, and which, as their denomination imports, are in a ſtate *approaching to Acid*. The compounds of this genus are named SULPHURATED OXYDS, and by ſubjoining the name of the particular ſpecies of Oxyd, names are formed which import the compoſition to be a compound of Metallic Oxyd and Sulphur, or of Metal Oxygen and Sulphur; as will appear on mentioning the names SULPHURATED OXYD OF ANTIMONY, SULPHURATED MERCURIAL OXYD, &c. As the Oxyds of the ſame metal are of different ſpecies according to the *quantity of Oxygen* combined with the *Metal*, of courſe the Sulphurated Oxyds of the ſame metal are of different ſpecies, and the number of ſpecies of Sulphurated Oxyds is very conſiderable.

It appears therefore that by four different terminations of the word Sulphur, and by two different abbreviations of it, and by adding the word which is the name of the ſpecies of ſubſtance united to Sulphur, or by prefixing a word which ſignifies the ſubſtance combined with a compound of Sulphur Oxygen and a baſis, above 300 different kinds of ſubſtances (which conſiſts of Sulphur united to other

bodies) may be denominated, ſo as to import the moſt eſſential properties of the things which theſe terms are intended to ſignify. The juſt meaning, ſimplicity, and brevity of the terms in theſe inſtances ariſe from naming ſubſtances analogous in their compoſition by the ſame term for the analogy and with an epithet to denote the difference. Hence the notion of the ſubſtance will ſuggeſt the name, and the name will ſuggeſt a juſt notion of the ſubſtance. A language ſo formed is the only means by which the mind is rendered equal to the comprehenſion and recollection of ſuch an immenſe number of properties of ſubſtances as belong to chemiſtry; and this will ſurely be allowed by every perſon who will compare the effect of the terms above explained with the effect of the terms in former nomenclatures; which latter terms have no analogy to each other, however analogous the ſubſtances may be which thoſe terms were intended to ſignify.

In proportion to the advances towards perfection in ſcience may the language of ſcience be rendered more and more perfect. Things are generally very imperfectly known by thoſe who firſt obſerve them, and conſequently in general improper names are beſtowed by the firſt obſervers. The firſt perſons known to have cultivated chemiſtry were what we now diſtinguiſh by the name of *Alchemiſts*, or Aſtrologers, or Magicians. They lived in the dark ages of literature, from about the ninth to the fourteenth century. They were but very imperfectly acquainted with the chemical properties of moſt ſubſtances, and from motives of vanity and pride, (and in order to commit frauds) they communicated their knowledge in metaphorical, bombaſtic, and myſtical language. Conſiderable improvements were made in chemiſtry during the fifteenth and ſixteenth, and eſpecially the ſeventeenth century, but the progreſs of it was far from proportioned to the progreſs of the other branches of natural phi-

loſophy. The *general* properties of material ſubſtance had been inveſtigated very fully before the properties ariſing from the action of *particular* ſpecies of ſubſtances on certain other ſpecies were inveſtigated to any conſiderable extent. Mayow and Boyle were the only perſons in the ſeventeenth century who can be truly ſaid to have inveſtigated the chemical properties of ſubſtances with a view to the ſcience of chemiſtry. Newton, however, in the beginning of this century, propoſed that many phenomena of chemiſtry ſhould be arranged under the head of a peculiar attraction: and in the early part of the preſent century Stahl accounted for ſo many chemical properties from the preſence and abſence of PHLOGISTON, (although an imaginary ſubſtance) that few chemical explanations were given for fifty years afterwards without uſing the word phlogiſton, or words derived from it. Boerhaave, Geoffroy, Lewis, and Cullen (principally by ſhowing the difference between affinity, or chemical attraction, and mechanical attraction) diſtinguiſhed clearly the ſcience of chemiſtry from natural philoſophy. Hales, by numerous experiments, made appear that property of many ſpecies of matter by which, under different circumſtances, they will be either in the gaz or concrete ſtate; which property had been demonſtrated, though leſs extenſively, by Mayow and Boyle. The fundamental and important diſcoveries of Carbonic Acid, and Hydrogen Gaz, by Black and Cavendiſh, between the years 1755 and 1766, appear to have been the chief cauſes of the unparalleled number of new chemical facts found out between the year 1770 and 1780, not only unparalleled by thoſe diſcoverd in any former equal period, but perhaps in any whole century. This rapid progreſs of chemiſtry from 1770 to 1780 made the cultivators of it ſenſible of the many improprieties, abſurdities, and barbariſms in its terms, and partial reforms were made by Baumé, Cullen, and others. How unjuſt, whimſical, and

ridiculous muſt the names Sugar of Lead, Liver of Sulphur, Oil of Vitriol, Butter of Antimony, Mercurius Vitæ, Luna Cornea, Microcoſmic Salt, Calomelas, Flowers of Zinc, Flowers of Benzoin, Terra foliata Tartari, Glauber's wonderful Salt, Vital Air, Cauſtic Alkali, Semi-metal, Diaphoretic Antimony, &c. now appear to every perſon acquainted with the chemical properties of the ſubſtances thus denominated!

But beſides theſe fantaſtic denominations, the ſame term was, in many inſtances, employed for ſubſtances in no reſpect ſimilar; for inſtance, Calx was employed for Oxyd of Metal, and Quick Lime.

In other inſtances the ſame ſpecies of ſubſtance was ſometimes denominated differently, according to the different matter from which it was prepared; ſo the ſame kind of Alkaline Salt was called Salt of Tartar, Salt of Wormwood, Pearl Aſh, Potaſh.

The difficulties to ſtudents in chemiſtry, after the improvements made up to the year 1780, muſt have been very great, on account of the immenſe number of facts to be known by terms which did not import the nature of theſe facts; which terms had no ſimilarity to one another, according to the ſimilarity of the things intended to be ſignified, and which were often periphraſes or definitions. No *general* reform of chemical language was propoſed till the year 1782, by De Guyton, (ci-devant, De Morveau,) in a "Memoir upon chemical denominations, the neceſſity of improving the ſyſtem, and the rules for attaining a perfect language." With this memoir he publiſhed a "Table of Chemical Nomenclature; containing the principal analogical denominations, and examples of the formation of compound names." This table was a ſyſtem of names agreeably to five principles in the above memoir, namely,

I. That every ſubſtance ſhould be denoted by a *name*, and not by a *phraſe*:

II. That the names ſhould be given according to the nature of the things intended to be ſignified by them:

III. That when the character of the ſubſtance is not ſufficiently well known to determine the denomination, a name which has no meaning ſhould be preferred to one which might give an erroneous idea.

IV. In the choice of new denominations, thoſe which have their root in the moſt generally known dead languages ſhould be preferred, in order that the word may be ſuggeſted by the ſenſe, and the ſenſe by the word.

V. The denominations ſhould be arranged with care, to ſuit the genius of the language for which they are propoſed.

How much indebted the authors of the Nomenclature of the new ſyſtem in particular, and the public in general, are to De Guyton, will appear moſt plainly on comparing his chemical table with that of the new ſyſtem. The learned and judicious Bergman, who had previouſly introduced ſome new names, in 1782 propoſed his plan of reform, particularly in the Nomenclature of Oryctology, formed upon certain principles, "*ut vere, perſpicue, apte, et breviter expri-* "*mantur, quæ verbis ſunt indicanda.*" Theſe principles of Bergman, and his Nomenclature, are nearly the ſame as thoſe of De Guyton, whoſe plan Bergman approves.

Principally from the influence of the writings of De Guyton and Bergman, chemical writers for ſeveral years have adopted their method of naming; and, what is remarkable, I find many medicines in the Pharmacopoeia Roſſica, ſo early as 1782, denominated by terms denoting their compoſition. In the Pharmacopoeia Edinburgenſis, publiſhed in 1783, alſo a few new names, agreeably to the plan of Bergman, are inſerted; and the writers of the Pharmacopoeia

Suecica in 1785 have availed themſelves of Bergman's Nomenclature to ſignify the compoſition of many ſubſtances.

A more extenſive and a better acquaintance with the chemical properties of matter which have occaſioned improvements in its language, have alſo occaſioned a new manner of reaſoning in chemiſtry. The experiments of Wilcke, Irwin, Black, and Crawford, (ſhowing that that ſubſtance or quality which produces the ſenſation of heat may exiſt in moſt bodies in a ſtate of combination, or analogous to combination, without producing the ſenſation of heat,) and the experiments principally of Cavendiſh and Prieſtley, and perhaps of Mayow and Hales, (ſhowing that different ſpecies of rare, claſtic, and, for the moſt part, inviſible fluids may very often by combination ſerve to compoſe denſe ſolids) furniſhed the facts which ſuggeſted to Lavoiſier explanations of phenomena hitherto referred to the hypothetical principle, Phlogiſton. To thoſe who reaſoned according to Lavoiſier's principles, the former language of chemiſtry was doubly improper, becauſe the import of many of the words was according to the Phlogiſtic hypotheſis, and, as hath been already ſaid, the words did not import the moſt eſſential properties of the things intended to be ſignified. To a perſon who has ſeen the change of Phoſphorus and Sulphur into the Acid ſtate by their combination with Oxygen, and the reproduction of Phoſphorus and Sulphur by ſeparating Oxygen from Sulphuric and Phoſphoric Acids, how abſurd and erroneous muſt appear the words dephlogiſticated Phoſphorus and Sulphur, and phlogiſticated Phoſphorus and Sulphur, uſed to ſignify theſe changes: and how juſt and ſignificant of the cauſe of theſe changes are the words oxygenated Phoſphorus and Sulphur, and deſ-oxygenated phoſphoric and ſulphuric Acids.

The new principles of reaſoning propoſed by Lavoiſier of courſe

occaſioned many names to be added to, and many to be diſcarded from, the chemical Nomenclature of De Guyton and Bergman; becauſe the two laſt-mentioned Chemiſts reaſoned upon the principle of Phlogiſton. Soon after the new Nomenclature and new theory of Chemiſtry had been diſſeminated, mankind ſuſtained a ſevere miſfortune by the death of Bergman, which happened in 1784. De Guyton continuing his labours to improve the language of chemiſtry, and ſenſible of the extreme difficulty of rendering it perfect, wiſely, in 1787, availed himſelf of the aſſiſtance of the Members of the French Academy. Very probably, it was from his conferences with them that he became a proſelyte to the new or antiphlogiſtic theory. De Guyton was eſpecially aſſiſted by Lavoiſier, Bertholet, and De Fourcroy; and theſe four Chemiſts, by their joint labours, have formed a Table of chemical Nomenclature according to the new theory and the principles above mentioned to have been ſtated by De Guyton. This table was preſented to the Royal Academy of Sciences the 18th of April, 1787, and publiſhed in May or June following. For two or three years the chemical table, excepting by the French Chemiſts, was generally cenſured or neglected; probably becauſe the theory upon which it was founded was not thought to be ſufficiently well ſupported, and becauſe thoſe who poſſeſs knowledge are unwilling to be at the trouble of changing the words by which they retain it, however improper thoſe words may be.

The new ſyſtem of chemical Principles and Nomenclature have been moſt remarkably fortunate in receiving confirmation from almoſt every new fact diſcovered ſince its firſt publication, particularly with reſpect to the main facts by which it was originally ſupported; namely, the compoſition of Water, the compoſition of Acids, eſpecially of the ſeveral kinds produced by the combination of Oxygen with different proportions of Nitrogen, Carbon, Sulphur,

Phoſphorus, Arſenic, &c.; and the compoſition of Oxyds. Since the year 1790, the New Syſtem of Chemiſtry, as it is called, and its new language, have been very generally adopted. Kirwan, in January 1790, after, as he ſays, " combating in defence of Phlogiſton " for ten years," lays down his arms; and Black, in the ſame month of that year, which is a remarkable coincidence, acknowledges that he is a convert to the " new doctrine."

I muſt acknowledge that I have experienced greater facility in teaching, and ſtudents experience greater facility in learning, the new ſyſtem of principles with its Nomenclature than the former ſyſtem of chemiſtry. I find the trouble of learning the meaning of new names amply compenſated by a more juſt and extenſive knowledge of things.

Under the preſent circumſtances of chemiſtry, I have conſidered myſelf to be fully juſtifiable in teaching the new ſyſtem and employing the new terms; and in order to facilitate the acquiſition of the knowledge of them, I have tranſlated from the French the New chemical Nomenclature, with the alterations and additions hereafter to be explained.

I beg leave to obſerve, that I do not conſider the terms in the original table, nor in the table in the ſtate in which it is now ſubmitted to the public, as even near perfection. I am fully ſenſible of many defects, and ſome improprieties, in the new Nomenclature, and that as the ſubject becomes better known the terms muſt receive ſucceſſive improvements; but, in my apprehenſion, the new paths now laid open lead to the higheſt attainments in chemical ſcience, and to the moſt beneficial conſequences to the arts in common life.

Although I think I can vindicate the new Syſtem of chemical Nomenclature, I muſt lament, for the ſake of medical ſtudents, the introduction of the new names in the London Pharmacopoeia of

1788, and the Edinburgh Pharmacopoeia of 1792. I apprehend that it would have been fortunate if the former names had been continued in uſe, or if thoſe of the new Chemiſtry had been inſerted. Many of theſe new denominations in the Pharmacopoeias, it is true, had been already uſed by Bergman, and ſome are formed upon his principles, and denote juſtly the chemical compoſition; but the denominations upon theſe principles are, in many inſtances, not given, and in ſome caſes they denote a compoſition not belonging to the ſubſtance. Likewiſe, many of the terms inſerted on the authority of the colleges do not, as Bergman requires, *vere*, *perſpicue*, et *apte*, import the ſubſtances which they are intended to ſignify. But if the new names had been, according to Bergman's principles, extenſively and properly impoſed, the inſertion of them in place of the former names would but have increaſed the difficulties of ſtudents; becauſe in elementary books and lectures, in general, either the denominations of the new Nomenclature, or the ancient names only, have been hitherto uſed.

I have ſaid that in many inſtances the names of the Diſpenſatories of London and Edinburgh do not denote the chemical compoſition of medicines; as inſtances, I point out Antimonium Vitrifactum, which is compounded of Oxyd of Antimony and Sulphur, and Sulphur Antimonii Præcipitatum alſo compounded of the ſame ſubſtances; Crocus Antimonii, a compound of Oxyd of Antimony and Sulphur mixed with Potaſh and Muriate of Soda; Flores Zinci, a compound of Zinc and Oxygen; Magneſia, a compound conſiſting of Magneſia and Carbonic Acid; Alumen, which conſiſts of Sulphuric Acid united to Alumina; Calomelas is compounded of Oxyd of Mercury and Muriatic Acid; Natron and Kali præparatum are compounded of Carbonic Acid and a peculiar ſpecies of alkaline Salt; Flores Benzoës are an Acid.

I have ſaid that in theſe Pharmacopoeias ſome terms have been erroneouſly impoſed, for they ſignify a different compoſition from the compoſition of the medicines they denote, as in the inſtance of the Hydrargyrus nitratus ruber; in which I can diſcover no nitrous Acid as its name implies, but merely Oxygen and Mercury; and Sulphur Antimonii præcipitatum, which is not Sulphur precipitated from Antimony, but a compound conſiſting of Oxyd of Antimony united to Sulphur, and which is therefore called, in the new ſyſtem, Sulphurated antimonial Oxyd.

