A letter from Michael Sendivogius to Vincenzo II Gonzaga, duke of Mantua (1562-1612)

The ^[81] wished to learn more about the effect of 'cold' (understood at the time as a potentially definable and measurable quality opposite to heat rather than simply a lack of the latter) on 'putrefaction' and 'multiplying of the spirit of nature', a 'multiplying' which would manifest itself in increased fertility. Given the terminology of the time and the known interests of Culpeper and his correspondent, Worsley, this evidently refers to the transmutation and multiplication of metals rather than to an agricultural process in the literal sense. Culpeper was explicit about having hit on the idea through a reflection on macrocosm-microcosm analogies: not but that I acknowledge alsoe a spring and an autumn as well in our lithe [sic: presumably a scribal error for 'litle'] world as in the great but my desire is that if wee desire to see a fruitful summer, wee must pass through the winter quarters, for if wee looke into nature wee shall find winter to be a naturall cause of the fruitfullnes in summer. ^[82]

Underlying this animistic view was the conviction that all Creation was imbued with a materially identifiable life-force, variously designated 'world spirit' ('spiritus mundi'), 'world soul' ('anima mundi'), 'universal spirit' ('spiritus universalis') and the like. Paracelsus called it an 'aerial nitre'. As ever, it is very difficult if not impossible to determine just what was understood by these terms, if, indeed, there was any consensus as to their definition, but the chemical literature of the period is full of practical experiments aiming to isolate and analyse this spirit, illustrating the way in which the new experimental philosophy was seen by the alchemists not as a challenge but an ally. 'Salt' in particular - a term of even greater ambiguity as used at the time - came to assume an importance it would be virtually impossible to overstate. Robert Fludd thought he had isolated the material spirit of life from wheat as 'a pure and divine volatile salt of wondrous properties' and J.B. Van Helmont was 'convinced that the vital spirit must be saltlike and aerial in nature'. Perhaps the most spectacular claims for salt were made by the colourful figure of J.R. Glauber, who will provide the focus for the following chapter.

'Salt' is the dominant theme in much of Glauber's writing. Like most authors who accepted the microcosm-macrocosm theory - and Glauber embraced it wholeheartedly -, he saw nothing odd in setting down side by side recipes for a salt preparation to kill maggots in cheese and another to turn base metals into gold, for preparing 'aurum potabile' and 'philosophic dung' ('philosophischer Mist'). [86] He was typical too in combining, almost in the same breath, conclusions drawn from laboratory experiment and from Scriptural exegesis and seeing the two as complementary. He pointed out that Christ referred to his disciples as 'the salt of the earth' (*Mark* 9:49-50), proving that salt is divinely privileged above all other substances just as the disciples were divinely chosen above all other men,^[87] and went so far as to speak of Christ himself as 'a pure divine salt' ('ein lauter Gottlicher Saltz').^[88] Its value as a fertiliser and preservative proved that it contained the miraculous spark of life itself, associating it in Glauber's mind with the sun, likewise a great fructifier, and with the first divine act of Creation, making it superior and anterior to the four Aristotelian elements: 'Salt is a symbol of eternity, for it is not altered or reduced in fire, air, water or earth, but long preserves all <167> things from decay. Salt was the first fiat at God's Creation, and from this fiat arose the elements. Hard as it may be to imagine God's first words having been 'let there be salt', Glauber went on to explain how salt emanating from the sun's fire passes down through air into the sea water (which, he claimed, is far saltier in sunny climes [90]) and thence into the interstices of the earth, animating and fecundating as it goes. In short, 'All fruitfulness and nutrition, then, comes from salt, salt from the sun, and the sun from God the creator of all things'. [9]

This identification of sunlight with 'salt' finds a clear echo in Moriaen's descriptions of his optical experiments:

Concerning burning glasses, I have noted this too: if finely ground antimony is ignited through them by the sun, it burns away strongly and yet loses none of its weight, but becomes heavier

by this means, which is proof indeed that the sun's rays impart natural salt and impregnate [the antimony] with it'. $^{[92]}$

The conclusion is not as wild as it may at first sound. The nature of light was one of the great mysteries of seventeenth-century science, and many leading thinkers tending towards atomism, including Gassendi and Newton, inclined to the view that it was composed of extremely small atoms, i.e. was a material substance, albeit of an exceptionally rarefied nature. Ally this with a belief that salt is a primordial building-block of Creation, and it becomes entirely logical to expect that sunshine should consist at least partially of salt.

