

The principles and constituency of antimony / [William Redmond].

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Redmond, William.

Publication/Creation

London, 1762.

Persistent URL

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T H E

PRINCIPLES and CONSTITUENCE

O F

A N T I M O N Y.

By WILLIAM REDMOND, M.D.

Non jam in amplum variegatumque Regni vegetabilis Campum excurrere lubet, sed potius profundum magisque præclusum Minerale Regnum perscrutabimur, utpote, cui majores potentioresque, præceteris duobus Regnis, Vires inesse, peritiores Chymici testantur ad unum omnes.

PORT. de Sulphuribus Metallorum.

Antimonium est Simplex quo non datur aliud Par in tota Medicina. ETTMULLER.

Multa de Antimonio Scripta exstant, et innumerabiles fere Processus a Chemicis et Alchemicis ex eo procusi varie prædicantur, sed paucissimis in mentem venit solidi quidpiam de eo commentari, et veram Ætiologiam Experimentorum contexere. JUNCKERI Conspectus Chemicæ.

L O N D O N :

Printed by S. CHANDLER, in HOLBORN ;

And Sold by JOHN CURTIS, at Shakespeare's Head,
in Fleet-Street ; and W. BRISTOW, in St. Paul's
Church-Yard. MDCCLXII.

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PRINCIPLES and CONSTITUENCE

OF

ANTIMONY.

By WILLIAM REDMOND, M.D.



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HE Practice of Physic having relied for many Centuries on Galenical Preparations, it frequently failed of effectuating the great Cures intended by able Physicians, from rationally deduced Indications, both from the Patient's Constitution, and Nature of the Disease; the Inefficacy of *Galen's* Pharmacy made all enterprising Practitioners wish for more active Medicines to second them in their meditated Cures, but all such Wishes had no Effect, untill Chemistry was introduced into the Practice of Physic.

Basilius Valentinus, a Monk, is said to have been the first Introducer; to whom succeeded *Paracelsus* and *Vanhelmont*. This Novelty caused a Reformation in Physic; all intelligent Physicians, convinced of the Utility thence derivable, chearfully embraced the powerful Assistance of Chemistry, while others, the more ignorant of the Profession, Slaves to former Prejudices, cried aloud against every such Measure.

But by the successive Labours of *Paracelsus*, *Vanhelmont*, *Boyle*, *Tachenius*, *Glauber*, &c. Chemistry soon furnished as great a Number of Medicines as the *Galenic* Pharmacy had formerly: Its two most powerful Agents, as acknowledged by the Learned of all Countries, are *Mercury* and *Antimony*; the Efficacy and Virtue of the former I leave to be discussed upon, and described by the Anti-venereal Practitioners, whose Province they peculiarly regard, and confine the Purport of this Essay to an Investigation of Antimony, which at first had engrossed equally the Attention of Physicians and Alchemists; the latter by various Processes en-

deavoured to torture out of it the Secret of the Philosophers Stone.

Paracelsus was the first who brought *Antimony* into any considerable Vogue; some Practitioners declaimed against it as a Poison, while others extolled it as a general and soveraign Specific; its Enemies carried their Inveteracy so far as to publish Lists of all those whom they pretended to have died by taking any of its Preparations; the others published Lists of Patients who had been relieved from Death's Door by its being administered to them.

Not only the Physical Faculty of *Paris* were divided among themselves about its Merit, but the Citizens split into Parties, *for* and *against*. The Dispute rose so high on both Sides, that it at last fell under the Cognizance of the Parliament.

The Partizans of Antimony were impleaded for having abandoned the sole Practice of *Hippocrates*, *Galen*, &c. and of having substituted to their chaste Practice, the meritricious Preparations of Chemistry, the Antimonial in particular. The Clergy (ever fond of meddling in Physic, of which they

know so little) cried out that such Innovations were sinful, a burning Shame, and deserved the Censure of the Church.—In fine, the prescribing of Antimony was condemned by an Edict of Parliament; a glaring Instance, among many others, of the confederate Powers of Dullness trampling over a most useful Discovery, and so highly beneficial to Mankind as Antimony has since proved to be; all Physicians who refused giving their implicit Assent to, and blindly obeying the said Edict, were expelled from the Faculty, and declared unqualified to practice, as Abettors of a poisonous Drug. O Shame to human Understanding!

After a Series of Years Antimony, by the daily miraculous Cures it operated in Private, began to emerge from that undeserved Obscurity, to which it had been so partially and so shamefully condemned by Ignorance and blind Zeal. Its unjust Fall served but to make its Rise the more brilliant and conspicuous, as its superior Successes to every other Medicine have ever since ~~been~~ universally evinced.

An unlucky Accident which, at its first Appearance in Practice, happen'd to certain *Friars* (*moine* in the *French* Language) gave also Rise to this chimerical Accusation, *Basilius Valentinus* (it is reported) having observed that Antimony greatly contributed to fatten Swine, resolved to make a farther Experiment thereof, in order to plump up and give a florid Hue to the fallen, lank, and pallid Cheeks of certain half-starv'd religious Folks, whose miserable Aspects were a walking Disgrace to penitential Doctrine, they happen'd to die, perhaps thro' the Effects of already exhausted Nature, or that *Basilius Valentinus* (Antimony at that Time being but recently known) had given it in large Quantities, or not properly prepared. From this Anecdote what was before called *Stibium*, received the new and now most universally prevailing Appellation of Antimony, being a Compound of the *Greek* *anti*, against, and the *French*, *Moine*, Friar; implying, that altho' Antimony had made good against Swine, it made against Friars. This evinces the Errour of those who derive its Etymology from the *Greek* Words

ant^α against, and ^{μολος} Solus ; intimating, in that Sense, that its metallic Effence was endow'd with an Abhorrence of Solitude, and that in Consequence it was always found intimately mixed and blended with other Substances.