I have affirmed alſo that many of the names inſerted for the firſt time on the authority of the colleges of London and Edinburgh do not convey a juſt meaning of the ſubſtances which they ſhould ſignify. The word Kali, hitherto uſed to ſignify the plant whoſe aſhes contain a ſpecies of alkaline Salt, which by uniting with acidulous Tartrite of Potaſh ſerves to compoſe the Salt popularly known by the name Rochelle Salt, in the London Pharmacopoeia ſignifies a totally different ſpecies of alkaline Salt, namely, that which, by uniting to acidulous Tartrite of Potaſh, produces Tartrite of Potaſh or Soluble Tartar. The ſubſtance named Kali is compoſed of carbonic Acid and a peculiar alkaline Salt, which compoſition is not implied by this name. In this inſtance, too, the rule that new names ſhall not be introduced unneceſſarily is violated, for thoſe already in uſe, viz. Potaſh, Vegetable Alkali, &c., were at leaſt as proper as thoſe newly introduced. The name Lixiva, in the Edinburgh Pharmacopoeia, inſerted to ſignify the ſpecies of Alkali juſt mentioned to be ſignified by the name Kali, is from the words Lix and Lixiva, and Lixivium, uſed by Pliny to ſignify a ley or ſolution in water of the ſaline Matter of the Aſhes of Fuel. This name Lixiva cannot ſurely with propriety be uſed to denote the ſubſtance in-

tended to be ſignified by it, viz. a compound conſiſting of carbonic Acid and a peculiar ſpecies of alkaline Salt.

The word Natron in the London Pharmacopoeia not only does not denote the compoſition of the ſubſtance, which ſubſtance is compounded of the Carbonic Acid and a peculiar ſpecies of Alkaline Salt, but it is a corruption of the word Νιτρον or Nitrum, and this word ſhould have been again brought into uſe if it was thought to be a proper denomination for the compound of carbonic Acid and Alkali. It does not, however, ſeem proper to introduce this name even with the original orthography, not only for the reaſon juſt mentioned, but becauſe, ever ſince the diſcovery of gunpowder, the word Nitrum has ſignified a Salt which contains an Acid called nitrous Acid. The word Natron alſo ſhould not have been uſed, as other names already well underſtood might have been choſen, namely, Soda, foſſile Alkali, &c.

Although I have thought it my duty to point out perhaps ſome defects and little improprieties in the terms of two Pharmacopoeias, it is with great pleaſure that I can truly declare that, in my opinion, theſe works are conſiderable improvements compared with former editions of them; and I think it probable that, with ſome alterations, the names in them would have been uſed for a very long time, if nearly at the ſame time the reformers of the Nomenclature of the new Syſtem of Chemiſtry had not, from a more attentive contemplation of the compoſition and other properties of matter, diſcovered a better theory, from which aroſe names which ſignified things more clearly, juſtly, aptly, and ſimply. If the preſent ſyſtem of Chemiſtry, and its terms, be found to conſiſt with future diſcoveries at the time when it ſhall be thought neceſſary to publiſh new editions of the above Diſpenſatories, I am ſure, from the liberality and candour of the two Colleges, that the preſent new names will be introduced; as well as the names in the

Linnean ſyſtem, which the colleges have begun to adopt; and that they will be the general names in uſe.

It is neceſſary for me, in the next place, to explain the *Table of Chemical Nomenclature* of the French Academicians; and to point out the *alterations* which I have ventured to make, and the *additions* which I thought uſeful.

This table (now contained in the four ſheets at the end of this work) is divided into *ſix perpendicular columns*, which are numbered accordingly, and the titles of their contents are at the top of each of them.

OF THE FIRST COLUMN.

The title of *the firſt column* is SIMPLE OR UNDECOMPOUNDED SUBSTANCES: by which title is to be underſtood that the ſubſtances contained in this column cannot be rendered into other bodies by decompounding them, or be produced by combining together other bodies: or at leaſt it will be found moſt uſeful to conſider theſe ſubſtances as acting after the manner of ſimple bodies. This claſs of ſubſtances is *the firſt* in the order of arrangement; becauſe the ſubſtances in the other *five columns* are *combinations* of two or more of theſe ſimple bodies. The number of theſe undecompounded ſubſtances in the original table is FIFTY-FIVE, but in the preſent table there are FIFTY-SEVEN; becauſe *three* new articles are inſerted, namely, *Uranite*, *Radical Laccic*, and one diviſion of *new Earths*; and *one* of the ſubſtances in the original table, namely, *Ammoniac*, is removed to another place in this table, it being proved

by analyſis and ſyntheſis to be compounded of two ſubſtances belonging to the firſt column, viz. *Nitrogen* and *Hydrogen*. In order to refer conveniently to the *undecompounded bodies* of this column, and to refer to, and eaſily underſtand, their combinations, the place of each of them is marked by an Arabic cipher denoting number, written upon the border of the *firſt* and *ſixth* column. For the ſame purpoſe the fifty-ſeven ſubſtances of the firſt column are ſeparated from one another by *horizontal lines*, which are continued through the other *five columns*.

The *undecompounded bodies* are referred to *five* heads, on account of the ſimilarity of properties of the ſubſtances under each of thoſe heads; and the Nomenclators have been ſtudious to place the chemical ſubſtances in the moſt natural and juſt order of the operation of the mind in the acquiſition of the knowledge of chemiſtry.

The *firſt* of theſe five heads contains, within a perpendicular bracket at the top of the firſt column, FOUR SUBSTANCES, viz. *Light*, *Caloric*, *Oxygen*, and *Hydrogen*. The term LIGHT is intended to ſignify the ſame thing which it is underſtood to ſignify in common converſation; but CALORIC * is a new term, becauſe there was no name in uſe to denote that which produces the ſenſation of heat, except the word *heat*, which is equivocal, for it denotes the ſenſation called heat, as well as that which cauſes the ſenſation.

The diſtinguiſhing property of the next ſubſtance in order is that of *producing Acid* by combining with certain bodies, and which

* The terms *Light* and *Caloric* being intended by the authors of the new ſyſtem to denote *ſubſtances*, are explained accordingly, but the tranſlator is well acquainted with the reaſons, entertained by ſome reſpectable philoſophers, for thinking that Light and Caloric are only *properties*; and perhaps not eſſentially different properties.

therefore is aptly denominated OXYGEN *, *i. e.* generator of Acid.

A characteriſtic property of the next ſubſtance in order being to produce water by combination with Oxygen, it is named HYDROGEN †.

The ſecond of the five heads of the *firſt* column comprehends, within a perpendicular bracket, in the original table TWENTY-SIX SUBSTANCES, but in the preſent table there are *twenty-ſeven ſubſtances*, becauſe the RADICAL LACCIC is added. Theſe twenty-ſeven ſubſtances, agreeing in the property of being rendered into Acids and uniting with Oxygen, are named, on the outſide of the bracket, *acidifiable Baſes*, or *radical of Acids*. There are other bodies not included under this head, as ſome Metals which become Acids by uniting with Oxygen; and therefore the negative property *unmetallic* might perhaps have been properly added.

With regard to the names of the particular acidifiable baſes, ſo much reſpect has been paid to uſage, that they are all derivations or abbreviations of the former names of the Acids of which they are the baſes, except the term *radical Carbonic* or *Carbon*; and their meaning will eaſily be apprehended from the knowledge of the former names of Acids.

The moſt exceptionable, and, I think, unneceſſary term, is AZOTE ‡; becauſe, *firſt*, its etymological import, viz. *a thing not furniſhing the aliment of life*, is not a chemical property; *ſecondly*, a negative property is not ſufficiently characteriſtic; *thirdly*, this negative pro-

* *Lavoiſier* has compoſed the term Oxygen from two Greek words οξυς, *acidum*, and γινομαι, *gignor*, and *gigno*; and this term, he conceives, implies *generator* OF *acid*.

† This term Hydrogen is derived from ὑδωρ, aqua, and γινομαι, gignor.

‡ This term, *Azote*, is from α, priv., and ζωη, vita.

perty is not a peculiar one to this ſubſtance; *fourthly*, the moſt diſtinguiſhing and eſſential property of this ſubſtance is to produce *Acid of Nitre* by uniting with Oxygen, and to produce *Ammoniac* by uniting with *Hydrogen*; and therefore this acidifiable baſis might have been called NITROGEN *, (which term I have added, but I believe it is not now uſed for the firſt time); or the term radical Nitric, inſerted in the original table as the ſynonym of *Azote*, would have been alone a proper denomination. The word *Ammoniagen* would have been a leſs proper name, on account of its combinations, to be named by derivations and analogous terms. As it may be thought that the word *vitriolic* is unneceſſarily changed for *ſulphuric*, it will be proper to obſerve that the Acid commonly called vitriolic Acid is now generally produced from Sulphur, and its combination could not be ſo juſtly named by derivations from *vitriolic* as from *ſulphuric*.

The analogy of the ſubſtances belonging to this head is denoted by the termination of the names of all of them in IC. It is obſerved that of the twenty-ſeven acidifiable baſes only *four* are known in a ſeparate ſtate, namely, *Nitrogen*, (and this only in the Gaz ſtate, or in combination with Caloric) *Carbon*, *Sulphur*, and *Phoſphorus*; the other baſes are preſumed on the ſtrongeſt arguments of analogy to exiſt in combination with Oxygen, by which they become Acids.

It will be proper to remark that the baſes of the animal and ve-

* The juſt etymological import of *Nitrogen* is *Generator of* NITPON, *i. e.* of *Soda*; but for ſeveral centuries *Nitre* having been underſtood to ſignify a Salt compoſed of an *Acid* called *nitrous Acid*, and of an *Alkali* now called *Potaſh*, the abbreviations of Nitre will moſt generally be underſtood to mean *nitrous Acid*, or its combination with Potaſh, and other baſes.

getable Acids are all truly compound bodies; for Carbon, Hydrogen, Nitrogen, and Oxygen, and ſometimes Phoſphorus, can be obtained from theſe Acids; but as theſe radicals of Acids unite without decompoſition, and exert their affinities and produce Acids after the manner of the other ſimple bodies of this diviſion, it was deemed more proper to claſs them in this column.

The *third* bracket of this *firſt column* contains EIGHTEEN * SUBSTANCES, the name of which ſet of ſubſtances not being changed, they are called METALS. They all combine with Oxygen, and are thereby rendered into a ſtate approaching to *Acid*, called *Oxyd*; and three of them may be changed into *Acids*: they might therefore have been called *oxydable metallic baſes*. The names of the ſpecies of metals are alſo not changed, being ſingle words, and having no known etymological import, they cannot miſlead. Seven ſpecies of Metals only were known to the ancients. One new Metal, the *Uranite*, was diſcovered by Klaproth in 1790, and therefore was not in the original table.

A mark of interrogation is written after *Tungſten*, becauſe no one has been able to confirm the experiments of D'Ellyart; in particular Klaproth and myſelf have in vain tried to obtain this metal. On account of the analogy in the nature of Metals, the termination of the latin names of all of them is UM.

By the *fourth* bracket are included ſubſtances called by their popular name, EARTHS: of which there are in the original table FIVE SPECIES, viz. *Silica*, an earth found eſpecially in flint, ſand, and

* If future experiments confirm the concluſion from the experiments of an able chemical philoſopher, Mr. *Gregor*, that the *Menackanite* is probably a new metal, the number of metals will be *nineteen*.

quartz; *Alumina*, the earth contained in Sulfate of Alumin, or common Alumn, and which earth was formerly called Clay *; *Baryt*, an abbreviation of the word Barytes, ſo named on account of its great weight; *Lime*, and *Magneſia*, which two were names always employed to denote theſe two laſt earths. With regard to the ſubſtances in the ſixth diviſion of *Earths*, they have been diſcovered ſince the publication of the original table, and although their properties may not have been inveſtigated ſo fully as to aſcertain ſatisfactorily that they are different ſpecies from thoſe already known, yet it has been rendered extremely probable that they may be conſidered as diſtinct ſpecies. They are ſet down therefore in one compartment, with a mark of interrogation after each to denote that the propriety of their place as new ſpecies is not fully determined.

The *fifth* and laſt ſection of the firſt column, entitled ALKALIES, comprehended within the bracket THREE SUBSTANCES, named *Potaſh*, *Soda*, and *Ammoniac*; but, for reaſons above given, the Ammoniac has been removed to a different diviſion of the table. Probably the word *Alkali* originally was intended to ſignify only the alkaline ſalt obtained from the plant *Kali*; which ſpecies of Alkali is now well known to be Soda combined with carbonic Acid; but for a very long time the word *Alkali* has been underſtood to mean any of the three ſubſtances here named, *Potaſh*, *Soda*, and *Ammoniac*; both in their pure ſtate, and combined with carbonic Acid.

The word Potaſh was uſed to ſignify that impure ſalt containing Alkali which is obtained by evaporating the aqueous ſolution of vegetable Aſhes in general, and eſpecially of wood Aſhes, to dry-

* The ſubſtances commonly known by the name of Clays, are now well known to be a mixture of about two parts of *Silica* and one of Alumina.

neſs; which Alkali, by uniting to *acidulous* Tartrite of Potaſh, ſerves to compoſe Tartrite of Potaſh; by uniting to ſulphuric Acid it produces Sulfate of Potaſh; by uniting to fat Oil it produces a ſoft kind of Sope; and united to carbonic Acid it deliqueſces in the air. This ſame ſpecies of Alkali, produced from acidulous Tartrite of Potaſh, has been called Salt of Tartar; when produced from Wormwood it has been called Salt of Wormwood, and alſo by other names, according to the ſubſtance from which it was obtained, and its ſtate of dryneſs or ſolution. To aſſiſt the memory and prevent miſtakes, Chemiſts of late called this Alkali, from whatever ſource it was procured, *Vegetable Alkali*, but the new Nomenclators have propoſed to name it by one ſhort word, (which can be conveniently applied to form the names of its combinations) already in uſe, to ſignify the ſubſtance from which it is principally obtained, that is, by the word *Potaſh*. The College of Phyſicians of London have denominated this ſalt by the words *Kali Purum*; and the College of Edinburgh have called it *Cauſticum Commune Acerrimum*, naming the Salt which affords it *Lixiva Purificata*.

The word *Soda* has been frequently uſed to denote the Alkali united to carbonic Acid, which is obtained from the Aſhes of the *Kali Spinoſum*, and of many ſea plants; which Alkali, by uniting to acidulous Tartrite of Potaſh, produces ſodaceous Tartrite of Potaſh, (Rochelle Salt); by combining with ſulphuric Acid it produces Sulfate of Soda; by uniting with fat Oil it affords a firm heavy Sope; and which, when combined with carbonic Acid and chryſtallized, efflores̊ces in the air. This Alkali is alſo called mineral and foſſil Alkali, becauſe it may be obtained from foſſil and ſea ſalt. The Nomenclators have propoſed to call this ſalt in its pure ſtate, and free from carbonic Acid, from whatever ſource it may be procured,

by the name *Soda*. This name is adopted by the College of Edinburgh for the Soda combined with carbonic Acid: which compound of carbonic Acid and Soda the London College have called *Natron*, from the corrupted orthography of Nitron. No other name in uſe but ſoda is ſo ſhort, and could be made, conſiſtently, to ſerve to denote its combinations.

In this table, in preference to the names popularly known, of Spirit or Salt of Hartſhorn; Spirit or Salt of Sal *Ammoniac*; and Volatile Alkali, &c., the name *Ammoniac* is adopted, becauſe this Alkali was eſpecially obtained from Muriate of Ammonia, or Sal Ammoniac; and becauſe it is one word, and ſuitable for the formation of the names of its combinations. In the London and Edinburgh Diſpenſatories the term *Ammonia* denotes this Alkali in a ſtate of union with carbonic Acid.