Metals and minerals were generally seen not as inanimate, but as organic substances growing in the earth like vegetables (though far more slowly). Bruce T. Moran gives a fascinating account of how in 1618 the alchemist Johann Popp 'proved' this theory to the delight of his patron Moritz of Hessen by growing crystal flowers from lead. [93] A contemporary (and open-ended) discussion of the idea can be found in 'A Discourse about the Essence or Existence of Mettals' by Gerard Malyne, the (unpaginated) Appendix to the *Chymical*, *Medicinal*, *and Chyrurgical Addresses*. Comenius took it entirely for granted:

if one wishes to distinguish Man's end and the means to his end by comparing him with other creatures, one will not concentrate upon his points of likeness to metals or stones or animals (inasmuch as he is born and grows and feeds and moves and uses his senses) but upon his points of excellence. [94]

Boyle too (or at least his fictional self-personification, the 'Sceptical Chymist' Carneades) thought the most plausible account of the origin of mineral matter, including metals, to be that it grew in the earth: he cited the formation of stalactites as an example. He also thought it probable that minerals altered in nature in the course of their development, though he characteristically warned that 'the growth or increment of Minerals being usually a work of excessively long time, and for the most part perform'd in the bowels of the Earth, where we cannot see it, I must instead of Experiments make use, on this occasion, of Observations'. Many less cautious spirits took such natural growth and transmutation of metals as axiomatic, and assumed that since Nature, being <168> the creation of God, aspired always toward perfection, they reached the highest stage of their development in gold. Alchemists saw themselves not as perverters or mutators of nature but as catalysts in a natural process. Their art was the husbandry of matter, and especially of metals. Thus, for instance, Glauber gives a method of 'planting' a gold 'seed' in the 'earth' of copper and regulus of antimony and 'watering' it with saltpetre to stimulate its growth:

and here the gold takes the place of a seed, and the copper and regulus of antimony the place of the earth in which the seed feeds and multiplies itself, and the saltpetre the place of the rainwater that moistens the earth and makes it fruitful. The longer the gold lies growing in this earth, the greater will be its increase. [97]

Though the sexually-cum-astrologically-based tradition that saw each metal as being born of the astral 'seeds' with which each 'planet' impregnated the earth was by no means universally accepted even among the Spagyrists, its implications were deep-rooted and continued to influence scientific thought into the eighteenth century if only at a subconscious level. It is essential to bear in mind that only seven metals were distinguished at this period, corresponding to the seven 'planets': from Saturn came lead; from Jupiter, tin; from Venus, copper; from Mars, iron; from Mercury, mercury (the one hangover in modern English of chemistry's astrological pedigree); from the Moon, silver, and from the Sun, gold. There was no reason for the Copernican reorganisation of the model of the planetary system to dent this astrological and microcosmical interpretation of the nature of metals: on the contrary, the centrality it accorded the sun served rather to confirm that gold occupied a privileged position in the hierarchy of created matter, and that other metals drew their life from it and aspired to develop into it. As Glauber put it, 'Nature strives continually to bring her children to perfection, but base metals are not perfect. Why should we not be able to come to Nature's aid and improve them?' [98] The Latin names and astrological symbols for the 'planets' were used as synonyms and shorthand respectively for the corresponding metals until well into the

eighteenth century, even by thinkers who had nothing but derision for the theory underlying such nomenclature. This ingrained habit, together with the deeply-rooted belief that seven was a magic or mystic number, probably did much to retard the realisation that there are in fact rather more than seven metals. Though other metals were known and named, such as bismuth, antimony and zinc, these were taken to be 'imperfect', 'immature' or 'half' metals, which had not yet grown into true ones. [99]

The mystical-alchemical theosophy of Jacob Boehme, which was highly influential on many of these thinkers, set out to define God himself as, effectively, a chemical reaction (though obviously of a highly exalted, spiritual nature). God consisted, he claimed, of seven 'source spirits' ('Quell-Geister'), each with a different 'quality': the sour, the sweet, the bitter, heat, love, sound and the 'corpus' which comprehended the first six. All seven constantly gave birth to each other and affected or 'qualified' one another in, as it were, an eternal and infinite chain reaction. [100] Boehme, it should be pointed out, was not himself a practising alchemist, though the influence of alchemical literature (especially Paracelsus) on his idiosyncratic account of <169> God, Creation and the Universe is unmistakeable. Nor was he so presumptuous as to purport to have analysed God in this fashion by experiment. He claimed a single and irrefutable source for all his knowledge of such matters: God had told him personally. But his association of alchemical theories and language with insight into the deepest mysteries of God and Nature is highly symptomatic of the aspirations of the chemical philosophers.

