Basic Concepts of

Alchemy

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Version 1.0

I. INTRODUCTION

Slowly, in the course of the eighteenth century, alchemy perished in its own obscurity. Its method of explanation—"obscurum per obscurius, ignotum per ignotius" (the obscure by the more obscure, the unknown by the more unknown)—was incompatible with the spirit of enlightenment and particularly with the dawning science of chemistry towards the end of the century. But these two new intellectual forces only gave the coup de grâce to alchemy. Its inner decay had begun at least a century earlier, at the time of Jakob Böhme, when many alchemists deserted their alembics and melting-pots and devoted themselves entirely to (Hermetic) philosophy.

It was then that the chemist and the Hermetic philosopher parted company. Chemistry became natural science, whereas Hermetic philosophy lost the empirical ground from under its feet and aspired to bombastic allegories and inane speculations which were kept alive only by memories of a better time. This was a time when the mind of the alchemist was still grappling with the problems of matter, when the exploring consciousness was confronted by the dark void of the unknown, in which figures and laws were dimly perceived and attributed to matter although they really belonged to the psyche.

Everything unknown and empty is filled with psychological projection; it is as if the investigator's own psychic background were mirrored in the darkness. What he sees in matter, or thinks he can see, is chiefly the data of his own unconscious which he is projecting into it. In other words, he encounters in the matter, as apparently belonging to it, certain qualities and potential meanings of whose psychic nature he is entirely unconscious. This is particularly true of classical alchemy, when empirical science and mystical philosophy were more or less undifferentiated.

The process of fission which separated the $\varphi v \sigma \iota \kappa \dot{\alpha}$ from the $\mu v \sigma \tau \iota \kappa \dot{\alpha}$ set in at the end of the sixteenth century and produced a quite fantastic species of literature whose authors were, at least to some extent, conscious of the psychic nature of their

"alchemystical" transmutations. On this aspect of alchemy, especially as regards its psychological significance, Herbert Silberer's book Problems of Mysticism and Its Symbolism gives us abundant information.

The fantastic symbolism bound up with it is graphically described in a paper by R. Bernoulli, and a detailed account of Hermetic philosophy is to be found in a study by J. Evola. But a comprehensive study of the ideas contained in the texts, and of their history, is still lacking, although we are indebted to Reitzenstein for important preparatory work in this field.

II. THE ALCHEMICAL PROCESS AND ITS STAGES

Alchemy, as is well known, describes a process of chemical transformation and gives numberless directions for its accomplishment. Although hardly two authors are of the same opinion regarding the exact course of the process and the sequence of its stages, the majority agree on the principal points at issue, and have been so from the earliest times, i.e., since the beginning of the Christian era. Four stages are distinguished:



The four stages of the alchemical process. The four elements are indicated on the balls.—Mylius, Philosophia reformata (1622)

They are characterized by the original colours mentioned in Heraclitus: melanosis (blackening), leukosis (whitening), xanthosis (yellowing), and iosis (reddening). This division of the process into four was called the **τετραμερείν την φιλοσοφίαν**, the quartering of philosophy.

Later, about the fifteenth or sixteenth century, the colours were reduced to three, and the xanthosis, otherwise called the citrinitas, gradually fell into disuse or was but seldom mentioned. Instead, the viriditas sometimes appears after the melanosis or nigredo in exceptional cases, though it was never generally recognized. Whereas the original tetrameria corresponded exactly to the quaternity of elements, it was now frequently stressed that although there were four elements (earth, water, fire, and air) and four qualities (hot, cold, dry, and moist), there were only three colours: black, white, and red.

Since the process never led to the desired goal and since the individual parts of it were never carried out in any standardized manner, the change in the classification of its stages cannot be due to extraneous reasons but has more to do with the symbolic significance of the quaternity and the trinity; in other words, it is due to inner psychological reasons.

The nigredo or blackness



The nigredo: eclipse of Mercurius senex, exhaling the spiritus and anima. The raven is a nigredo symbol.—Jamsthaler, Viatorium spagyricum (1625)

The nigredo or blackness is the initial state, either present from the beginning as a quality of the prima materia, the chaos or massa confusa, or else produced by the separation (solutio, separatio, divisio, putrefactio) of the elements. If the separated condition is assumed at the start, as sometimes happens, then a union of opposites is performed under the likeness of a union of male and female (called the coniugium, matrimonium, coniunctio, coitus), followed by the death of the product of the union (mortificatio, calcinatio, putrefactio) and a corresponding nigredo.