It will ſurely now appear that the names of the fifty-ſeven ſubſtances in the *firſt column* are all, except three or four, either derived from words previouſly uſed according to their preſent meaning, or they are words which are intended to ſignify the ſame things as before.

In this table the Latin names of each ſubſtance is inſerted in the ſame diviſion with the Engliſh name, in order that the ſtudent may readily get acquainted with the Latin chemical Nomenclature. The little alteration made in the orthography of the old Latin words, the reader will perceive, was for the ſake of analogy; therefore all the Latin names of the Metals terminate in *um*, and of the Earths in *A*, except the word *Calx*, which it was thought could not be changed without introducing an alteration inconſiſtent with the rules laid down.

In inſpecting the table to underſtand the explantion, the reader will notice the perpendicular diviſion of each column, by a ſmall black line; and that the titles of the contents of theſe diviſions are

written at the top of each, under the horizontal bracket; one of theſe diviſions is there entitled, *new or adopted names*, and the title of the other is *former names*. The diviſions containing the former names contain alſo *obſervations*, the *ſynonyma* of the London, Edinburgh, Swediſh, Ruſſian, Daniſh, and other Diſpenſatories; *the names of the authors*; *and dates of many diſcoveries*. It is hoped that, by this means, ſtudents will eaſily know the ſubſtances in the Pharmacopœias which have been treated of in the new Chemiſtry: And in this diviſion of the columns is contained a conſiderable part of the hiſtory of the diſcoveries which have given birth to the preſent ſyſtem, namely, of the Carbonic Acid; Hydrogen Gaz; Nitrogen Gaz; the compoſition of Water;—of Acids of Nitre;—of Ammoniac, &c. To explain the uſe of this part of the table, I take as inſtances the accounts of the Alkalies. One of theſe, *Soda*, is ſtated to be the Alkali of the נתר of the Hebrews, which is denoted in the Polyglott Bible, and Septuagint Greek verſion, and in *Dioſcorides*, by the word NITPON; from ſome of theſe writings *Pliny* probably derived the words, *Nitrum*, *Aphronitrum*, or *Spuma Nitri*, to ſignify this ſubſtance. The term Spuma Nitri, or Aphronitrum, clearly denote a characteriſtic property of cryſtallized Soda, namely, that of efflorеſcence. In this compartment for Soda, it is farther ſtated, that the moderns have called this ſalt *Natron*, which word is a corruption of Nitron. It was alſo neceſſary to ſtate that this Alkali is a conſtituent part of Seignette's Salt, becauſe the compounding of it by ſaturating acidulous Tartrite of Potaſh with the Alkali from the Aſhes of *Kali*, *Soda Hiſpanica*, and of many marine plants *, afforded an eſſentially different ſubſtance from the Salt compounded

* Theſe Aſhes, after being melted, are called *Kelp*, a word probably of Teutonic and Saxon origin, which ſignified ſubſtances obtained from the ſea plants and ſhells.

by ſaturating acidulous Tartrite of Potaſh with Potaſh, or Alkali of common vegetables; and thereby a moſt diſtinguiſhing property between theſe two alkalies was diſcovered. The ſpecific difference between the two Alkalies being ſtill farther ſhown by the compoſition of the Sea Salt, (Muriate of Soda), a reference is made to that diſcovery.

The hiſtory alſo of the other fixed Alkali, *Potaſh*, may be traced from Pliny's time to the preſent, by the references in the compartment of this column for *Potaſh*.

In the original table the perpendicular diviſion of this column, entitled, "*former names*," contains merely a few of the *Synonyma*; but the additional matter now inſerted has occaſioned the preſent table to be double the ſize of that of the French Academicians.

OF THE SECOND COLUMN.

The bodies to be named which belong to this column, are ſuppoſed to be compounded of CALORIC (a ſubſtance ſo rare as to be imponderable, and ſo ſubtile as to pervade the pores of the moſt denſe veſſels) and any one of the other ſimple bodies of the firſt column; by which union with Caloric they are rendered into *the ſtate of Gaz*, permanent in every known temperature of the atmoſphere. Theſe are the ſimpleſt compounds, and, except *Light* and *Caloric*, they are the rareſt and moſt ſubtile of all known bodies whatever: and in particular they are the ſimpleſt ſtate known of Oxygen, Hydrogen, and Nitrogen. There are but three ſpecies of the undecompounded bodies which are known to be rendered into the ſtate of Gaz by Caloric, namely, Oxygen, Hydrogen,

and Nitrogen; and conſequently this column contains but three ſubſtances, namely, Oxygen *Gaz*, Hydrogen *Gaz*, and Nitrogen *Gaz*.

Some of the moſt eſſential properties of *Oxygen Gaz* were diſcovered above a century ago by *Mayow*, but they were probably unheeded by all ſubſequent philoſophers, and had utterly ſunk into oblivion, till they were again brought to light, independently of the firſt diſcoverer, by *Prieſtley* and *Scheele*, in 1774.

The moſt eſſential properties of the ſecond of theſe Gazes, in order, *Hydrogen Gaz*, were inveſtigated by *Cavendiſh*; who publiſhed an account of them, together with the firſt conſiderable improvements of the chemical pneumatic apparatus, in 1766.

The third and laſt of the Gazes, in this column, *Nitrogen Gaz*, was diſcovered by *Prieſtley* in 1772, and, from his hypothetical notion of its nature, it was named *phlogiſticated Air*. I feel much ſatisfaction in recording the name of *Rutherford* as one of the earlieſt diſcoverers of this Gaz, becauſe he has not received due honour on this account from the public. I was made acquainted with this diſcovery by Dr. *Cullen*, in a converſation on the ſubject of air, in 1773, who referred me to *Rutherford*'s inaugural Diſſertation *de Aëre Mephitico*, publiſhed at Edinburgh in 1772.

OF THE THIRD COLUMN.

In this column are inſerted the ſubſtances produced by the combination of *Oxygen* with any one of the other *undecompounded bodies*, in the order of the arrangement of theſe bodies.

Hydrogen is the only ſubſtance of the firſt diviſion of the firſt column which combines with Oxygen to form a compound, which is not in the Gaz ſtate, and this combination is named *Water*. The

diſcovery of the compoſition of Water having introduced a totally different opinion from that univerſally entertained of the elementary nature of this ſubſtance from the time of the oldeſt Grecian philoſophers; and ſo many phenomena being now explained by reaſoning upon its compoſition, the date of this diſcovery by CAVENDISH in 1781 muſt ſurely be ever conſidered as a memorable epoch in the hiſtory of chemical philoſophy. The term, *Water*, is continued becauſe it cannot miſlead by any known import of its nature; and the meaning of the term is popularly underſtood. In this caſe, beſides many others, the Nomenclators have given a deciſive proof of their averſion from unneceſſary innovation in Nomenclature; for otherwiſe an obvious new name, *Oxyd of Hydrogen*, would have been inſerted to denote the compoſition of Water.

The ſubſtances of the *ſecond diviſion* of this column are acidifiable; of courſe, by uniting with Oxygen, they become Acids, according to the preſent theory. Some of the acidifiable ſubſtances unite with ſeveral different quantities of Oxygen; with ſmaller proportions of it they are rendered into the ſtate *approaching to Acid*, and are called *Oxyds*; and with larger proportions they become *Acids*. For inſtance, a given quantity of Nitrogen unites with four different quantities of Oxygen; with the ſmalleſt it produces *Oxyd of Nitrogen*; with the ſecond quantity the ſubſtance called *Nitrous Oxyd* is compoſed; with the third proportion the *nitrous Acid* is compounded; and with the largeſt quantity of Oxygen the *nitric Acid* is produced.

The rule obſerved in forming the denominations of the Acids appears to have been to denote the ſpecies by an abbreviation of the name of the radical from which it is produced with the addition of the terminations in *ous*, and *ic*, and with the epithet *oxygenated*, according to the degrees of oxygenation of the baſis or radical. If

theſe oxygenated ſubſtances poſſeſs many of the properties, but not the whole of what are uſually reckoned the properties of Acids, the ſpecific name terminates in *ous*; if they poſſeſs the whole of the properties of Acids, the name of the ſpecies terminates in *ic*; and if theſe laſt Acids are combined with a certain further quantity of Oxygen, they are denominated by the name of ſuch Acids, with the epithet *oxygenated*. Some acidifiable baſes unite only with that determinate quantity of Oxygen which produces the firſt ſort of Acid; for inſtance, the radical Tartaric yields only the tartare*ous* Acid in which the baſis is conceived to predominate: other baſes unite only with one certain quantity of Oxygen, but with a larger proportion than the former baſes, and produce the ſecond ſort of Acids; for inſtance, the radical Boracic yields only the Borac*ic* Acid, in which it is imagined the two components of Acid are in ſuch proportions as to afford perfect Acids. And ſome baſes unite with two proportions of Oxygen to afford both theſe Acids; for inſtance, the radical Acetic yields the acet*ous* and the acet*ic* Acids. The radicals which give the third ſort of Acids alſo always afford the ſecond, and ſometimes the firſt, as well as ſecond; for inſtance, the radical Muriatic, according to the quantity of Oxygen with which it combines, affords the muriat*ic*, and *oxygenated* muriatic Acids; the radical Sulphuric affords, according as it is oxygenated, in the firſt, ſecond, or third degree, the ſulphure*ous*, the ſulphur*ic*, and the *oxygenated* ſulphuric Acids. In theſe laſt Acids it is ſuppoſed the Oxygen predominates. It now appears, that although there are but twenty-ſeven acidifiable baſes, there are many more ſpecies of Acids.

The diviſion of this column correſponding to the third diviſion of the firſt column, contains the ſubſtances compoſed by the union of Oxygen with each of the metals. The metals in general may be united with different proportions of Oxygen. The three firſt,

namely, Arſenic, Tungſten, and Molybdena, combine with the greateſt proportion, for they can be brought into the *Acid ſtate*; the other metals can be rendered by oxygen into the ſtate only of *Oxyd*. A few years ago an account was publiſhed of the acidification of Tin, but it has received no confirmation, and the author has acknowledged his error in having concluded Tin to poſſeſs this property.

The ſpecies of compounds of Metals and Oxygen are denominated by the generic name *Oxyd* and the name of the metal oxydated ſubjoined; for inſtance, the compound of Iron and Oxygen is named Oxyd of Iron; the compound of Copper and Oxygen is called Cupreous Oxyd, or Oxyd of Copper.

The different ſpecies of metallic Oxyds cannot be denominated according to the different proportions of Oxygen which they contain, becauſe the proportions are not yet inveſtigated. The different kinds of Oxyd of the ſame metal are denoted at preſent by their colour, mode, and means of oxygenation, &c.; for inſtance, the different kinds of Oxyd of Antimony are termed *vitreous*, by *ſublimation*, by *muriatic Acid*. And the Oxyds of Manganeſe are termed *white*, *black*, *vitreous*.

The inferior parts of this column correſponding to *Earths*, and *Alkalies*, are vacant, becauſe Oxygen does not form any combinations with either of theſe two diviſions.

OF THE FOURTH COLUMN.

The ſubſtances belonging to the third column, which by combination with *Caloric* are in the Gaz ſtate, in every known temperature of the atmoſphere, are referred to this head. Theſe combinations,

therefore, conſiſt of Caloric and Oxygen united to certain baſes, which are ſome of the undecompounded bodies. *Four* of theſe baſes only are known to produce the compounds belonging to this column, namely,

1. *Nitrogen*, which with Caloric and Oxygen, according to three different proportions, affords three different ſpecies of Gazes, named *Gazeous Oxyd of Nitrogen*, *Nitrous Oxyd Gaz*, and *Nitrous Acid Gaz:*

2. *Carbon*, which by union with Oxygen and Caloric, affords *Carbonic Acid Gaz:*

3. *Sulphur*, which by combining with Oxygen and Caloric produces *ſulphureous Acid Gaz:*

4. *Radical Muriatic*, which by uniting with Oxygen and Caloric, produces the *Muriatic Acid Gaz* and *oxygenated Muriatic Gaz:*

5. *Radical Fluoric*, which by uniting with Oxygen and Caloric yields *Fluoric Acid Gaz.*

Theſe ſubſtances are inſerted in the places of this column correſponding to their baſes in the firſt column: but the other compartments in the fourth column correſponding to the acidifiable baſes, Earths, and Alkalies, are vacant. And that part of it correſponding to the Metals muſt have been alſo vacant if the Nomenclators had not availed themſelves of the opportunity of filling it by inſerting the *combinations of metallic Oxyds with different ſubſtances* (principally with Sulphur) which are not Acids. For theſe combinations a proper place, it was thought, could not be found in the other parts of the table. This ſet of compounds are entitled in the fourth column, "*Oxyds united with different baſes.*" The combinations of Sulphur and metallic Oxyds are named *ſulphurated Oxyds;* to which generic name is added the name of the metal oxydated and combined with Sulphur: for inſtance, the Oxyd of Iron combined with Sulphur is called *ſulphurated* Oxyd of Iron; the Oxyd of Antimony combined

combined with ſulphur is denominated *ſulphurated* antimonial Oxyd. Theſe combinations will ſurely be diſtinguiſhed, ſufficiently, by the words *ſulphurated Oxyd*, from the combinations of the metals and Sulphur and other baſes, in the ſixth column, called *Sulphures* or *Sulphurets*. The ſame method of naming will eaſily be employed to denote and diſtinguiſh compounds of Phoſphorus and metallic Oxyds from thoſe of Phoſphorus and metals and other baſes; the former being denominated *phoſphorated* metallic Oxyds, and the latter being named *Phoſphorets*, or *Phoſphures* of metals, &c.

The combinations of metallic Oxyds with Sulphur have been but little inveſtigated; thoſe known furniſh many valuable medicines; and from the ſucceſs of *Bergman* in his experiments on the ſubject of "Sulphurated Antimonials," there is no reaſonable doubt that a further inveſtigation would yield an ample compenſation to other inquirers.

OF THE FIFTH COLUMN.

This claſs is intended to comprehend combinations of *oxygenated ſubſtances and different baſes*; which compounds are *Acids* united to metallic Oxyds, Earths, and Alkalies.

As each of the unmetallic Acids, which are at leaſt in number thirty-three, (produced by the oxygenation of the twenty-ſeven acidifiable baſes) and the three metallic Acids, may be united with each of the metallic Oxyds, (of which there are about twenty-ſix ſpecies already known), and certainly with four of the Earths and with the three Alkalies: and as ſome of the Acids may produce different compounds according to the proportions in which they unite; and as alſo ſome of the Acids may produce compounds by

uniting with two, or perhaps more baſes, it will appear plain that if the names of the whole of theſe ſpecies had been inſerted, this column would have been extended to a moſt inconvenient length, and have rendered the table very coſtly. Accordingly, in the original table, a few inſtances only of the names of theſe ſpecies are inſerted; but in the preſent table the denominations only of the *genera* are ſet down, with their definitions, becauſe it was propoſed to have a ſeparate table for the ſpecies belonging to this part of the fifth column. It is preſumed, however, from the very ſimple method of naming employed, that the ſtudent will find no difficulty to form the terms of the ſpecies from thoſe of the genera ſet down in this table, and of the particular baſes in the firſt column.