The idle and invidious Charges of Poison and deleterious Effects, brought by Ignorance, and what is still worse, obstinate Prejudice against innocent *Antimony*, were then invalidated, and overthrown by Men of enlightened and superior Understandings, who saw thro' all the Fallacy of the many sophistic Arguments employed to run down a Remedy, they were not only determin'd not to approve, but sworn to persevere in wilful Blindness to all the salutary Consequences it produced.

Crude Antimony has been externally applied to wounds, to stop an Efflux of the Blood, and bring on a Cicatrice, it has also been advantageously used in Collyriums for curing Ulcers of the Eyes, which Practice was very well known to *Galen*, *Dioscardes*, and others, tho' they were ignorant of Antimony's great and wonderful Virtues when

internally taken, for which Discovery we are indebted to Chemistry, the salutary Effects it is productive of when judiciously prepared, serve as multiplied Vouchers for its being as innoxious as beneficial.

That it may not be thought that the Superiority of Antimony above all other Medicines, is either to be obtruded on the Public, or to force its implicit Belief, and passive Assent thereto, by the Dint of a mere *ipse dixit*, the learned Readers are here presented with a Succinct and aggregated View of the (thro' various Volumes) scattered Approbations of Personages most eminent in Chemico-Pharmaceutic Knowledge, as at the same Time celebrated in Medicinal Practice. For such of our Readers as are unacquainted with the Latin Tongue, the quoted Passages are translated into *English*, and immediately follow the former.

“ Antimonium Restaurator est, & Reno-
 “ vator omnium Virium Corporis Humani,
 “ curat Leprosos, Morpheam, Scabiem,
 “ Leoninam, Elephantifiam, Tyriam, om-
 “ nes fere Morbos tollit.”

“ Antimonium tantas habet Virtutes, ut
 “ omnia quæ ab Humore radicali enascun-
 “ tur Mala, inquinamenta, Labes, reparat,
 “ & quasi in Fundamento Fabricam Hu-
 “ manam redintegrat.”

“ Tanta est Antimonii Vis ut gravissi-
 “ mum caduci Morbi Paroxysmum levet,
 “ est maxime comfortativa in Contracturis
 “ Membrorum, preservat etiam ab omni-
 “ bus fere speciebus Amentiaæ.”

“ Antimonii Virtute egregiâ et facultate
 “ inditâ, tota Sanguinis Massa mundificatur,
 “ ac repurgatur citra vehementiorem cali-
 “ ditatem quam nullum omnino refert.”

“ Antimonium ut plurimum insensibilem
 “ Operationem exercet; quandove Alvum
 “ laxando, Urinas provocando, omnia citra
 “ Molestiam & perturbationem præstans sed
 “ sæpius tota Humororum Correctione, In-
 “ stauratione, ac Corroboratione Balsami
 “ radicalis agit, quam ulla Evacuatione,
 “ aut Alteratione sensibili, atque ut paucis

“ dicam universalissima est Medicina, om-
 “ nibus Ægreditudinibus, vel deploratissimis
 “ etiam, ut Apoplexia, Epilepsia, Paralyfi,
 “ omni Hydropis generi, hystericas Affec-
 “ tiones, &c. id genus.”

“ Antimonium Sanguinem repurgat, Ap-
 “ petitum sopitum excitat, Ventriculum,
 “ aliaque Nutritionis Viscera corroborat,
 “ funditus evellit Cachexiorum Radicem,
 “ Melancholiam, Hypochondriacam, Icete-
 “ rum.”

“ Antimonium vera est universalis Me-
 “ dicina, quæ torpentes spiritus stimulat,
 “ roboratque animales, vitales, & naturales,
 “ mundando totam sanguinis Massam, in-
 “ staurando radicale Balsamum, et Corpus
 “ Humanum ita renovando, ut in Juveni-
 “ lem Statum, Hominem caducum trans-
 “ format.”

“ Antimonium Apostemata interne om-
 “ nia sine noxa aperit, atque curat, fan-
 “ guinem concretum dissolvit, corruptum-

“ que purificat, ad Lepram, Scrophulam,
 “ Carcinomata, presentaneum est Reme-
 “ dium, talis tantusque Theſurus nuſquam
 “ in orbe occurrit.”

“ Antimony is the Reſtorer and Reviver
 “ of the decayed Powers of the Human
 “ Body ; it cures the Leproſy, cutaneous
 “ Eruptions of every Denomination, as well
 “ as moſt Diſorders.”

“ Antimony is endued with ſuch power-
 “ ful Virtues, as to eliminate whatever Er-
 “ rors may ariſe from the vitiated Humours,
 “ and by ſo doing repair a ſhattered Con-
 “ ſtitution.”

“ So ſurpriſing is the Energy of Anti-
 “ mony, that it alleviates the moſt violent
 “ Attacks of the falling Sickneſs, yields a
 “ comfortable Senſation to thoſe who are
 “ ſubject to be tortured with Cramps and
 “ Contraction of the Limbs ; a conſtant Uſe
 “ of it is even a Preſervative againſt Mad-
 “ neſs of every Species.”