Creation itself was seen by many as an alchemical process, the separating out into discrete elements of the initial Chaos. The early chapters of Genesis were frequently invoked as images of and sanction for the alchemist's labour. Culpeper, for instance, sought to produce 'such an excitation of the Spirit of nature as that it may (as in the beginning) moove in and upon the waters'. [101] It followed that to practise alchemy was to emulate God - an idea strikingly exemplified in a tract sent to Hartlib from Hamburg, [102] which he passed on to Moriaen, J.F. Schlezer and others for comment. The author of this work, a now otherwise unknown septuagenarian going by the name of Stapula, 103 not only wished to replicate the action of the Holy Spirit in Creation, he maintained that he had isolated that Spirit by experiment. The piece advertises a miraculous 'spirit of mercury' or 'philosophical water' ('spiritus mercurii', 'philosophisches wasser') which would preserve seeds from frost, increase the yield of a crop three thousandfold and cure all diseases, 'and this is the quintessence of the Universal Spirit that moved upon the face of the waters (Genesis 1)'. [104] To be sure, this remarkable claim of in vitro revelation was too much for Hartlib's correspondents. Moriaen characteristically criticised it as undemonstrated speculation: 'I see indeed that the author's philosophy goes beyond his experience'. [105] But, equally typically, he suggested the discovery was probably not without value, albeit the claims made for it were preposterously exaggerated. Schlezer suspected the 'philosophical water' of being merely ammonia ('Spiritus Vrinæ'). [106] Another commentator, who remains anonymous, objected more sternly to the virtually blasphemous implication of the claims: 'it is expressly stated in the text [of Genesis] that this spirit was the Spirit of God, but it is absurd for a chemist to try to make a quintessence into the Spirit of God'. [107] Yet the fact remains that the claim was made and that Hartlib seriously canvassed opinions on it. This philosophy not only saw but set out to analyse the world in a grain of sand and heaven in a wild flower.

An exchange such as this helps to suggest the tightrope alchemists found themselves obliged to walk. Just as Comenius had been criticised for a presumptuous mingling of divine and human knowledge, for attempting through his merely human Pansophy to gain access to an omniscience that was only accessible to his Creator, so - perhaps even more so - were alchemists vulnerable to the charge of playing God. Hence the defensive iteration of pious rhetoric that is a feature of almost all writing of the genre. Over and again, these thinkers and experimenters insisted that their knowledge had been vouchsafed them by God himself, that they were acting under his tutelage and on his instructions. Their dilemma is implicit throughout the myth of *Genesis* itself. On the one hand, people were created in the image of God, and specifically instructed to take charge of the rest of Creation: clearly it behoved them to emulate their Maker. [108] On the other hand, the first two great curses brought down on them were precisely for overstepping the bounds of <170> their delegated responsibility and aspiring to divine status themselves.

And the Lord God said, Behold, the man is become as one of us, to know good and evil: and now, lest he put forth his hand, and take also of the tree of life, and eat, and live for ever: Therefore the Lord God sent him forth from the garden of Eden. [109]

The same thing happened at Babel: it was to be a tower 'whose top may reach unto heaven', but God again seems to have been palpably alarmed at such presumption:

this they begin to do: and now nothing will be restrained from them, which they have imagined to do. Go to, let us go down, and there confound their language, that they may not understand one another's speech.^[110]

Naturally, alchemists were at pains to stress that when they replicated the Creation act in miniature in their laboratories, they were acting as faithful stewards, not as usurping masters. The question on which no consensus could be reached was where to draw the line between the two, and it would be rash to take at face value the alchemists' rationalisations of their schemes. As with the writings of missionary colonialists and pansophic educationalists, the fundamental impulse behind these works can be seen, I would suggest, as a desire for reassurance that humanity has both the right and the ability to comprehend and control the world about it.