The method of forming the denominations of the particular compounds in this column is evidently this: a word is compoſed of an abbreviation of the name of the radical Acid and the terminating ſyllable *ate*, or *ite*, to denote the combination of an Acid with a metallic, earthy, or alkaline baſis. When the name of the Acid in combination terminates in *ic*, it is named in the ſtate of combination with a baſis by the terminating ſyllable *ate*; and when the name of the Acid in combination terminates in *ous*, it is named in the ſtate of combination with a baſis by a word the laſt ſyllable of which is *ite*. For inſtance, *Acet*ATE, and the aſſumed Latin word *Acet*AS, denotes a combination of the *acet*IC Acid and a baſis of the kind juſt mentioned; and *Acet*ITE, and the aſſumed Latin word *Acet*IS, denotes a combination of the *acet*OUS Acid and a baſis. If the acetic Acid could combine with Oxygen to produce the oxygenated acetic Acid, its combinations would be named *oxygenated Acetates*. From this illuſtration it is hoped there will be experienced no difficulty to underſtand the *generic* terms *Muri*ATE, *oxygenated Muri*ATE, *Sulf*ITE, *Sulf*ATE, *oxygenated Sulf*ATE, *Pyro-muc*ITE, *Tartr*ITE; and it is pre-

ſumed as little difficulty will be met with in forming the names of the ſpecies of theſe genera, which conſiſts in ſubjoining the name of the baſis given in the preſent Nomenclature. The meaning will be obvious of the terms Aceta*te* of Soda, Muria*te* of Iron, *oxygenated Muriate* of Potaſh, Sulf*ite* of Ammoniac, or ammoniacal Sulfite, Sulf*ate* of Antimony, or antimonial Sulfate, oxygenated Sulfate of Potaſh, Pyro-muc*ite* of Zinc, Tartr*ite* of Cobalt, or cobaltic Tartrite, &c.

To denote the predominance of Acid or Alkali in theſe combinations, the epithet acidulous or alkaline is employed. For inſtance, Potaſh affords a neutral combination, with a certain proportion of tartareous Acid, which is named *Tartrite of Potaſh*, (ſoluble Tartar); and with a certain larger proportion of this Acid, it gives a combination with Acid properties, named *acidulous Tartrite of Potaſh*, or Chryſtals of Tartar. Soda neutraliſed by Boracic Acid is named *Borate of Soda*; Soda combined with a ſmaller proportion of Boracic Acid in which the Alkali predominates is named *ſuperſaturated Borate of Soda*, or alkaline Borate of Soda, *i. e.* common Borax.

To denote the combinations of Acids with *two baſes*, the name may be that of the compound of the Acid and the baſis already united with the addition of the name of the other baſis; if they be compoſed by adding a baſis to ſuch compounds; as in the caſe of the ſalt compounded by ſaturating acidulous Tartrite of Potaſh with Soda, by which is produced a ſubſtance named *ſodaceous Tartrite of Potaſh*. In other caſes in which a triple compound is produced by applying *two* baſes at the ſame time to an Acid, the combination may be denominated by the name of the combination of the Acid with either of the baſes, and the name of the other baſis.

It appears then, in the combinations of this column, that each of the generic names, with the name of the particular baſis, is calcu-

lated to recall to the memory the compoſition of nearly one hundred different ſpecies of analogous combinations; and the advantages of ſuch a method of naming ſeem to be ſo obvious that an explanation would be unneceſſary.

The diviſion of each of the genera into metallic, earthy, and ſaline, according to the combination of the Acids with metallic Oxyds, Earths, and Alkalies, will be found very uſeful. The combinations of Acids and metallic Oxyds conſiſt of three ſimple ſubſtances, viz. Oxygen, an acidifiable baſis, and a metal; or of two compound ſubſtances, viz. an Acid and a metallic Oxyd. The earthy and ſaline combinations are compounded of only two ſimple ſubſtances.

OF THE SIXTH COLUMN.

In the firſt of the five preceding columns are claſſed the undecompounded bodies. In the ſecond are contained the combinations of Caloric and any of the other undecompounded bodies, which are permanent Gazes. And to the three other columns are referred the combinations of Oxygen with one or more undecompounded bodies, beſides Caloric in one of theſe claſſes; but independently of Oxygen, and of the combination of Caloric with any *one* other undecompounded body, the ſubſtances belonging to the firſt column combine with one another, and theſe combinations are reſerved for the ſixth column. The meaning of the title of this column, namely, *combinations of acidifiable baſes*, (but not acidified), *and of ſubſtances not acidifiable*, will by this explanation be underſtood.

The combinations of this head which are known are,

I. Of the radicals of Acids.

II. Of the metals with one another.

To the former ſet belong *four genera*, namely,

1. Compounds of *Azote* or *Nitrogen* with the baſes mentioned to produce the ſubſtances belonging to this column have been called AZOTURES or AZOTURETS: or, according to the method of the preſent Nomenclature, being produced from Nitrogen, they may be named NITRURES or NITRURETS. One of the ſpecies here ſet down is called AMMONIAC, on account of the term *Sal Ammoniac*, (employed to ſignify a ſalt which contains this ſubſtance) being familiarly known, and alſo to avoid innovation by the name *Nitruret of Hydrogen*, however proper it may be. This combination, when pure, is united with Caloric, and is in the Gaz ſtate, called Gaz of Ammoniac; or if united with water to be liquid it has been named Spirit of Sal Ammoniac, or of Hartſhorn, Aqua Ammoniæ puræ, &c.

If I had not intended to publiſh a table of the ſpecies belonging to the *fifth* column, it would perhaps have been better to have inſerted the *Ammoniac* in the diviſion for the Alkalies in the firſt column, on account of the combinations which it makes like a ſimple body.

2. The ſecond radical of Acids, which yields combinations belonging to this column, is *Carbon*. Theſe are named CARBURETS, or CARBURES. The ſpecies of this genus are but little known; two of them, mentioned as inſtances of compounds of Carbon and Iron, are commonly called Steel, and Plumbago. The former *Carburet of Iron*, or Steel, contains a very large portion of Iron; and the latter, Carburet, or Plumbago, contains a very ſmall proportion of Iron to the Carbon. It will be very eaſy, after theſe examples, to form the names of the other ſpecies of the genus *Carburet*, as well as of the former, *Nitruret*.

3. The next radical of Acids, *Sulphur*, affords combinations belonging to this column, now named SULPHURETS, or SUL-

PHURES; which were formerly called *Hepars* or *Livers*, and the compounds of Sulphur and Metals were called *Pyrites*. Sulphur combines with the Metals, Alkalies, and Earths; there are therefore a great number of ſpecies, for which names may eaſily be formed according to the preſent Nomenclature. As examples I mention the terms, Sulphuret of Potaſh, Sulphuret of Lime, Sulphuret of Iron.

Sulphur alſo combines with Hydrogen Gaz, which compound belongs to this genus, and is named in the new ſyſtem, Sulphuret of Hydrogen Gaz, or ſulphurated Hydrogen Gaz, but formerly it was called Hepatic Air.

Sulphuret of Hydrogen Gaz combines with Carbon, and other ſubſtances; which combinations belong to this head, and may eaſily be denominated according to the preſent Nomenclature as ſoon as their ſpecies are more known.

4. The only other ſpecies of Acid radical which affords combinations to be claſſed in this column is *Phoſphorus*. This genus is called PHOSPHORET or PHOSPHURE. The ſpecies are combinations of Phoſphorus with Metals, Earths, and Alkalies; and receive their denominations from the name of the genus and the baſis, which will eaſily be formed, namely, Phoſphoret of Iron, Phoſphoret of Lime, Phoſphoret of Soda, &c.

The other ſet of compound bodies belonging to this column, combinations of Metals with one another, are in the original table named ALLOYS: but this term in the Engliſh language often ſignifies a deterioration or debaſed ſtate of Gold, and Silver, and, perhaps, of Platina, from union with other Metals. In this table the term ALLOY, or *Inquinamentum*, is uſed only to denote theſe laſt-mentioned compounds. What is intended to be meant by the term *Aurum inquinatum Ferro*, *Argentum inquinatum Cupro*, &c. will readily be underſtood.

The compounds of *Quickſilver* and other metals are denominated AMALGAMS*, a word of perhaps the ſame import as CONNUBIA. The term *Connubia* might have been the word uſed to denote every combination of metals with one another, if it had not been thought better to employ different terms for the combinations of Gold, Silver, and Platina, with other metals, and for the compounds of Quickſilver and other Metals. The term *Connubia* is therefore the Latin word, or the Engliſh word *Combinations*, reſerved to denote thoſe compounds of Metals which are not thoſe explained to be ſignified by the terms *Alloy* and *Amalgam*.

I know that the moſt judicious and experienced Engliſh operator in the fuſion of Metals is of opinion that Metals do not *combine* but merely *mix* or *diffuſe* through one another; that the Alloys, and other compounds of Metals, are merely *mechanical mixtures*. I think, however, that ſo conſiderable an alteration of chemical properties is produced by the fuſing together of ſome Metals in certain proportions, as in the inſtances of the *fuſibility* of the compound of certain proportions of Biſmuth, Lead, and Tin, and of the *augmentation of ſpecific gravity* of Copper and Tin after fuſion together; not to mention the deciſive property of chemical affinity between Metals, afforded by the ſolution of Tin, Biſmuth, Lead, &c. in Quickſilver, that I conclude metals *combine* with one another chemically, as well as many other bodies. *Lavoiſier* refers alſo to *Briche* for experiments ſhowing that Metals, in certain proportions, unite with one another *chemically*.

* *Amalgama* ſeems to be derived from ἀμα, ſimul, and γαμεω, nubo.

OF COMPOUND SUBSTANCES NOT YET PRODUCED BY SYNTHESIS.

The above ſix columns into which the table of the new chemical Nomenclature is divided comprehend the names of all the known ſpecies of *ſimple bodies*, and of all the genera and many of the ſpecies of compound ſubſtances which are at this period pretty certainly known, that is, which have been demonſtrated both by analyſis and ſyntheſis. But there is a number of ſubſtances of a compound nature which have not been compounded by uniting the bodies which they yield on decompoſition, and therefore the compoſition of theſe bodies is conſidered to be imperfectly known. In general alſo they cannot be produced at all by art, as animal muſcles, blood, vegetable mucilage, gum, farina, eſſential oil, &c. Theſe compound bodies all combine, without decompoſition, with certain other ſubſtances; but the nature of theſe combinations, and the chemical properties of theſe compound bodies which enter into theſe combinations, have not been extenſively inveſtigated. It was probably from theſe conſiderations that the Nomenclators thought it beſt to arrange theſe ſubſtances together at the foot of the table of ſix columns, under the title of

Denominations of divers more compound Subſtances, which combine without Decompoſition.

Theſe ſubſtances are principally animal and vegetable ſolids and fluids, which readily afford *mucilaginous ſolutions* in water, and undergo the putrefactive fermentation, by which they are reſolved into *Gazes*,

or ſubſtances capable of becoming Gazes. Many of theſe ſubſtances are alſo *Oils*; and others, as *Alcohol* and *Æther* and *Oil of Wine*, are the products only of the vinous fermentation.

The compoſition ſhown by analyſis of theſe ſubſtances appears to be a combination of *Carbon*, *Hydrogen*, *Nitrogen*, and *Oxygen*; and in ſome of them are other ſubſtances, as Phoſphorus and Sulphur. To denominate theſe compound ſubſtances from their ſuppoſed compoſition, they ſhould be called Oxyd hydro-carboneous; Oxyd hydro--carbonic; Oxyd carbon-hydrous; Oxyd carbon-hydric; Carbon oxyd-hydrous; Nitro-hydro-carbonic; Carbo-nitro-hydrous; Oxyd hydro-nitro-carbonic; Oxyd nitro-hydro-carbonic, &c. or by abbreviations of theſe words. The Academicians, however, have more judiciouſly determined to proceed no farther than experiments juſtify in their method of naming from the compoſition of bodies, and therefore have denominated the ſet of ſubſtances claſſed together in this place by the ſhorteſt, leaſt improper, and beſt-known names, or common names a little altered. And they probably found it difficult to impoſe names denoting the compoſition of the ſubſtances in this part of the table, which names ſhould be a ſingle word, and which alſo ſhould be ſuch as are not deemed *barbarous* in European languages.

Having given the explanation which I thought neceſſary to enable the ſtudent to underſtand the *plan* or *method of naming*, and the *terms* in the table of Nomenclature now publiſhed; having made obſervations to develope the advantages which may reaſonably be expected from this new ſyſtem of names; and having made ſome remarks on the propriety of many of the new terms, I wiſh the reader to conſider the ſubject thoroughly, and according to his own judgement to adopt, reject, or alter the preſent table of Nomenclature.

I cannot, however, ſatisfactorily to myſelf cloſe this publication

without making ſome remarks upon the ſtrictures of the *Engliſh tranſlator of Macquer's Dictionary* on the new ſyſtem of Chemiſtry, and its new Nomenclature; becauſe I am aware of the extenſive influence, upon the public mind, of the opinion of a chemical philoſopher of ſuch high reputation, and from whom the public have received ſo much information. Theſe ſtrictures are contained in the elegant preface to the firſt part of his new Macquer's Dictionary, publiſhed in 1790, a work which muſt, from the ability of the tranſlator, become the moſt popular book in Chemiſtry. The eloquence of this author has been, probably, one of the principal cauſes of the very ſlow progreſs of the new Chemiſtry in this country. He has employed *reaſoning* to ſubvert the foundations of the new ſyſtem, and *wit* to expoſe it to ridicule; and by theſe means he has endeavoured to confirm the partiſans of the *phlogiſtic* ſyſtem in their attachment, and allured the ſtudent to embrace the old doctrine. If the arguments of this *Chief*, who ſtill ranges himſelf under the banners of Phlogiſton, can be refuted, the ſtudent will in other authors meet with little to create heſitation as to which of two ſyſtems he ought to adopt.

In the firſt place, notice muſt be taken of the arguments againſt the principles of the new ſyſtem, becauſe the propriety of the new terms depends entirely upon them.

1. The author alleges that the principal foundation of the new ſyſtem is on ſuppoſitions, and not, as is pretended, on well-eſtabliſhed facts. In this light he conſiders the compoſition of water, which is affirmed to be compounded of Oxygen and Hydrogen; the compoſition of Carbonic Acid, ſuppoſed to conſiſt of Oxygen and Carbon; the compoſition of Nitrous Acid, ſuppoſed to conſiſt of Nitrogen and Oxygen; the compoſition of Ammoniac, which is affirmed to be a combination of Nitrogen and Hydrogen; the exiſtence of Ni-

trogen as a component of animal mucilage. With regard to theſe facts, I obſerve, that as they have all received confirmation ſince the time this author objected to them; and as no experiments have been publiſhed, which, in the opinion of Chemiſts in general, affect the concluſions concerning the compoſition of the above ſubſtances; the new ſyſtem may be ſafely conſidered to be founded on well-aſcertained facts. The author obſerves alſo, that the reaſoning in the new ſyſtem on the compoſition of the Gazes being Caloric and peculiar baſes, and on the compoſition of animal and vegetable Mucilage, and Oil, being Carbon united to Nitrogen, Hydrogen, and Oxygen, is merely hypothetical ground. It is very true that experiments have not yet afforded nearly equal demonſtrative evidence of the compoſition of theſe bodies to that of the ſubſtances above mentioned; but here the new Theoriſts aſſume only to reaſon on hypothetical principles, which is warrantable by the laws of philoſophizing, until more ſatisfactory explanations can be obtained, and with which the author of the preface has not favoured the public.

2. The authors of the new Chemiſtry are reproached with miſleading others as they have miſled themſelves, by unwarrantable pretenſions " of never uſing any hypotheſis; of never ſupplying the " want of facts; of never concluding more than experiments autho- " rize; of their doctrine being not ſo much a theory as a mere de- " claration of facts." If the new Theoriſts had not in this paſſage alluded to certain parts of Chemiſtry, which however they evidently do, their diffident and modeſt explanations in general, and their acknowledging in other parts of their ſyſtem the imperfect ſtate of Chemiſtry, would convince the reader that they are neither deluded themſelves, nor will delude others, by the pretenſions mentioned.