“ Antimony enjoys the uncommon Faculty to cleanse and purify the whole Mass of Blood, without fatiguing the Taker with the disagreeable Sensation of any greater Degree of Heat than usual.”

“ Antimony, in general, acts in an imperceptible Manner: Its Exertion never exceeds that of causing a gentle or a breathing Sweat, or a diuretic Discharge without any concomitant Inconvenience, —but its most usual Way is by correcting, renovating, and giving a stronger Consistence to the radical Balsam of the Blood; and thus imperceptibly to act is more agreeable to it, than to manifest its Power by visible Evacuations, or inwardly caused Operations, whose Impressions are perceivable by those that take it;” whence its Virtue appears to be only equalled by its Mildness; in fine, it is to be looked on as the *Universal Remedy* against the most deplorable Diseases; such as the Apoplexy, Epilepsy, Palsy, various Kinds of Dropsies, all cachectic Habits of Body, the Hysteria, and all its kindred Maladies.”

“ Antimony depurates the Blood, new
 “ whets a blunted Appetite, awakens not
 “ only the Powers of the Stomach, but
 “ also those of the digestive System; it op-
 “ poses all Tendency to a Decomposition
 “ of the Blood, or other Humours, and
 “ consequently of the Solids, which is de-
 “ signed by the Name of *Cachexy*, and
 “ thereby cuts off all Approaches to Me-
 “ lancholy, Hypochondria, and the Jaun-
 “ dice.”

“ Antimony is the universal Remedy,
 “ that rouses our Spirits from the torpid
 “ State in which they had lain oppress’d.
 “ It gives new Vigour to those which pre-
 “ side over the natural and vital Functions.
 “ By its defecating the Blood, by repairing
 “ its radical Balsam, and by renovating the
 “ human Frame, it in a manner recalls ad-
 “ vanced Years back to second Youth.”

“ Antimony opens and cures all internal
 “ Congestions and Swellings, it attenuates
 “ a grumous, dissolves a concreted, and de-
 “ purates a contaminated Blood; whence

“ appears its powerful Energy against Le-
 “ prous, Scrophulous, and cancerous Dis-
 “ eases;” which acknowledged Virtue has
 justly acquired to it this transcendant Cha-
 racter, “ So great a Treasure for Mankind
 “ is not to be found in the World.”

To all these foreign Authorities, the Spi-
 rit of whose Sense is here transferred into
English, it will not be amiss, by way of
 summing up the Evidence, to quote the
 Words of that chief Judge of Nature (as
 far as Humanity will allow) the noble, the
 learned, the virtuous *Boyle*, in regard to
 Antimony.

“ In Physick, the Uses of Antimony are
 “ so various, that according to its Prepara-
 “ tions, it alone, or in Company with one
 “ or two Associates, is sufficient to furnish
 “ an Apothecary’s Shop, answering the Phy-
 “ sician’s Desire.”

The Uncertainty of several eminent Pro-
 fessors of Physic and Chemistry, either to
 ascertain the Principles of Antimony, as

well as to account for its Medicinal Virtue, hath been productive of a fluctuating Variety of Preparations, most of which are rendered unnecessary by an Attainment of the real Principles and Constituent of Antimony (which at the same Time in a Course of elaborate and expensive Experiments) pointed out to the Discoverer, where to fix its medicinal Virtue. In this Research, certain I am that I have succeeded, and am enabled by my Success to conclude, that the new Pilular Form my Experiments suggested to me, are the best, and the most commodious to answer all the Physical Intentions for which the (now unnecessary Variety of Antimonial Preparations have heretofore been ordered.

The Virtue of these *Antimonial Pills* is already established as a Dissolvent for the greatest and most inveterate Degrees of Obstruction, the Schirrus and Cancer; and from thence any Reader may conclude what it is capable of effecting in other Disorders; the Varieties of which depend on the different Modes, Degrees and Situations of Obstruction. *Bonetus* by the Dissection of those

that died of chronic Maladies, has shown that the Scirrhus is the chief Cause thereof, which some have construed into a Reason for the Rarity of Cure in these Cases.

The wonderful Effects of Antimony in curing, as well as preventing most of the Diseases incident to Man, are supported by such a Cloud of learned and skilful Witnesses, as leave not the least Room for doubting thereof, to any one who enjoys the Use of Reason, induced all ingenious Chemists by various Processes, to endeavour at investigating the Nature and Principles of a Mineral, which proved of such unbounded Utility to Mankind.

Yet notwithstanding the Variety of Experiments made by even the very ablest Chemists, the Progress into the Knowledge of the Principles and Constituence of Antimony has been but very inconsiderable.— It is true, they are almost all agreed, and do nothing more than repeat each other, That Antimony decomposed, yields a Sulphur not unlike to the common One, and a metallic Substance — so far they are right, but what this metallic Substance is,

hath equally puzzled them all; and they do nothing more, than dance like blind Men after each other in the same erroneous Maze.

But however it being necessary, for the Honour of their Learning, to give some Name or other to this metallic Substance, some call it *Mercurial*, an *Abortion of Nature*, others an *incompleat Metal*, an *unaccountable Metal*, but most are agreed, that it is a “METALLUM SUI GENERIS;” and this Opinion prevails even in this learned and Science encouraging Age. What this Denomination, “METALLUM SUI GENERIS,” a *Metal of its own Kind*, is, wants to be explained and reduced to the level of common Sense, unless it is to be illustrated by an Allusion to the *Phœnix*, which to borrow an Expression from the Chemists, may be called, *Avis sui Generis*, a Bird of its own Kind; but as neither the *Phœnix*, nor this “METALLUM SUI GENERIS,” have Existence in Nature, this may be called, an Expression, *Chemicæ Generis*, of Chemic Kind, to cover their Ignorance of the Nature of this metallic Substance.

