

# Glauber

[This extract is taken from the English translation by Christopher Packe of *The Works...* of Johann Rudolph Glauber printed in London in 1689. Although historians often portray Glauber as a proto-scientific chemist (he is credited with the identification of Glauber's Salt now known as Sodium Sulphate), Glauber worked extensively with alchemical ideas as well as developing laboratory techniques for distillation and control of furnaces. This extract illustrates very well Glauber's reworking of the classic sequence of colour changes in the process of transmutation. - A. McLean].

## **A Short Book of Dialogues, or, (Certain Colloquies) of some Studious Searchers After the Hermetick Medicine and Universal Tincture.**

The First Dialogue, or Conference, betwixt two Lovers of Hermetick Medicine, deciphered by the Letters, A. and B. the last of which hath had a prosperous Success on his Labours, the other not, and therefore craves of this last (viz. B.) a Manuduction to the Work, whereby he is rendred Master of his desire.

A: I have searched into Vegetables, Animals, and Minerals, because the Philosophers write, that their Stone is Vegetable, Animal, and Mineral; but I see, that I have not had under my hands the true Matter. For if there does appear in any [of these Matters] the Crow's head, yet the other Colours which the Philosophers make a description of (as the Dragon's Blood, the Peacock's Tail, Virgin's Milk, Coagulum, or curdling, and principally that Red and Fire-abiding Salamander) did never appear [to my view]. Or, if these [Signs] of Sanguis Draconis, or Lac Virginis appear to sight, in some other Matter, yet notwithstanding the other colours, and other signs, which the Philosophers make mention of, did never discover themselves [to my view]. Hereupon I did at last even most thoroughly persuade myself, that it was an impossible thing, that, out of one Matter, and by one and the same Labour, one Colour should orderly succeed another, and become visible to the sight, by the bare help of an external Fire, as for example, first of all, in the putrefaction, the Crow's head, then the Peacock's Tail, then the Dragon's Blood, Lac Virginis, Coagulum or cheese-like curdling, and at last the fixed Salamander...

B: Come then, on God's Name, a little nearer me, and heed well the things which shall be shewn unto you. We will here take half an ounce of common Gold, and put it into this Aqua Fortis, made of Vitriol and Saltpeter, whereto we will add the same weight as the Gold is of, or a little more, of our Salarmoniack, without which, the Aqua Fortis alone, and by itself, is not able to dissolve the Gold.

A: Pray, Sir, why do you say, Our Salarmoniack? Are their several and different kinds of it? For my part, when I dissolve Gold, I put it into the Aqua Fortis, that [common] Salarmoniack, which is everywhere to be had in the Merchants Warehouses, and is very fit to dissolve Gold into a Yellow water.

B: You speak very well after your own way; And I confess, that every Salarmoniack mixt with Aqua Fortis is very good to dissolve Gold; nor is this any new way, for 'tis in very much use amongst all the Chymists, who are wont on this wise to dissolve their Gold, but yet that which is thus dissolved, still remains Gold, and doth easily admit of being again precipitated out of the Aqua Fortis, and of being reduced by Fusion into the former Body, it had before its Solution. But if so be, that the Solution shall be made by the help of our Sal Armoniack, then is the case vastly altered, and your attempting its Reduction again will be in vain. For if Gold be but dissolved barely once with out Salarmoniack, it admits not any more of melting, nor doth it of itself return again into a malleable Metallick Body, but gets a Reddish Scarlet kind of Colour in the Tryal [or Crucible] and remains an unfulfil Powder. And if you add some Borax thereunto, and set it in the Fire then to melt, it will pass into a Red Glass, which is a sign of its being plainly destroyed, and of its being transmuted into another Body. And therefore I dare aver, that there is seated in our Salt Armoniack a power of inverting, and transmuting Gold, and of making it fit for the Philosophical putrefaction, which thing is impossible to be done by any other salts whatever they be, and what Name soever called by.

A: Certainly, this is a Divine miraculous thing, to subject Gold, so mightily constant in the Fire, unto Putrefaction, and to reduce it by Putrefaction, into a nothing: For I have read too and again, amongst the Philosophers Writings, that it is an easier thing to make Gold by Art, than to destroy Gold made by Nature. And therefore this salt must

needs be a wonderful one, which is able to effect these and other, the like almost incredible things.