" Cette ſcience," (la Chimie), ſays *Lavoiſier*, " préſente *des laccunes nombreuſes* qui interrompent la ſerié des faits, et qui exigent des ra-

cordemens embarraſſans et difficiles. Elle n'a pas, comme *la geometrie élémentaire, l'avantage d'être une ſcience complette, et dont toutes les parties ſont exactement liées enſemble.*" Although it is plain from this quotation that *Lavoiſier* and his colleagues conſider Chemiſtry, in its preſent ſtate, as a ſeries of facts interrupted by numerous chaſms, and renounce all pretenſions " to the preciſion of method employed in geometry, and the certainty of its corollararies," yet the author of the preface criticiſes them for " announcing their ſyſtem as a mere expoſition of facts in which no hypotheſis is admitted to fill up the chaſms," and for pretending to the demonſtrative evidence of geometry.

It appears then that the ſyſtem of the new Chemiſtry does not contain ſo great a proportion of hypotheſes as hath been alleged, and it is agreed by all, that if the principal facts above mentioned, on which it is founded, ſhall be further eſtabliſhed, it will afford more extenſive and ſatisfactory explanations than the old doctrine; that the facts are arranged in a better order for the memory, and for further diſcoveries as well as for application to the arts of life; and therefore that it is the preferable ſyſtem.

The ingenious and learned Tranſlator has made many acute but rather ſevere remarks on the new Nomenclature, as well as on the new ſyſtem of Chemiſtry. Having in the preceding pages attempted to ſhow the advantages of a reform in chemical language, I ſhall only make remarks on his *critique*.

He acknowledges that ſome of the old names in Chemiſtry are barbarous, and others tend to produce unjuſt notions of the properties of ſubſtances; as Oil of Vitriol, and Butter of Arſenic. " The number of theſe words is, however, not great, and we have " never heard of any bad conſequences having ariſen from the " names of Oil and Butter having been applied to thoſe acrimo-

" nious mineral matters, which have certainly no other reſemblance " but that of a ſimilar conſiſtence. It is, however, a deſirable ob- " ject to purge the ſcience of theſe remains of barbariſm and alche- " mical myſtery, and to introduce terms more *preciſe* and *elegant*, " and eſpecially ſuch as clearly diſtinguiſh the objects, either by " *proper names*, or by ſuch as indicate ſome *ſenſible* and *obvious* pro- " perty; and above all, which have *no theoretical etymology*, and con- " ſequently no tendency to give *falſe ideas*, or to give ſtability to " ſuch as are *uncertain* and *hypothetical*." —— " The new Nomencla- ture is entirely relative to the new theory."

The Tranſlator obſerves that the ſcheme of a ſyſtematic language is impracticable — that a Roman Emperor could not introduce one word into the language of his ſubjects — that Biſhop Wilkins in vain attempted to introduce a new philoſophical language — that a lan- guage *juſtly* and *completely* formed on the principles of the *conſtituent parts* and *characteriſtic properties* of ſubſtances, as attempted in the new Nomenclature, is a degree of perfection which is not perhaps attainable. " Such may perhaps be the language of the *Gods* of which *Homer* ſpeaks, but I think it will not be ſoon ſpoken on *Earth*."

The Tranſlator does not ſeem to comprehend the grand ſcope of a new chemical Nomenclature: the object is not merely, or princi- pally, to avoid error in the uſe of ſubſtances occaſioned by the erro- neous import of their names, but to facilitate the acquiſition and retention of the knowledge of the properties of ſubſtances. As to the impracticability of the introduction of a new language, already at leaſt one half of the chemical writers and teachers employ it. And to ſuppoſe that a language is unattainable the names of which ſhall denote the conſtituent parts and characteriſtic properties, is to ſuppoſe that the knowledge of the compoſition of ſubſtances is un-

attainable; but it will ſurely be allowed that we are acquainted, probably, with the conſtituent parts of Sulphuret of Potaſh, of Nitrite of Potaſh, and of ſeveral thouſand double and triple combinations; and it cannot be denied alſo that properties are known which are characteriſtic of a great number of ſimple ſubſtances by which theſe compounds are produced. It is preſumed that few perſons will object to the introduction of names denoting the ſuppoſed compoſition of bodies, and their characteriſtic properties, and analogous according to the analogy of the ſubſtances; in place of abſurd names, and names which have no analogy to one another, however analogous the ſubſtances: and eſpecially when it is conſidered that the number of newly-diſcovered bodies which are not ſcarcely yet known by any popular name, exceed the number of the old ones; — that it is only by ſuch a method of naming that the memory becomes equal to the recollection of ſo great a number of ſubſtances, — and that even ſuppoſing hereafter ſome errors in the names from compoſition ſhould be diſcovered, or properties more characteriſtic be known, the language will have anſwered its grand purpoſe, that of promoting ſcience.

Hiſtorians inform us that *Claudius* (to whom it is preſumed the learned tranſlator alludes) was unable to introduce his three new letters, but the objects of this addition to the alphabet were totally different from thoſe of the new chemical Nomenclature, ſo that ſurely this fact affords no argument againſt the practicability and utility of the preſent ſyſtem. And the objects, principles, and plan of the new language propoſed by the learned *Wilkins*, and the circumſtances in which he made this attempt, were ſo very different from thoſe of the new Chemiſtry, that the friends of it ought not to be diſcouraged by the Biſhop's ill ſucceſs.

The Author of the new Dictionary of *Macquer* criticiſes the French Academicians becauſe they ſtate after *Condillac*, that " Men *think* only by means of *words*;" for that, ſays he, implies, that " dumb perſons are deſtitute of thought." The queſtion whether men think *only* by means of words is not perhaps determined, but it is admitted, I apprehend, by every perſon, that words enable men to think and reaſon more extenſively, than they can who do not poſſeſs them; and therefore, it is of great conſequence to attend to the words employed in Chemiſtry.

With regard to the change in the meaning of old words, as in the inſtance of the names, Potaſh, Soda, and Ammoniac, now employed to denote the Alkalies in their cauſtic or pure ſtate; and with reſpect to comprehending ſuch diſſimilar ſubſtances as Sugar and *Minium* under the term Oxyd, it is hoped the propriety of theſe alterations will be underſtood from the explanation of the new Nomenclature in the preceding pages.

With reſpect to the " claſſical ſoleciſms," from the mixture of words, partly Greek and partly Latin, and ſometimes from the uſe of words compoſed of partly Greek and partly of Latin ſyllables, as the object of language is to convey our thoughts, we have only to conſider what words will anſwer this purpoſe beſt, and we with more freedom introduce in particular ſciences names formed from different languages, becauſe our own language has gradually attained its preſent copiouſneſs by adopting words from other nations.

It is obſerved that the ſtudy of Chemiſtry ought not to be confined to learned men, and that the avenues to it, *Names*, ought to be rendered as eaſy and acceſſible as poſſible; but the new Nomenclators have rendered Chemiſtry impregnable by " a tremendous " *chevaux de frize* of hard and uncouth words." On this paſſage I beg leave juſt to remark, that the new Nomenclature is intended for

thoſe who ſtudy the new ſyſtem or theory of Chemiſtry, and that with proper explanations both are more eaſily learnt, even by perſons but little acquainted with Greek and Latin, than the former terms and old ſyſtem; and therefore I can confirm *Fourcroy*'s aſſertion, that a much ſhorter time is now requiſite to learn Chemiſtry than formerly. "This effect," ſays the writer of the Dictionary, "of a "few Greek terms is the more extraordinary, as it is not produced "on cloiſtered ſtudents devoted to erudition, but on audiences, "compoſed of ladies as well as gentlemen, and ſelected from the "polite circles of Paris." It would be ridiculous to impute the taſte of the polite circles of Paris for Chemiſtry to a few terms from the Greek, but it ſeems reaſonable to account for it from the many new and beautiful experiments, from the clear and juſt method of arrangement, from the ſatisfactory explanations afforded by the new principles, from the ſimplicity and juſt import of the new Nomenclature; and alſo from the eloquence of the popular lecturer *Fourcroy*.

There is no juſt ground of fear that, "from the zeal for reforming "language, ſuch a number of reformers may ariſe, that our ears "will not be leſs ſtunned, nor our underſtandings leſs perplexed, "than if we were expoſed to the clamour of *Babel*, or the *thaw of* "*words* of Sir John Mandeville:" for the diſtinguiſhed ſuperiority of a ſyſtem produced by a *De Guyton*, a *Lavoiſier*, or a *Bergman*, would ſurely ſuperſede the work of perſons of inferior ability.

POSTSCRIPT.

IMMEDIATELY after the preceding ſheets were printed, a pamphlet by Dr. *Prieſtley* was publiſhed, entitled "*Experiments on the Generation of* AIR FROM WATER; *to which are prefixed, Experiments relating to the* DECOMPOSITION OF DEPHLOGISTICATED AND INFLAMMABLE AIR, *from the Philoſophical Tranſactions*, Vol. LXXXI. p. 213."

In theſe *papers* he argues, as in his former works, that *Nitrous Acid*, *Water*, and *Carbonic Acid*, are not compounded in the manner ſtated in the above *Table* of Nomenclature, and conſequently that the principal parts of the new ſyſtem are erroneous. Dr. *Prieſtley* having been one of the moſt ſucceſsful labourers in the field of chemical ſcience, for in *number* of diſcoveries he is rivalled only by *Scheele*, it is reaſonable to apprehend that his opinions muſt tend to fruſtrate the principal intention of the preſent work, namely, the diffuſing more generally the knowledge of the new ſyſtem of Chemiſtry. It is not incumbent upon me as the author of the preſent publication to anſwer every objection to the new chemical doctrines, but as Dr. *Prieſtley* obſerves that the partiſans of the new theory have not replied to his laſt paper in favour of Phlogiſton, and as he now comes forward with additional ſtrength from new experiments, I am induced to publiſh a few remarks on his arguments.

With regard to the compoſition of Nitrous Acid, Dr. P. alleges that his experiments are "deciſive in favour of an Acid from dephlogiſticated Air and inflammable Air."

1ſt. Phlogiſticated Air," (Nitrogen Gaz), ſays Dr. P., "does not

produce nitrous Acid, becauſe the more phlogiſticated Air is contained in the two other kinds of Air mixed in the proportion of two meaſures of inflammable Air (Hydrogen Gaz) and one of dephlogiſticated (Oxygen Gaz) the leſs Acid I got; but that, when I purpoſely mixed any given quantity of phlogiſticated Air with them, it appeared not to have been at all affected by the proceſs, but remained the very ſame, in quantity and quality, as before."

Remark. It appears from the experiments of Mr. Cavendiſh, (*Phil. Tranſ. Vol. LXXIV. p.* 132), and other able Chemiſts, that Oxygen Gaz has a ſtronger affinity for Hydrogen Gaz than for Nitrogen Gaz; and as in the experiments from which Dr. P. argues there was apparently a ſufficient quantity of Hydrogen Gaz preſent to ſaturate the Oxygen, no Acid of Nitre could be produced, nor Nitrogen Gaz be deſtroyed, in whatever quantity this latter Gaz was preſent.

2. " Becauſe Mr. Cavendiſh, though in a very different proceſs, had found Nitrous Acid to reſult from the decompoſition of phlogiſticated and dephlogiſticated Air; and becauſe Mr. Lavoiſier and his friends had found nothing but pure water after the ſlow burning of dephlogiſticated and inflammable Air; it was maintained by the favourers of their ſyſtem, that the water only in the liquor which I procured came from the union of the two kinds of Air, and the *Acid* from the *phlogiſticated Air*, which I had not been able to exclude."

Remark. This is but a partial ſtatement of the facts from which the above concluſion was drawn, for it ſhould have been mentioned, that in the moſt accurate experiments the production of Nitrous Acid was uniformly attended with an adequate diminution of Nitrogen Gaz, and that this Gaz had been found to be preſent in every caſe of combuſtion in which Nitrous Acid was produced.

3. Dr. P. finding that it was ſtill objected that the Oxygen Gaz upon which he operated might contain Nitrogen Gaz, he ſays, " the dephlogiſticated Air which I at preſent uſe is ſo pure, that it contains no ſenſible quantity of phlogiſticated Air, - - - - yet in theſe circumſtances in which all phlogiſticated air is excluded I procure even a *ſtronger Acid* than before."

Remark. I do not recollect that any accurate Chemiſt beſides Dr. P., has ever affirmed that he had procured Oxygen *quite free* from Nitrogen Gaz; for Oxygen Gaz got from ſuper-oxygenated Muriate of Potaſh contained * $\frac{1}{100}$, in one caſe, and in the other, $\frac{1}{172}$ † of its bulk of Nitrogen; and it is the more extraordinary becauſe the Oxygen uſed by Dr. P. was obtained from Oxyd of Mercury. As however this pure Oxygen Gaz, on mixture with Nitrous Gaz, left a reſidue of about four hundred parts of the bulk of Oxygen Gaz, it is probable that the Oxygen contained Nitrogen Gaz; and *one* grain of Nitrogen in 100 of Oxygen Gaz has produced near five grains of Nitrous Acid ‡. As to the ſmall quantity of Nitrous Acid obtained by Mr. Cavendiſh from 3194 grain meaſures of atmoſpherical Air in one experiment, and 2710 grain meaſures in another experiment, Dr. P. ſeems to have overlooked the quantity produced by which the Mercury of the apparatus was oxydated and diſſolved.

4. " I conſtantly obſerve, that if there be a ſurplus of dephlogiſticated Air, the reſult of the exploſion is always the Acid liquor; but if there be a ſurplus of inflammable Air the reſult is ſimply water. That phlogiſticated Air is not in all caſes affected by this proceſs, I completely aſcertained, by admitting a little common

* See Annales de Chimie, Vol. VII. p. 260; VIII. and IX. p. 91.
† ——————— Vol. X. p. 140.
‡ ——————————— p. 139.

Air into that mixture of the two kinds of Air which always produced water, and finding nothing but water in the reſult."

Remark. Theſe obſervations confirm Mr. Cavendiſh's firſt concluſions, and the phenomena have been above explained on the principle of ſingle elective attractions. It muſt however be obſerved, that although redundant Oxygen Gaz (to the quantity required to ſaturate the Hydrogen Gaz) be preſent, and alſo Nitrogen Gaz be in the mixture, no Acid is produced unleſs the combuſtion be *rapid.*

5. Dr. P. ſays he now conſiders it as uncertain that water and Nitrous Acid are compoſed of the ſame "elements" in different proportions, namely, of "dephlogiſticated and inflammable Air;" "for when I mix the two kinds of Air in ſuch proportions as to produce *Water*, I find in the reſiduum much more *phlogiſticated Air* than I do when *Acid* is produced; which affords a ſuſpicion that, in this caſe, *the principle of Acidity* goes wholly into the phlogiſticated Air - - - - ſo that it is very poſſible that the *pure water* we find may be nothing more than the baſis of the two kinds of Air; and the principle of Acidity in the dephlogiſticated Air, and the Phlogiſton in the inflammable Air, may combine to form a ſuperfluous Acid in the one caſe, and the phlogiſticated Air in the other." - - - As the reaſon why in my former experiments I always produced an acid liquor, and never pure water, was my uſing too great a proportion of dephlogiſticated Air; ſo the reaſon why Mr. Lavoiſier and his friends generally produce but little Acid, and at laſt none at all, muſt have been, that the *ſlow combuſtion* which they made uſe of gave the principle of Acidity in the dephlogiſticated Air, and the Phlogiſton in the inflammable Air, a better opportunity of eſcaping and forming the phlogiſticated Air in their reſiduum, of which they have not publiſhed any ſatisfactory account; and it is probable, that the weight of theſe elements compared with that of water, which forms the baſis of the two kinds of Air, may be very ſmall."