Albedo or whiteness

From this the washing (ablutio, baptisma) either leads direct to the whitening (albedo), or else the soul (anima) released at the "death" is reunited with the dead body and brings about its resurrection, or again the "many colours" (omnes colores), or "peacock's tail" (cauda pavonis), lead to the one white colour that contains all colours. At this point the first main goal of the process is reached, namely the albedo, tinctura alba, terra alba foliata, lapis albus, etc., highly prized by many alchemists as if it were the ultimate goal. It is the silver or moon condition, which still has to be raised to the sun condition.

Rubedo or redness

The albedo is, so to speak, the daybreak, but not till the rubedo is it sunrise. The transition to the rubedo is formed by the citrinitas, though this, as we have said, was omitted later. The rubedo then follows direct from the albedo as the result of raising the heat of the fire to its highest intensity. The red and the white are King and Queen, who may also celebrate their "chymical wedding" at this stage



Crowned hermaphrodite representing the union of king and queen, between the sun and moon trees.—"Traité d'alchimie" (MS., Paris, 17th cent.)

III. CONCEPTIONS AND SYMBOLS OF THE GOAL

The arrangement of the stages in individual authors depends primarily on their conception of the goal: sometimes this is the white or red tincture (aqua permanens); sometimes the philosophers' stone, which, as hermaphrodite, contains both; or again it is the panacea (aurum potabile, elixir vitae), philosophical gold, golden glass (vitrum aureum), malleable glass (vitrum malleabile).

The conceptions of the goal are as vague and various as the individual processes. The lapis philosophorum, for instance, is often the prima materia, or the means of producing the gold; or again it is an altogether mystical being that is sometimes called Deus terrestris, Salvator, or filius macrocosmi, a figure we can only compare with the Gnostic Anthropos, the divine original man.



Anthropos as anima mundi, containing the four elements and characterized by the number 10, which represents perfection (1 + 2 + 3 + 4).—Albertus Magnus, Philosophia naturalis (1650)

Besides the idea of the prima materia, that of water (aqua permanens) and that of fire (ignis noster) play an important part. Although these two elements are antagonistic and even constitute a typical pair of opposites, they are yet one and the same according to the testimony of the authors. Like the prima materia the water has a thousand names; it is even said to be the original material of the stone. In spite of this we are on the other hand assured that the water is extracted from the stone or prima materia as its life-giving soul (anima).

This perplexity comes out very clearly in the following passage from the "VIII Exercitatio in Turbam":

Many dispute in long controversies whether the stone, under different names, consists of several substances, or of two, or only of one. But this philosopher [Scites] and Bonellus say that the whole work and the substance of the whole work are nothing but the water; and that the treatment [regimen] of the same also takes place in nothing but the water. And there is in fact one substance in which everything is contained and that is the sulphur philosophorum,[which] is water and soul, oil, Mercurius and Sol, the fire of nature, the eagle, the lachryma, the first hyle of the wise, the materia prima of the perfect body. And by whatever names the philosophers have called their stone they always mean and refer to this one substance, i.e., to the water from which everything [originates] and in which everything [is contained], which rules everything, in which errors are made and in which the error is itself corrected. I call it "philosophical" water, not ordinary [vulgi] water but aqua mercurialis, whether it be simple or composite. For both are the philosophical water, although the vulgar mercury is different from the philosophical. That [water] is simple [and] unmixed, this [water] is composed of two substances: namely of our mineral and of simple water. These composite waters form the philosophical Mercurius. from which it must be assumed that the substance, or the prima materia itself, consists of composite water. Some [alchemists] put three together, others, only two. For myself two species are sufficient: male and female or brother and sister.



Brother-sister pair in the "bath of life," being bitten in the calf by dragons while the lunar water, fertilized by the divine breath, is poured over their heads.—Theatrum chemicum Britannicum (1652)

But they also call the simple water poison, quicksilver [argentum vivum], cambar, aqua permanens, gum, vinegar, urine, sea-water, dragon, and serpent.

This account makes one thing very evident: the philosophical water is the stone or the prima materia itself; but at the same time, it is also its solvent, as is proved by the prescription immediately following:

Grind the stone to a very fine powder and put it into the sharpest celestial [coelestino] vinegar, and it will at once be dissolved into the philosophical water.

It can also be shown that fire played the same role as water. Another, no less important, idea is that of the Hermetic vessel (vas Hermetis), typified by the retorts or melting-furnaces that contained the substances to be transformed.