B: Well may you term it a wonderful Salt, for so it is, the like of which, no Man will find in the whole World; though to such as know it, it is so vile and mean a thing; insomuch that scarce any one would think it likely, that such things could be done thereby, as are wont to be, should it be but named by its own proper Title. Does not, I pray, that Philosopher, Cosmopolita [or Sandivow] confess, that he hath oftentimes declared the Art, and Secret of the whole Philosophick work, word for word, sometimes to one, sometimes to another, and yet they would not at all believe him, by reason of the meanness, or vileness of the Work? And does not he make frequent mention of his own, and not the common Sal Armoniack? But that you may give more belief and credit to our salt, I would have you read the Turba of the Philosophers, wherein you will find all those things which they have published concerning their Salt: And amongst others, hearken to those few words, which the Rosary mentions: Our Salt dissolves Gold into a red Colour, and Silver into a white Colour, and transmutes them out of their Corporeity into a Spirituality, and with our Salt, are their Bodies calcined. And for this reason, Lumen Luminum, also says, that if the Omnipotent God had not created this Salt, the Elixir could not have been perfected, and the Study of Chymistry would have been in vain. Avicen saith, If thou hast a desire of getting Riches, prepare Salts, that they may be changed into a clear water, for by the Fire are Salts changed into Spirits: Salts are the Roots of thy work. Hermes saith: All Salts are Enemies to our Work, and to our Art, save the Salts of our Lune: Arnoldus saith: Every Salt that is well and rightly prepared, is of the Nature of Salt Armoniack, and the whole Mystery of our Art consists in the Preparation of common Salt: He therefore that knows Salt, and its Solution, to him is the Mystery of the ancient wise Men known. And therefore bend the utmost Meditations of thy Wit upon the Nature of that Salt only, in which the Wisdom of the ancient wise Men, and every Mystery, is found hidden and concealed. The Writings of the Philosophers are full of those and such like Sayings, and they so every where mightily insist upon Salt. And now, what think you of these Testimonies; what! do the things I have spoken, yet find any belief in your Breast?

A: Yes Verily, and now I am on your side; but yet do as yet desire, and heartily wish for this one thing, that you would for once let me see your Labour, whereby I may convince other incredulous Persons, and make them believe too.

B: Well, I am content; and come let us go to work, and let us put the Gold in its requisite Menstruum, and place it in warm Sand, thereby to hasten forward the Solution of the same; though there is strength sufficient in our Menstruum, to dissolve the Gold in the Cold without Fire. We shall in a short time see it of a yellow colour: And behold that very Colour, and the Gold itself is so changed, as it is never more reducible into its former golden Body. Thus you have now the entrance and beginning, which as yet is vastly distant from the wisht for end: And when you now see the beginning, know, that is the first day of our Philosophick Labour. Next, let us proceed to the Putrefaction of the dissolved Gold, without which no Colours present themselves to our view. Behold in this very moment, Sol begins to wax black, and in a little while after it will conceive such a thorough blackness, that it will be like to Ink, and may serve to write withal on Paper. This lackness, the Philosophers call the Head of the Crow, by that name pointing out unto us their Putrefaction; by which, the second day of our Philosophical Labour is finished. Our Ground [or Earth] therefore, being sufficiently enough moistned, we must beseech God to bestow upon us the hot shine of the Sun; for without the Sun's heat which stirs up the Life in all things, there cannot possibly be any increase and growth. Lend me therefore your best attention. As soon as the putrefied Body of our Sol shall feel the warming heat of the Sun, its blackness, which was the true Sign of its Putrefaction, will vanish away by little and little, and give way to the access and approach of many most delicate Colours, the which, the Philosophers have named the Peacock's Tail, and this finisheth the third day of our Philosophical Labour. And now, when the Fruit-producing Sun shall have thus illustrated our Field, or Ground with its warmer Rays, but for one day as yet, we may easily see, what is further likely to come to pass hereafter.