Dr. P. concludes that " the ſource of the *Acid* in theſe experiments is not *phlogiſticated Air*, as Mr. Cavendiſh imagined, but the union of the dephlogiſticated and inflammable Air; and that they make it at leaſt doubtful whether theſe two kinds of Air compoſe *pure water*."

Remark. I cannot help expreſſing my complete aſtoniſhment at the mode of reaſoning of ſo great a diſcoverer as Dr. Prieſtley. It has been proved by abundant experiments, made with admirable preciſion and infinite labour, that whenever Nitrous Acid was obtained by the combuſtion of Oxygen and Hydrogen Gaz, that Nitrogen Gaz which had been mixed with them diſappeared in quantity adequate to the nitrous Acid produced; but that when this Acid was *not produced*, either the Oxygen Gaz was wholly ſaturated by the Hydrogen Gaz, or the fire of the combuſtion was probably not ſufficiently intenſe to unite Oxygen to Nitrogen Gaz. If Dr. P.'s theory were juſt, *Nitrogen Gaz* (phlogiſticated Air) *muſt have been produced* in thoſe experiments in which the combuſtion was *ſlow*, or the portion of Hydrogen more than ſufficient to ſaturate the Oxygen Gaz. It has likewiſe been ſhewn by experiments above referred to, that Nitrous Acid may be produced by paſſing the electric ſpark through the mixture of Nitrogen and Oxygen Gaz. Dr. P. ſays that " *phlogiſticated* Air," more than was contained in the Airs before combuſtion, was found in the elaborate and accurate experiment of *Fourcroy*, *Vauquelin*, and *Seguin*, related to the Royal Academy of Paris, May 21ſt, 1790*. I think it neceſſary to give only a very ſhort account of this experiment, leaving the reader to determine for himſelf whether the whole of the " phlogiſticated Air" (Nitrogen

* See *Annales de Chimie*, tome VII. p. 257.
———————, tome VIII. p. 230.
———————, tome IX. p. 30.

Gaz) did not exiſt in the Gazes before the combuſtion, and alſo to draw his own concluſions with reſpect to the compoſition of water.

To obtain the Hydrogen Gaz. 1ſt, Zinc was melted and rubbed into a powder in a very hot mortar. 2dly, This metal was diſſolved in concentrated ſulphuric Acid diluted with ſeven parts of water. The Gaz procured was made to paſs through cauſtic Alkali. To obtain the Oxygen Gaz, two pounds and a half of chryſtallized ſuper-oxygenated Muriate of Potaſh were diſtilled, and the Gaz was transferred through cauſtic Alkali. This experiment was begun on Wedneſday, May 13, 1790, and was finiſhed on Friday, the 22d of the ſame month. The combuſtion was kept up 185 hours with little interruption: during which time the machine was not quitted for a moment. The experimenters alternately refreſhed themſelves when fatigued, by lying for a few hours upon matraſſes in the laboratory.

The volume of Hydrogen Gaz employed was 25963,563 cubic inches; and the weight was 1039,358 grains.

The volume of Oxygen Gaz was 12570,942, and the weight was 6209,869 grains.

The total weight of both elaſtic fluids was 7249,227.

The weight of water obtained was 7244 grains, or 12 ounces, 4 gros, 45 grains.

The weight of water which ſhould have been obtained was 12 ounces, 4 gros, 49,227 grains.

The deficit was 4,227 grains.

The volume of Nitrogen Gaz before the experiment was 415,256 cubic inches; and at the cloſe of it 467. The exceſs of Nitrogen after the experiment was conſequently 51,744 cubic inches. This augmentation is to be attributed, the Academicians think, to the ſmall quantity of atmoſpheric Air in the cylinders of the Gazometers at the time the other Gazes were introduced. Theſe additional

51 cubic inches could not ariſe from the Hydrogen Gaz, for experiment ſhowed that it contained no Nitrogen Gaz. Some addition of Nitrogen Gaz, the Experimenters think, cannot be avoided, on account of the conſtruction of the machine.

The water being examined was found to be as pure as diſtilled water. Its ſpecific gravity to diſtilled water was as 18671 : 18670.

With regard to the compoſition of "*fixed Air*," or carbonic Acid, Dr. P. conſiders it to be compounded of the ſame elements as nitrous Acid. On which opinion I have only to remark that, beſides the experiments ſhowing that nitrous Acid is compoſed of Nitrogen and Oxygen Gaz, and conſequently not as Dr. P. ſuppoſes, of Hydrogen and the acidifying principle of Oxygen Gaz, it has been demonſtrated, by ſynthetic as well as analytic experiments, that carbonic Acid is produced by the union of Carbon with Oxygen; and that in no inſtance has it been deciſively ſhown to be produced without Carbon and Oxygen.

The experiments related in the other paper, of this pamphlet, namely, *On the Generation of Air from Water*, have induced Dr. P. to change his opinion with reſpect to the elementary nature of water, but not to conclude with the antiphlogiſtic party, that it conſiſts of Oxygen and Hydrogen. He now ſuppoſes that its components are "dephlogiſticated and phlogiſticated Air," or Oxygen and Nitrogen: and that water only requires "heat" to be combined with it to become a mixture of Oxygen and Nitrogen Gaz.

The firſt argument is from analogy. "Nothing but heat being neceſſary to convert Spirit of Wine, Oil, and other inflammable ſubſtances, liquid or ſolid, into permanent inflammable Air."

Remark. The effect of *Heat* (*Caloric*, as it is called in the new

ſyſtem) in rendering concrete ſubſtances into the Gaz ſtate, is equally favourable to Mr. Cavendiſh's opinion of the compoſition of water as to the different concluſion of Dr. Prieſtley. But Dr. P. is not quite accurate in ſtating that the inflammable bodies mentioned are changed into " inflammable Air by heat;" for they alſo yield Oxygen Gaz, Nitrogen Gaz, and Carbon united to Oxygen, that is, Carbonic Acid Gaz.

2. " Steam being made to iſſue from the end of a copper, or glaſs tube into a recipient containing water, every bubble of ſteam collapſed into a ſmall bubble of permanent Air." This Air was generally much purer than " common Air," the ſtandard of it with an equal quantity of nitrous Air being 0.9,0.85, or even 0.8 inſtead of 1.0 or 1.1, which is the uſual ſtandard of atmoſpherical Air after being agitated on its mixture with nitrous Air - - - - Twenty-five ounces of water being diſtilled through a red-hot copper tube, with the tube by which the ſteam was conveyed not covered with water, I got two ounce meaſures of Air."

Remark. From the quantity and quality of the Air afforded by given quantities of water, in the manner related, it will appear to moſt perſons at leaſt as probable that the Air was diſengaged from ſolution in water, as that it was from the decompoſition of this liquid. Dr. P. being aware of this objection, made the following experiment:

3. " I contrived to uſe the ſame water repeatedly, confined by Mercury, than which I do not know that any proceſs can be more unexceptionable. Filling long glaſs tubes, cloſed at one end, partly with Water, and partly with Mercury, the open ends being immerſed in baſons of Mercury, I began with expoſing a part of the tube above the Mercury to heat, ſo as to convert the water contigu-

ous to that place into ſteam, the water having been previouſly made as free from Air as poſſible" - - - - - That the water in the tube might not be for even a moment expoſed to the common atmoſphere and imbibe Air, " I provided a long trough of Mercury, and plunging the tubes into it, let out the Air under the Mercury, ſo that the water never came into any contact with the Air of the atmoſphere. But I always found that when the tubes were again brought to the fire, and the water converted into ſteam, Air was produced as before; and I did not ceaſe to repeat this proceſs, till I was thoroughly ſatisfied that the repetition would anſwer no purpoſe. I therefore could not help concluding that, on whatever principle the effect was produced, the whole of any quantity of water is convertible into Air by means of heat, or by heat and light jointly. For the glaſs tubes in this ſet of experiments being tranſparent, light might have ſome influence in the buſineſs." On making the experiment, however, in opaque veſſels, as much Air was produced as in tranſparent ones.

Remark. This is the leaſt exceptionable experiment in the whole ſet, but I confeſs that it does not carry conviction to my mind of the change of water into " Air" by this proceſs. It ſeems probable that on reading the account of this experiment without much conſideration, in which it is ſtated, that a certain quantity of water afforded Air, day after day, and week after week, in as great quantity as at the firſt, many perſons will be diſpoſed to think the Air could not have been contained in the water, but muſt have been generated from it. But I beg leave to obſerve, that Dr. P. has not ſaid that he has ever converted the *whole*, or even *one half*, of a given quantity of water into Air by the application of heat. Nor has he re-produced water by re-uniting the " phlogiſticated and dephlogiſ-

ticated Air" obtained from water*. The quantities of Air which he mentions to have been procured are but a very ſmall part of the weight of the water which afforded it; and it has been long known how very difficult it is to free Water from Air, and that it probably contains in ſolution a far greater quantity than is commonly ſuppoſed.

However inconcluſive theſe experiments appear to me, and although I cannot help *reaſoning* differently, from Dr. P. on the ſubjects of theſe two papers, I muſt acknowledge that there are few chemical writers who afford me ſo much information with reſpect to *facts*.

* The experiment of Meſſrs. *Paets van Trooſtwyk* and *Deiman*, publiſhed above three years ago, is ſingularly curious and intereſting, becauſe it ſeems at once to prove, both by analyſis and ſyntheſis, that water is a compound of Hydrogen and Oxygen. It affords, perhaps, the ſtrongeſt proof hitherto obtained of the decompoſition or analyſis of water. Notwithſtanding the importance of this experiment, I believe it has not received confirmation: I have only heard that an experienced Chemiſt did not ſucceed in his attempt to repeat it. But I have now the ſatisfaction of informing philoſophical men that Mr. *Cuthbertſon*, late of Amſterdam, (ſo advantageouſly known for his improvements in the conſtruction of the Air-Pump, Electrical Machines, and other inſtruments) obligingly deſired me to ſee him make this experiment a few days ago: of which a ſhort account may be acceptable.

A tube about $\frac{1}{13}$ of an inch in diameter in the bore, and 11 inches in length, with wire introduced at each end, was bent in the manner deſcribed by *Paets* and *Deiman*. The upper wire at the end of the tube hermetically ſealed was about $\frac{1}{130}$ of an inch in thickneſs, $1\frac{3}{10}$ of an inch in length; the under wire was of gold; and the water in the tube had been boiled and expoſed under the exhauſted receiver. By means of a plate electrical machine two feet in diameter, (of Mr. *Cuthbertſon*'s conſtruction), about 360 interrupted diſcharges, taken at the diſtance of $\frac{1}{8}$ of an inch, from a Leyden jar, containing 160 ſquare inches of coated glaſs, were made to paſs through the tube, from the platina wire to the gold wire. So much air was by this means produced that it occupied nearly the ſpace of half an inch of the length of the tube. This air being placed between the ends of the two wires, on paſſing a ſpark from the conductor through the tube it inſtantly diſappeared, excepting a reſidue of about $\frac{1}{40}$ of the air which had been produced. This reſidue, I believe, has not been examined. It is probably air diſengaged from the water, or detached from the ſides of the tube, by the electric ſparks which neither a boiling heat nor the exhauſted receiver had ſeparated.

The water in the tube after the experiment did not render lime water turbid, nor turn paper ſtained with litmus to a reddiſh colour.

THE END.

A TABLE OF CHEMICAL NOMENCLATURE,

Messrs. de Morveau, Lavoisier, Bertholet, *and* de Fourcroy, *in May, 1787: to which are added, by the Translator, the Latin Names in the new System of Chemistry; some of the former and popular Titles, and the Synonyma in the London, Edinburgh, and other Pharmacopoeias; with References to Authors of Discoveries; and Observations.*

I.

PLE OR UNDECOMPOUNDED SUBSTANCES:

W, OR ADOPTED NAMES.	FORMER NAMES.
Light.	
LUX	
Caloric.	Phlogiston, of *Stahl.* Latent Heat, of *Black.* Combined Heat, of *Bergman.* Matter of Heat
CALORICUM	
Oxygen.	Basis of Vital or of Fire Air. Acidifying Principle
OXYGENIUM	
Hydrogen.	Basis of inflammable Air or Gaz
HYDROGENIUM	
AZOTE or RADICAL NITRIC or NITROGEN.	Basis of phlogisticated Air. or of the Mephitic Air of the Atmosphere. Basis of Nitrous Acid
AZOTICUM or NITROGENIUM	
Carbon or Radical of Carbonic Acid.	Pure Charcoal. Basis of fixed Air. Coaly Matter
CARBONICUM	
Sulphur or Radical Sulphuric.	Brimstone. Flowers of Sulphur, of *Geller.* Sulphuria flores, Ph. E. et Lon. Sulphur Sublimatum, Ph. E. Sulphur præcipitatum, Ph. L. Basis of Vitriolic Acid
SULPHURICUM vel SULPHUR	
Phosphorus or Radical Phosphoric.	*Homberg* and *Kunckel*'s Phosphorus. Basis of Phosphoric Acid
PHOSPHORUS vel PHOSPHORICUM	
Radical Muriatic.	Basis of Muriatic Acid
MURIATICUM	
Radical Boracic.	Basis of Acid of Borax
BORACICUM	
Radical Fluoric.	Basis of Acid of Spar
FLUORICUM	
Radical Succinic.	Basis of Acid of Amber
SUCCINICUM	

II.

——RENDERED INTO THE STATE OF GAZ BY MEANS OF CALORIC:

NEW, OR ADOPTED NAMES.	FORMER NAMES.
Oxygen Gaz.	Nitro-Aëreal Spirit, of *Mayow* in 1672. Dephlogisticated Air, discovered by *Priestley*, Aug. 1774. Fire and Empyreal Air, by *Scheele* in 1774
GAZ OXYGENIUM. N. B. Light contributes to the gaz state of Oxygen	
Hydrogen Gaz.	Air fixable of Phlogiston, of *Kirwan.* Inflammable Air, of *Boyle* and *Cavendish*, in 1766, *Black* and *Priestley.* Inflammable Gaz
GAZ HYDROGENIUM	
Azotic Gaz or Nitrogen Gaz.	Phlogisticated Air, of *Priestley* and *Bertholet* in 1772. (a) Factitious (b) Native 1. In the *Bath* Water, *Priestley.* 2. *Buxton* Water, *Pearson.* 3. Atmosphere, *Scheele* and *Priestley.* Probably the Mephitic Air of the Lake *Averno*, Caves, &c. of the Ancients
GAZ AZOTICUM. GAZ NITROGENIUM	

III.

