

The
Journal
of the
Alchemical Society

Edited by
H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.

VOL. I.
JANUARY TO MAY, 1913.

LONDON :

Published for THE ALCHEMICAL SOCIETY
BY
H. K. LEWIS,
136, Gower Street, W.C.

ERRATA.

- ✓p. 8, line 28, for "resistence" read "resistance".
- ✓p. 20, line 2 from bottom, for "amosphere" read "atmosphere".
- ✓p. 34, line 13 from bottom, for "Art" read "the Art".
- ✓p. 46, line 17, for "polasity" read "polarity".
- ✓p. 47, bottom line, for "he" read "the".

540.100 AL REMOTE STORAGE

MAY 1913] V. 1

Reviews.

77

royalty. Nothing, however, appears to have come of the scheme.

Mrs. Cooper Oakley has evidently spent a very considerable amount of time and labour in collecting the materials for this monograph, but I think she has been somewhat misled by a dependence upon historically unreliable sources, such, for example, as the works of Mme. Blavatsky, the memoirs of Franz Graeffe, and the highly suspicious "Souvenirs sur Marie-Antoinette, by the Countess d'Adhémar." She has, however, carefully indicated the several sources of her information and quotations, so that critical students, by neglecting that obtained from unreliable sources, may derive a good deal of valuable information from her book.

EDITOR.

PERIODICAL LITERATURE. *The Journal of the Chemical Society* for February contains, amongst other papers, Sir William Ramsay's note on "The Presence of Helium in the Gas from the Interior of an X-Ray Bulb", and in that for March appears Profs. Collie and Patterson's paper on "The Presence of Neon in Hydrogen after the Passage of the Electric Discharge through the latter at Low Pressures." The experiments described in these papers, which indicate that it may be possible either to transmute hydrogen into helium and neon by means of the electric discharge at low pressures, or else actually to build up the atoms of the two latter gases from the electrons of the kathode-rays, have already attracted a good deal of attention from the public press. It has been suggested that the presence of helium and neon observed in the tubes may have been due to leakage, but this suggestion is rendered very doubtful in view (1) of the large quantity of air needed, and (2) the careful and cautious manner in which the experiments and blank check-experiments have been carried out. Of course, whether or not it is a case of genuine transmutation, or of the building up of matter from electricity, can only be finally determined after further experimentation.

EDITOR.

THE END OF VOLUME I.

Chemistry 27J/15 St 300 V. 1 Ja-MY 1913 Pt 1-5 2000 M. J. B.

INDEX TO VOL. I.

ABDUL-ALI. SIJIL	16, 34, 47, 60.
<i>Alchemical Literature. The Canon of Criticism in respect of</i>	17.
<i>Alchemist. A Scottish—of the Seventeenth Century: David, Lord Balcarres</i>	68.
<i>Alchemy. An Interpretation of—in relation to modern Scientific Thought</i>	34.
<i>Alchemy. The Origin of</i>	2.
Annual Meeting. Report of First	65.
<i>Balcarres David, Lord—: A Scottish Alchemist of the Seventeenth Century</i>	68.
<i>Canon of Criticism in respect of Alchemical Literature. The</i>	17.
CRAVEN. Venerable Archdeacon J. B., D.D.	68.
DE MENGEL. GASTON	49, 61.
Discussions. Abstracts of	15, 31, 46, 60.
<i>Evidence for Authentic Transmutation. The</i>	49.
Fifth General Meeting. Report of	65.
First Annual Meeting. Report of	65.
First General Meeting. Report of	1.
Fourth General Meeting. Report of	49.
FRINGS. J. W.	60.
GIBSON. Lt.-Col. JASPER, V.D., LL.B. (LOND.)	31.
HORTON. WILLIAM T.	32, 46.
<i>Interpretation of Alchemy in relation to modern Scientific Thought. A</i>	34.
KERLOR. W. DE	15.
Meetings. Report of	1, 17, 33, 49, 65.
MENGEL. GASTON DE (see DE MENGEL. GASTON)	
OLD. WALTER GORN.	15, 31, 46, 66.
<i>Origin of Alchemy. The</i>	2.
REDGROVE. H. STANLEY, B.Sc. (LOND.), F.C.S. 2, 16, 46, 61, 62, 64, 74, 75, 76, 77.	
Reviews	62, 75.
<i>Rosicrucian Society. Note on the</i>	74.
ROWBOTTOM. B. R.	15, 46.
<i>Scientific Thought. An Interpretation of Alchemy in relation to modern</i>	34.
<i>Scottish Alchemist of the Seventeenth Century: David Lord Balcarres. A.</i>	69.
Second General Meeting. Report of	17.
Secretary. Report of the Honorary	66.
Third General Meeting. Report of	33.
<i>Transmutation. The Evidence for Authentic</i>	49.
Treasurer. Report of the Honorary	68.
WAITE. ARTHUR EDWARD	17, 32.
WELLBY. PHILIP S., M.A. (CANTAB.)	15, 31, 68.

THE JOURNAL OF THE ALCHEMICAL SOCIETY

EDITED BY H. STANLEY REDGROVE, B.Sc. (LOND.), F.C.S.

VOL. I. PART I.

JANUARY 1913.

REPORT OF FIRST GENERAL MEETING.

THE first General Meeting of the Alchemical Society was held at 8 p.m. on Friday, January 10th, at the International Club, Regent Street, S.W., the chair being taken by Mr. Philip S. Wellby, M.A.

The Chairman announced that Prof. John Ferguson, M.A. (Glas.), LL.D. (St. Andrews), F.I.C., F.C.S., of Glasgow University, the eminent authority on the history of Alchemy, had accepted the office of Honorary President of the Society. "Prof. Ferguson," the Chairman remarked, "is well known as a profound thinker and an able scientist, and every member present will agree that THE ALCHEMICAL SOCIETY is most fortunate in the possession of a President of such distinguished ability." It was further announced by the Chairman that the following Officers and Members of the Council had been appointed at a preliminary business-meeting of the Society. Acting President, Mr. H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.; Hon. Vice Presidents, Mr. Arthur Edward Waite, Mme. Isabelle de Steiger, Mr. W. Gorn Old; Hon. Secretary, Mr. W. Gorn Old; Hon. Treasurer, Mr. Philip S. Wellby, M.A.; Editor of the Journal, Mr. H. Stanley Redgrove; Ordinary Member of Council, Miss Clarissa Miles. The Chairman stated that according to the Rules of the Society, it would be necessary to elect *five* more ordinary members of Council; the Council invited nominations so that this might be effected at the next general meeting of the Society.

Letters of regret for unavoidable absence were read from Mme. Isabelle de Steiger, Col. J. Collins, LL.B., and Mr. F. Hylton.

A paper was read by Mr. H. Stanley Redgrove on "The Origin of Alchemy," which was followed by a discussion. (The paper and abstract of the discussion are printed in the present number of the Journal.)

Votes of thanks were passed to Mr. H. S. Redgrove for his paper, to Prof. John Ferguson for accepting the Hon. Presidency of the Society, and to the Chairman.

THE ORIGIN OF ALCHEMY.

BY H. STANLEY REDGROVE, B.Sc., (LOND.), F.C.S.

THE common opinion concerning Alchemy is that it was a pseudo-science or pseudo-art flourishing during the Dark Ages, and having for its aim the conversion of common metals into silver and gold by means of a most marvellous and wholly fabulous agent called the Philosopher's Stone, that its devotees were half knaves, half fools, whose views concerning nature were entirely erroneous and whose objects were entirely mercenary. This opinion is not entirely destitute of truth; as a science Alchemy involved many fantastic errors; and in the course of its history it certainly proved attractive to both knaves and fools. But if this opinion involves some element of truth, it involves a far greater proportion of error. Amongst the alchemists are numbered some of the greatest intellects of the Middle Ages—Roger Bacon, for example, who might almost be called the father of experimental science. And whether or not the desire for material wealth was a secondary object, the true aim of the genuine alchemist was a much nobler one than this—as one of them exclaims with true scientific fervour: "Would to God . . . all men might become adepts in our Art—for then gold, the great idol of mankind, would lose its value, and we should prize it only for its scientific teaching."* Moreover, recent developments in physical and chemical science seem to indicate that the alchemists were not so utterly wrong in their concept of nature, as has formerly been supposed—that, whilst they certainly erred in both their methods and their interpretations of individual phenomena, they did intuitively grasp certain fundamental facts concerning the universe of the very greatest importance.

Suppose, however, that the theories of the alchemists are entirely erroneous from beginning to end, and are nowhere relieved by the merest glimmer of truth. Still they were believed to be true, and this belief had an important influence upon human thought. Many scientific men have, I am afraid, been too prone to regard the mystical views of the alchemists as unintelligible; but whatever their theories may be to us, these theories were certainly very real to them; it is preposterous to maintain that the writings of the alchemists are without meaning, even although their views are altogether false. And the more false their views are believed to be, the more necessary does it appear to be to explain why they should have gained such universal credit. Here we have problems into which scientific enquiry is not only legitimate but, I think, very desirable,—apart

*EIRENÆUS PHILALETHES: *An Open Entrance to the Closed Palace of the King.* (see *The Hermetic Museum, Restored and Enlarged*, ed. by A. E. Waite, 1893, Vol. ii. p. 178).

altogether from the question of the truth or falsity of Alchemy as a science, or its utility as an art. What exactly was the system of beliefs grouped under the term "Alchemy," and what was its aim? Why were the beliefs held? What was their precise influence upon human thought and culture?

It is in order to elucidate problems of this sort, as well as to determine what elements of truth, if any, there are in the theories of the alchemists, that THE ALCHEMICAL SOCIETY has been founded. In the present paper it is my object to venture a partial reply to the questions, What did the alchemists believe? Why did they believe this?—two questions which cannot be well discussed apart from one another. I can, of course, only attempt to deal with the subject in broad outlines; and there are numerous details that I should like to see filled in, and hope to see filled in as the result of further research conducted, not only by myself, but by any others who may be sufficiently interested to undertake such research. But let me make it quite plain at the outset that I, and not THE ALCHEMICAL SOCIETY, am responsible for the theory concerning the Origin of Alchemy and the interpretation of its beliefs which I am about to lay before you. THE ALCHEMICAL SOCIETY is not a propaganda; it exists, not for the propagation of anyone's opinions, but for study and investigation alone.

As you may be aware, some students of the writings of the alchemists have advanced a very curious and interesting theory as to the aims of the alchemists, which may be termed "the transcendental theory." According to this theory, the alchemists were concerned only with mystical processes affecting the soul of man, and their chemical references are only to be understood symbolically. In my opinion, however, this view of the subject is rendered untenable by the lives of the alchemists themselves; for, as Mr. Waite has very fully pointed out in his *Lives of Alchemystical Philosophers* (1888), the lives of the alchemists show them to have been mainly concerned with chemical and physical processes; and, indeed, to their labours we owe many valuable discoveries of a chemical nature. But the fact that such a theory should ever have been formulated, and should not be altogether lacking in consistency, may serve to direct our attention to the close connection between Alchemy and Mysticism.

If we wish to understand the origin and aims of Alchemy we must endeavour to recreate the atmosphere of the Middle Ages, and to look at the subject from the point of view of the alchemists themselves. Now, this atmosphere was surcharged with mystical theology and mystical philosophy. Alchemy, so to speak, was generated and thrived in a dim religious light. We cannot open a book by any one of the better sort of alchemists without noticing how closely

their theology and their chemistry are interwoven, and what a remarkably religious view they take of their subject. Thus, one alchemist writes, "In the first place, let every devout and God-fearing chemist and student of this Art consider that this arcanum should be regarded, not only as a truly great, but as a most holy Art (seeing that it typifies and shadows out the highest heavenly good). Therefore, if any man desire to reach this great and unspeakable Mystery, he must remember that it is obtained not by the might of man, but by the grace of God, and that not our will or desire, but only the mercy of the Most High, can bestow it upon us. For this reason you must first of all cleanse your heart, lift it up to Him alone, and ask of Him this gift in true, earnest, and undoubting prayer. He alone can give and bestow it."* Whilst another alchemist declares: "I am firmly persuaded that any unbeliever who got truly to know this Art, would straightway confess the truth of our Blessed Religion, and believe in the Trinity and in our Lord Jesus Christ."†

Now, my thesis is that the alchemists constructed their chemical theories for the main part by means of *à priori* reasoning, and that the premises from which they started were (i.) the truth of mystical theology, especially the doctrine of the soul's regeneration, and (ii.) the truth of mystical philosophy, which asserts that the objects of nature are symbols of spiritual verities. I hold that there is abundant evidence to show that Alchemy was a more or less deliberate attempt to apply, according to the principles of analogy, the doctrines of religious mysticism to chemical and physical phenomena. Some of this evidence I shall attempt to lay before you in this paper.

In the first place, however, I propose to say a few words more in description of the theological and philosophical doctrines which so greatly influenced the alchemists, and which, I believe, they borrowed for their attempted explanations of chemical and physical phenomena. This system of doctrine I have termed "Mysticism"—a word which is unfortunately equivocal, and has been used to denote various systems of religions and philosophical thought, from the noblest to the most degraded. I have, therefore, further to define my usage of the term.

By mystical theology I mean that system of religious thought which emphasises the unity between Creator and creature, though not necessarily to the extent of becoming pantheistic. Man, mystical theology asserts, has sprung

**The Sophic Hydrolith; or, Water Stone of the Wise* (see *The Hermetic Museum*, vol. i. p. 74).

†PETER BONUS: *The New Pearl of Great Price* (trans. by A. E. Waite, 1894), p. 275.

from God, but has fallen away from Him through self-love. Within man, however, is the seed of divine grace, whereby if he will follow the narrow road of self-renunciation he may be regenerated, born anew, becoming transformed into the likeness of God and ultimately indissolubly united to God in love. God is at once the Creator and the Restorer of man's soul, He is the Origin as well as the End of all existence; and He is also the Way to that End. In Christian Mysticism, Christ is the Pattern, towards which the mystic strives; Christ also is the means towards the attainment of this end.