ANTIMONY is a Mineral, constituted of three Parts of common Sulphur, and one of Lead.

The only external Difference between Antimony *, and some certain Species of sulphurated Lead Minerals, or Ores, is, that it is striated, which is accountable for by a superior Mixture of Sulphur.

There are several Species of Antimonial Minerals, the greater or less Proportion of the Sulphureous to the Metallic Principle constitutes all.

Those that appear the most attenuatedly striated, contain the greatest Quantity of Sulphur, and (*vice versa*) the most coarsely striated contain the least.

* “ L’Antimoine, ou *Stibium*, est un Minéral fort ressemblant au *Sarocha*, ou Plomb minéral.”

Traité de Métallurgie D’alphonse Barba.

“ L’Antimoine crud est composé d’aiguilles ou de stries ; ce qui le distingue de la Mine de Plomb.”

Introduction à la Minéralogie D’Henckell.

The most coarsely striated Antimony as containing the greatest Quantity of Reguline Parts, is the most valuable, but for the Purpose of Vitrification the most attenuated is preferable.

Two Parts of the Sulphur of Antimony, slightly united, are easily decomposed from, and recompounded with the reguline Part.

On this Decomposition depends the Discovery of the Regulus, on that Recomposition, the Regeneration of Antimony.

This Regulus is an equal and obstinate (tho' an imperfect) Incorporation and Mixture of the Metal, and the other Part of the Sulphur. On the perfect Deconstitution, and Reconstitution of which, depend the Elucidation of the Principles and Constitution of Antimony.

This Regulus of Antimony being finely triturated, clearly indicates its internal Sulphur is a metallic *Æthiops*, resembling in Appearance *Æthiops Mineral*.

This triturated reguline *Æthiops* farther evinces its internal Sulphur; by being digested with Spirit of Turpentine, it yields thereto its Sulphur, and forms a Balsam of Sulphur*.

By a continued Coction of the fine triturated Regulus, or rather the Cerufs of Antimony in Lime Water, or strong Lixiviums, Part of the internal Sulphur is separated, and the Regulus may be easily reduced, which being kept in fusion, the volatile and sulphureous Parts sublime, and the Metal of Antimony (Lead) remains.

As by a momentary Use of Nitre, the external Sulphur is separated from Antimony (by which the Regulus is prepared) so by a long and continued Use thereof, the

* “ Hic Regulus teritur minutim, & vitro imponitur, superfunditurque Oleum Juniperi vel Spiritus Terebinthi, qui prior in distillatione prodiit, et purus est, instar aquæ fontanæ, bene clausum impone Balneo Mariæ in calore subtili, fietque Oleum Juniperi, vel Spiritus Terebinthi ruber instar Sanguinis, iisdem pollet viribus, quibus Balsamus Sulphuris, quoniam unam eandemque postulant præparationem.”
Basil. Valentini Triumphus Antimonii.

internal Sulphur is separated, and the Regulus metallized.

Regulus by frequent Decomposition and long Fusion with Nitre, becomes deprived of a considerable Portion of its Sulphur, is less spiculated, less fragile, less splendid, and its metallic Part predominates.

This Regulus (so altered in Appearance) keep in Fusion, its volatile and sulphureous Parts sublime, and the Metal of Antimony remains.

More and more of the Metal of Antimony is produced in proportion to the Frequency of Decomposition, and Time of Fusion with Nitre.

The Regulus of the Ceruss of Antimony (as being already resolved by a partial Deprivation of its fragilizing Sulphur) is the most preferable for the Purpose of Metallization.

As in the precedent Processes the Sulphur of the Regulus is attracted by the Magne-

tism of Alcaline (so by the Subsequent is the Metal by the Magnetism of Acid) Menstrums.

The fine levigated Regulus, or Glass of Antimony, being digested with Vinegar, and a Portion of Oil of Vitriol in B. A. gives thereto a considerable Portion of its metallic Part, which appearing in saline Form, has by several, erroneously, been looked on as the Salt of Antimony.

Neither the Glass of Antimony, nor the Regulus (tho' impalpably triturated) yield any remarkable Degree of Tincture to tartarised Spirit of Wine, without a previous Digestion in Acids.

The exiccated Regulus, after a Solution and long Digestion in Aqua Regia, being redigested in tartarised Spirit of Wine, gives thereto a very deep Tincture, which is derivable from the predecomposed Sulphur.

This Regulus (being reduced with the black Flux, or Soap) keep in Fusion the

volatile and sulphureous Parts sublime, and the Metal of Antimony remains.

The Mercurification of Antimony (as that implies the Destruction of a perfect metallic Compound) is impossible.

An imperfect metallic Compound is reduceable to its Principles, Antimony is an imperfect metallic Compound (elucidated in all the Variety of Form and Virtue that it is susceptible of) therefore it is reduceable to its Principles.

The Principles of Antimony are compounded of other Principles; the one (*Sulphur*) of a mineral Acid and a Bitumen; the other (*Lead*) of Mercury, and a vitriifiable Earth.

In the Deconstituence of Antimony (either by Acid or Alcaline Menstruums) one of its compound Principles is decomposed.

The Sulphur Auratum of Antimony (considered as entirely divested of reguline Parts) is neither qualified for the Purpose of Medicine or Metallurgy.