A: Huy da! what a wonderful thing is this, that I see here? in so short a time, and how speedily hath the Peacock's Tail changed itself into a thick Blood? Who could ever believe it, unless he had seen and beheld it with his own eyes?

B: I confess it is such a thing as may well cause in any one most exceeding admiration, seeing that there proceed from Art and Nature, Operations of such great moments: God hath made all things very well, and should he not permit such an admirable changing of Colours, to appear in the Operation, verily the Philosopher would be in doubt, whether or no he might hope for an happy success of all his Labour: An now upon the occasion of this Blood-like Colour, is arisen the Name of Dragon's Blood amongst the Philosophers, who say, that when this Colour appears in view, the fourth day of the Philosophical work or Labour is finished.

... For this Golden Blood may [probably] be the potable Gold of the Ancients, which never more suffers itself to be reduced into its former malleable Body. I have sundry ways attempted to reduce it, but never could effect the same. But this one Case I except, viz., a little of this dry Blood, being put upon molten Gold, hath ingressed into the same, and the residue swims at the top thereof like an Earth: but yet that little which adjoined itself to the Gold, is of so

great a Power as to make all that whole Body of Gold which it entred into, brittle, yea so brittle, as that it suffers itself to be beaten in a Morter into most fine Powder.

A: I Marry, Sir! these are Miracles indeed, which I see and hear; who will make any further doubt, but that the Universal Tincture which heals the Sicknesses, or distempers both of Men and Metals, may be prepared, out of this Golden Blood? For all the Philosophers do with one consent confess, that their Tincture, when quite perfected and cast in upon molten Gold, doth render the same brittle. And now seeing this Golden Blood of ours, being as yet immature, and not prepared, doth effect the same, would it not, I pray, perform the same much better, if it had but Ingress given unto it, by inceration, whereby it might flow the easier, and enter the more readily. I do not now at all doubt, but that this aureous Blood both can and in time will become an universal Tincture of Medicinal Virtues.

B: Although I am not minded publickly to disclose an Arcanum of such great moment, and so great a Mystery, and to throw such a precious Pearl afore swine; yet I am of the mind to prepare some quantity thereof, and to part with so much unto the sick that need it, and that shall desire the same from me, as is requisite for their use. And not only to the sick, but to others too, that are willing to apply it to other uses and experiments; but especially unto those who would fain try, whether or no, even this very Blood will turn itself (according to my description) into a white Milk, and then into a Red Stone, and, by a new reiteration of the work, pass through all colours. This desireousness, or inquiry after the Truth cannot at all prove any ways disadvantageous to me, or mine. For the Art itself will always remain an Art, unless it chance to hapopen that some one or other Searcher, which is of a more subtle Ingenuity, should, by his diligent and serious inquiry, search out the very foundation of the Art itself. Which if it should come to pass, he must then think, that God hath vouchsafed this gift unto him, and that he now considers, and well knows, what esteem he ought to set upon it, and by what means he ought to hide it... All these things which thou hast hitherto seen, are indeed very good; but we are as yet far off from the end. Have you not likewise read in the Philosopher's writings, that the White Swan doth also show itself in the Work? Now, if by but as yet One days shining, the Sun shall have illuminated by its brightness the Dragon's Blood, you shall see it turned into a white Milk, which milk the Philosophers have written off, and which at length goes into a Coagulum, or cheeselike curdling. Look therefore now upon that Milk, which you see to admit of Coagulation and Condensation, by little and little: And thus with this golden Cheese do we finish the Philosophical Labour of the Fifth day.

A: God be thanked, that this days Labour hath also succeeded, as we could wish, But forasmuch as those things which you mentioned, but now come in my mind, viz., that we are far off from the end of the work as yet, and yet tomorrow is the Sixth and last day of this our Philosophical week; and further, seeing you said presently after the beginning of this our Conference, that the whole Work would be finished in six days space, and that on the seventh Day we may cease from all our Work and Labours, and sanctify it, or keep it holy, and give God due thanks for all his benefits bestowed on us: Seeing (I say) that all these things come now in my mind, 'tis no wonder, if they likewise create in me a great deal of care and puzzling, to think, how this can be, that all those things that remain yet behind may be perfected, and brought to a full end in one day.