By mystical philosophy I mean that system of philosophical thought which emphasises the unity of the Cosmos, asserting that God and the spiritual may be perceived immanent in the things of this world, because all things natural are symbols and emblems of spiritual verities. As one of the Golden Verses attributed to Pythagoras puts it, "The Nature of this Universe is in all things alike," commenting upon which, Hierocles, writing in the fifth or sixth century, remarks that "Nature, in forming this Universe after the Divine measure and proportion, made it in all things conformable and like to itself, analogically in different manners. Of all the different species, diffused throughout the whole, it made, as it were, an Image of the Divine Beauty, imparting variously to the copy the perfections of the Original."*

In fine, as Dean Inge well says, "Religious Mysticism may be defined as the attempt to realise the presence of the living God in the soul and in nature, or, more generally, as the attempt to realise, in thought and feeling, the immanence of the temporal in the eternal, or of the eternal in the temporal."†

Now doctrines such as these were not only very prevalent during the Middle Ages when Alchemy so greatly flourished, but are of great antiquity, and were undoubtedly believed in by the learned class in Egypt and elsewhere in the East in those remote days when Alchemy seems to have originated. So far as we can judge from their writings, the more important alchemists were convinced of the truth of these doctrines and it was with such beliefs in mind that they commenced their investigations of physical and chemical phenomena. Indeed, if we may judge by the esteem in which the Hermetic maxim, "What is above is as that which is below, what is below is as that which is above, to accomplish the miracles of the One Thing," was held by every alchemist,

**Commentary of Hierocles on the Golden Verses of Pythagoras* (trans. by N. Rowe, 1906), pp. 101 and 102.

†WILLIAM RALPH INGE, M.A.: *Christian Mysticism* (The Bampton Lectures, 1899), p. 5.

we are justified in asserting that the mystical theory of the spiritual significance of nature—a theory with which is closely connected the Neoplatonic and Kabalistic doctrine that all things emanate in series from the Divine Source of all Being—was at the very heart of Alchemy. As writes one alchemist “ . . . the sages have been taught of God that this natural world is only an image and material copy of a heavenly and spiritual pattern; that the very existence of this world is based upon the reality of its celestial archetype; and that God has created it in imitation of the spiritual and invisible universe, in order that men might be the better enabled to comprehend His heavenly teaching, and the wonders of His absolute and ineffable power and wisdom. Thus the Sage sees heaven reflected in Nature as in a mirror; and he pursues this Art, not for the sake of gold or silver, but for the love of the knowledge which it reveals; he jealously conceals it from the sinner and the scornful, lest the mysteries of heaven should be laid bare to the vulgar gaze.”*

The alchemists, I hold, convinced of the truth of this view of Nature, *i.e.*, that principles true of one plane of being are true also of all other planes, adopted analogy as their guide in dealing with the facts of chemistry and physics known to them. They endeavoured to explain these facts by an application to them of the principles of mystical theology; their chief aim being to prove the truth of these principles as applied to the facts of the natural realm, and by studying natural phenomena to become instructed in spiritual truth. They did not proceed by the sure, but slow, method of modern science, *i.e.*, the method of induction, which questions experience at every step in the construction of a theory; but they boldly allowed their imaginations to leap ahead and formulate a complete theory of the Cosmos on the strength of but few facts. This led them into many fantastic errors, but I would not venture to deny them an intuitive perception of certain fundamental truths concerning the constitution of the Cosmos, even if they distorted these truths and dressed them in a fantastic garb.

Now, as I hope to make plain in the course of this paper, the alchemists regarded the discovery of the Philosopher's Stone and the transmutation of “base” metals into gold as the consummation of the proof of the doctrines of mystical theology as applied to chemical phenomena, and it was as such that they so ardently sought to achieve the *magnum opus*, as this transmutation was called. Of course, it would be useless to deny that many, accepting the truth of the great alchemistic theorem, sought for the Philosopher's

*MICHAEL SENDIVOGIUS (?): *The New Chemical Light*, Pt. II., *Concerning Sulphur* (see *The Hermetic Museum*, vol. ii. p. 138).

Stone because of what was claimed for it in the way of material benefits. But, as I have already indicated, with the nobler alchemists this was not the case, and the desire for wealth, if present at all, was merely a secondary object.

The idea, expressed in Dalton's atomic hypothesis, and universally held during the nineteenth century, that the material world is made up of a certain limited number of elements unalterable in quantity, subject in themselves to no change or development, and inconvertible one into another, is quite alien to the views of the alchemists. The alchemists conceived the universe to be a unity; they believed that all material bodies had been developed from one seed; their elements are merely different forms of one matter and, therefore, convertible one into another. They were thoroughgoing evolutionists with regard to the things of the material world, and their theory concerning the evolution of the metals was, I believe, the direct outcome of a metallurgical application of the mystical doctrine of the soul's development and regeneration. The metals, they taught, all spring from the same seed in Nature's womb, but are not all equally matured and perfect; for, as they say, although Nature always intends to produce only gold, various impurities impede the process. In the metals, the alchemists saw symbols of man in the various stages of his spiritual development. Gold, the most beautiful, as well as the most untarnishable metal, keeping its beauty permanently, unaffected by sulphur, most acids and fire—indeed, purified by such treatment—gold, to the alchemist, was the symbol of regenerate man, and, therefore, he called it "a noble metal." Silver was also termed "noble"; but it was regarded as less mature than gold, for, although it is undoubtedly beautiful and withstands the action of fire, it is corroded by nitric acid and is blackened by sulphur; it was, therefore, considered to be analogous to the regenerate man at a lower stage of his development. Possibly, we shall not be far wrong in using Swedenborg's terms, "celestial" to describe the man of gold, "spiritual" to designate him of silver. Lead, on the other hand, the alchemists regarded as a very immature and impure metal: heavy and dull, corroded by sulphur and nitric acid, and converted into a calx by the action of fire,—lead to the alchemists, was a symbol of man in a sinful and unregenerate condition.

The alchemists assumed the existence of three principles in the metals, their obvious reason for doing so being the mystical threefold division of man into body, soul (*i.e.*, affections and will) and spirit (*i.e.*, intelligence), though the principle corresponding to body was a comparatively late introduction in alchemistic philosophy. This latter fact, however, is no argument against my thesis; because, of course, I do not maintain that the alchemists started out

with their chemical philosophy ready made, but gradually worked it out, by incorporating in it further doctrines drawn from mystical theology. The three principles just referred to were called "mercury," "sulphur," and "salt"; and must be distinguished from the common bodies so designated (though the alchemists themselves seem often guilty of confusing them). "Mercury" is the metallic principle *par excellence*, conferring on metals their brightness and fusibility, corresponding to the spirit or intelligence in man.* "Sulphur," the principle of combustion and colour, is the analogue of the soul. Many alchemists postulated two sulphurs in the metals, an inward and an outward.† The outward sulphur was thought to be the chief cause of metallic impurity and the reason why all (known) metals, save gold and silver, were acted on by fire. The inward sulphur, on the other hand, was regarded as essential to the development of the metals: pure mercury, we are told, matured by a pure inward sulphur yields pure gold. Here again, it is evident that the alchemists borrowed their theories from mystical theology; for, clearly, inward sulphur is nothing else than the metallic equivalent to love of God; outward sulphur is love of self. Intelligence (mercury) matured by love to God (inward sulphur) exactly expresses the spiritual state of the regenerate man according to mystical theology. There is no reason, other than their belief in analogy, why the alchemists should have held such views concerning the metals. "Salt," the principle of solidity and (resistance) to fire, corresponding to the body in man, plays a comparatively unimportant part in alchemistic theory, as does its prototype in mystical theology.

see
errata,
on back
of title
page

Now, as I have pointed out already, the central theorem of mystical theology is, in Christian terminology, that of the regeneration of the soul by the Spirit of Christ. The corresponding process in Alchemy is that of the transmutation of the "base" metals into silver and gold by the agency of the Philosopher's Stone. Merely to remove the evil sulphur of the "base" metals, thought the alchemists, though necessary, is not sufficient to transmute them into "noble" metals; a maturing process is essential, similar to that which they supposed was effected in Nature's womb. Mystical theology teaches that the powers and life of the soul are not inherent in it, but are given by the free grace of God. Neither, according to the alchemists, are the powers and life of nature in

*The identification of the god Mercury with Thoth, the Egyptian god of learning, is worth noticing in this connection.

†Pseudo-Geber, whose writings were very highly esteemed, for instance. See R. Russel's translation of his works (1678), p. 160.

herself, but in that immanent spirit, the Soul of the World, that animates her. As writes the famous alchemist who adopted the pleasing pseudonym of "Basil Valentine," "the power of growth . . . is imparted not by the earth, but by the lifegiving spirit that is in it. If the earth were deserted by this spirit, it would be dead, and no longer able to afford nourishment to anything. For its sulphur or richness would lack the quickening spirit without which there can be neither life nor growth."* To perfect the metals, therefore, the alchemists argued, from analogy with mystical theology, which teaches that man can be regenerated only by the power of Christ within the soul, that it is necessary to subject them to the action of this world-spirit, this one essence underlying all the varied powers of nature, this One Thing from which "all things were produced . . . by adaptation," and which is the cause of all perfection throughout the whole world."† "This," writes one alchemist, "is the Spirit of Truth, which the world cannot comprehend without the interposition of the Holy Ghost, or without the instruction of those who know it. The same is of a mysterious nature, wondrous strength, boundless power . . . By Avicenna this Spirit is named the Soul of the World. For, as the soul moves all the limbs of the Body, so also does this Spirit move all bodies. And as the Soul is in all the limbs of the Body, so also is this Spirit in all elementary created things. It is sought by many and found by few. It is beheld from afar and found near, for it exists in everything, in every place, and at all times. It has the powers of all creatures; its action is found in all elements, and the qualities of all things are therein, even in the highest perfection . . . it heals all dead and living bodies without other medicine . . . converts all metallic bodies into gold, and there is nothing like unto it under Heaven."§ It was this Spirit, concentrated in all its potency in a suitable material form, which the alchemists sought under the name of "the Philosopher's Stone." Now, mystical theology teaches that the Spirit of Christ, by Which alone the soul of man can be tinctured and transmuted into the likeness of God, is Goodness itself; consequently the alchemists argued that the Philosopher's Stone must be, so to speak, Gold itself, or the very essence of Gold: it was to them, as Christ

*"BASIL VALENTINE": *The Twelve Keys* (see *The Hermetic Museum*, vol. i. pp. 333 and 334.)

†From the "Smaragdine Table" attributed to Hermes Trismegistos (i.e., Mercury or Thoth)

§*Book of the Revelation of Hermes, interpreted by Theophrastus Paracelsus, concerning the Supreme Secret of the World* (see BENEDICTUS FIGULUS: *A Golden and Blessed Casket of Nature's Marvels*, translated by A. E. Waite, 1893, pp. 36, 37 and 41).

is of the soul's perfection, at once the pattern and the means of metallic perfection. "The Philosopher's Stone," declares "Eirenæus Philaethes," "is a certain heavenly, spiritual, penetrative, and fixed substance, which brings all metals to the perfection of gold or silver (according to the quality of the Medicine), and that by natural methods, which yet in their effects transcend Nature . . . Know, then, that it is called a stone, not because it is like a stone, but only because, by virtue of its fixed nature, it resists the action of fire as successfully as any stone. In species it is gold, more pure than the purest; it is fixed and incombustible like a stone [*i.e.*, it contains no outward sulphur, but only inward, fixed sulphur], but its appearance is that of a very fine powder, impalpable to the touch, sweet to the taste, fragrant to the smell, in potency a most penetrative spirit, apparently dry and yet unctuous, and easily capable of tingeing a plate of metal. . . . If we say that its nature is spiritual, it would be no more than the truth; if we described it as corporeal the expression would be equally correct; for it is subtle, penetrative, glorified, spiritual gold. It is the noblest of all created things after the rational soul, and has virtue to repair all defects both in animal and metallic bodies, restoring them to the most exact and perfect temper; wherefore is it a spirit or 'quintessence.'"*

In other accounts, the Philosopher's Stone, or at least the *materia prima* of which it is compounded, is spoken of as a despised substance, reckoned to be of no value. Thus, according to one curious alchemistic work, "This matter, so precious by the excellent Gifts, wherewith Nature has enriched it, is truly mean, with regard to the Substances from whence it derives its Original. Their price is not above the ability of the poor. Ten Pence is more than sufficient to purchase the Matter of the Stone. . . The matter, therefore, is mean, considering the Foundation of the Art, because it costs very little; it is no less mean, if one considers exteriorly that which gives it Perfection, since in that regard it costs nothing at all, in as much as *all the World has it in its Power*, . . . so that . . . it is a consistent Truth that the Stone is a Thing mean in one Sense, but that in another it is most precious, and that there are none but Fools that despise it, by a just Judgement of God."† And Jacob Boehme writes, "The Philosophers Stone is a very dark disesteemed Stone, of a Gray colour, but therein lyeth the highest

*"EIRENÆUS PHILAETHES": *A Brief Guide to the Celestial Ruby* (see *The Hermetic Museum*, vol. ii., pp. 246 and 249).

†*The Hermetic Triumph: or, the Victorious Philosophical Stone* (1723), pp. 101 and 102.

Tincture."‡ In these passages there is probably some reference to the ubiquity of the Spirit of the World, already referred to in a former quotation. But this fact is not, in itself, sufficient to account for them. I suggest that their origin is to be found in the religious doctrine that God's Grace, the Spirit of Christ that is the means of the transmutation of man's soul into spiritual gold, is free to all; that it is, at once, the meanest and the most precious thing in the whole Universe. Indeed, I think it quite probable that the alchemists who penned the above-quoted passages had in mind the words of Isaiah "He was despised and we esteemed him not." And if further evidence is required that the alchemists believed in a correspondence between Christ—"the Stone which the builders rejected"—and the Philosopher's Stone, reference may be made to the alchemistic work called *The Sophic Hydrolith; or Water Stone of the Wise*, a tract included in *The Hermetic Museum*, in which this supposed correspondence is explicitly asserted and dealt with in some detail.

Apart from the alchemists' belief in the analogy between natural and spiritual things, it is, I think, incredible that any such theories of the metals and the possibility of their transmutation or "regeneration" by such an extraordinary agent as the Philosopher's Stone would have occurred to the ancient investigators of Nature's secrets. When they had started to formulate these theories, facts were discovered which appeared to support them (*e.g.*, the apparent transmutation of iron into copper when placed in a solution of blue vitriol); but, it is, I suggest, practically impossible to suppose that any or all of these facts would, in themselves, have been sufficient to give rise to such wonderfully fantastic theories as these: it is only from the standpoint of the theory that Alchemy was a direct offspring of Mysticism, that its origin seems to be capable of explanation.

In all the alchemistic doctrines, mystical connections are evident, and mystical origins can generally be traced. I shall content myself with here giving a couple of further examples. Consider, in the first place, the alchemistic doctrine of purification by putrification, that the metals must die, before they can be resurrected and truly live, that through death alone are they purified—in the more prosaic language of modern Chemistry, death becomes oxidation, and re-birth becomes reduction. In many alchemistic books there are to be found pictorial symbols of the putrification and death of metals and their new birth in the state of silver, gold, or as the Stone itself, together with descriptions of these processes. The alchemists sought to kill or destroy

‡JACOB BOEHME: *Epistles* (translated by J. E., 1649), Ep. iv. §III.

the body or outward form of the metals, in the hope that they might get at and utilise the living essence they believed to be immanent within. As Paracelsus put it: "Nothing of true value is located in the body of a substance, but in the virtue . . . the less there is of body, the more in proportion is the virtue." It seems to me quite obvious that in such ideas as these we have the application to metallurgy of the mystic doctrine of self-renunciation—that the soul must die to self before it can live to God; that the body must be sacrificed to the spirit, and the individual will bowed down utterly to the One Divine Will, before it can become one therewith.