The Process of Sulphur with Alcalies, must be considered as the Destruction of its acid Principle; the *Neutralization* of Sulphur.

Vice versa. The Process of Sulphur with Acids, must be considered as the Destruction of its inflammable Principle, the *Vitrification* of Sulphur.

The Reconstituence of the compound Principles (in native Virtue) into Antimony, is effected by Apposition, Magnetism, Incorporation, Mixture and Fire.

There are but six Metals (Mercury has not the Properties of a Metal) and of these Lead has the greatest Affinity, and commiscible Power with Sulphur, and is the only one that is susceptible of such an obstinate Mixture with it, as is visible in Antimony.

Sulphur (*primo contactu*) rapaciously incorporates with Lead in Fusion, and renders it hard, spiculated, and fragile.

Sulphur and Lead may (at length) be so obstinately compounded, as to demonstrate a striated Resemblance, and be as analogous to the native Antimony, as the factitious is to the native Cinabar.

Those who would make any Proficiency in the Mineralogy of Nature, must commence by a sedulous Application to chemical or artificial Mineralogy.

There is no intermediate State between Metal and Metal, or Mercury and Metal; of Consequence there is no Semi-Metal. If according to the Definitions that have been given, it is to be understood as a Substance ceasing to be mercurial, and verging towards a metallic State.

All those Substances classed by the Naturalists and chemical Writers, as Semi-Metals, are really *Metals* decomposed by mi-

neral Acids, or Sulphurs; the constituent Metal of all of these is Lead.

By the Decomposition of Antimony, either by Acid or Alcaline Menstruums, we learn, that its medical Virtue depends on a judicious Separation of its sulphureous from its reguline Parts.

Whether you deprive the Regulus of a Portion of its Metal by Acids, or a Portion of its Sulphur by Alcalies, either way you cause a Diminution of its medical Virtue.

It is easy to deprive Regulus of its Emeticity, either by causing a Relaxation of Texture, with its Quantity of Lead, or sheathing up its Points with its Quantity of Sulphur.

Very little can be expected from crude Antimony as a Medicine, its reguline Parts being sheathed up with Sulphur.

Antimony prepared with its weight of Nitre, is the Crocus of Antimony, the ex-

E

ternal Sulphur is separated from the reguline Spicula, which accounts for its Emeticity.

Antimony prepared with twice its weight of Nitre is a more bland Emetic, the external Sulphur is not only detached from a Union with the reguline Parts, but the reguline Parts are subtilly divided, and in some degree resolved.

The Calx of Antimony (prepared with three Times the weight of Nitre) is inert, because its reguline Parts are very much subtilized, resolved and blunted, by being deprived of a considerable Portion of their aculeating Sulphur.

On the contrary, the Calx of Antimony, prepared by Ustulation, evidences a Concentration of its reguline Parts, which Concentration may be so far increased, that it may at length terminate in a perfect Composition, no Menstruum, either Acid or Alkaline, being of Force to lessen its Emeticity.

Antimony in the Process of Ustulation (being acted upon by sulphureous Flame)

acquires Copper, that which abounds the most in Sulphur, the greatest Quantity.

Regulus, by the Process of Ustulation, (in some measure) acquires a Concentration of its Constituents, but no Copper.

There is nothing improbable in imagining Copper to be concentrated Antimony, as it possesses nearly the same *Vis emetica*.

In the Vitrification of Antimony, it is to be understood, that the internal Sulphur necessary to the Existence of the Regulus, cannot (like the external Sulphur) suffer a Diminution of the Power of its Principles, or be vitrified.

In this Process was the Vitrification of the internal reguline Sulphur *possible (similia similibus quadrant)* it would unite with the Glass of the external Sulphur, and perfect a Metallization of the Regulus.

What accounts for the pre-eminent Activity of the Glass of Antimony is, that its Regulus is not decomposed (either by an

acid, or an alkaline Menstruum) concentrated and disengaged, the Glass of the external Sulphur being no ways obstructive.

Every Property of Antimony elucidates its Principles and Constituence; its Friability, Volatility, Colour, specific Gravity, medical Virtue, Time of Durability in the Fire, &c. &c. &c. all declare the Existence and obstinate (tho' imperfect) Mixture of *Sulphur* and *Lead*.

The Point in Question (the specific Metalleity) may be decided by a Repetition of Process; so will those that are desirous of Conviction, be convinced that I have made (and that others may make) the Regulus of Antimony malleable without *Metallic Matter*; and as to the Nature of the Dispute between certain Misleaders of the Chemical Committee for the Encouragement of Arts and Sciences, and myself, that is best elucidated by the following Letters, which were addressed, chiefly, to the Printer of (and published in) the *St. James's Chronicle*.

LETTER L

Bedfordshire, June 9, 1762.

S I R,

WHEN last in Town I constantly attended the Society for Encouraging Arts and Sciences, of which I am one of the Elder Members, and was not a little surprized at a partial Clamour raised against Doctor *Redmond's* Essay on the Constituence of Antimony. But as the Principal in that Opposition has since given the Society a flagrant Occasion to doubt of his Candour, it is easy to guess from what Motive he acted. The Doctor since communicating his Discovery to the Public in the *London and Imperial Magazine* for June and July 1761, as well as in the *St. James's Chronicle, Gazetteer, and Ledger*, was a proper and judicious Rebuke to his interested Opponents in a private Assembly, who have never since attempted to refute it. Their Acquiescence is then a convincing Proof to

me of the Uncontrovertibility of his Doctrine.—Highly pleased to find he had not confined his long and expensive Researches to mere Chemical Speculation; but that he has also extended them to a Medical and Practical Utility, I, upon his first advertising, sent Orders to Town for a large Quantity of his Antimonial Pills, which I have distributed amongst my Country Neighbours, in the late Epidemic, as well as in other adventitious Maladies, and have seen such salutary Effects produced thereby, as must enhance so valuable a Discovery more and more in the Publick's Esteem, and rank it amongst the most safe and efficacious Remedies in our Materia Medica.