The influence of such concerns and convictions on the laboratory practice of the alchemists is illustrated in two strikingly similar experiments aiming to isolate the life-spirit, one described by Moriaen in somewhat fragmentary fashion (and at second hand, as he frankly admitted) in the course of three letters between April and July 1658, [111] the other, apparently independently, by Glauber in Part IV of *Des Teutschlands Wohlfahrt*, [112] published the following year. Both versions involved 'magnetising' a raw material by impregnating it with sunlight and subsequently using the 'magnet' to attract from the night air something described by Moriaen as 'salt of nature' ('sal naturæ') and by Glauber as 'a water, in which water is concealed the general nutriment of the air'. [113] This substance was then purified by distillation (Moriaen) or evaporation of the superfluous fluid (Glauber), and what remained exposed again by night, purified again, and so forth, over a period of some thirty days in Moriaen's version, or a hundred in Glauber's. What remained at the end was, according to Moriaen, a 'liquor' containing the sperm of both the sun and the moon, or in Glauber's account a 'salt' in which 'the astral life-giving rays of the sun' had been made 'visible, tangible, corporeal and solid'. [114]

Moriaen called his liquor the 'Universal menstruum' but gave no clearer indication of what he thought it was or what was to be done with it; however, the mention of solar and lunar seeds clearly points to an alchemical purpose, the sun and moon being the ruling 'planets' of gold and silver respectively. Glauber was marginally more forthcoming on this point: his preparation was a medicine (though he neglected to say what for) and it could transmute metals (but he forgot to mention how). What comes down to us is a great cry of Eureka but no very clear definition of what was supposed to have been found. That it struck a chord in contemporary minds, however, is evidenced not only by the fact that Moriaen returned to the subject four times within three months, obviously at Hartlib's urging, but by Hartlib's underlining relevant passages in the manuscripts or having scribal copies and translations made of them. He also discussed with Boyle a later version of Moriaen's experiment, of which there is no trace in the surviving papers. In 1659, Hartlib advised his young friend that 'Concerning the instrument of catching and condensing the sun- <171> beams, I have a promise of a large account from Mr *Morian*'. And he elicited a lively reaction from Poleman, who urged Hartlib to send him full details:

I thank you most warmly for the extracts you sent of Herr Moriaen's manuscript on concentrating the spirit of the world. But among other things, Herr Moriaen says in his account that he has revealed to you a method of catching the water of the air by means of calcined pebbles: I pray you seek this out and send it to me as soon as possible. [116]

Close comparison of the two experiments leaves Glauber's account looking suspiciously like a rewrite of Moriaen's with certain crucial details left out. The point cannot be proved one way

or the other without further documentary evidence, but I do not think it out of the question that Glauber based his version, without acknowledgment, on information given him by Moriaen. Since Moriaen made no claim to have devised or even conducted the experiment himself, there is no reason to suppose that if Moriaen had had it from Glauber he would have concealed the fact from Hartlib. He said he had learned it 'from the mouth of my cousin' ('aus meines Vettern mund), the 'cousin' in question having taken part himself in the experiment. The German word 'Vetter', like the English 'cousin', was at this date used very loosely to designate any relative beyond the immediate family (though Moriaen's German grammar makes it clear this relative was male): since he gave no indication of how long ago he had learned the process, it is conceivable that the reference is to his alchemically-inclined brother-in-law Peter von Zeuel, but this is pure conjecture.

Whether or not Glauber and Moriaen were aware of how similar their experiments were, the two accounts exemplify the contrasting presentation of public and private alchemical exchange. Glauber totally omitted to define the nature of his raw material; Moriaen somewhat more helpfully described his as a coarse powder obtained by grinding a type of flint or pebble^[117] to be found by the Rhine. Moriaen was quite explicit in stating that what his 'magnet' initially attracted from the air was 'salt'; Glauber said no such thing, but did suddenly and bafflingly start referring to the residue after evaporation as 'salt'. Similarly, Glauber abruptly remarked that the evaporation drew off superfluous liquid without affecting the 'seeds' the magnet had attracted, but gave no hint as to what these seeds were or where they had come from; Moriaen was far more specific with his solar and lunar spermata.