In the second place, consider the directions as to the colours that must be obtained in the preparation of the Philosopher's Stone, if a successful issue to the Great Work is desired. Such directions are frequently given in considerable detail in alchemistic works; and, without asserting any exact uniformity, I think that I may state that practically all the alchemists agree that three great colour-stages are necessary—(i.) An inky blackness, which is termed the "Crow's Head" and is indicative of putrification; (ii.) A white colour indicating that the Stone is now capable of converting "base" metals into silver; this passes through orange into (iii.) A red colour, which shows that the Stone is now perfect and will transmute "base" metals into gold. Now, what was the reason for the belief in these three colour-stages, and for their occurrence in the above order? I suggest that no alchemist actually obtained these colours in this order in his chemical experiments, and that we must look for a speculative origin for the belief in them. We have, I think, only to turn to religious mysticism for this origin. For the exponents of religious mysticism unanimously agree to a threefold division of the life of the mystic. The first stage is called "the dark night of the soul," wherein it seems as if the soul were deserted by God, although He is very near. It is the time of trial, when self is sacrificed as a duty and not as a delight. Afterwards, however, comes the morning light of a new intelligence, which marks the commencement of that stage of the soul's upward progress that is called "the illuminative life." All the mental powers are now concentrated on God, and the struggle is transferred from without to the inner man, good works being now done, as it were spontaneously. The disciple, in this stage, not only does unselfish deeds, but does them from unselfish motives, being guided by the light of Divine Truth. The third stage, which is the consummation of the process, is termed "the contemplative life." It is barely describable. The disciple is wrapped about with the Divine Love, and is united thereby with his Divine Source. It is the life of love, as the illuminative life is that of wisdom. I suggest that the alchemists, believing in this threefold division of the regenerative process, argued that

there must be three similar stages in the preparation of the Stone, which was the pattern of all metallic perfection; and that they derived their beliefs concerning the colours and other peculiarities of each stage in the supposed chemical process, from the characteristics of each stage in the psychological process according to mystical theology.

Moreover, in the course of the latter process many flitting thoughts and affections arise and deeds are half-wittingly done, which are not of the soul's true character; and in entire agreement with this, we read of the alchemistic process, in the famous "Canons" of D'Espagnet, "Besides these decretory signs [*i.e.*, the black, white, orange and red colours] which firmly inhere in the matter, and shew its essential mutations, almost infinite colours appear, and shew themselves in vapours, as the Rainbow in the clouds, which quickly pass away and are expelled by those that succeed, more affecting the air than the earth: the operator must have a gentle care of them, because they are not permanent, and proceed not from the intrinsic disposition of the matter, but from the fire, painting and fashioning everything after its pleasure, or casually by heat in slight moisture"* That D'Espagnet is arguing, not so much from actual chemical experiments, as from analogy with psychological processes in man, is, I think, evident.

As well as a metallic, the alchemists believed in a physiological, application of the fundamental doctrines of mysticism: their physiology was analogically connected with their metallurgy, the same principles holding good in each case. Man, they taught, is a microcosm, a world in miniature; his spirit, the Divine Spark within, is from God; his soul is from the Stars, extracted from the Spirit of the World; and his body is from the earth, extracted from the elements of which all things material are made. The Philosopher's Stone, therefore, (or, rather, a solution of it in alcohol) was also regarded as the Elixir of Life; which, thought the alchemists, would not endow man with physical immortality, as is sometimes supposed, but restore him again to the flower of youth, "regenerating" him physiologically. Failing this, of course, they regarded gold in a potable form as the next most powerful medicine—a belief which probably led to injurious effects in some cases.

Such is the evidence I have the honour to lay before you in substantiation of my thesis "that the alchemists constructed their chemical theories for the main part by means of à priori reasoning, and that the premises from which they

*JEAN D'ESPAGNET: *Hermetic Arcanum*, canon 65. (See *Collectanea Hermetica*, ed. by W. Wynn Westcott, vol. i. 1893, p. 29).

started were (i.) the truth of mystical theology, especially the doctrine of the soul's regeneration, and (ii.) the truth of mystical philosophy, which asserts that the objects of nature are symbols of spiritual verities."

It seems to follow, *ex hypothesi*, that every alchemical work ought to permit of two interpretations, one physical, the other transcendental. But I would not venture to assert this, because, as I think, many of the lesser alchemists knew little of the origin of their theories, nor realised their significance. They were concerned merely with these theories in their strictly metallurgical applications, and any transcendental meaning we can extract from their works was not intended by the writers themselves. However, many alchemists, I conceive, especially the better sort, realised more or less clearly the dual nature of their subject, and their books are to some extent intended to permit of a double interpretation, although the emphasis is laid upon the physical and chemical application of mystical doctrine. And there are a few writers who adopted alchemical terminology on the principle that, if the language of theology is competent to describe chemical processes, then, conversely, the language of Alchemy must be competent to describe psychological processes—this is certainly and entirely true of Jacob Boehme, and to some extent also, I think, of Henry Khunrath and Thomas Vaughan.

In conclusion I will venture one remark dealing with a matter outside of the enquiry I have here undertaken. Alchemy ended its days in failure and fraud; charlatans and fools were attracted to it by purely mercenary objects, who knew nothing of the high aims of the genuine alchemists, and scientific men looked elsewhere for solutions of Nature's problems. Why did Alchemy fail? Was it because its fundamental theorems were erroneous? I think not. I consider the failure of the alchemistic theory of Nature to be due rather to the misapplication of these fundamental concepts, to the erroneous use of *à priori* methods of reasoning, to a lack of a sufficiently wide knowledge of natural phenomena to which to apply these concepts, to a lack of adequate apparatus with which to investigate such phenomena experimentally, and to a lack of mathematical organons of thought with which to interpret such experimental results had they been obtained. As for the basic concepts of Alchemy themselves, such as the fundamental unity of the Cosmos and the evolution of the elements, in a word, the applicability of the principles of mysticism to natural phenomena; these seem to me to contain a very valuable element of truth—a statement which, I think, modern scientific research justifies me in making,—though the alchemists distorted this truth and expressed it in a fantastic form.

ABSTRACT OF DISCUSSION.

THE CHAIRMAN said that he very greatly appreciated Mr. Redgrove's resumé of the subject of Alchemy and its aims. To him, it was a source of satisfaction to find that one, whose attitude towards Alchemy was necessarily scientific and critical, should have dwelt with so much sympathy and insight on the analogy of the mystical regeneration of man with the transmutation of metals, as giving a starting point for the understanding of the theories and methods of the alchemists of old. In one point he was obliged to differ from the lecturer, *viz.*, that the alchemists were a failure. He could not subscribe to that view, as the perusal of the works of the ancient writers impressed one strongly that many of them had reached the goal to which they aspired.

MONS. W. de KERLOR said that he considered that Mr. Redgrove's paper, in its historical and philosophical survey of the evolution of Alchemy, was most clear and precise. The lecturer, he said, certainly managed to throw a wet blanket on any hopes that one might manage the alchemical "trick" of transmuting ordinary metals into gold; but there could be no doubt that the mystical application of Alchemy to oneself is the most practical and advantageous. We must not, he added, be too hard on the old alchemists, for they were the pioneers of modern chemistry and pharmacy; and might be compared to the investigators of experimental psychology of to-day.

MR. W. GORN OLD referred to the modern theory of the elements, that they were all differentiations from a common basic substance—the "protyle" of Sir William Crookes—as having a close resemblance to the views of the alchemists. With regard to potable gold, he referred to the account in *Exodus*, in which Moses is reported to have reduced the golden calf and the gold ornaments of the Israelites to an *aurum potabile*, and to have given it to the people to drink, thus curing them, not only of their idolatry, but also of their boils, the effects of their traffic with the gods and fleshpots of Egypt.

MR. B. R. ROWBOTTOM said that he had listened with much interest to Mr. Redgrove's lecture, and was convinced that his theory as to the Origin of Alchemy threw much light on many statements and theories of the alchemists otherwise unintelligible. According to Mr. Redgrove one idea appeared to have permeated the theories of the alchemists, namely that all phenomena in the natural world are symbolical. The alchemists attempted to apply this principle of "correspondence" between the natural and the spiritual; but their inadequate knowledge of experimental facts led them

astray. Mr. Redgrove, however, appeared to suggest that the principle is not in itself incorrect. If this were so, it would be of great interest to have the correct symbolic interpretation of various chemical phenomena, such as the reaction between iron and copper sulphate. With regard to the practical value of Alchemy, the speaker said that, however deep the philosophic insight of the alchemists might have been, the result of the application of their methods to chemical phenomena could be described by no other word than "failure"; and a complete revolution in methods took place before chemical science made progress. The advent of the balance and the hypothesis of Dalton were of far greater service than the accumulated theories of the alchemists.

Mr. SIDI ABDUL-ALI said that the diverse properties attributed to the Philosopher's Stone appeared to bear some resemblance to properties of the ether. The Stone was said to be both spiritual and corporeal, mean and precious, near at hand and far off, visible and invisible, etc. The ether was unique in that it embodied similar antithetical qualities, such as an exceeding rarity and enormous density, a zero viscosity and a rigidity scarcely comparable with that of any known form of matter, homogeneity and heterogeneity, and so on.

Mr. REDGROVE, in replying, expressed his thanks for the many expressions of approval of his lecture. Many of the remarks of the various speakers had raised matters of considerable interest; but he reminded them that his sole object in the paper he had read was to formulate and substantiate a certain theory concerning the origin of Alchemy, and to deal adequately with certain of the points raised would necessitate a series of further lectures. To his mind, the expression "failure," as applied to Alchemy, connoted the fact that the theories of Alchemy did fail to satisfy scientific men, who turned elsewhere in their endeavours to understand Nature. He was not, however, concerned with the question of the truth of Alchemy or its relations to modern science; but only with the nature of its aims and the rationale of its origin; and although, as a metaphysician, he believed, with Swedenborg, in the possibility of a complete interpretation of Nature in terms of Spirit, to attempt anything of that sort would not here be feasible. As to the antithetical properties ascribed by the alchemists to the Philosopher's Stone, the reason of this was probably due to the fact that the alchemists regarded the Stone as symbolical of Jesus Christ, *i.e.*, God incarnate, who, according to Christian theology, harmonises in Himself such antithetical qualities as Deity and Humanity, Infinitude and Finitude, etc.

THE JOURNAL OF THE ALCHEMICAL SOCIETY

EDITED BY H. STANLEY REDGROVE, B.Sc. (LOND.), F.C.S.

VOL. I. PART 2.

FEBRUARY, 1913.

REPORT OF SECOND GENERAL MEETING.

The second General Meeting of THE ALCHEMICAL SOCIETY was held at 8 p.m. on Friday, February 14th., at the International Club, Regent Street, S.W., the chair being taken by Mr. W. Gorn Old.

The Chairman informed the meeting, with regret, that the Acting President, Mr. H. S. Redgrove, was prevented by illness from attending the meeting and occupying the chair.

The Chairman further informed the meeting that the Council had authorised the Publisher to supply members of the Society with additional copies of the Journal, for their private use, at half the published price.

An election of ordinary members of Council was held and Lt.-Col. Jasper Gibson, LL.B., and Mr. B. R. Rowbottom were elected.

A paper was read by Mr. Arthur Edward Waite on "The Canon of Criticism in respect of Alchemical Literature", which was followed by a discussion. (The paper and an abstract of the discussion are printed in the present number of the Journal.)

A vote of thanks was passed to Mr. A. E. Waite for his paper.

THE CANON OF CRITICISM IN RESPECT OF ALCHEMICAL LITERATURE.

BY ARTHUR EDWARD WAITE.

ONE problem which confronts us on the threshold of a general enquiry respecting the literature of Alchemy, understood as memorials of the concern of alchemists, is the fact that there are two aspects which are reasonably plain on the surface of the literature, and an introductory account of them was given by our Acting President at the first General Meeting of THE ALCHEMICAL SOCIETY. Having regard to the limit of time which must be placed on the present address, and to that also of space when it comes to be printed in the JOURNAL, I will define the two aspects in almost as many words, resting certain that my hearers are versed in the distinction already. The aspects are (a) Physical and (b)

Religious, Theological or Mystical. Now, Mr. Redgrove's thesis was, in his own words, "that the alchemists constructed their main theories by means of *à priori* reasoning"; that the premises from which they started were the doctrine of spiritual regeneration and the presumption that natural objects are symbols of spiritual truths. This was his first point, and it is a settlement so far of that theory which, according to the alchemists themselves, was of such importance that failing its proper understanding those who proceeded to the work would be wasting their time and means. Mr. Redgrove said further that the practice of Alchemy was an attempt to apply, in accordance with principles of analogy, "the doctrines of religious mysticism to chemical and physical phenomena". This was his second point; while as regards the third and last, I believe that I shall not be misconstruing him if I record that, from his standpoint, the experiment was as such a failure. It is a conclusion to which his paper leads up and the evidence for the two previous points is that which fills the paper. I am not here to praise the work of a precursor as if this Society were a species of brotherhood having for its counsel the axiom: *De fratribus nil nisi bonum*. It will be a very bad thing for us if we cannot at need debate, with the license of honourable criticism, the views that are expressed among us. However, there is another axiom, or one which I will invent for the moment, and this is: *De condiscipulis non nisi justum*, on which ground let me add that it is a very long time since I have met with a discourse on Alchemy which has created so clear an issue and maintained it with such force and reason. In so far as it covers the ground, and subject to my personal understanding, I add my concurrence at its value, respecting the affirmation of failure, which—you should observe—was limited rather strictly by Mr. Redgrove, as will be seen in his last paragraph.

Now, the question which arises is whether he has given us that canon of criticism in respect of alchemical literature which is the subject of my own address. I was unfortunately not present when he spoke, and I had already chosen that subject when the first issue of the JOURNAL came into my hands. It is therefore, to some extent, by an accident of things that I find myself taking into consideration the account of Alchemy and its origin which has been placed before us already, it being understood as Mr. Redgrove laid down on his own part, that no point of view is to be regarded as of authority among us, that our Society has no propaganda and exists solely for the purpose of research. It will remain for your judgment at the end of the present address whether what I have placed before you should be regarded as arising solely out of that which has preceded

and therefore, as the case may prove, a supplement or alternative thereto. For myself, I regard Mr. Redgrove's paper as a convenient point of departure. In its absence I should have presented my own thesis with less after the manner of preface, but I feel that my task would have been harder; and in addition to the recognition which we owe him for a valuable exposition of the subject from a particular standpoint, my own thanks are due for that which he has unconsciously saved me.