B: Cease your care, my friend, nor do you ought else this Sixth day, but hourly increase the Fire by degrees, and stir it up more and more, that so you may see, by what means our white Coagulated Milk will by little and little pass into a yellow Colour, and will at length be thoroughly Red, and abide most constant in the Fire. This fixed Redness, the Philosophers call their Salamander: The Poets tells us a tale, of a certain Worm that lives in the Fire, which cannot be burnt or consumed thereby. Therefore, after the Philosophers have brought their work through all the colours, an have at length attained so far, as that there appears no other, but a mere fixed Redness, they named it their Salamander, with which (if you except only Inceration and Multiplication) they ended their work, and so do we also finish these our present Labours.

A: Ah, my dearest friend... there are divers scruples and doubts.. that perplex my mind.. For I am yet as plainly ignorant, what use to put that Salamander to. As concerning those things which you have faithfully disclosed unto me hitherto, I trust, I shall not err in their operation, but as touching Inceration and Multiplication, in which the two Cardinal main points, the very pillar or hinge of the whole operation lies, as you said, I must needs confess myself more blind than Tiresias was...

B: Have you not read in the Philosophers, when they speak of Inceration, that the out-driven Soul is to be restored to the dead King, that the dead Body may be recalled back to Life, and that it, arising with a more glorious Body, and a more excellent Crown, may prove an helper to its meaner Brethren. The Philosophers words are as follows. Here the Soul lets itself down, and refresheth the dead body. For it is not sufficient, that the King be deprived of Life and so left dead: No, no, for necessity requires, that its Soul be restored unto it, which may restore its motion, and lost life, to the dead body. Now, by how much the oftener, the Soul and Life is taken away from the King, and that which is taken away be again restored thereunto, which so much the stronger and more active Body, and so much the magnificenter a Crown will he arise withal. By these few words have I laid open unto you, Inceration and Multiplication. But yet there are other ways of increasing our fixed Salamander, and rendring it fusible, viz. by the

addition of Mercurial things, which by their speedy Flux and penetrating Property, do pierce into this our destroyed Gold, dissolve it, and so bring to pass, that there is made of them both (viz. of the destroyed Gold, and which admits not of any reduction, and of the Volatile Mercury) a certain fusile middling Body, which said Body, thus conjoin'd of the two, is to be matured by the bare Regiment of the Fire. And by this maturation, is this universal Medicament rendred so fusible, as to have ingress into all the Metals, and to penetrate them.

A: But pray Sir, is not this way of giving a more easy ingress and flux to our destroyed, and irreducible Gold, by the Mercury of Metals, more facile, and a nearer one than that abovesaid way, which requires a great many operations, by the reiterating of Inceration and Multiplication?

B: Yes verily, it is a shorter and easier way, as being void of many tedious Labours, for it needs nothing else, but that the Mercury of some Metals be put into some good strong glass with the inverted Gold, and so be brought unto Fixation. But yet this medicament, that is on this wise wrought up with the Mercury to a constancy in the fire, cannot extend its colour so largely, as that, which is rendered fusible by so many reiterated Operations, because, in every reiteration, the Tincture is exalted and multiplied...

A: .. Only this one thing more would I gladly know, viz., where I ought to seek for the Soul of the King.

B: You must look, whither you have driven it, and there must you seek it, and having found it, you must restore it to the dead King, and so you will again begin your Work, and you shall again bring it through all, the variety of colours, like as you did at the first time. For when the Soul is restored to the Body, there is made a new Solution, which is to be again putrefied, that it may turn back [sic]; and then proceeding on according to the same way, as was done in the first operation, there will appear all the Colours, and they too far more delicate than in the foregoing Labour. The Crows head will be blacker, the Dragons Blood redder, the Lac virginis whiter, and the Salamander more subtle, than it was in the first operation. For by so much the oftener you shall repeat this Mortification and Vivification of the king, so much the more Magnificent, more precious, and more efficacious a Tincture, will you obtain. Believe it, and give God the thanks, and be mindful of the Poor, as soon as ever you are Master of your Desires...