Glauber's omissions are deliberate, for like most alchemists who actually went to press, his aim was not to communicate the whole mystery (whether or not he believed himself to know it). It was rather to attract the interest of a particular audience. Whether in Glauber's case that intended audience consisted solely of well-heeled potential patrons or included anyone whose piety, wisdom and application rendered them worthy of alchemical enlightenment is a moot point. In all probability he had both categories in mind: and should his work fall under the eyes of someone who belonged to both categories at once, so much the better. It is in any case certain that he was in the habit of sending presentation copies of his new publications to figures of high social standing who had shown signs of interest in the chemical philosophy. Moriaen, on the other hand, knew very well who his <172> audience was: it was Hartlib and Clodius in the first instance, and anyone to whom they saw fit to pass on the information. He was clearly not seeking any personal gain through the communication, and in contrast to most such private reports there is no injunction to secrecy. Moreover, far from hinting at further information that he might be induced to impart, he repeatedly apologised for having no more to offer. It is a genuine example of 'free and generous communication of secrets'.

Both accounts, though, Moriaen's no less than Glauber's, seem frustratingly incomplete. In particular, they are very vague as to the nature and use of the experiment's end product. In Glauber's case, this is hardly surprising, for all the reasons just stated. In Moriaen's the matter is less clear-cut. It may be that he saw no reason to expand on the definition of 'universal menstruum' because he thought Hartlib would regard it as self-evident. On the whole, however, this seems unlikely. Neither Moriaen nor Hartlib ever claimed to be an adept. Hartlib was an interested observer and sponsor of other men's labours in the field, but clearly no more than that. Moriaen certainly was a practising alchemist, but he never pretended to be a very successful one. It is likely that the lacunae in the account simply represent the limitations of Moriaen's own knowledge and understanding of the business.

Nonetheless, however vague he may have been as to what the 'universal menstruum' actually was, he seems to have been quite sure that whatever it was, this was it. The same applies to the 'ludus Paracelsi' he sent Hartlib through Albert Otto Faber in 1661, and to the method of turning antimony into gold he believed he had discovered in the early 1650s. (This will be discussed in Chapter Seven.) Glauber and Moriaen found what they were looking for because they defined their results in terms of what they were expecting to find. By the same token, many alchemists must have concluded that what they had produced was a form of gold, or the elixir, or the universal spirit, because they were assured by respected authority and/or what they took to be divine inspiration that that was what their method would produce. It was

one thing to dismiss the theories of pagans such as Galen and Aristotle as ignorant or misguided and to refute them by experiment, but the study of true Scripture and the insights achieved through pious Christian meditation could only serve to illuminate and explain experimental data. This is not to accuse these thinkers of intellectual laziness or dishonesty, merely to attempt to understand their habits of thought by placing them in historical context.

The letters and documents of the natural philosophers directly or indirectly associated with Hartlib in the mid-seventeenth century, far from showing any gathering doubts about the claims of alchemy, manifest a mounting and at times near-hysterical enthusiasm. Confronted with unprecedented social upheavals - the Thirty Years War in Germany and surrounding lands, the civil wars in England - and with the explosion of information and new philosophies posited in the previous chapter as the challenge that inspired Comenian Pansophy, they found in alchemy a system of thought that reconciled the evidence of their senses with the demands and promised rewards of the Christian faith to which they clung with almost desperate tenacity. There was, in their minds, no antithesis between the pragmatic inductivism of Bacon and the mystic Paracelsianism of Boehme, and they actively encouraged the development of new technology and experimental science, which they thought could only contribute to their work. The papers <173> abundantly demonstrate that, as is now widely recognised, the revival of alchemy and the growth of the 'new' science were not merely parallel but inextricably intertwined. Though empiricism was in time to sound the death-knell of alchemy, it is wholly anachronistic to speak in terms of a conflict between the two at this date. Francis Bacon, dismissing alchemy as outmoded superstition, thought he was speaking of the past, but might equally be seen as having predicted the future, when in 1605 he acknowledged that

surely to alchemy this right is due: that [...] the search and stir to make gold hath brought to light a great number of good and fruitful inventions and experiments, as well for the disclosing of nature as for the use of man's life'. [119]