So far as it covers the ground, I am in agreement in his view of the subject, under the reserves which will appear hereafter. The *quod superius sicut quod inferius*, the reasoning from things as they were assumed to be above to things as we find them below, was unquestionably for a long period a chief working hypothesis of alchemists. This was the doctrine of analogy, a doctrine of spiritual law obtaining in the natural world, and as such the counterthesis to that of the late Professor Drummond, who was thought for a moment to hold a practical key of the universe, as it had to be understood in Christendom. But whether Mr. Redgrove's view can be held to explain how Alchemy originated or whether some of its intimations are not referable rather to positions at a particular period, are alternatives for our consideration. If it obtained altogether from the beginning and continued till it ended, as he tells us, in fraud and failure—I suppose, about the period of the French Revolution—then he has given us the canon of criticism in respect of the literature, and it may seem at first sight that we shall find it difficult to justify the existence at this day of an Alchemical Society. The difficulty has not been absent from his own mind, and he has sought to deal with it briefly. His suggestion is that the alchemical theory, as stated, may have been erroneous, but it was real to those who held it, was not without an influence of importance on human thought, and it is desirable to understand how it gained such general credit—whether Alchemy, in its aspect as a science of metallic transmutation, is matter of fact or not. I am not clear that this deals with the issue. If in the application of their *à priori* theory the alchemists failed throughout to accomplish that which they sought, it seems certain that their literature is a dead letter so far as the physical work is concerned, and even if they made valuable chemical discoveries in the course of their gropings, I question whether the point is of any living and palmary interest to you or me at this day. Profiting by the light of modern science, we may, of course, undertake the experiment of transmutation on our own part and so justify our existence; but the old books will not help us. We shall be an association of modern chemists incorporated for a specific by-way of research. As a matter of fact, I have not heard that

we are established for this purpose, though it is not excluded from our objects; we are concerned rather with the study of a certain literature in all its complexions; and it seems to me therefore that if the physical work was a failure, our vindication must be sought in the theory, as also in things connected with and arising therefrom.

One word more and I have done with the question of failure. The possibility which was envisaged by Alchemy is one thing and the "à priori methods of reasoning" by which it was sought to realise that possibility are another, though it may be a mere platitude to say so. All the long story notwithstanding, the possibility remains, and I hope at our next Meeting some one will come forward to speak with authority on the old dream in the light of modern science—apart or not from the question whether there is any colourable evidence in the records that transmutations were effected in the past, however rarely and sporadically, perhaps even by other methods than the theory itself suggested. It is only yesterday that we heard of a discovery by Sir William Ramsay and other scientists—working, I believe, independently—which may mean the transmutation of one chemical element into another—subject, of course, to the validity of Prof. Sir J. J. Thomson's alternative contention. We must seek to know more of the trend of recent discovery in this direction, and we need to be informed by someone who has an eye to the efforts of the past, but also a complete disregard of any à priori reasonings which actuated those efforts.

And now in respect of the theory, the supposition that it was erroneous was posited at one point by Mr. Redgrove for a purpose of argument only at the beginning of his discourse; and he said in his conclusion that for him the fundamental concepts of Alchemy had not only a precious element of truth, but one which is not unjustified by modern research. I want us to observe for a moment where this is likely to lead us.—Mr. Redgrove has given us a synopsis of mystical theology which either comprises these concepts or is that out of which they arose. They are the unity of the Creator and the creature, the unity of the cosmos, the realisation of God as the origin and end of existence, and the idea of a path by which the soul of man may return to God, which path is called that of rebirth. It is under the light of these doctrines that he asks us to recreate the atmosphere of the Middle Ages. I wish to say they were not their atmosphere, and if they were—as it is suggested—the intellectual and spiritual medium in which the alchemists lived and moved; if—as it is suggested also—"Alchemy was generated and thrived in a dim religious light"; then these things were neither the light nor the atmosphere in which the people at large of the Middle Ages lived and moved themselves.

see
errata
on back of title page

The term "Middle Ages" may be used in rather a loose sense; but if it corresponded, let us say, to the twelfth, thirteenth and fourteenth centuries, to the epoch of Raymund Lully, Arnold de Villanova, Jean de Meung and Nicholas Flamel, then the theological light and atmosphere were scholastic and not mystical, though perhaps in the fourteenth century the intellectual cities of scholastic philosophy had become rather deserted. There is no need to dwell on this point; I am only concerned with showing that the times were the reverse of mystical, though there were Eckehart and Tauler in Germany, and there is a name here and there in England, Italy and France. The middle of the fourteenth century has been called a great mystical period in England, which means only that it was then in more particular evidence. England has never been an important country mystically. The seat of doctrine was of course the Latin Church, whether at Rome or at Avignon, and we know after what manner it was maintained; we know of the Holy Inquisition, the crusade in Holland, the crusade in southern France, the suppression and spoliation of the Templars. I mention these matters of history roughly and crudely enough; but it is only to indicate the spirit of the time, the kind of power that ruled it, and to add that, in so far as there was revolt against it, the protests were scarcely to be called mystic. It is true that German thought was seething on points of doctrine, and Master Eckehart may have reflected something from the Averroism which was condemned in the thirteenth century; but he remained under the ægis of the Church till he was, so to speak, ravished away and withdrawn possibly into the shelter of the Holy Office. Tauler was always an orthodox mystic.

If therefore during these centuries, in laboratories and scriptoria, there were alchemists seeking to apply physically and to maintain in cryptic writings the soul's regeneration, the unity of the cosmos and the postulate that "this natural world is only an image and material copy of a heavenly and spiritual pattern", they did not derive these notions from current theology, mystical or otherwise: they belonged to another school. We find, as a matter of fact, that Raymund Lully, like his predecessor the Latin Geber, describes the Hermetic art in his *Clavicula* [*Clavicula Raymundi Lullii Majoricani*. See Jo. Jacobi Mangeti, *Bibliotheca chemica curiosa*, Tomus primus, p. 872.] as a gift of God which is given to whom God wills and is an eternal treasure for the recipient. He affirms also in his *Codicillus* or *Vade Mecum* [*Ibid.* p. 884, col. 2.] that as Jesus Christ, of the root of David, assumed human nature for the liberation of humanity, which was in bondage through the transgression of Adam, so in the Art of Alchemy, that which has been defiled by one thing is ab-

solved and cleansed by another. I remember little to my purpose in Arnaldus except again that the work is God's gift and that to whom He pleases is given not only the Stone of the Philosophers but also the Perfect Medicine. [*Testamentum Magistri Arnaldi de Villa Nova*. See Mangetus, *Tomus primus*, p. 706, col. 1.] The testimony is curious in its wording: "*Dominus noster dedit cuilibet lapidem Philosophorum, et non tantum lapidem Philosophorum, sed medicinam perfectam, quæ magnam virtutem habet transmutandi metallum in solem et lunam sine aliqua preparatione . . .*" It would be unwise to dwell on sporadic analogies, even if they shew rather plainly the quarter from which sets the wind of doctrine; but Arnaldus says also that "live Mercury could not reside in a metal without a medium, even as the soul could not dwell in the body of man, were it not for the spirit which is the medium between body and soul". [*Ibid.* p. 704, col. 2.] Jean de Meung bears much the same kind of testimony when he says, in the person of Nature: "Let me ask you to consider the birth and development of man, my noblest work. You cannot make a human body out of any substance whatsoever. Of my method of forming so subtle a body neither Aristotle nor Plato had the remotest knowledge. I harden the bones and the teeth, I make the flesh soft, the muscles cold, the brain moist, the heart warm—into which God has poured the life—and I fill all the veins with red blood. And in the same way, I make of one quicksilver and of one active male sulphur, one maternal vessel, the womb of which is the alembic. It is true that man aids me by his art, by shedding external heat into the matrix; more than this, however, he cannot do". [*Demonstratio Naturæ . . . , descripta per Joannem a Mehung*. See *Museum Hermeticum Reformatum et Amplificatum*, Frankfurt, 1658, p. 156. See also my edition in English, *The Hermetic Museum*, vol. 1, p. 130.] These are examples at their value of a certain doctrine of analogy. But if the book or testament of Nicholas Flamel can be regarded as a work of the period—which is more than doubtful—then his explanation of the designs which he caused to be painted on the fourth arch of the Cemetery of the Innocents is an example of a very different kind of correspondence. He says: "I caused to be depicted on the said fourth arch . . . the most true and essential marks of the Art, yet under veils and hieroglyphic coverings, in imitation of those which are contained in the gilded book of Abraham the Jew. They could be held to represent two things, according to the capacity and knowledge of those who beheld them: (a) the mysteries of our future resurrection at the Day of Judgment and the coming of the good Jesus; (b) the chief or essential operation of the Magistry. These hieroglyphical figures

will serve as two ways leading to celestial life, the first, in more open words, teaching the sacred mysteries of our salvation, and the second teaching every man—if so be he is called to the Stone—the lineal way of the work, which if perfected by anyone, changes him from evil to good, extracts the root of all sin, which is avarice, making him liberal, mild, pious and God-fearing—however bad he was previously.” [*Bibliothèque des Philosophes chimiques, tome second, Paris, 1741, pp. 210, 211. See also my Lives of Alchemistical Philosophers, 1888, p. 108.*] The text which follows these words makes a certain pretence of distinguishing between the religious and alchemical pictures, but it really leaves them interwoven; the one is explained by the other and each belongs to each.

I am not pretending to put forward these citations as especially convincing in their kind, and I speak of them under all reserves in respect of dates and authorship attributed to the texts. Nearly everything that passes under the name of Flamel is exceedingly suspicious when it is not patently spurious, and the book which contains the passage just quoted seems in my own judgment to occupy the undesirable dignity of a middle place between these alternatives. The alchemical writings which are connected with Raymund Lully are certainly not his authorship, and the distinction created by one of the French biographical dictionaries between the Lully who invented *Ars Magna* and the Lully who was a “proselyte of the gate”, or convert to Jewry, offers no authority for the statement. I observe that any attribution seems good enough for some modern French writers on Alchemy and that therefore Albert Poisson [*Cinq Traités d’Alchimie des plus Grands Philosophes . . . Traduits du Latin en Francais, par Alb. Poisson. Paris, 1890.*] is in a state of peace which passes understanding not only about the antiquity of the *Emerald Tablet* but about the *Clavicula* of Lully and the tracts ascribed by past pleasantry to Albertus Magnus. We have to exercise greater caution when we are making a bid for recognition in respect of serious research and are not translating or editing texts for the unsuspecting children of modern Martinism.

We have now dealt with the evidence of two centuries connected with important names in our literature. There is, however, another matter, which we shall do well to keep in our minds, as it belongs to all periods and places. We have to remember that the literature of Alchemy has been cryptic *ex origine symboli* and that there are two possible reasons: (a) that it contained a secret process which for some cause—real or imputed—not always apparent on the surface, had to be reserved from the profane, but was in the ordinary sense of the word a metallic secret; (b) that

it contained alternatively—whether always, occasionally, or additionally in a subsidiary sense—a secret or a congeries of secrets belonging to the spiritual order. Of these two possible reasons one is a claim—actual or putative—of the whole literature: if there are texts which are entirely mystic in the spiritual sense—in the sense of the soul's experiments—the records concerning these still speak the language of metallic transmutation. It is true also that those which are unquestionably dealing with a mystery of physics are couched more often than not in a sort of religious terminology and breathe a spirit of religious devotion. I do not propose to debate the comparative value of the motives which may have justified secrecy in the alternative cases; that question lies beyond our province at the moment, for we are dealing with things as they are. I have registered my opinion that the mystic theology which has been imputed to alchemists is not orthodox in its character; it was not to be heard in the churches, the chairs of theology, the works of authorised theologians, or the liturgies of the Church at large. It belonged to the suspect order of religious thought; sometimes it was expressed in a manner which escaped specific condemnation and sometimes not. If we suppose for a moment that any mystic text-books veiled in the language of Alchemy were not concerned with simple doctrinal propositions but with certain practical methods by which the mind and soul of the searcher passed beyond the region of speculation into that of demonstrative experience, we are possibly confronted at once with the most cogent of all reasons for the adoption of symbolic veils. I shall recur to this subject shortly from another standpoint.

Now, in considering the literature of Alchemy as a whole, and in the historical sense, we have to remember that it has three periods: (a) Byzantine Alchemy, (b) Arabian and Syrian Alchemy, (c) Latin Alchemy—including a host of texts in the vernaculars of various countries. It is a very difficult question indeed, but as regards the last period, I question whether much that is extant is prior to the twelfth or thirteenth century. The things, for the rest, which pass under the names of Rhasis, Alfarabis, Avicenna and Morien have some roots in preceding cycles, like the Latin treatises known under the name of Geber, though from very far away in the last case. He, indeed, is only as the shadow of a name, and if I say there is something more in the others, it may be allowed to stand at that, for the texts are not of our concern especially. The Latin Geber himself is ascribed to the twelfth or thirteenth century by M. Berthelot, speaking of course speculatively. The *Turba Philosophorum* is earlier—let us say of the eleventh century, perhaps even of the tenth, meaning, of course, in its Latin

guise; but any definite suggestion is hazardous. It is quoted by Vincent de Beauvais in his *Speculum Naturale*. It is not, however, till the thirteenth century that we feel ourselves on firm ground.

The line of transmission in Alchemy has been made perfectly clear by the great French chemist Berthelot, through the publication in 1887 and 1888 of his *Collection des Anciens Alchimistes Grecs* and of the Arabian and Syrian alchemists in 1893. The *Collection des Anciens Alchimistes Grecs* is in three parts, the first of which contains a valuable body of criticism; the second gives the complete Greek text; and the third is the translation into French. The text was edited and rendered by C. E. Ruelle. The second work is in three volumes, entitled *La Chimie au Moyen Age*. Vol. I. is an Essay on the Transmission of Antique Science to the Middle Ages; vol. II. contains Syrian Alchemy, with text and translations by Rubens Duval; vol. III. contains Arabian Alchemy, the text and its rendering being the work of O. Houdas.