—— COMBINED WITH OXYGEN

NEW, OR ADOPTED NAMES.	FORMER NAMES.
Water. AQUA. YAIP	The sole Element, or Principle of every thing, according to *Thales.* Water. AQUA. Its composition discovered by Synthesis in 1781, and published in 1784, by *Cavendish*
1. Oxyd of Nitrogen, or of Azote, its composition by *Davy, Priestley*, &c. in 1793. OXYDUM NITROGENII vel Nitrous Oxyd.	1. Basis of dephlogisticated Nitrous Gaz, of *Priestley.* Azote or Nitrogen oxygenated in the first degree 2. Basis of Nitrous Air, of *Priestley* Azote oxygenated in the second degree 3. Fuming Nitrous Acid, of *Glauber* Azote oxygenated in the third degree Acidum Nitrosum Ph. L. et Ed. 4. Dephlogisticated Nitrous Acid, of *Priestley* Azote oxygenated in the fourth degree
2. Nitrous Acid. ACIDUM NITROSUM its composition discovered by *Lavoisier*, and *Cavendish.*	
4. Nitric Acid. ACIDUM NITRICUM.	
Carbonic Acid. Its composition discovered by Synthesis, in 1781, by *Lavoisier*; and by Analysis, in 1791, by *Tennant* and *Pearson*	Fixed Air, of *Hales* and *Black.* Aërial Acid, of *Bewley* and *Bergman.* Mephitic Air
ACIDUM CARBONICUM	
Sulphureous Acid.	Phlogisticated Vitriolic Acid. or Volatile Vitriolic Acid. Sulphur oxygenated in the first degree
ACIDUM SULPHUROSUM	
Sulphuric Acid.	Vitriolic Acid, or Oil of Vitriol, of *Basil Valentine.*
ACIDUM SULPHURICUM	ACIDUM VITRIOLICUM Ph. L. et E. Vitriolic Acid oxygenated in the second degree
Oxygenated Sulphuric Acid.	Dephlogisticated Vitriolic Acid. Sulphur oxygenated in the third degree
ACIDUM SULPHURICUM OXYGENATUM	
Acid of Phosphorus.	Common or fixed Phosphoric Acid, of *Homberg.* Phosphorus oxygenated in the second degree.
ACIDUM PHOSPHORICUM	ACIDUM PHOSPHORICUM Ph. Ed.
Phosphorous Acid.	Volatile or fuming or phlogisticated Acid of Phosphorus. Phosphorus oxygenated in the first degree
ACIDUM PHOSPHOROSUM	
Muriatic Acid.	Marine Acid, of *Bay. Valentine*, Acid of Sea Salt. Radical Muriatic oxygenated in the first degree.
ACIDUM MURIATICUM	ACIDUM MURIATICUM Ph. L. et Ed.
Oxygenated Muriatic Acid, of *Bertholet.*	Dephlogisticated Marine Acid, by *Scheele*, in 1774. Aërated Marine Acid.
ACIDUM MURIATICUM OXYGENATUM	Marine Acid basis oxygenated in the second degree
Boracic Acid.	Sedative Salt, of *Homberg.*
ACIDUM BORACICUM	SAL SEDATIVUM. Pharm. Rossica. SAL ACIDUM BORACIS. Ph. Suecica
Fluoric Acid.	Acid of Spar, of *Scheele*, in 1771
ACIDUM FLUORICUM	
Succinic Acid.	Salt of Amber, of *Agricola, Boëthius*, and *Borrichius.*
ACIDUM SUCCINICUM	SAL SUCCINI. Ph. L. et Ed.

IV.

OXYGENATED SUBSTANCES IN THE GAZ STATE.

NEW, OR ADOPTED NAMES.	FORMER NAMES.
1. Gaseous Oxyd of Azote of *Dewman*, &c.	1. Dephlogisticated Nitrous Gaz, of *Priestley*
2. Nitrous Oxyd Gaz	2. Nitrous Air, of *Priestley*, in 1775.
GAZ OXYDUM NITROSUM	
3. Nitrous Acid Gaz	3. Nitrous Acid Air, of *Priestley*
GAZ ACIDUM NITROSUM	
Carbonic Acid Gaz, of *Lavoisier.*	Gaz *Sylvester.*
GAZ ACIDUM CARBONICUM	Fixed Air, by *Black*, in 1755
Sulphureous Acid Gaz	Volatile Vitriolic or Sulphureous Acid Gaz, or *Air.*
GAZ ACIDUM SULPHUROSUM	GAZ SULPHURIS. Vitriolic Acid Air, of *Priestley*
Muriatic Acid Gaz	Marine Acid Air, of *Priestley*
Oxygenated Muriatic Acid Gaz, of *Bertholet*	Muriatic Acid Air, or Dephlogisticated Marine Acid Air, of *Scheele*
Fluor Acid Gaz.	Fluor Acid Air, of *Scheele*
GAZ ACIDUM FLUORICUM	Sparry Acid Air

V.

OXYGENATED SUBSTANCES COMBINED WITH BASES

NEW, OR ADOPTED NAMES.	FORMER NAMES.
Nitrates. NITRATES. Salts formed by the union of Nitric Acid with Metallic Oxyds, earthy, and alkaline Bases	Nitres. NITRA.
Nitrites. NITRITES. Salts formed by the union of Nitrous Acid with different Bases	No former Nomenclature
Carbonates. CARBONATES. Compounds formed by the union of Carbonic Acid with different Bases	Effervescent Substances. Aërated Bases, of *Bergman*
Sulphites. SULPHITES. Compounds consisting of Sulphureous, or Volatile Vitriolic Acid, and different Bases	Phlogisticated Vitriolic or Sulphureous Salts, of *Stahl*
Sulphates. SULPHIATES. Compounds consisting of Sulphuric Acid and different Bases	Vitriols. VITRIOLA. Vitriolated Salts, of *Bergman*
Phosphates. PHOSPHATES. Combinations of Phosphoric Acid with different Bases	Phosphoric Salts
Phosphites. PHOSPHITES. Combinations of Phosphorous Acid with different Bases	Phosphoricated Phosphoric Salts
Muriates. MURIATES. Combinations of Muriatic Acid with different Bases	Muriatic or Marine Salts. MURIÆ
Oxygenated Muriates. MURIATES OXYGENATI Combinations of Oxygenated Marine Acid with different Bases.	Oxygenated Muriatic Salts, of *Bertholet.* Hyperoxygenated Muriatic Salts
Borates. BORATES. Combinations of Acid of Borax with different Bases	Boracic Salts. Boraxated Alkalies, Earths, Oxyds, &c. of *Bergman*
Fluates. FLUATES. Combinations of Fluoric Acid with different Bases	Fluorated Alkalies, Earths, and Oxyds
Succinates. SUCCINATES	Succinated Bases. Succinous Salts

VI.

COMBINATIONS OF ACIDIFIABLE BASES AND OF SUBSTANCES NOT ACIDIFIABLE

NEW, OR ADOPTED NAMES.	FORMER NAMES.
Ammoniac. AMMONIACA. Composed of Azote and Hydrogen, by *Bertholet*, and *Milner*	Volatile Alkali. N. B. In the original table this substance is in a different compartment, but subsequent experiments have shewn that it consists of Azote and Hydrogen
Carburets or Carbures. CARBURETA. Compounded of Carbon and Metals, &c.	No former generic name
Sulphurets, or Sulphures. SULPHURETA. Consist of Sulphur and Metals earthy, alkaline, and other Bases	Hepars, or Livers. 1. With Bases of Metals. Pyrites, or Metallic Hepars 2. With Earthy Bases. Earthy Hepars, or Livers. 3. With Alkaline Bases Alkaline Hepars
Sulphurated Hydrogen Gaz. GAZ HYDROGENIUM SULPHURATUM	4. With Basis of Hydrogen. Hepatic Air, of *Bergman.*
Sulphurets, containing Carbon, Metals, &c. SULPHURETUM CARBONIO CONNUPTUM, &c.	Alkaline Liver, containing Charcoal, Metals, &c. Carbonaceous Metallic Hepars, &c.
Phosphurets, or Phosphures. PHOSPHORETA. Combinations of Phosphorus with different Bases.	Phosphoric Hepars 1. With Bases of Metals, by *Pelletier* 2. Earthy Bases. See Phil. Trans. vol. 82. *Pearson* 3. With Alkalies. 4. With Bases of Hydrogen Gaz.
Phosphoured Hydrogen Gaz. GAZ HYDROGENIUM PHOSPHORISATUM.	Phosphoric Inflammable Air, of *Gengembre* and *Kirwan*

ACIDIFIABLE Bases.

Substances which by Combination with Oxygen become Acids.

Radical Acetic. ACETICUM	Basis of Acetic Acid, or of Vinegar			Acetous Acid. ACIDUM ACETOSUM	Vinegar. Basis of Acetic Acid oxygenated in the first degree. ACETUM. Ph. L. et Ed. ACETUM DISTILLATUM Ph. L. et Ed.			Acetites. ACETITES. Are formed by the union of Acetous Acid, or common Vinegar and different Bases	Acetous Salts. Acetated Bases	
				Acetic Acid. ACIDUM ACETICUM, of *Berthollet*	Radical Vinegar. ACIDUM ÆRUGINIS. ACETUM RADICALE. ACETUM ACETOSUM Ph. Lond. Basis of Acetic Acid oxygenated in the second degree			Acetates. ACETATES. Combinations of Acetic Acid, or radical Vinegar, with different Bases	*Berthollet's* Salts with radical Vinegar	13
Radical Tartaric. TARTARICUM	Basis of Acid of Tartar			Tartareous Acid. ACIDUM TARTAROSUM	Acid of Cream of Tartar. Tartareous Acid, of *Scheele*. ACIDUM TARTARI CRYSTALLISATUM, Pharm. Rosf. 1782, et Soer. 1787			Tartrites. TARTRITES. Compounds of Acid of Tartar and different Bases	Tartareous Salts. Tartarifated Bafes, of *Bergman*	14
Radical Pyro-Tartaric. PYRO-TARTARICUM	Basis of Pyro-tartaric Acid			Pyro-tartareous Acid. ACIDUM PYRO-TARTAROSUM	Spiritus Tartari, *Lully*. Empyreumatic Acid of Tartar. ACIDUM TARTARI. Ph. Rosi. ACIDUM TARTARI DISTILLATUM. Ph. Suecica.			Pyro-tartrites. PYRO-TARTRITES. Compounds of Pyro-tartareous Acid, or Empyreumatic Acid of Tartar, and different Bases	Empyreumatic Tartareous Salts	15
Radical Oxalic. OXALICUM	Basis of Acid of Sugar			Oxalic Acid. ACIDUM OXALICUM	Saccharine Acid, of *Bergman*. Acid of Sugar. Oxaline Acid			Oxalates. OXALATES. Combinations of Acid of Sugar or Oxalic Acid with different Bases	Saccharated Bafes, of *Bergman*	16
Radical Gallic. GALLICUM	Basis of Acid of Gall Nut			Gallic Acid. ACIDUM GALLACEUM	Acid of Gall-Nut, of *Scheele* and *Kunfemüller*. Aftringent Principle			Gallates. GALLATES. Compounds formed by the union of the Acid of Gall Nut with different Bases	No former generic Name	17
Radical Citric. CITRICUM	Basis of Acid of Lemons			Citric Acid. ACIDUM CITRICUM	Citroneous, or Lemon Acid. SUCCUS LIMONUM. Ph. L. et Ed.			Citrates. CITRATES. Compounds of Citric Acid and different Bases	Citroneous Salts. Salts with Acid of Lemons	18
Radical Malic. MALICUM	Basis of Apple-Acid			Malic Acid. ACIDUM MALICUM	Acid of Apples, of *Scheele*. Malaceous Acid			Malates. MALATES. Combinations of Malic Acid with different Bases	No former generic Name	19
Radical Benzoic. BENZOICUM	Basis of Acid of Benjamin			Benzoic Acid. ACIDUM BENZOICUM *Schrader*	Acid of Benjamin, of *Lachfenius*. FLORES BENZOINI. Ph. E. ——— BENZOES. Ph. Rofs. Ph. Lon. et Ed. SAL BENZOES. Ph. Suec. ACIDUM BENZOICUM. Ph. E.			Benzoates. BENZOATES. Salts by the union of Acid of Benzoe with different Bases	Benzoinated Salts	20
Radical Pyro-ligneic. PYRO-LIGNICUM	Basis of Acid diftilled from Birch and other Woods			Pyro-ligneous Acid. ACIDUM PYRO-LIGNOSUM	Empyreumatic Spirit of Wood. Ligneous Acid, of *Gmelin*			Pyro-lignites. PYRO-LIGNITES. Salts formed by the combination of Acid of Wood with different Bases	No former Nomenclature	21
Radical Pyro-mucic. PYRO-MUCICUM	Basis of Acid of Honey			Pyro-mucous Acid. ACIDUM PYRO-MUCOSUM	Spirit of Honey, Sugar, &c. Syrupous Acid			Pyro-mucites. PYRO-MUCITES. Salts formed by Acid of Honey and different Bases	*No former Nomenclature*	22
Radical Camphoric. CAMPHORICUM	Basis of Acid of Camphor			Camphoric Acid. ACIDUM CAMPHORICUM	Acid of Camphire, of *Kofegarten*			Camphorates. CAMPHORATES. Combinations of Acid of Camphor with different Bases	No former Nomenclature	23
Radical Lactic. LACTICUM	Basis of Acid of Milk			Lactic Acid. ACIDUM LACTICUM	Sour Milk Acid of four Milk, of *Scheele*. Galactic Acid, of *Bergman*. Ph. Suec.			Lactates. LACTATES. Compounds of Acid of Milk and different Bases	Galactated Bafes, of *Bergman*	24
Radical Sach-lactic. SACCHO-LACTICUM	Basis of Acid of Sugar of Milk			Sach-lactic Acid, of *Bergman*. ACIDUM SACCHO-LACTICUM	Acid of Sugar of Milk, of *Scheele*			Saccho-lates. SACCHO-LATES. Combinations of Acid of Sugar Milk with different Bases	Saccho-lated Bafes, of *Bergman*	25
Radical Formic. FORMICUM	Basis of Acid of Ants			Formic Acid. ACIDUM FORMICUM	Acid of Ants, of *Ecmüller*, *Margraaf*, and *Arvedjon*. Formicine Acid. ACIDUM FORMICÆ. Ph. Suec.			Formiates. FORMIATES. Formed by the Union of Acid of Ants with different Bases	Formicated Bafes, of *Bergman*	26
Radical Prufic. PRUSSICUM	Basis of Acid of Prufian Blue			Prufic Acid. ACIDUM PRUSSICUM	Tinging Matter of Prufian Blue, of *Scheele* Acid of Prufian Blue			Prufiates. PRUSSIATES. Formed by the union of Prufic Acid with different Bases		27
Radical Sebacic. SEBACICUM	Basis of Acid of Fat			Sebacic Acid. ACIDUM SEBACICUM	Acid of Fat of *Morveau*, *Crell*, *Knappe*, and *Segner*			Sebates. SEBATES. Formed by the union of Acid of Fat with different Bases		28
Radical Lithic. LITHICUM	Basis of Acid of Urinary Stone			Lithic Acid. ACIDUM LITHICUM	Acid of Urinary or Bezoar Stone, of *Scheele*			Lithiates. LITHIATES. Formed by the Lithic Acid with different Bafes		29
Radical Bombic. BOMBICUM	Basis of Acid of Silkworm			Bombic Acid. ACIDUM BOMBICUM	Acid of Silk Worm, of *Chauffier*			Bombiates. BOMBIATES. Combinations of Bombic Acid with different Bafes		30
Radical Laccic. LACCICUM	Basis of Acid of Waxy Matter of the white Lac Coccus			Laccic Acid. ACIDUM LACCICUM vel LACCÆ ALBÆ	Acid of the waxy Matter produced by the White Lac Coccus or Infect, by *Pearfon*, in 1792			Laccates. LACCATES. Formed by the union of the Laccic Acid with different bafes		31

Oxyds united with different Bases

OXYDA DIVERSIS CORPORIBUS C JUNCTA.