Alchemical furnace. – Geber, De alchimia (1529)

Although an instrument, it nevertheless has peculiar connections with the prima materia as well as with the lapis, so it is no mere piece of apparatus. For the alchemists the vessel is something truly marvellous: a vas mirabile.



Maria Prophetissa. In the background, the union (coniunctio) of upper and lower. —Maier, Symbola aureae mensae (1617)

Maria Prophetissa says that the whole secret lies in knowing about the Hermetic vessel. "Unum est vas" (the vessel is one) is emphasized again and again. It must be completely round, in imitation of the spherical cosmos, so that the influence of the stars may contribute to the success of the operation. It is a kind of matrix or uterus from which the filius philosophorum, the miraculous stone, is to be born.



Mercurius in the vessel.—Barchusen, Elementa chemiae (1718)

Hence it is required that the vessel be not only round but egg-shaped.



The transformations of Mercurius in the Hermetic vessel. The homunculus shown as a "pissing manikin" is an allusion to the urina puerorum (= aqua permanens).—"Cabala mineralis" (MS., British Museum, Add. 5245)



Mercurius in the "philosopher's egg" (the alchemical vessel). As filius he stands on the sun and moon, tokens of his dual nature. The birds betoken spiritualization, while the scorching rays of the sun ripen the homunculus in the vessel.—Mutus liber (1702)

One naturally thinks of this vessel as a sort of retort or flask; but one soon learns that this is an inadequate conception since the vessel is more a mystical idea, a true symbol like all the central ideas of alchemy. Thus we hear that the vas is the water or aqua permanens, which is none other than the Mercurius of the philosophers. But not only is it the water, it is also its opposite: fire.

I will not enter further into all the innumerable synonyms for the vessel. The few I have mentioned will suffice to demonstrate its undoubted symbolic significance. As to the course of the process as a whole, the authors are vague and contradictory. Many content themselves with a few summary hints, others make an elaborate list of the various operations. Thus in 1576, Josephus Quercetanus, alchemist, physician, and diplomat, who in France and French Switzerland played a somewhat similar role to that of Paracelsus, established a sequence of twelve operations as follows:

- 1. Calcinatio
- 2. Solutio
- 3. Elementorum separatio
- 4. Coniunctio
- 5. Putrefactio
- 6. Coagulatio
- 7. Cibatio
- 8. Sublimatio
- 9. Fermentatio
- 10. Exaltatio
- 11. Augmentatio
- 12. Proiectio



The twelve alchemical operations in the form of the arbor philosophica.—Samuel Norton, Mercurius redivivus (1630)

Every single one of these terms has more than one meaning; we need only look up the explanations in Ruland's Lexicon to get a more than adequate idea of this. It is therefore pointless to go further into the variations of the alchemical procedure in the present context.

Such is, superficially and in the roughest outline, the framework of alchemy as known to us all. From the point of view of our modern knowledge of chemistry it tells us little or nothing, and if we turn to the texts and the hundreds and hundreds of procedures and recipes left behind by the Middle Ages and antiquity, we shall find relatively few among them with any recognizable meaning for the chemist.

He would probably find most of them nonsensical, and furthermore it is certain beyond all doubt that no real tincture or artificial gold was ever produced during the many centuries of earnest endeavour. What then, we may fairly ask, induced the old alchemists to go on labouring—or, as they said, "operating"—so steadfastly and to write all those treatises on the "divine" art if their whole undertaking was so portentously futile?

To do them justice we must add that all knowledge of the nature of chemistry and its limitations was still completely closed to them, so that they were as much entitled to hope as those who dreamed of flying and whose successors made the dream come true after all. Nor should we underestimate the sense of satisfaction born of the enterprise, the excitement of the adventure, of the quaerere (seeking) and the invenire (finding). This always lasts as long as the methods employed seem sensible.

There was nothing at that time to convince the alchemist of the senselessness of his chemical operations; what is more, he could look back on a long tradition which contained not a few testimonies of such as had achieved the marvellous result. Finally the matter was not entirely without promise, since a number of useful discoveries did occasionally emerge as byproducts of his labours in the laboratory. As the forerunner of chemistry alchemy had a sufficient raison d'être.

Hence, even if alchemy had consisted in—if you like—an unending series of futile and barren chemical experiments, it would be no more astonishing than the venturesome endeavours of medieval medicine and pharmacology.



Hermaphrodite.—Hermaphroditisches Sonn- und Mondskind (1752)



Alchemists at work.—Mutus liber (1702)