I am, SIR, yours, &c.

LETTER II.

S I R, *June 24, 1762.*

A Letter to you lately, address'd from *Bedfordshire*, by a Brother Member for the Encouragement of Arts and Sciences, recalls to Mind *Dr. Redmond's* Essay on the Constituence of Antimony; on account of his being a Member, he offered to our Society the Preference of his Discovery, so far as it regarded *Metallurgy*, (an Article in which we do not as yet see very clear) reserving to himself whatever Medico practical Utility might be the Result of his Researches. Why we heard no more of it, I could never get a satisfactory Answer from those I asked, who perhaps were interested not to give me one; but as by the above hinted Letter from *Bedfordshire*, there seems to be an inuendo of foul Play, it will oblige me and several Members, who detest nothing so much as mean Cabals to depress others, and are deter-

mined to see Justice done to every laudable Attempt, according to the true Spirit of our Society's Institution, if Dr. *Redmond*, thro' your Paper will speedily give a candid Account of that Proceeding; for which Purpose he is called upon in this Public Manner.

I am, SIR, yours, &c.

L E T T E R III.

S I R,

July 1, 1762.

SEEING myself called upon in your Paper, to give the Public an Account of what passed relative to my Essay on the Constituence of Antimony, which, as a Member, I laid before the Society for the Encouragement of Arts and Sciences, I shall comply with your Correspondent's Request, in as succinēt a Manner as I can. In *April*, 1760, I laid before the Society my Essay on the Metallization of Antimony, or the Method of making its Regulus malleable, without metallic Matter, which was a *Desideratum*, or a Discovery long wished for in Chemistry. After much Altercation, a Committee was appointed, Dr. *Watson* in the Chair.—I met with what is but too usual on all similar Occasions, Clamour and Obloquy, instead of a candid Hearing and dispassionate Enquiry. Some interested Opponents, who had private Views to mislead

the Society for their own partial Emolument, (which has given Rise, to the Society's late Resolution of defeating and stigmatizing all such Pretenders) with their well-known Modesty, concluded the Arcana of Nature, that had escaped their Notice, or rather what they had never thought of, could not be revealed to the Penetration of another, although he had neither spared the Labour of Years, nor the Expence of many Hundred Pounds. The best Comment on so partial a Proceeding is to relate the Conduct of *Riolanus*, the most eminent *French* Anatomist of his Time, who, when all *Harvey's* Experiments to evince the Circulation of the Blood, (which he denied) were pressed hard upon him, his last Argument was:—" If the Blood circulates
 " in the Human Body, I must have discovered it;
 " covered it: I have not discovered it;
 " therefore the Blood does not circulate,
 " consequently *Harvey* is an Impostor," &c. This Difference, however, is to be observed, that *Riolanus* was one of the most skilled in Anatomy amongst his Contemporaries.— But as to my few clandestine Opponents—

clandestine I call them, because the Tenets they wantonly and maliciously caballed against in private, they have never dared to implead since published; which was intended as a fair Defiance to their Ignorance and Self-interestedness. The Secrets of Metallurgy are attainable by those only who labour over the Furnace and Crucible; the bare dim-sighted Reading of Chemical Books can, at best, make but petulant Talkers, but never solid Reasoners, nor accurate Discoverers, to be depended on.

A Resolution was entered in the Books, for giving a Premium of One Hundred Pounds on ascertaining the Truth of the Facts which I had advanced. I was ever ready to come to the Experiment, *ad experimentum provocavi*, and especially to give indisputable Demonstration, in Support of my Theory, by a Communication of my Discovery, which (it being easier to deny than disprove) was declined. Some worthy Gentlemen of the Society, declaring the Treatment I had received unfair, espoused my Interest, among whom strenu-

ously exerted himself, the learned and ingenious Dr. *Parsons*, Fellow of the Royal and Antiquarian Societies, well known to the Learned of *Europe*, by his various Productions fraught with Taste, Candour, Elegance and Erudition. He is, moreover, the ever ready Friend to make known all laudable Endeavours and Merit in another. He, I say, was generously warm in my Cause before the Society; but finding the Stream too strong against me there, kindly offered to present my Researches to the Royal Society.

I thought it but a just Return for his Civility, not to trouble him any more on my Behalf, lest he should be thereby involved in what might arise to a Literary Warfare, and resolved, therefore, that the Trouble should be all my own. In the Months of *June* and *July*, 1761, in the *St. James's Chronicle, Gazetteer, and Ledger*, as well as in the *London and Imperial Magazines*, (to which, for the present, I refer) I published my Chemical and Metallurgical Observations on Antimony, in which I gave the

Method of making Regulus of Antimony malleable without metallic Matter. Now, Mr. Printer, as your Paper will not allow Room for further expatiating, I must conclude, declaring myself penetrated with the highest Veneration for the by far greatest Part of that most laudable Society for the Encouragement of Arts and Sciences, notwithstanding whatever Dislike I have just Reason to entertain towards a few envious and malevolent Particulars, who, upon clear Examination of their Abilities, Veracity, &c. would be found a Disgrace to so respectable a Corps; for such Men, by their dark and sinister Manœuvres, (if not timely prevented) must prove detrimental to so praise-worthy an Institution.