Arsenic. ARSENICUM	Regulus of Arsenic, of *Schröder*, in 1641, and of *Monnet*, in 1775		Oxyd of Arsenic. OXYDUM ARSENICI	White or Flowers of Arsenic, of *Avicenna*. ARSENICUM. Ph. Suec. et Ed. Arsenic oxygenated in the first degree.	Sulphurated Oxyd of Arsenic, *yellow*. OXYDUM ARSENICI SULPHURATUM, *LUTEUM*. Sulphur. Oxyd of *A. red*. OXYDUM ARSENICI SULPHURATUM, *RUBRUM*.	Arsenical Oxyd of Potash. OXYDUM ARSENICALE POTASSÆ	Antipigmentum. Orpiment, or Yellow Realgar. Liver of Arsenic. State by Water, or the Ague Drops?	Arseniates. ARSENIATES. Compounds consisting of Acid of Arsenic and Oxyds, Earths, Alkalies, or other Bases	Arsenical Salts, of *Margraaf* and *Scheele*	Combinations of Arsenic with Tin, or other Metals. CONNUBIA ARSENICI CUM STANNO et CÆTERIS METALLIS, &c.	Arsenicated Tin, &c.
			Oxyd of Arsenic combined with more Oxygen. ACIDUM ARSENICI	Arsenical Acid, of *Scheele*. Arsenic oxygenated in the second degree							
Molybdena. MOLYBDENUM	Regulus of Molybdena, of *Hielm*, in 1784.		Oxyd of Molybdena. Molybdic Acid. OXYDUM vel ACIDUM MOLYBDENI	Calx of Molybdena. Acid of Molybdena, of *Scheele*	Sulphurated Oxyd of Molybdena. OXYDUM MOLYBDENI SULPHURATUM		Molybdena	Molybdates. MOLYBDATES Consist of Molybdic Acid and different Bases.	Molybdated Bases	Combinations of Molybdena with other Metals. CONNUBIA MOLYBDENI CUM CÆTERIS METALLIS	
Tungsten? TUNSTENUM?	Regulus of Wolfram? of Mess. *de Luyarts*, in 1783		Oxyd of Tungsten. Tungstic Acid. OXYDUM vel ACIDUM TUNGSTENI	Yellow Calx or Acid of *Lapis Ponderosus*, and *Wolfram*, of *Scheele*. Wolframium album, of *Gmelin*				Tungstates. TUNSTATES Consist of Tungstic Acid and different Bases	Tungstenated Bases of different Kinds	Combinations of T., &c.?	
Uranite. URANIUM	Regulus of Uranite, of *Klaproth*, in 1790		Oxyd of Uranite. OXYDUM URANII	Calx of Uranite, of *Klaproth*						Uranite united to other Metals. CONNUBIA URANII CUM CÆTERIS METALLIS	
Manganese. MAGNESIUM	Regulus of Manganese, of *Gahn*, in 1777		Oxyd of Manganese. ——— *white*. ——— *black*. ——— *Firestone*. OXYDUM MAGNESII ALBUM, NIGRUM, VITREUM	White Calx of Manganese. Manganese oxygenated in the first degree. Black Calx of Manganese. Manganese oxygenated in the second degree	Alkaline Oxyd of Manganese. OXYDUM ALKALINUM MAGNESII		Mineral Chameleon			Manganese combined with Iron, &c. CONNUBIA MAGNESII CUM FERRO, &c.	
Nickel. NICCOLUM	Nickel, of *Cronstedt*, in 1751, and of *Bergman*		Oxyd of Nickel. OXYDUM NICCOLI	Calx of Nickel						Nickel united to other Metals. CONNUBIA NICCOLI CUM CÆTERIS METALLIS	
Cobalt. COBALTUM	Regulus of Cobalt, of *Brandt*, in 1735, and *Lehmann*		Oxyd of Cobalt, *grey*. ——— *Flowers*. OXYDUM COBALTI GRISEUM, et VITREUM	Calx of Cobalt	Alkaline Cobaltic Oxyds. OXYDA ALKALINA COBALTICA		Precipitates of Cobalt dissolved by Alkalies			Combinations of C., &c. CONNUBIA, &c.	
Bismuth. BISMUTHUM	Tin-Glass. Bismuth or Marcasite, of *Agricola*, and *Schröder*, in 1641		Oxyd of Bismuth, *white*. ——— *yellow*. ——— *Flowers*. OXYDUM BISMUTHI ALBUM, LUTEUM, et VITREUM	Magistery of Bismuth or white Cosmetic, Ph. *Spielmann*. Yellow Calx of Bismuth, Glassy Calx of Bismuth	Sulphurated Oxyd of Bismuth. OXYDUM BISMUTHI SULPHURATUM		Bismuth precipitated by Water of Sulphur			Combinations of B., &c. CONNUBIA, &c.	
Antimony. STIBIUM	Regulus of Antimony, of *Basil Valentine*		Oxyd of Antimony. by, 1. Nitric Acid. 2. Muriatic Acid. 3. Sublimation. 4. Vitrefaction. OXYDUM STIBII ALBUM ACIDO NITRICO, MURIATICO, et IGNE et OXYGENIO FACTUM	Diaphoretic or white Powder of A. of *Basil Valentine*. ANT. CALCIN. Ph. L. et E. ALGAROT'S POWDER. Silver Flowers of A. or Snow. Glass of Regulus of Antimony	Sulphurated Oxyds of Antimony. OXYDA SULPHURATA STIBII Alkaline Oxyds of Antimony. OXYDA ALKALINA STIBII		Liver of Antimony. Sulphurated Antimonial *Boræmus*. Antim. Vitrif. Ph. L. Sulphur Antim. Ph. L. et Ed. Kermes Mineral. Ph. Ed. Alkalizated Calces of Antimony			Combinations of A., &c. CONNUBIA, &c.	
Zinc. ZINCUM.	Marcasite, of *Albertus Magnus*, in 1260. Zinc, of *Henckel* and *Lemery*. Distilled Zinc, of *Margraaf*, in 1746 ZINCUM. Ph. L. et Ed.		Oxyd of Zinc by Sublimation. OXYDUM ZINCI SUBLIMATUM. Oxyd of Zinc by Precipitation. OXYDUM ZINCI ACIDIS CONFECTUM	FLORES ZINCI, of *Glauber*, and Ph. L. Zincum Ustum. Ph. Ed. CALX ZINCI. Ph. Suec. Calx by precipitation from Sulphate of Zinc, &c. Pompholyx. Calamine, or impure Calx of Zinc. LAPIS CALAMI. Ph. L. et E.	Sulphurated Oxyd of Zinc. OXYDUM ZINCI SULPHURATUM		Precipitate of Zinc by Lixivium of Sulphur, or artificial Blende			Combinations of Z., &c. CONNUBIA, &c.	
Iron. FERRUM	Mars. FERRUM. Ph. L. et Ed.		Oxyd of Iron, *black*. ——— *yellow*. ——— *red*. ——— *brown*. Oxyd of Iron by Precipitation, *green*	Martial Æthiops. Crocus Martis Aillriogens. Ochre. COLCOTH. FERRI. Ph. E. RUBIGO. Ph. L. E. et Roff. Green Calx in Griffiths' Tonic	Sulphurated Oxyd of Iron. OXYDUM FERRI SULPHURATUM		Sulphurated Calx of Iron			Combinations of I., &c. CONNUBIA, &c.	
Tin. STANNUM	STANNUM. Ph. L. et Ed.		Oxyd of Tin, *subliméd* and *white*. ——— *grey*. OXYDUM STANNI ALBUM, CINEREUM	Flowers of Tin. Calx of Tin	Sulphurated Oxyd of Tin, *black*. ——— *yellow*. OXYDUM STANNI SULPHURATUM, *ægrum et luteum*		Sulphurated Calx of Tin, *black*. ——— *yellow*. Aurum Mosaicum, Mosaicum			Combinations of T., &c. CONNUBIA, &c.	
Lead. LEAD	Saturnus PLUMBUM. Ph. L.		Oxyd of Lead, *brown*. ——— *white*. ——— *yellow*. ——— *red*. ——— *glassy*. OXYDUM PLUMBI, &c.	Lead Ash. Cerusa or White Lead. Ph. L. et Ed. Massicot. Ph. L. et E. Minium Ph. L. et Ed. Litharyrus. Ph. L. et E.	Sulphurated Oxyd of Lead. OXYDUM PLUMBI SULPHURATUM		Sulphurated Calx of Lead			Combinations of L., &c. CONNUBIA, &c.	
Copper CUPRUM	Venus CUPRUM. Ph. L.		Oxyd of Copper, *red*. ——— *green*. ——— *blue*. OXYDUM CUPRI RUBRUM, &c.	Red or Brown Calx of Copper. Green Calx of Copper. Mountain Blue.	Ammoniacal Oxyd of Copper. OXYDUM CUPRI AMMONIACALE		Cuprum Ammoniacal. CUPRUM AMMONIACUM. Ph. Ed.			Combinations of C., &c. CONNUBIA, &c.	

Metals. METALLA.

No.		New Names	Former Names			Oxyds						Alloys		No.
46		Mercury. HYDRARGYRUM	Ὑδράργυρος, of *Dioscorides.* Hydrargyrum and Argentum Vivum, of *Pliny.* Quickfilver. HYDRARGYRUS. Ph. L. et Ed.			Oxyd of Mercury, by Fire and Air, *red.* —— by Nitrous Acid, *red.* —— by Precipitation, *white.* —— —— *yellow* —— —— *brown* —— —— *black.*	HYDRARGYRUS CALCINATUS. Ph. L. HYDRARGYRUS NITRATUS RUBER. Ph. L. et Ed. CALX HYDRARGYRI ALBA. Ph. L. HYDR. PRÆCIP. CINEREUS. Ph. Ed. Turpeth Mineral, of *Crollius.* Mercurius fufcus. Æthiops.	Sulphurated Oxyd of Mercury, *black.* —— *red.* OXYDUM HYDRARGYRI SULPHURATUM, *nigrum et rubrum*	HYDRARGYRUS CUM SULPHURE. Ph. Lond. HYDRARGYRUS SULPHURATUS NIGER. Ph. Cinnabar. HYDRARGYRUS SULPHURATUS RUBER. Ph. Lond.			Amalgams. CONNUBIA HYDRARGYRI CUM CÆTERIS METALLIS, vel AMALGAMA.		46
47		Silver. ARGENTUM	Luna			Oxyd of Silver. OXYDUM ARGENTI	Calx of Silver					Alloy of Silver by Iron, &c. ARGENTUM INQUINATUM FERRO, &c.		47
48		Platina. PLATINUM	Regulus of Platina, of *de Lisle* in 1773, *Sickingen* and *Ingen-Housz.* White Gold			Oxyd of Platina. OXYDUM PLATINI	Calx of Platina. Calx Platinæ.	Sulphurated Oxyd of Silver. OXYDUM ARGENTI SULPHURATUM				Alloy of Platina by Copper, &c. PLATINUM INQUINATUM CUPRO, &c.		48
49		Gold. AURUM	Sol.			Oxyd of Gold. OXYDUM AURI	Calx of Gold					Alloy of Gold by Copper, &c. AURUM INQUINATUM CUPRO, &c.		49
50	TERRÆ.	Silica. SILICA.	Vitrifiable or Siliceous Earth, Quartz, &c.											50
51		Alumin ALUMINA	Pure Clay. Earth of Alum, of *Margraf*, 1750. Argilla.											51
52		Baryt BARYTA	Ponderous Earth, by *Scheele*, in 1774. Barytes, of *Morveau*, & Ph. E. Terra Ponderofa											52
53		Lime or Quick Lime. CALX	Pure Calcareous Earth, of *Bergman.* Dearated Calcareous Earth. CALX. Ph. Lond. et Ed.											53
54		Magnefia. MAGNESIA	Magnefian Earth, of *Valentini*, 1707; *Hoffman* and *Black*, 1755. Pure Magnefia, of *Bergman.* Calcined Magnefia, of *Henry*, in 1772. MAGNESIA USTA. Ph. Lond. et Ed.											54
55		Jargon? ZIRCONIA. Adamantine? ADAMANTINA. Strontianite? STRONTIANA. Auftrala? AUSTRALA. Thefe Earths, which are not in the original table, are inferted with a mark of interrogation, and future experiments muft determine whether or not they are peculiar fpecies.	Circon Earth, of *Klaproth*, 1789. Adamantine Spar Earth, of *Klaproth*, 1789. New Earth from Strontian, by *Crawford* and *Sulzer*, 1791. New Holland Earth, by *Wedgwood*, 1790. TERRA AUSTRALIS, of *Blumenbach.*											55
56	ALKALIA. Alkalies.	Potafh. POTASSA	Alkali of "Lix cinis foci," of *Pliny.* Alkali Tartari cauft. of *Geber* and *Lully.* Pure or Cauftic Vegetable Alkali, of *Bergman.* Soap Ley. KALI PURUM. Ph. L. AQUA KALI PURI. Ph. L. CAUSTICUM COMMUNE ACERRIMUM, et MITIUS. Ph. Ed. AQUA LIXIVIA CAUSTICA. Ph. Ed.											56
57		Soda. SODA	Alkali of נתר. See *Ben. Ar. Montani* Biblia Sacr.; in Proverb. Alkali of Νιτρον, and Nitrum; fee Polyglott Bible, and *Dioscorides.* Alk. of Nitrum, and Αφρονιτρον, and Spuma Nitri, of *Pliny.* Alkali of Natron, of the Moderns, and Ph. L. Alkali from Kali, Soda Hifp., in *Seignette's* Salt, and Sea Salt, by *Geoffroy* and *Duhamel*, 1736											57

Denominations of divers more compound Subftances than the above, and which combine without Decompofition.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NEW NAMES.	Mucus. MUCUS	Gluten. GLUTEN	Sugar. SACCHARUM	Starch. AMYLUM	Fixed Oils. OLEA FIXA	[illegible]latile Oil. O[illegible]M ESSENTIALE.	Aroma. AROMA	Refin. RESINA	Gum. GUMMI	Refinous Extract: When the Refin predominates. RESINO-EXTRACTIVUM	Extractive or Gummous Refin: When the Gum predominates. GUMMI RESINA	[illegible], of *Libavius.* [illegible]CULA, of *Albucafis*	Alcohol or Spirit of Wine. ALCOHOL vel SPIRITUS VINI, of *Thaddæus* and *Lully*	Alcohol of Potafh. —— Guaiacum. —— Scammony —— Myrrh, &c.	Alcohol of Nitric. —— Gallic. —— Muriatic, &c. Acids	Æther Sulphuric. —— Muriatic. —— Acetic, &c.	Soaps Alkaline. —— Earthy. —— Acid. —— Metallic. Saponules of Turpentine, &c.
FORMER NAMES.	Mucous Matter	Glutinous Matter. Vegeto-animal Matter, of *Beccari*	Saccharine Matter	Amylaceous Matter	Fat, Grofs, or Unctuous Oils	[illegible]ffence. [illegible]ntial Oil	Spiritus Rector. The Odorous Part of Plants and Flowers	Refin	Gummous Matter	Refinous Gum.	Gum-Refin	[illegible]like Sediment	ALCOHOL. Ph. Lond. SPIRITUS VINI RECTIFICATISSIMUS. Ph. Suec.	Lily, of *Paracelfus*, or Tincture of Alkali. —— Guaiacum. —— Scammony —— Myrrh, &c.	Dulcified Spirit of Nitre. Tincture of Gall-Nut. Dulcified Marine Acid.	Æther of Frobenius; and Ph. L. and Ed. —— Marine. —— Acetous, &c.	Soaps, Alkaline, Earthy, &c. Combinations of Volatile Oils with Bafes.