Speaking in rather a broad sense, the alchemists of Syria derived distinctly from the adepts of Byzantium, the Arabians from those of Syria, and Latin Alchemy more especially from that of Arabia. Those who would carry the question further must check this rough statement by the researches of Berthelot, and they will see that I am speaking here under several reservations which there is no opportunity to recite. We know after what manner the imputed science and wisdom of Araby the Blest passed into Europe, and we can understand that Spain, under Moslem domination, was a meeting-point of East and West for Alchemy, as for so much else that came from the East westward. It was in the Arabian schools of the prophet that the Sheik Abou Moussa Djaber ben Hayyân Es-Soufy—otherwise Geber,—Rhasis, Morien and other successors of so-called Hermetic tradition, became known to zealous students who believed that there was a mystery of Nature concerning the transmutation of metals which was not beyond attainment, primarily by Divine help but also by the guidance of a master thereunder, and by familiarity with the findings of past research. Not there of necessity, but because of that fountain-source, the books of adepts like these assumed a Latin vesture, in most of which they were transformed rather than veiled. We can, I think, understand further how it came about in such a centre that the most literal of all texts and the most physical side of the concern bore a religious aspect: yet that aspect was as much a characteristic of pseudo-Democritus, Zosimus the Panopolite, the feigned Cleopatra, queen of Egypt, with all the artists and all the art of chrysopeia which flourished at Byzantium several

centuries previously. The fact must be taken at its value and the quality of such value must depend whether the tincture of religion was a surface colouration only—like the goldsmith's industry, memorised in the Leyden papyrus—or was a true, essential, converting agent—like the fabled gold of the adepts. In other words, the question arises whether the religious sentiment is simply the natural setting of faith and devotion, particular to periods, places and classes, or whether it is an index pointing to a secret and divine doctrine which reposed in the heart of the adepts. If it be simply the Sheik Djaber testifying as a Mussulman that there is no God but God and that Allah is His prophet; if it be simply Benedictus Figulus, or another of the Christian school, opening *qua* Christian, in the Name of the Most Holy Trinity, then it is no part of our concern. I believe it to be more than this, more also—at a later period—than a heretical doctrine held under veils and evasions because of the terror of the time; and if this be the case, seeing that the index seems to be lifted for our guidance almost from the beginning of Alchemy, it follows that the latter differs from some other departments of activity and literature which belong, from my own standpoint, to the Secret Tradition in Christian times. It was out of the old folk-myths and folk-tales that the glorious books of the Holy Graal have been drawn into another manner of language, with another motive and another set of intimations, and high and holy rumours, which came as if from a secret sanctuary, beyond all mortal ken.* It was out of an old Operative Guild, as I have tried to show elsewhere [*Secret Tradition in Freemasonry*, 2 vols. 1911.] and out of any crude mystery that it worked for the incorporation of apprentices and fellows, that the art and craft of Speculative and Symbolic Masonry was drawn into another manner of mystery, with another motive and a high and holy pageant, which depicts for those who have eyes and recites for such as have ears the last transfiguration of the old orders of initiation. As regards the Graal, there is no possible comparison whatever between the old tales with a quest-motive, a spelling and unspelling motive, with a food-giving talisman or a spear that drops blood, and the Galahad and Perceval romances told for "the truest and the holiest in this world". There is no comparison between the old Operative Masonry and the emblematic art of building living beings into palaces and temples of the Holy Spirit. There is no comparison, in fine, between the idea of metallic transmutation and the conversion of the soul in God. But unlike the Masonic Fraternity, and unlike the Graal literature, we cannot lay the finger on a period when it can be said that

*See my *Hidden Church of the Holy Graal*, 1910.

definitely and for the first time, the texts of Alchemy began to assume a semi-religious, doctrinal or theological aspect. In a sense they had always this guise. M. Berthelot says that the "history of Magic and Gnosticism is closely bound up with that of the origin of Alchemy", and this is also a signpost, though Magic and Gnosticism do not correspond for us to any notion of theological, much less of mystic doctrine. The texts, however, are more direct to our purpose, and I will quote from the Greek collection.

It may be noted in the first place that the fragment on the *Philosophical Egg* affirms that the work of Alchemy is the fulfilment of a mystery "sought for in a single body and extracted therefrom". Another fragment, on the *Assembly of the Philosophers*, says: "The furnace is one, one is the path to follow, and one also is the work". This is communicated from one initiate to another, and according to Synecius such communication was always under a great pledge. There is not one of the prophets, says Zosimus, who has dared to hand it down otherwise, after which he proceeds to publish it on the authority of Stephanus, but in words that remain unintelligible, notwithstanding careful annotations by Berthelot. One of the general indications prefixed to the collection speaks of the habits of a philosopher and provides that "he who follows the study of science must, firstly, love God and men, be temperate and disinterested, eschew all falsehood, fraud and evil action, as also every envious sentiment. He must be a sincere and faithful child of the Holy Consubstantial and Co-eternal Trinity." Apart from these qualities, the searcher will do injury to himself in the quest of that which is—for him—inaccessible. The reason is that, according to Pelagus the Philosopher, it is a divine and sacred art, and the principle from which it depends is one of analogy, for Zosimus says: "Above the things celestial, and below the terrestrial things; by male and female is the work accomplished". According to Sophe the Egyptian, "the symbol of chemistry is drawn from creation (in the eyes of its adepts) who save and purify the divine soul enchained in the elements and who separate above all the divine spirit entangled with flesh. Even as there is a sun, flower of fire, a heavenly sun, the right eye of the world, so copper, if it become flower (that is to say, if it assume the colour of gold) by purification, becomes then a terrestrial sun, which is king on earth, as the sun is king in heaven." But much more categorical than anything is one of the technical pieces, being a *Description of the Grand Heliurgia*, as follows: "The All manifests in six things: in the four elements, in the soul and in God Himself, the Artisan and Creator of these things. Here now are the four elements: the first, being that which dwells above, is fire; the second, in a lower place, is air;

still lower is the third, or earth; and beneath the earth is water. Such are the four elements. Besides these are the soul and God, their Artisan and Fabricator. . . There are six things also in the matter of the Grand Heliurgia, namely, water, sublimed vapour, the (metallic) body, ash, humid vapour and fire. Among these, the first four answer to the four elements. The fifth, or humid vapour, is comparable to the soul, and the sixth, which is fire, is the image of God."

As regards Arabian and Syrian Alchemy, it should be understood that a large part of it is less or more direct translation from the Greek, from Zosimus and Pseudo-Democritus, while it is beyond my province, as indeed our purpose at the moment, to estimate the extent to which original writings like those of the Arabian Geber, have their root-matter in the Byzantine collection. The writer last mentioned seems to dwell more than others on what may be called the doctrine of equilibrium. He is also the first who has given a categorical explanation of the secrecy maintained by the philosophers, affirming that "if we divulged this work, the world would be corrupted; for gold would be made then as glass is now in the bazaars". He distinguishes the totality of created things into two worlds, under the old denomination of macrocosm and microcosm; but the work of Alchemy is a third world, the authority for which is said to be the philosopher Plato, because it is comparable to the two others and joins the forces of both. M. Berthelot is of opinion that Geber teaches the unity of God and creation, but this is not borne out by the passages in the Book of Royalty to which he refers. The tracts which represent the Greek tradition, approximately or remotely, without being translations from the Greek, affirm, like the Byzantine precursors, that the Stone is not a stone, and that it is not even of the genus stone; it is one substance, of one nature, and it comprises two things, which are male and female. The work is a signal mark of favour which God gives to those who are His worshippers.

We should have no difficulty in realising the limits of significance attaching to these quotations, if we remember that they occur in authors who, on the surface of their writings, and in the certain opinion of the great authority who edited them, were dealing with a physical concern. In a general way they bear out tolerably enough some points of Mr. Redgrove's hypothesis, as, for example, that there was a vivid recognition of analogy; but, on the other hand, it is quite clear that nothing that I have cited belongs to the realm of mystical theology. Had Greek, Arab or Syrian extended the doctrine of analogy, that region might have been entered unquestionably, for if that which is below is in the

likeness of that which is above, the perfection of metals may reasonably offer some comparison, stage by stage, with the perfection of the soul in God and with the path of ascent thereto. Mr. Redgrove develops this similitude in connection with late alchemical writers, and it seems to me that he has been guided by true instinct. The spiritual aspects, spiritual likeness and intimations of the art are a growth of centuries, and their growing was from more to more, so that Flamel or Basil Valentine may be conspicuously to our purpose in comparison with all Byzantium, while Eirenæus Philalethes, Thomas Vaughan and the author of *The New Light of Alchemy* may offer more precious vestiges than anything in those two among their precursors. We reach in this manner an epoch when books written under the veil of alchemical symbolism were concerned wholly with the mystical work. It is impossible even to name them in this place, but the *Amphitheatre of Eternal Wisdom* by Khunrath, at the end of the sixteenth century, is a notable case in point.

What is it that had happened in the literature to account for these productions? Had there been such a process of grafting as we can recognise when Graal literature came forth out of the old folk-tales and Emblematic Freemasonry out of the Operative Craft? I cannot answer Yes, for the claim on the surface is the same, and there was also the veil of old in respect of all the symbolism. We can distinguish them by a different spirit and by the obvious fact that they offer no contribution to the chemistry of their period. *The New Light of Alchemy*, mentioned above, may have to be classed in this series. I have indicated here a line of demarcation in the literature; and as it so happens that it divides the period when works on Alchemy were, comparatively speaking, few, from that later time when they were produced incessantly, owing to the increased facilities of printing, it will be seen that there is an important work awaiting any Alchemical Society—to determine which among several hundred texts of greater or lesser repute are contributions to the physical side and which are of mystical import. I am indeed sure that the whole later literature calls to be studied from this point of view, for much that has been marked "disesteemed" in old catalogues, like that of Lenglet du Fresnoy, may have a message on a side unknown to some of our forerunners.

There is one point more, and it is the crown of the whole subject. We have seen how Geber explained the need of reservation in respect of the physical work, though he forgot that if gold became common like glass, it would cease to be a thing of value, which would tend to financial confusion rather than the world's corruption and might necessitate a non-metallic currency. But what of the secrecy

in purely mystic books? Why was it necessary, desirable, or even tolerable to adopt a baffling terminology in discoursing of the Divine Quest and the soul's return to God? It is at this point that Mr. Redgrove's canon of criticism does not cover the whole ground, because his thesis is confined to a set of theological doctrines which, *ex hypothesi*, ruled the procedure of adepts working in physics. So far as analogy goes and the implicits of the *Emerald Tablet*, I have said that I concur, generally speaking; but what of the mystical adepts? We have to consider their position under another light. This light resides in the fact that mysticism is not a series of intellectual doctrines simply, but is a doctrine of experience and a great experimental science. Suppose for a moment that the adepts of mystical Alchemy had carried their research beyond the known field of Christian mysticism into regions vaguely hinted at in the untranslated writings of Eckehart, and do you see the possibilities that open? The fear of the powers that were may once have silenced such witnesses, and this is implied by my previous reference; but the persecuting power of Rome was reduced by the Reformation, and though the latter was not more tolerant than the orthodoxy which it sought to replace, it was much too divided against itself to establish a particular rule and support it *vi et armis*—except indeed sporadically. Now the purely mystic texts of Alchemy are subsequent to the supposed purgation of the Church. But there may have been another hindrance—a secret to hide in the heights against those who might wrest it to their own destruction, as there was supposed to be a secret in the mineral depths which might be abused by unqualified possessors—even if it were unlikely to corrupt the whole world or to imperil the world's currency.

I have at least reached that limit about which I spoke at the beginning. The question must remain in your minds till the opportunity of its consideration in full shall arise at a later period. I have met with intimations in mystic Alchemy, the promise of which I should not care to put into words until I see my way more clearly. When, indeed, shall we see our way—I or another? It will be when the canon of criticism shall have distinguished not alone between the physical and mystical texts, but shall have decoded the latter fully. Meanwhile, those speculative hypotheses which belong to Alchemy from the beginning seem to me not so much an explanation of its origin as of the setting in which it appeared. These hypotheses grew in authority with the centuries and may well have helped to misdirect the alchemists of later periods, distracted enough as they were by their ignorance of "natural phenomena" and the real meaning of these.

ABSTRACT OF DISCUSSION.

THE CHAIRMAN suggested that the position developed by Mr. Waite was in contrast with that defined by Mr. Redgrove in his lecture last month. The latter argued that mediæval Alchemy was based on a belief in a correspondence between universals and particulars, between the cosmos and man. Both the mystical and physical concepts of Alchemy might be true on the grounds of universal correspondence; but Mr. Waite appeared to indicate that, as to origins, Alchemy as concerned with the transmutation of metals antedated the mystical interpretation, and that this latter was the religious cloak under which metallurgical knowledge was smuggled into Europe and preserved to us, as were so many other arts and sciences during the Middle Ages, in the monasteries.

Lt.-Col. J. GIBSON suggested that it would tend to the better appreciation of the relationship of Alchemy to mysticism in the Middle Ages, if the scope of mystical theology in the technical sense were more clearly understood. According to Scholasticism (the system of philosophy and theology which then dominated Western Europe) theology was divided into, (1.) *dogmatic*, which dealt with revealed truth, (2.) *moral*, which dealt with human action, and (3.) *mystical*, which dealt with the relationship which might be established between individual human beings and the Divine Spirit. The writings of those individuals who dealt with the third branch were approved or condemned in so far as their notions and methods were or were not in agreement with those inculcated by the other branches. There were, therefore, two classes of persons who might well have had recourse to alchemical allegory—(1.) those whose opinions on matters of faith were orthodox, but who wished to record in symbolic language, the results of their experiments in a discountenanced art, and (2.) those who wished to promulgate heretical doctrines in a guarded and covert manner. If this were so, the writings of the latter class were negligible so far as the connection between Alchemy and modern chemistry was concerned. Lt.-Col. Gibson also referred to the relationship between Alchemy and astrology, which he considered was of considerable importance. He asked the lecturer whether there was any record of alchemical tradition handed down from Egypt or the East similar to that concerning astrology.

Mr. PHILIP S. WELLBY asked the lecturer if it was his opinion that certain mystics, who were devoted entirely to the spiritual regeneration of man, had, as it were, stumbled upon, or received sudden illumination on, the secret processes of Alchemy, by which the transmutation of metals

could be physically effected. He instanced Jacob Boehme as a possible case in point.

Mr. W. T. HORTON expressed his thanks to Mr. Waite for his most illuminating and scholarly lecture. Having made incidental mention of the mystical teaching of Avicbron (Ibn Gebirol), he remarked on the significant words of the lecturer implying that for each man the way to the "Philosopher's Stone" was to be found by himself and for himself by his own method. As in the past the truest revelations had often come to men who had been accounted heretics and forced to hide their knowledge, so it was, in a less degree, in the present.

Mr. A. E. WAITE, in replying, said: (1.) That in his understanding of the literature the indications of a mystic doctrine of religion and philosophy as originating the practice of Alchemy in its search after metallic transmutation was exceedingly vague and could hardly be said to exist in Byzantine records. (2.) That there was, however, the doctrine of analogy, with all that could be regarded reasonably as implied at the period therein. (3.) That the rise of a purely mystic literature couched in the language of Alchemy could not be dated earlier than the sixteenth century. (4.) That in the history of the subject there was little or nothing to indicate hostility on the part of the Church to any physical work of Alchemy. (5.) That the evidence of the mystic texts did not point to secret heretical doctrine, in the ordinary understanding of the term, so much as to an experience carried further than appears in the authorised testimony of Christian mysticism. (6.) That, in answer to Lt.-Col. Gibson, there were undoubtedly traces of some relationship between Alchemy and astrology, but it would be easy to exaggerate its extent. There was, for example, a certain observance of times and seasons, some periods being more favourable, by the hypothesis, than others to the accomplishment of the Great Work. (7.) That Alchemy, understood as an art of metallic transmutation, does not seem to have existed in ancient Egypt, while as regards the East, so far as he was aware, there was only China. He had met long since with an article by an English missionary which stated that there was a Chinese literature of transmutation, using much the same terminology as was afterwards adopted in the West. (8.) That in reply to Mr. Philip S. Wellby, he believed that some writers of the modern Theosophical school had suggested that the attainment of occult adeptship, as understood by them, implied such a power over the forces of nature that metallic transmutation would be not only possible but was, in their opinion, frequently accomplished. There was of course no evidence and the opinion was quite negligible. Jacob Boehme certainly never made physical gold.