I am, SIR, yours, &c.

William Redmond.

LETTER IV.

S I R,

July 15, 1762.

I HAVE, for some Time, waited, with great Expectation, to know what Answer would be made, by the Society for the Encouragement of Arts and Sciences, to the Charge brought by Dr. *Redmond*, which implies that respectable Body's being either misled, or have acted with Partiality.

A Resolution was entered in the Books, which was finally agreed on at a general Meeting, That if Dr. *Redmond* could make the Regulus of Antimony malleable, without Metallic Matter, he should have a Premium of One Hundred Pounds. This Dr. *Redmond* has performed, and indisputably acquitted himself according to this said Resolution; and is therefore indisputably entitled to the Premium. He, in the Months of *June* and *July*, 1761, in the *St. James's Chronicle*, *Gazetteer*, and *Ledger*,

as well as in the *London and Imperial Magazines*, published his Chemical and Metallurgical Observations on Antimony, in which he gave the Method of making the Regulus malleable, without Metallic Matter; and thereby proved to the Public, as well as to the Society, the Veracity of his Allegations, by putting it in the Power of both to make the Experiments. He called publicly on the Society,—but no one answered. Their Acquiescence then must appear to all Mankind, and in the strictest Justice be allowed to be, a demonstrative Proof of the Uncontrovertibility of his Doctrine. That the Doctor gave his Discovery to the Public (the Gentlemen of the Society will surely allow) is an Argument, and that a great one, *in Favour of*, instead of being any Sort of Objection to, his having the Premium. A private Misrepresentation therefore, to the Prejudice of the Doctor's Character, is not giving him fair Play; but, on the contrary, is the worst of Assassinations, and like wounding and stabbing of him in the Dark:—And to menace and talk of raising a *Posse* against

a Fact which is so easy to be tried and proved, is surely a Demonstration, not only of Inhumanity and Ungenerosity, but also favours of the *Weakness* of Envy; an Imputation which so valuable and esteemed a Society (I am persuaded) would, if they would but give themselves Leave to think coolly and impartially, cautiously guard against. Before I conclude, I would beg Leave to observe to the Gentlemen of the Society, another Consideration, that they must themselves be convinced of; and that is the *Time* taken up, as well as *Expence*, attending these Investigations. Dr. Redmond, has, besides the Time employed by him, the Pains he has taken, Labour he has been at, been also at a great Expence (*Five Hundred Pounds*) in making this important, and so much sought after, and so much desired Discovery. Will that respectable Body, who have now manifested to their Country their laudable, and indeed glorious Views, in enriching it with every useful Discovery that can tend to its farther Aggrandisement, and which has already made them famous over *Europe*, lessen that Fame, their own

Worth, Dignity and Importance, and give a *Check* to other Adventurers by them encouraged to farther Pursuits in Science, by with-holding from Dr. *Redmond* this promised Compliment, tho' an inadequate Reward for so *momentous* a Discovery, and which has given the *Clue* to, and thrown *Elucidation* upon that Part of Nature, the Investigation and Analysis of which have been so assiduously sought after by the Philosopher, Physician and Chemist? His Antimonial Pill, which perhaps had never been otherwise discovered, owes its Birth there-to;—a *Medicine*, that in many deplorable Cases already has, and will soon farther proclaim its Value and (permit me to say) its astonishing Efficacy to the World; I say astonishing Efficacy, as I have been an Eye Witness of *Cancers*, pronounced incurable, being cured thereby; and Health, Vigour, Strength, Digestion, and Spirits restored, in the worst, lowest, and most dispiriting Nervous Cases.

I am, SIR, yours, &c.

CANDIDUS.

L E T T E R V.

To Dr. TEMPLEMAN.

S I R,

I AM not a little surpris'd at the passive Conduct of the Members of your Society, relative to the Charge of Partiality on their Side, as well as of Injury received by Dr. *Redmond*.—I own this Charge regards not so much the Society in general, as the Chemical Committee, most of whom, those especially who preside, are supposed capable of repeating any Process, which shall be propos'd. —

Now Sir, to bring Matters to an Issue, as a Resolution is enter'd in your Book, for giving a Premium of One Hundred Pounds to Dr. *Redmond*, for making Regulus of Antimony malleable, without metallic Matter; the said Dr. *Redmond*, having made it appear demonstratively, that he has performed this said Desideratum, is, *ipso facto*,

entituled to the Premium ; and, upon Refusal of Payment, would find Relief at Law--such is the Opinion of an eminent Barrister : Because the entering of the above-hinted resolution was the Consumation of the Contract, which, as Trustees and Agents for the Public, (for whose Utility every useful Research is intended) you are obliged to discharge--otherwise they must be liable to heavy Censure, a disagreeable Suit, and which might induce many to decline, and deter others from subscribing---Evils to be prevented. I cannot pay any Attention to what I this Moment hear, to wit, that the Society entered such a Resolution, looking on the Fact as impossible, and merely to make Dr. *Redmond* ridiculous ; but as he has indisputably evidenced the Fact, who is ridiculous now ? How much the more intelligent he, and consequently more deserving of the Premium ; I could be copious in animadverting on such partial proceedings, but chuse to avoid it, lest thereby the Interests of so laudable a Society, when mislled, might be prejudiced.

