

VII. *Extract of a Letter from M. Geoffroy, Chemist, Member of the Royal Academy of Sciences at Paris, and F. R. S. to Sir Hans Sloane, Bart. President of the Royal Society ; concerning Mr. Seignette's SAL POLYCHRESTUS RUPELLENSIS, and some other Chemical Salts. By T. S. M. D.*

Paris, May 4, 1732.

S I R,

WE have nothing new in *Chemistry* here, but the Discovery we have made of the Make of Mess^{rs}. *Seignette's Sal polychrestus Rupellensis*. It is a *Tartarum solubile*, composed of Cream, or Crystals of *Tartar* ; and the fix'd Salt of the *Kali* of *Alicante* well deperated. This Salt is very singular ; for tho' it be a fix'd *Alkaline* Salt, it has the peculiar Property of crystalizing ; nor does it easily dissolve in the open Air, as other fix'd Salts do ; but on the contrary, it calcines therein, like *Vitriols* or *Glauber's* Salt. Another peculiar Property, which I have observ'd to belong to it, is, that if it be satiated with a *vitriolick* Acid, and the Liquor be evaporated, there results a Salt that has the Form of *Glauber's* Salt, and all the Properties requisite to make Mess^{rs}. *Seignette's* Salt. In order to which,

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Take of the Salt of *Kali* well purified, 1℔. dissolve it in Water, add thereto of *Crystals of Tartar* about 1℥ ℥; boil the whole in order to dissolve the *Crystals of Tartar*. But the exact Proportion of *Crystals of Tartar* can be no more determined in this Operation, than in making the *Tartarum solubile*; either because the Salt of *Kali* has retain'd more or less Humidity in its Crystallization, or because the *Tartar* has more or less Impurities in it. But if there be too much *Tartar* in the alkaline Liquor, after the Fermentation is over, filtrate the Liquor, and as it cools, the superfluous *Tartar* will fall to the Bottom. After the Separation of the *Tartar* from the Liquor, evaporate the *Lixivium* by a gentle Heat, set it in a cool Place to crystallize, and you will have very fine *Crystals*. If the Liquor be evaporated a little too much, there will be no *Crystals* of Salt formed, but the Liquor will be converted into a hard transparent Mass, not unlike Glue. But if you dissolve this Mass again, you may make it crystallize, as upon dissolving *Seignette's* Salt.

This Salt purges very well, from one to two Ounces dissolv'd in a Quart of Water.

Such is the Discovery of this Salt, which has hitherto pass'd for an *Arcanum*.

We have likewise his crystallized alkaline Salt, which is the Salt of *Kali*, that dissolves not in the Air. I am actually at work in perfecting this Salt, in examining that of *Kali*, and comparing it with *Borax*. From this last I extract *Glauber's* Salt,

Salt, by mixing it with Oil of *Vitriol*. The Mixture of *Borax* ξ iv with Oil of *Vitriol*, ξ j ξ j upon Sublimation gives me the *Sal sedativum* described by M. *Homberg*; and the Residue exposed to a strong Fire affords *Glauber's* Salt. I have found out a Method to shorten this Operation; for instead of subliming this Salt, I get it by Crystallization in light foliated *Laminae*. This Salt, whether sublimated or crystallized, has the Property of dissolving in Spirit of Wine; and if you set this Spirit of Wine on Fire, its Flame is green. Spirit of Wine has no Effect on *Borax*; the Oil of *Vitriol*, digested with Spirit of Wine, communicates no Greenness to its Flame: therefore it is requisite that the *Borax* should be united to an Acid, in order to produce this green Flame.

P O S T S C R I P T.

I Send you a Specimen of Salt made of *Crystals of Tartar* and Lime Water, which Messrs. *Grossé* and *Dubamel*, two Members of our Academy, have prepared; to which I join *Crystals of Seignette's* Salt, that M. *Bolduc* and I have made separately.

You will also find some *Sal Sedativum* made by Crystallization, which crystallizes in a peculiar Manner. This Operation is perform'd with ξ iv of *Borax*, and ξ i ξ i of concentrated *Oil of Vitriol*, the most fixt and weighty that can be had. The *Borax* is put into a Glass Retort, the Oil of *Vitriol* is poured on it, and then half an Ounce of common Water. This Mixture being exposed to a Fire gradually encreased, after the Phlegm has passed off,
and

and even while it is passing, there rises Flowers, or a volatile Salt in very beautiful foliated *Lamine*; some of which melt by the Heat of the Fire. After the Operation, the finest of these Flowers, which are round the Neck of the Retort, are gathered; and those that are grey, are thrown upon the remaining Mass: which Mass is dissolved in Water, filtrated, and evaporated slowly. Sometimes, even without Evaporation, the shining Talcous *Lamine* are to be seen in the Liquor. In 24 Hours the Liquor is poured off these *Lamine*: they are washed in fair Water, set to drain, and then to dry in a Stove.

If these *Crystals* do not calcine in the Stove, or in the Sun, 'tis a Sign there is nothing crystallized but the *Sal neutrum*: if they do calcine, 'tis a Sign that there is some *Glauber's Salt* mixed. And then this Salt must be dissolved again in hot Water, and recrystallized. No body before me has thought of extracting this Salt by Crystallization: It was always sublimed hitherto.