THE JOURNAL OF THE ALCHEMICAL SOCIETY

EDITED BY H. STANLEY REDGROVE, B.Sc. (LOND.), F.C.S.

VOL. I. PART 3.

MARCH, 1913.

REPORT OF THIRD GENERAL MEETING.

THE third General Meeting of THE ALCHEMICAL SOCIETY was held at 8 p.m. on Friday, March 14th, at the International Club, Regent Street, S.W., the chair being taken by Mr. H. Stanley Redgrove, B.Sc., F.C.S.

An election of ordinary members of Council was held, and Messrs. William T. Horton and J. Arthur Jutsum were elected. The Venerable J. B. Craven, D.D., Archdeacon of Orkney, was elected an Honorary Vice-President of the Society in recognition of his services to the study of alchemical literature by the publication of digests of the writings of Robert Fludd and Michael Maier.

The Chairman announced that Mr. Ralph Shirley, editor of *The Occult Review*, who had been elected an Honorary Vice-President at a business meeting of the Society, preliminary to the first general meeting, had now definitely accepted the office.

A letter from Miss A. A. Locke, expressing regret for unavoidable absence was read; and the Secretary announced the names of new members of the Society.

A paper was read by Mr. Sijil Abdul-Ali on "An Interpretation of Alchemy in relation to modern Scientific Thought," it having been announced by the Chairman that Messrs. L. Pembroke and S. Abdul-Ali had decided not to collaborate on a paper, as stated in last month's JOURNAL, but to present separate theses to the Society. A discussion followed the reading of the paper. (The paper and an abstract of the discussion are printed in the present number of the JOURNAL.)

A vote of thanks was passed to Mr. Sijil Abdul-Ali for his paper.

AN INTERPRETATION OF ALCHEMY IN RELATION TO MODERN SCIENTIFIC THOUGHT.

BY SIJIL ABDUL-ALI.

It was a fundamental tenet of Hermetic philosophy that the primary laws repeated themselves in every surface of manifestation throughout the Universe. "Operations or Workings are not carried upwards, but descend downwards." [HERMES TRISMEGISTUS: *The Divine Pymander*, 1894. See *Collectanea Hermetica*, ed. by W. Wynn Westcott, Vol. ii, p. 19.] Thus, in modern terminology, the law that fire produces heat and light as a result of the burning (*i.e.*, the oxidation) of its fuel, is a particular and familiar example of exothermic chemical reaction, which itself is an aspect of the more general law that energy is subject to flux and change, but not to creation or destruction. This empirical law, generalized as "the doctrine of the conservation of energy", presents to the philosopher a partial manifestation of still more comprehensive facts, namely, that thought flows, but is not self-generated; that passion, unqualified, misdirected, consumes the substance of him who entertains it; that emotion, apart from the restraining and unifying influence of the intellect in action, dissipates its energy into the ether of celestial space.

A study of the natural world for its own sake, on an experimental basis and by a purely inductive method, seems to be a feature peculiar to modern science. There is no clear evidence that it was attempted in Hermetic Schools. This statement does not imply, of course, that their theories of nature are therefore necessarily erroneous; and it certainly casts no aspersion upon their sincerity. The greater alchemists undoubtedly believed in the truth of their teachings. An intense religious fervour pervaded and sustained their search after reality. Alchemical literature is full of devout utterance and earnest exhortation, from which it is scarcely necessary to cite, but which shows clearly enough that Art was regarded as of superhuman origin, and revealed by God Himself to the purified and humble soul. Their attitude is well described in the words attributed to Hermes: "But concerning the Truth, it may be that some men, to whom God will give the good seeing Power, may understand it. . . . O Son, Truth is the most perfect virtue, and the highest Good itself, not troubled by Matter, not encompassed by a Body, naked, clear, unchangeable, venerable, unalterable Good." [*Ibid.*, p. 107.]

The alchemists appealed to nature: of that there need be no doubt. But perhaps we shall not wrong them if we say that their appeal was confirmative rather than interrogative.

see
errata
on back
of title
page

They fully expected that experiment would confirm theory; and if it did not, they were inclined to believe that the experiment had been improperly conducted. Of course, this is often the method in scientific research; but to the alchemist, the relinquishing of a theory meant the falsifying, not only of a part of his philosophy of nature, but of an integral and perhaps vital part of his philosophy of the Universe, which was his religion, divinely revealed, confirmed, if he were a mystic, by his own super-sensuous experience, and altogether beyond the pale of question. Speaking of the "hidden stone", one writes: "Alchemy is supernatural and Divine We have need of faith in this matter, just as much as we have need of it in regard to God's miraculous dealings in Scripture. It is God alone that perfects our Stone, and Nature has no hand in it". [PETER BONUS: *The New Pearl of Great Price*, trans. by A. E. Waite, 1894; p. 124.]

I make these few introductory remarks in order that there may be no doubt about the atmosphere in which the true alchemist worked. It was certainly not the atmosphere of the modern scientific laboratory; nor was it (as Mr. Waite, in his recent address to this Society, pointed out) precisely that of the sanctuary of the orthodox church; and we cannot hope to interpret alchemical theory unless we bear these facts in mind.

On any general theory of knowledge there appears to be little elaboration in the literature. The treatment of this subject is sporadic. There are indications of a quite scientific and rational empiricism in such passages as the following: "In all operative sciences (as Aristotle sets forth) the truth of a proposition ought to be shewn, not by logical argument, but by ocular demonstration. The appeal should be not to the intellect, but to the senses. For particulars belong to the domain of sense, while universals belong to the domain of reason." And again: "Anything in which the specific properties, qualities, and operations of a certain substance are observed, is of the same nature with that substance. Now, we find in the gold and silver of Alchemy all the distinctive peculiarities of natural gold. We do not know the substantial form of anything; we do know its qualities, properties, operations and accidents; consequently, it is in regard to these particulars that we must look for agreement, because all our knowledge necessarily has a sensuous or perceptive basis. The substantial form, on the other hand, is nothing but a convenient intellectual abstraction. In determining the nature of anything, we must found our judgments on its practical manifestations." [*Ibid.*, pp. 84 and 90.] But, despite such passages as these, it would be hard to believe that the alchemists formulated their theories as a result of observing the properties of natural bodies. In general they

seem to have either claimed or tacitly assumed the possibility of a direct and valid perception of universal truth by intuition, or some faculty of spiritual vision not necessarily referable to the senses. Such mystics as Jacob Boehme and Thomas Vaughan were doubtless conscious of the deep and far-reaching realities of religious experience, and there need be but little wonder in the fact that these should have been inclined to ignore, or at any rate to under-estimate, the value of mere empirical data. Yet even here we must be cautious. Vaughan himself tells us: "I can assure thee here is nothing affirmed, but what is the fruit of my own experience. . . . for with much labour have I wrung it out of the earth, nor had I any to instruct me". ["EUGENIUS PHILALETHES": *Euphrates or The Waters of the East*, 1896. See *Collectanea Hermetica*, edited by W. Wynn Westcott, Vol. vii., p. 8.] On points of this kind it is not safe to dogmatize: far too little is known regarding the precise nature of alchemical methods of experimental research to warrant very much positive assertion.

Leaving, now, these more general considerations, I propose to deal with certain details fundamental to "The Great Work" itself. In anticipation of the question: Did the alchemists actually accomplish transmutation in the metallic sense?—let me at once state my agnostic position. I do not know. To express a mere opinion is neither necessary nor desirable; and it would certainly not be decorous on my part, in view of the fact that there are members of this Society whose qualifications to speak on the subject are far greater than my own. I stand before you neither as historian nor as critic; my aim, in however incipient a manner, is to interpret and suggest. That the alchemists themselves believed at least in the possibility of metallic transmutation is, of course, beyond doubt. One of them writes: ". . . I stoutly maintain that the Art of Alchemy is clear and true, and founded upon Nature; that its products are as truly silver and gold as the precious metals which are produced in the bowels of the earth; and that I am fully prepared to substantiate all these assertions in the following chapters, and to place them beyond the reach of reasonable doubt." [PETER BONUS: *The New Pearl of Great Price*, p. 103.] And another: "I hope my Book will shew that the Transmutation of Metals, from an imperfect to a perfect state, is a real and true achievement, and that by the co-operation of Nature and Art." ["EIRENÆUS PHILALETHES": *The Metamorphosis of Metals*. See *The Hermetic Museum, Restored and Enlarged*, ed. by A. E. Waite, 1893, Vol. ii., p. 228.] But any proof of the truth or falsity of the theory must, like all such evidence, ultimately rest upon experience; and when someone shall have come forward to demonstrate the accomplishment of the work by

alchemical as opposed to modern scientific methods—then, but not before, we shall be justified in declaring that the *Magnum Opus* was actually and physically achieved.

What were the theories upon which the possibility of transmutation rested? In order to understand these we must first consider the alchemical concepts regarding the constitution of the world. The postulates appear to have been as follows:—

(1) A "First Matter" or "Hyle", the fundamental substance or "stuff" out of which the material world is fashioned. "Hyle is the Beginning of all things, a confused mass and primary matter, which is neither moist nor dry, not earth nor water, not light nor darkness, not air nor fire." [*Corollary concerning Hyle.* See BENEDICTUS FIGULUS: *A Golden and Blessed Casket of Nature's Marvels*, trans. by A. E. Waite, 1893, p. 259.]

(2) Four Elements, contained implicitly in the "first matter", and subsequently, by mutual differentiation, separation and ultimate recombination, to issue in manifestation. In explanation of a certain diagram attributed to Raymund Lully, it is written: ". . . in the centre of it you see the first Hyle, or matter whereof the world was made. In this Hyle (saith Raymund) all the Elements and all natural Principles, as well as Means and Extremes, were mingled potentially, *in forma confusa Aquae*; and this primitive Spermatic ocean filled all that space which we now attribute to the air. . . . Out of this central Hyle. . . did rise all those Principles and Bodies which you find written in the circumference of the Figure and here begins our Philosophy. In the first place over the Hyle, you see the Elements of the visible created world, whose parts are commonly called Elements, namely Earth, Water, Air and Heaven . . ." ["EUGENIUS PHILALETES": *Euphrates or The Waters of the East.* See *Collectanea Hermetica*. Vol. vii., p. 38.] And in another work we read: "These are the four pillars of the world. They were in the beginning evolved and moulded out of chaos by the hand of the Creator; and it is their contrary action which keeps up the harmony and equilibrium of the mundane machinery; it is they which, through the virtue of celestial influences, produce all things above and beneath the earth." [MICHAEL SENDIVOGIUS (?): *The New Chemical Light, Pt. II., Concerning Sulphur.* See *The Hermetic Museum*, Vol. ii., p. 130.]

(3) A certain divine Spirit or Essence, pervading and immanent in all things, called "The Soul of the World" and "The Spirit of Truth". "This is the Spirit of Truth, which the world cannot comprehend without the interposition of the Holy Ghost, or without the instruction of those who know it. The same is of a mysterious nature, wondrous strength, boundless power. The Saints, from the beginning

of the world, have desired to behold its face. By Avicenna this Spirit is named the Soul of the World. For, as the Soul moves all the limbs of the Body, so also does this Spirit move all bodies. And as the Soul is in all the limbs of the Body, so also is this Spirit in all elementary created things. It is sought by many and found by few. It is beheld from afar and found near; for it exists in every thing, in every place, and at all times. It has the powers of all creatures; its action is found in all elements, and the qualities of all things are therein, even in the highest perfection." [*The Book of the Revelation of Hermes, interpreted by Theophrastus Paracelsus, concerning the Supreme Secret of the World. See BENEDICTUS FIGULUS: A Golden and Blessed Casket of Nature's Marvels, pp. 36 and 37.*]

(4) A Fifth Essence, neither "The Soul of the World" nor compounded of the elements, but a mediate Spirit by which an intimate and co-operative union between these is maintained. "Since two different things cannot be mixed or joined into one, and the Soul being a certain Divine light and substance, emanating immortal from Divine springs, so produced, incorporeally, that it is dependent on the virtue of the Agent, not on the bosom of matter, the same is a *primum mobile*, and, as they say, spontaneous and self-moving: And, on the other hand, the Body is wholly earthly matter, having its origin in gross, rank, elementary matter, mortal of itself, unfit for motion, and therefore far inferior to the Soul; wherefore it can never be united to the Soul, so different from itself, except through a third, a medium participating in the nature of each, a quasi-body and quasi-soul, by which the Soul may be added and joined to the Body. But such medium they suppose to be the Spirit or Soul of the World, *i.e.*, what we call Fifth Essence, because it consists not of the four elements, but is a certain fifth one, above and beside them. Such Spirit necessarily requires, as it were, a binding-chain, whereby Celestial Souls may bestow on grosser bodies strength and wondrous gifts; as also God and Man cannot be united except through a medium, our Saviour Christ, participating in the two natures, Celestial and Terrestrial, Divine and Human." [*Man, the best and most perfect of God's creatures. A more complete Exposition of this Medical Foundation for the less Experienced Student. See BENEDICTUS FIGULUS: A Golden and Blessed Casket of Nature's Marvels, pp. 58 and 59.*]

All this, of course, is of very general application. It is primarily a philosophy of the Universe. But if the Hermetic axiom be sound, what is true of the Universe is true also of every single department thereof. Hence we have here also a philosophy of nature in the narrower sense; and it is when thus considered that it comes into contact with the natural sciences.

Let us take, first, the concept of a "first matter" or

"Hyle". For many years chemists thought that matter was composed of some seventy elements each of which was of an ultimate, irresolvable nature. The discovery of the facts supporting this view was no mean achievement. To resolve all the innumerable forms which matter assumes, all the complexities of its molecular structure, into combinations amongst so comparatively small a number of elementary substances, was a work whose magnitude we do not always appreciate. This having been done, however, and Dalton having brought forward his atomic theory to account for the observed gravimetric relationships between bodies entering into chemical combination, it remained to explain the laws discovered by Boyle, Charles, Dalton, Gay Lussac, and others, respecting the volumetric relationships in gaseous reactions. Avogadro offered a solution to this problem in his hypothesis that equal volumes of all gases, under the same conditions of temperature and pressure, contain each the same number of molecules. On this assumption it can be shewn that the relative weights of gaseous molecules are proportional to the relative densities of the gases; and hence, by a quite simple argument based on the results of experiment, that the molecules of hydrogen, oxygen, chlorine, and many other elementary gases, are chemically divisible into two parts. Avogadro called these parts "elementary molecules," and the molecules themselves "integral molecules": we now use the terms "atoms" and "molecules" respectively.