I am, S I R, yours, &c.

L E T T E R VI.

S I R,

August 12, 1762.

I HAVE read all the Letters which have appeared in your Paper, relative to Dr. *Redmond's* being entitled to a Premium for rendering Antimony malleable, without metallic Substance, as well as the Success of his Antimonial Pills. They have hitherto been expressed in a decent, spirited, and polite Manner; which is not usual in the Letters either of those, or of their Friends, who think an Injury has been done.---I cannot conceive why the Society for the Encouragement of Arts and Sciences (that Part of it at least, the Chemical Committee, and yet more especially the Directors thereof) have thrown out no Answer in their Defence. So passive a Shrinking from the Charge brought against them, gives Room to surmise, that "All is not right, and that there is something rotten in the State of Denmark." From the

long Experience I have had of Life, I never knew any particular Person, or Body of Men, when publicly called upon (if they thought themselves furnished with an apposite and brilliant Defence) decline a Publication thereof: Therefore I always incline to harbour a Suspicion of foul Play, on the Side of any particular Person, or Body of Men, who decline a replicatory clearing of their Character, when publicly impleaded.—The old hackneyed Excuse is too contemptible to be of any Weight here, to wit, “We scorn it—It is beneath our Notice.”—Because such a Summons, before the Tribunal of the Public, is to be neither scorned, nor deemed beneath Notice; in as much as they in general, who think either in so pusillanimous, or so evasive a Manner, remain not only branded with the Charge, but thereby sink into Infamy, and afterwards often attempt an ineffectual Answer, when too late.

Every Individual, or Body of Men, should be as delicately sentimental, in regard to their particular, or collective Cha-

raeters, as *Cæsar* was in respect to his Wife, “*Calpurnia’s* Virtue ought not to be suspected.”

If the Society hath been partially influenced, or misled, at first against Dr. *Redmond’s* Discovery, surely that is no Reason they may not now open their Eyes to Truth; and as the Law Term implies, put in practice the *Nunc pro Tunc*; that is, let them give now to him the Premium entered in their Books, which he has long time been entitled to.--- It is much more eligible, as well as laudable, to recede from a Mistake, since “to err is human,” than to persevere in wilful Error, which is odious and detestable in the interested Advisers of so unfair and so partial, nay, so oppressive a Proceeding. Oppressive I call it; for what can be more so, than to refuse giving laborious Merit its stipulated Due, as can be vouched by unquestionable Authority?

I am, SIR, yours, &c.

LETTER VII.

A Letter to a Gentleman in the Country.

S I R,

August 19, 1762.

IN Answer to your Letter, requesting of me, as a Member of the Society for the Encouragement of Arts and Sciences, to give you my opinion of the Complaint of Dr. Redmond, against our Chemical Arbiters, I candidly confess, I know no more of the Transaction, than what I have seen in the public Papers; because our Number is so great, the Business is branched out into several departments, and for each a Committee is appointed. Into the Chemical, there is Reason to fear, that some Chymiastrs have introduced themselves: One in particular, to the Disgrace of the Society, who by a most barefaced Imposition, has not only received a Premium, but also their Thanks. Their having been imposed on once, is a just Reason for their being cauti-

ous, though it would have been much better for the Credit of their Understanding and Judgment, that no such foul stain had ever happened: But it is a most extraordinary Manner of proceeding, to refuse a Premium to one, who has proved himself greatly worthy thereof, because for-sooth, they have been seduced to give one to a Person who was not.

The unsatisfactory Replies I get from those supposed to be in the Secret, make me doubt of the Integrity of their Judgments. As for Instance, "The Doctor has made his Process publick,"---What forced him thereto?—The obstinate Resolution they had taken not to be convinced. Their reliance upon Authorities, and the prevailing weak Opinion of there not being a Grain of Metallic Matter in Antimony, and consequently of the Impossibility of its Regulus being made malleable, they opposed to demonstrable Fact, ungenerously insinuating to every one the Doctor's Accomplishment of that grand and consequential Desideratum in Medicine and Chemistry, not only as visionary and impracticable, but also as the

effect of Imposture. The Doctor, to elucidate the Fact, made a Publication of his Discovery, in the Months of *June* and *July*, in the public Papers and Magazines, in order that Conviction might appear to every one desirous thereof, by a Repetition of his Process. This being the Case, the Misleaders of the Chemical Committee find themselves in a very critical Dilemma, as well in respect to the Public as to the Society; for if, after so many public Attacks, they assent to give Dr. *Redmond* the Premium, it will, they well know, imply Partiality and Injustice in their preceding Conduct; and, if they do not, he will, as they have Reason to conclude, still goad them in the Public Papers, which may be productive both of Discredit and Disadvantage to the Society.

I am, SIR, yours, &c.

F I N I S

effect of imposture. The Doctor, to elucidate the fact, made a Publication of his Discovery, in the Months of June and July, in the public Papers and Magazines, in order that Conviction might appear to every one delirious thereof, by a Repetition of his Proceedings. This being the Case, the Members of the Chemical Committee find themselves in a very critical Dilemma, as well in respect to the Public as to the Society; for if, after so many public Attacks, they assent to give Dr. Redwood the Premium, it will, they well know, imply Partiality and Injustice in their preceding Conduct; and, if they do not, he will, as they have Reason to conclude, still goad them in the Public Papers, which may be productive both of Discredit and Disadvantage to the Society.

I am, Sir, yours, &c.

W. A. S.