Bacon meant to suggest that such useful discoveries were an unintentional by-product of the vain labours of would-be gold-makers. In fact, the disclosure of nature and use of man's life were very much part of the alchemical agenda, but they were by no means the whole of it. The underlying impulse, like that of Bacon's own projected Great Instauration, was dominion. I suggested at the end of the last sub-chapter that alchemists, as opposed to mere chemists, might be seen not as mappers but as colonists of the created world. Such an account is of course anachronistic, representing a twentieth-century analysis that would have been quite incomprehensible to a seventeenth-century practitioner of alchemy. Alchemical rhetoric speaks not of dominating or colonising Nature, but of helping it, husbanding it, curing it. Nor, for that matter, did 'philo-Judaists' such as Moriaen, or the missionaries who set out for the supposedly New World, regard or project themselves as conquerors: they genuinely believed, or many of them did, that they were doing the benighted Jews and native Americans a favour by guiding (or driving) them towards the light, accelerating their progress along a path that was divinely pre-ordained. Like the inhabitants of nations overcome by Thomas More's Utopians, one could only expect them, in the long run, to be grateful for the experience.

All metals aspired to become, indeed were destined to become, gold. Jews (and, by some accounts, heathens) were likewise destined to mature into Christians. Colonists, Pansophists and alchemists were only acting as catalysts, helping the rest of Creation on its providentially pre-ordained way, raising it to the standard of physical and spiritual health it had been vouchsafed them to recognise. Or so they convinced themselves.

The impulse underlying both Pansophy and alchemy is that underlying the Judaic Creation myth itself. The Book of Genesis is essentially an affirmation of the divine sanction accorded to humankind to assert control over the rest of Creation, and to a given race and creed to assert control over the rest of humanity. Put another way, it is a rationalisation of the impulse to exercise such control. Judaism's equally anthropocentric daughter religions, Christianity and Islam, accepted wholesale the notion of humanity's privileged position within the sublunary sphere, and adroitly transferred the status of chosen race and creed, with all the responsibility and licence that status implied, to a variety of European and Arab civilisations.

While alchemy in early modern Europe tended on the whole to downplay the importance of national identity (the figure of the 'Cosmopolite' was a stock-in-trade of the <174> alchemical tradition, and one which Starkey in particular made an integral part of his self-projection), the notion of a supremely privileged, divinely sanctioned elect resurfaces as strongly as ever in the topos of the magus or adept inspired directly by God and manipulating the very fabric of the planet.

It was suggested earlier that Christian proselytisers regarded Jews (or whatever other group they were seeking to 'enlighten') as raw material to be remoulded in their own image. James Holstun, in his extremely perceptive and thought-provoking study of Protestant Utopianism, depicts Comenius's educational ideology in very similar terms, and relates it to the endeavours of early colonists to set up new model societies on the 'virgin' soil of the Americas - and to the economic and ideological colonialism of our own time. [120] He draws attention to Comenius's notion of 'didachography', his oft-repeated metaphor of the infant mind as a blank page on which virtue and truth may be inscribed by the enlightened educator:

Nowhere does Comenius refer to the student as an autonomous subject or even as a being with any trace of prior individuality. He (or she - Comenius proposes the education of both sexes) is only the blank paper on which didachography prints. But the sheer repetititiveness of the printing becomes millennial: 'For the moment, it is enough to have shown that our discovery of didachography or the panmethodia can multiply learned men in precisely the same way that the discovery of printing has multiplied books [...] And since we struggle to implant piety itself after planting learning and morality in the souls of all who are consecrated to Christ, we can hope for the fulfillment of those divine prophecies that we are commanded to hope for: "The earth shall be full of the knowledge of God, as the waters cover the sea" (Isa. 11:9)'. [121]

Once again, the aim of alchemy can be seen as analogous to, or even an extension of, that of Pansophy. Alchemy sought to demonstrate the possibility of returning Creation itself to its original status as blank page, when the earth was without form, and void. [122] That page had been written on by the word that was in the beginning, that was with God and was God, but the text had subsequently been corrupted by sin. Just as Comenian education would mould the uncorrupted minds of infants in godly fashion, as missionaries would build a new Jerusalem on the undefiled soil of the New World, so the alchemists would rewrite Creation in better accord with the original divine intention. Of course they did not think they were usurping God. They believed that God intended them to do so, and it is certainly not my intention to question the sincerity of that belief. My suggestion is rather that the God on whose authority they were acting was himself a projection of their own deep-seated impulse to mastery.

Continue reading <u>Chapter Six: Universal Medicines: Johann Rudolph Glauber and his Reception in England</u>

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