These laws of Dalton and Avogadro are of immense importance. They are, of course, only working hypotheses, and are not necessarily true in any absolute sense; but they explain the observed phenomena; they are pragmatically true; and upon them, and the facts deducible therefrom, is based the theory of modern chemistry, and especially of that recent extension of the science, known as "physical chemistry". In illustration of this it will suffice to mention such a comprehensive mathematical doctrine as the Kinetic Theory of Gases, with its extension by Van't Hoff and others to the theory of liquid and gaseous solutions, diffusibility, partial pressure, and what is now known to play so important a part in many vital processes of animal and vegetable organisms, namely, osmotic pressure.

The first outcome of the acceptance of Dalton's hypothesis was the necessity of distinguishing between the combining weights of elements and their atomic weights. This was a slow process; but it was gradually accomplished; and as a result of prolonged and elaborate experiment, we are now furnished with a series of numbers representing, with what is in all probability a high degree of accuracy, the weights of the atoms of elements relative either to the weight of the hydrogen-atom taken as unity, or, as an alternative

recently adopted, to that of the oxygen-atom taken as sixteen.

Many elements have, of course, been discovered since Dalton's time. As the processes of discovery of new elements and of the determination and redetermination of atomic weights were going on, attempts were made to generalize the results obtained—that is, to discover some relation between the properties of elements and their atomic weights. One of the earliest was that of Prout, who suggested that "hydrogen may be regarded as the primary matter from which the other elements have been formed by condensations". But it has been found that atomic weights are not, and do not even approximate to, whole numbers—obviously a necessary condition when the atomic weight of hydrogen is taken as unity—and this hypothesis cannot be accepted. I shall not go into the history of these attempts. For our present purpose it will suffice to mention that in 1869 Professor Mendeléeff communicated to the Russian Chemical Society a now famous memoir in which he arranged the elements "in vertical columns, according to increasing atomic weight, so that the horizontal lines contained analogous elements, again according to increasing atomic weight", and proceeded to derive certain general conclusions from the result. By means of the "Periodic Table," which was drawn up in 1871, Mendeléeff predicted the existence and properties of three unknown elements which were subsequently discovered. The Periodic Law was stated as follows: "The properties of the elements, as well as the forms and properties of their compounds, are in periodic dependence on, or (expressing ourselves algebraically) form a periodic function of the atomic weights of the elements."

The periodic classification divides the elements into "groups" and "series". The vertical columns of the Table show groups of elements which are related to each other in certain chemical and physical properties. Thus, in general, the elements of a group have the same valency, form similar compounds with other elements, exhibit a gradual and systematic variation in chemical activity, specific gravity, and metalline or non-metalline characteristics; so that they appear to have been produced under similar though not identical conditions. The elements of a series, or horizontal line, on the other hand, show no such family relationships. The atomic weights increase from left to right, and the properties undergo desultory changes through a certain number of elements, and are then repeated in a fresh series under modified conditions. Since the time of Mendeléeff, five (or, including niton, six) new gaseous elements have been discovered, which appear to have no valency (*i.e.*, to be incapable of entering into chemical combination); so that the elements now fall, with fair regularity, into eight groups, with

an additional group for certain irregular metals. The valency of elements in the first group (usually called Group 0) is zero. The elements in Groups i, ii, iii, and iv. are respectively univalent, bivalent, trivalent, and quadrivalent. The valency of Group v. elements is 3 or 5; of Group vi., 2 or 6; and of Group vii., 1 or 7. Thus, commencing with hydrogen, whose atom is the lightest known, and which stands in a "series" by itself, the valencies of elements, taken in the order of increasing atomic weights, read: 0, 1, 2, 3, 4, 3, 2, 1, 0, . . . etc., or 0, 1, 2, 3, 4, 5, 6, 7, 0 . . . etc.

It must not be supposed that the properties of elements rigorously obey the laws indicated. There are many gaps and anomalies in the scheme, but its general outline is remarkable enough to suggest that the elements have not been formed in any fortuitous manner. It becomes evident that they have been subject to an orderly genetic process—a view which is confirmed by contemporary spectroscopic research upon the constitution of the stars.

Now, if the elements have been evolved, the questions at once arise: What are they evolved from? What is the primary "stuff" out of which they are wrought? Have they a common origin? I am not sure that these are legitimate scientific questions. But they are legitimate philosophical questions, and as such no doubt their solution must ultimately be attempted. I shall endeavour, however, to answer them, so far as possible, in terms of the natural sciences.

Modern ultra-atomic research has revealed the existence of small particles or corpuscles (now called electrons), each of which is invariably associated with a definite and constant charge of negative electrification. The discharge of electricity through gases under low pressure produces a stream of electrons which are projected from the cathode with about one-tenth of the velocity of light. Under the influence of electrical pressure the molecules of a gas become dissociated and ionized, and when a current is passed through attenuated gases, phenomena analogous to those of electrolysis (*i.e.*, the conduction of a current by liquids) are observed. The product finally observed in this ionization of gases is the electron, whose charge is equal to that carried by the anion in electrolysis. The remaining contents of the vacuous tube are known to be positively electrified, but the "atom" or unit of positive electricity has never been isolated. What are called the "beta"-rays in the science of radioactivity also manifest the same properties as a stream of electrons; and the "alpha"-rays, being deflected in the opposite direction by a magnetic field, are shown to be positively electrified. It seems fairly clear, on the electronic theory of matter, that there must be positive electricity inherent in the atom, since there can be no stable equilibrium in a system of mutually re-

pellent particles; and the most plausible theory of the constitution of the atom appears to be that which postulates a central nucleus or sphere of positive electricity about which, or embedded in which, move electrons. The various properties of elementary atoms will therefore depend upon the number, configuration and motion of their constituent electrons. As an alchemist put it, "Everything depends . . . on a certain disposition of elements and rearrangement of atoms." [PETER BONUS: *The New Pearl of Great Price*, pp. 94 and 95.]

It thus seems reasonable to postulate two primordial substances, or protyles, one positively and the other negatively electrified, out of which atoms have evolved. The connection between the protyles and electricity cannot be precisely stated: it may be that they are electricity and that electricity is atomic. We do not know what electricity is, although we have very exact knowledge of its various manifestations as energy. It may be pointed out, however, that there is no need to assume a fundamental mass for the atom, as distinct from its electrical constitution. The mass of the electron is its inertia, which may turn out to be identical with its electrical inertia—*i.e.*, the inertia term of its kinetic energy. In fact, to postulate two kinds of inertia—mechanical and electrical—is to create unnecessary difficulty. Sir William Tilden has recently indicated a theory, based on the periodic scheme, to suggest the way in which evolution of the elements from two protyles might have occurred; and he states the position as follows: "Assuming the possibility of the evolution of matter, as we know it, from a primal essence, several questions require to be considered in order that the process may be pictured in terms of those forms of energy and those forces with which we are familiar. The earliest stages are too difficult, and must be passed over without an attempt at explanation; for supposing a protyle, it is impossible to say what led to the first differentiation into discrete parts; and if all were alike in mass and movement, what impressed one set of particles with the property of assuming the state called positive while another set acquired the power of becoming negative electrically. Nor can we say whether electricity is itself something superadded to matter or whether it is matter itself. Facts now at our disposal show that all matter is resolvable into the two parts, positive and negative, and the elements of the chemist of which all terrestrial matter consists are capable of being brought into a common scheme. The questions which admit of discussion are concerned with the relative probabilities of the different possible views as to the order in which these elements have been evolved, and the manner in which the negative protyle may be supposed to have co-operated with the positive toward the formative process. The question may

also be considered whether it is probable that the elements have all been formed one after another in an order corresponding with the order of their atomic weights, and whether the process should be supposed to be of a generally uniform character throughout, or whether it is not justifiable to imagine that this uniformitarian view should be modified so as to admit the occasional operation of energy derived from sources other than those immediately and continuously concerned in the formative process." [See *The Elements; Speculations as to their Nature and Origin*, 1910, pp. 109 and 110.]

We are now confronted by the question: What is the electron? Any answer must, of course, be tentative; but it has been suggested that the electron may be regarded as a kind of vacuity, or tendency to vacuity, in space; a rupture or centre of strain in the ether; a place where the ether is modified, and its homogeneous continuity interrupted. If this be so, we must also assume another kind of break or discontinuity which constitutes the positive element in atomic structure. Perhaps it would be better to suggest minute vortices or eddies in the ether, which are positive or negative according to the direction of the vortical motion constituting them. This is purely speculative; but that there is an essential and integral connection between the ether and the atom is beyond doubt.

We are thus finally brought to a brief consideration of the ether of space. The ether is postulated as an all-pervading, homogeneous and continuous medium, having no discrete parts, and offering no frictional resistance to the passage of matter, at however high a velocity, through it. It is the medium of transmission of all energy whatever from the sun through its system or from any body isolated in space to any other. It sustains the forces of gravity and cohesion which bind, as it were, the physical universe together. By it those forms of energy which we call light and radiant heat, and also electrical energy which we do not directly appreciate by any organ of sense, are conveyed with inconceivable velocity. In fine, if we make for a moment the ridiculous assumption that the material world could exist without the ether, we should have to think of it as absolutely dark, cold and lifeless.

Let us summarize the conceptions which may now be formed concerning the constitution of the physical universe. There is first energy, which, since it is conserved, should be considered a fundamental physical entity. Indeed, we may go so far as to say that it is the only fundamental physical entity of which we know, since it is the only thing of whose conservation we have good assurance. It may therefore be called "substance," *the* substance of the physical universe, that which underlies all natural phenomena. It is more fundamental than the ether, for the ether is the medium in

which it operates. It is more fundamental than matter, which is said to be measured by "mass"; for "mass" is the derived factor in kinetic energy, just as "self-inductance" is the derived factor in the energy of electricity in motion. Moreover, according to the electrical theory of matter, the "mass" or "inertia" of the atom is a function of the number and velocity of electrically charged particles constituting it.

Secondly, there is ether, the sole vehicle in space for the transmission of energy, and the medium which, so to speak, unites energy with matter.

Thirdly, there are the ultimate atoms which, prior to their condensation into matter, we have called "the protyles," and which within the elementary atom become electrons and positive electricity.

It seems to me that these three concepts bear considerable resemblance to the three alchemical concepts defined earlier in this paper, and called respectively "The Soul of the World", "The Spirit of the World", and "The First Matter". "The Soul of the World" is the ubiquitous, immanent and creative essence in things. Evidently the phrase describes something very much like energy in the sense I have suggested. The principal difference is that to us the term "energy" denotes a concept which has a definite mathematical expression, although, of course, we do not know the nature of energy considered as "substance"; while to the alchemists such names as "The Soul of the World" had a quite general and undefined meaning. Then "The Spirit of the World" or "Fifth Essence", considered as the medium by which the Soul held intercourse with its Body (*i.e.*, matter) is analogous to the ether, the medium of energy transmission, as already explained. The connection between "First Matter" and the protyles is obvious.

It remains for me to deal with the concept of the Four Elements. These are often thought to denote the hot, cold, moist and dry principles or qualities of bodies; but we may also suppose that the "elements", earth, water, air, and fire, represent respectively the solid, liquid, gaseous, and what may be called incandescent-gaseous states of matter, although this is by no means a satisfactory or complete interpretation. It must be confessed that the subject of the elements is a difficult one, and I have not yet found explanations for it in the language of modern science. The descriptions in alchemical literature are, so far as I have seen, obscure; and in the work of transmutation it appears to have been the "principles" (*i.e.*, mercury, sulphur, and salt), rather than the elements, which played the important part. It may be noticed, however, that there exist gases at temperatures so high that they are incandescent. There is little doubt that in such circumstances the molecules are in a very extraordinary condition of dissociation and ionization; but the sub-

ject is still in its infancy. The ordinary gaseous state is one in which the molecules have what is called a "mean free path", whereas in liquids they are never out of the sphere of one another's influence, and in solids they have only an oscillatory movement, their "mean free path" being negligible or even zero. The question of heat considered as molecular kinetic energy, would probably occupy an important place in any modern theory of transmutation; at present, however, the subject is scarcely ripe for discussion.

I had intended to deal briefly with transmutation in the light of recent research, but find that the limit of space will necessitate my leaving this side of the subject for future consideration. I may remark, however, that modern methods in this branch of experimental research are entirely different from those of the alchemists, and do not, in my opinion support the alchemical doctrines. The relation of the "principles" to the "elements" and to the "first matter" is another subject of interest, the discussion of which must be postponed. It appears to have but little connection with scientific theory.

It is hardly necessary to point out that to the alchemists the problem of transmutation was of far greater concern than it is to us to-day. Their cosmogony and cosmology were vitally connected with it. The "base" metals to them symbolized imperfection and impurity, the unregenerate condition, being marred by an impure, extraneous sulphur, which had to be eliminated in order that the pure, inward sulphur, which was hidden in the mercury, might become manifest. All the "base" metals were in the course of evolution into gold, which represented the consummation of metallic regeneration. Silver was in the intermediate or "neutral" stage, through which all "base" metals had to pass before they could become thoroughly "noble".

In concluding, I find that I have done little more than supply some of the groundwork for an interpretation such as is suggested by the title of this paper. It was necessary to review briefly the modern concepts of molecules and atoms—concepts which cannot, however, be fully appreciated without some knowledge of the mathematical theory which connects them with, and renders them explanatory of, experimental data—and some aspects of the subject with which I should have liked to have dealt, have consequently been crowded out. But inasmuch as the fundamental doctrines of Alchemy were philosophical rather than scientific, and applicable to man rather than to matter, any purely scientific interpretation of the literature must necessarily be inadequate. Perhaps I may be allowed to develop, in a future paper, the lines of thought here indicated, and also to attempt an interpretation of Alchemy in relation to some other departments of modern thought.

ABSTRACT OF DISCUSSION.

MR. W. GORN OLD said that it was customary for alchemical writers to express the *trilogia* of the cosmical factors—sun, moon and earth,—as spirit, soul and body respectively. The lecturer's quotation appeared to make the *anima mundi* superior to the Spirit of the Universe. With regard to the theory that energy is the prime substance, he thought the Vedantic concept of the three coördinates—life, substance and intelligence, and their physical expressions in force, matter and consciousness, taking this last as indicated by response to stimuli,—as altogether preferable. If we learned to look at ideas instead of names, we should find that many of the ancient concepts were identical with modern ones, only the labels by which they are designated have been changed. The modern term "dynamic equilibrium," for example, involved the same ideas as the older terms "polarity" and "affinity." *see errata on back of title page*

Mr. T. W. HORTON, having thanked the lecturer for his very interesting discourse, expressed his surprise at the lecturer's quotation in which the soul was placed above the spirit, contrary to the usual order of spirit, soul and body. He said that he looked upon energy as only one of the manifestations or attributes of spirit. The unreality of matter had been asserted by many philosophers from ancient times to the present day—by the Vedantists with their theory of "maya"; by the Nominalists versus the Realists, with Abelard and Anselm in the Middle Ages; and by Berkeley versus Locke later on.

Mr. B. R. ROWBOTTOM said that Mendeléeff was not the first definitely to indicate a periodicity in the properties of the elements considered in relation to their atomic weights. The honour for this discovery was due to an Englishman, J. A. R. Newlands, whose first paper on the subject was published in 1863. The speaker said that he preferred the phrase "dynamic equilibrium" to "force of attraction" and similar expressions, since these latter indicated causation, whereas only sequences of phenomena were observed. We knew very little of force, *i.e.*, what caused bodies to move; but we did know that they moved and possessed energy in virtue of their motion. He further said that he considered there was no very good ground for speaking so much of the *unity* of the Cosmos. He thought that phenomena exhibited uniqueness rather than unity. At least, unity was not observable on the surface.

THE CHAIRMAN said that he considered Mr. Abdul-Ali's paper an excellent one. The lecturer, he said, had done well in indicating that the chemical theories of the alchemists held an essential position in their universal philosophy, and were arrived at, on the whole, by *à priori* methods. He was in entire agreement with most of the opinions expressed in the paper, and he thought that it emphasised what he had fre-

quently insisted on, namely, that though the alchemists often went astray and wandered into the realms of fantasy, they did, in their curious way, grasp certain concepts whose importance modern scientific research was only just beginning to make plain. Or, as Sir William Tilden had put it; “. . . it appears that modern ideas as to the genesis of the elements, and hence of all matter, stand in strong contrast with those which chiefly prevailed among experimental philosophers from the time of Newton, and seem to reflect in an altered form the speculative views of the ancients”. [*The Elements*, 1910, pp. 108 and 109.] In a few matters of detail, however, he was inclined to differ from the lecturer. These minor points were as follows: (1.) The lecturer's quotation undoubtedly proved that at least one alchemist considered the Soul of the World to be distinct from the Spirit of the Universe. The speaker questioned whether this distinction was at all general amongst alchemical philosophers, or, at least, clearly defined. (2) It was true, as the lecturer had indicated, that the atomic weights of the elements did not, on the whole, closely approximate to integers, when expressed in terms of $H=1$. In a paper recently communicated to the Chemical Society, however, Mr. E. Feilmann [*Proc. Chem. Soc.* Vol. xxviii., 1912, pp. 283 and 284] had shown that the degree of approximation was far closer than what could be accounted for by chance if the standard $O=16$ was used. The meaning of this fact was not obvious. (3.) The terms “mass” and “inertia” had the same meaning in modern physics, but the latter word was preferable, because “mass” was ambiguous. The experiments of Kaufmann, taken in conjunction with Thomson's calculations, very conclusively proved that the inertia of the electron was wholly electrical in origin. (4.) When a body was said to possess so much energy, all that was meant was that it could do so much work. It was questionable, therefore, whether energy ought to be called “an entity”. It was rather an organon of mathematical physics. In the last analysis dynamics could be reduced to correlations between configurations of particles. (5.) There was no reason why matter should be measured by means of “mass” or “inertia.” Berkeley did not deny the existence of matter as a phenomenon—*i.e.*, as a complex of sense-impressions. In fact, no one could deny its existence in this sense. But Berkeley did deny its existence as a substance, and the speaker agreed with him.

Mr. S. ABDUL-ALI, in replying, said that in postulating the Spirit of the World as the medium of the Soul, he was adopting the order given in the alchemical work to which reference was made in the paper: it was merely a question of nomenclature. The Vedantic theory was alternative to that of energy, and was no doubt equally valid; and the substitution of the word “energy” for ^{the} word “force” might be little

see errata on back of title page

more than a change of name. In the language of modern science, however, the terms "force" and "energy" connoted two distinct concepts, and were not synonymous. Both were mathematically definable in terms of the so-called "fundamental" units of mass, length, and time.

He was, he continued, quite in agreement with the view that energy was not ultimate: but he was dealing strictly with manifestations in the physical universe (*i.e.*, with phenomena). In speaking of "the unreality of matter," we must, he said, be careful to avoid confusion of terms. If by the term "matter" we meant merely a sum of certain sense-impressions—which may, however, be analyzed and co-ordinated by the reason—then matter was real in precisely the same degree as sensation, thus analyzed and co-ordinated, was real.

Although Mendeléeff was not the first to attempt a periodic classification of the elements, he presented the scheme in its most adequate form, and it was customary to accord him the honour of its discovery. The phrase "dynamic equilibrium" was certainly advantageous, because it obviated the necessity of postulating various inexplicable "forces" of attraction and repulsion. Statical problems were thus treated as special or "limiting" cases of dynamical problems, with a consequent reduction in the number of concepts employed. Unity in the Cosmos was not apparent on the surface, but he thought that a deep and intuitive study of nature reveals unity underlying diversity. The fact that generalization was possible pointed to this conclusion.

The distinction between soul and spirit in relation to the microcosm (*i.e.*, man) was very general; but it was probably not quite so general in relation to the macrocosm (*i.e.*, the universe). The lecturer accepted the reservation with regard to the approximation of atomic weights to integers ($0=16$): it did not, however, affect his contention that there was no ground for supposing that hydrogen was the primary matter of the elements. That the inertia of the electron was wholly electrical, and that the concept "mass" was explicable on this basis, he was personally fully persuaded. He had, perhaps, used the term "entity" a little loosely. But inasmuch as energy was conserved, and, considered as capacity for doing work, was directly compounded of two sensuously perceived factors (*vis.*, force and distance), it was, on a purely empirical basis, more fundamental than "mass" or "inertia," which was simply the irresolvable term derived from the mathematical analysis of "force". For the purpose of analogy, therefore, though not with strictly philosophical accuracy, we might speak of energy as an "entity" or "essence" in the physical universe.

THE JOURNAL OF THE ALCHEMICAL SOCIETY

EDITED BY H. STANLEY REDGROVE, B.Sc. (LOND.), F.C.S.

VOL. I. PART 4.

APRIL, 1913.

REPORT OF THE FOURTH GENERAL MEETING.

THE fourth General Meeting of THE ALCHEMICAL SOCIETY was held at 8 p.m. on Friday, April 11th., at the International Club, Regent Street, S.W., the chair being taken by Mr. H. Stanley Redgrove, B.Sc., F.C.S.

A letter from Mr. P. S. Wellby, M.A., expressing regret for unavoidable absence, was read.

Messrs. Leonard F. Pembroke and Sijil Abdul-Ali were elected auditors for the current year. A motion was passed requesting the Council to alter the time of the General Meetings of the Society from 8 p.m. to 8.15 p.m.

A paper was read by Mr. Gaston De Mengel on "The Evidence for Authentic Transmutation", which was followed by a discussion. (The paper and an abstract of the discussion are printed in the present number of the JOURNAL.)

A vote of thanks was passed to Mr. De Mengel for his paper.

THE EVIDENCE FOR AUTHENTIC TRANSMUTATION.

BY GASTON DE MENGEL.

It may be a truism to remark that the study and exposition of a subject must necessarily be more or less coloured by the mental characteristics and affectional temperament of him who undertakes such study and makes such exposition therefrom. Nevertheless, the fact is too often forgotten, and it would be well therefore if we were to take it into consideration whenever the outcome of any person's study of a subject is presented to our ken. For then we should understand that the presentation does not and cannot claim to be the whole truth about the subject, but can only be some phase or aspect of that truth.

This I would wish you to bear in mind when considering the essay I have the honour of presenting to you to-night. I have always had an affection for broadness of outlook on all planes; I have a passion for order in both action and thought, and my memory proves itself tenacious of such fundamental principles as I may be able to discern beneath the elaborations of fervid imagination. On the other hand, mere scholarship makes but little appeal to me, any more than collections of facts more or less unconnected with a plan of thought; and for dates, names, or the terminology affected by this or that writer, I have to refer to my notebook. After this confession of qualities and defects, you will know to some extent what to expect. But if my essay makes up for lack of empirical solidity or scholarly learning by a suggestiveness that may set some thinking on new lines, I shall be amply repaid.

With this apology for the perhaps unusual lines upon which my paper is drafted, I will proceed.

The impression I have received from the study I have made of matters alchemical, is that the alchemists had ever with them two great preoccupations. The one was the attestation of certain ontological and cosmogonic principles constituting a philosophy which to-day we would qualify as *à priori*; the other was the search for a process which, in accordance with these principles, could produce a material substance endowed with certain virtues—the philosopher's stone. The motives which led to the search for the philosopher's stone were no doubt mixed; but, at any rate, in all save the most unworthy, they seem to have been noble and altruistic. In the highest minded, the motive was probably the more or less unconscious desire to find some objective test of the validity of their theories, strong though their belief in them may have been.

The power of effecting the transmutation of metals, especially of the baser metals into gold, has been singled out of the manifold virtues attributed to the philosopher's stone as being the most striking, in the light of ancient, and indeed, all but the most modern, experience. But it must not be forgotten that the philosopher's stone was in reality considered as endowed with a universal virtue or activity which could bring about wonderful changes in other things than metals, hastening the evolution of all natural forms, mineral, vegetable or animal. Indeed, it could not be otherwise, seeing that its power was due to the operation of a universal principle postulated more or less definitely by all the alchemists, and the knowledge of which was the secret of the great work. This principle is generally referred to as the *Telesme*, the *Philosophic Mercury*, the *Aour*, etc. Metals being, however, among the most fixed forms of matter, the power to transmute them would be regarded as *prima facie*

evidence that the substance possessed of that power would also be possessed of those other virtues which made manifest, in a minor degree, the potency of the universal principle, the soul of the world.

If, therefore, there is any good evidence that the transmutation of metals was effected by means of a substance prepared according to the principles of alchemical philosophy, the presumptive truth of this philosophy will be greatly strengthened. What evidence there is may be said to be of three kinds: the purely negative, the positive historical, and the positive deductive.

Of the purely negative evidence, I will say but little. In his work, entitled *L'Alchimie et les Alchimistes*, published in 1854, the eminent French savant, Louis Figuier, declared that: "In the present state of our knowledge, it cannot rigorously be proved that the transmutation of metals is an impossibility; certain circumstances go to prevent the alchemical opinion being rejected as absurd and contrary to scientific fact." [Second edition, Paris, 1856, p. 363. There is no English translation.]

Likewise, the eminent chemist, Berthelot, in his work, *Les Origines de L'Alchimie*, published in 1885, at Paris, shows in various places that modern chemical philosophy is tending to revive, in an altered form, the alchemical theories. "Through the mystical explanations and symbols pervading the works of the alchemists," he says, "we can discern the essential principles of their philosophy, reducible ultimately to a few clear and plausible ideas of which some are seen to be strangely analogous to modern concepts." [p. 279.] "I repeat", he further says, "that no one assuredly has the right to deny *à priori* the possibility of manufacturing the so-called elements." [p. 320.] I need not remind you that the opinions of these scientists are greatly emphasised by the discoveries of the past ten years: the study of cathodic rays and of radio-activity has given an entirely new aspect to the scientific view of the nature of matter and the constitution of the so-called elements. You will find these views developed nowhere better than in Dr. Gustave Le Bon's *Evolution of Matter* [translated from the third French edition, by F. Legge, 1907.] Assuming therefore that we have no valid ground for denying *à priori*, for scientific reasons, the possibility of transmutation, I will pass to the positive historical evidence.

Of historical instances of transmutation, there are three which are recorded in detail by men of such good standing and scientific repute, that they deserve careful consideration. The first is that of Helvetius, otherwise Johann Friedrich Schweitzer, physician to the States General of the Hague, who published at Amsterdam, in 1667, a circumstantial account of his transmutation, under the title of *Vitulus Aureus*,

quem Mundus adorat et orat. On the 27th December, 1666, at six in the afternoon, he says that there came to his house at the Hague a man who was to him "planely unknown, but endowed with an honest gravity, and serious authority of countenance, cloathed in a *Plebeick* Habit, like to some Memnonite." [p. 45.] * This man professed himself to be no physician, but "no other than a Melter of *Orichalcum*, and that in the Flower of his years, he had known many things from his Friend, rare to the Sight . . ." [p. 47.] Helvetius calls him *Elias* the Artist. Of the conversation of Helvetius with *Elias*, and the subsequent events, you can read a full account in *The Golden Calf*, which is a literal English translation of the *Vitulus Aureus*. An abridged account will be found in Mr. H. Stanley Redgrove's *Alchemy, Ancient and Modern* (1911), pages 83 *et seq.*, and a still more condensed one in Figuier's work [p. 211], already referred to. It will suffice for the needs of my paper to give a brief statement of the important points of their intercourse.

The Artist *Elias* had called upon Helvetius because of having read some treatises of his, particularly that directed against the "sympathetic powder" of Sir Kenelm Digby, and in which was expressed the author's doubt of "the true Philosophick Mystery." Apparently *Elias* wished to convince Helvetius of this truth. At their first interview, he showed him what he claimed to be the philosopher's stone, and allowed Helvetius to keep it in his hand for a quarter of an hour, though he refused to part with even the smallest portion of it, saying it was not lawful for him to do so. He took the stone from an ivory box kept in his pocket, and Helvetius describes it as consisting of "three ponderous fragments, in magnitude scarcely equalizing a small walnut; these were Glass-like, of the colour of pale Sulphur, to which the interior scales of the Crucible did adhere, in which this most noble substance was liquefied." [*The Golden Calf*, p. 49.] *Elias* told Helvetius "many things worthy of note touching the Wonderful Effect of the same, for humane and Metallick bodies" [p. 49], and said that he had been taught the divine Art by "a certain Extraneous Friend, who for certain dayes lodged in his House" [pp. 54-58]; but he refused to perform a transmutation before Helvetius then, though he promised to return in three weeks.

During this interview, Helvetius had managed to break off a tiny particle of the stone, keeping it under his nail, and when alone, projected it, wrapped in paper, upon melted lead. But no trace of transmutation appeared, almost the whole of the lead volatilizing, and the remaining substance being transmuted into glassy earth. [p. 64.]

* The references are to the English translation, published in 1670, under the title of *The Golden Calf*.

Elias, however, returned punctually on the promised day, and, Helvetius having confessed his theft, he replied that the operation had failed because the stone had not been wrapped in yellow wax, so as to prevent its being volatilized together with the lead. [p. 64.] At this second interview, in which they talked for over two hours together, the alchemist still refused to effect a transmutation before Helvetius, but let him have the value of about half a rape-seed of the stone, saying it would be enough to transmute up to an ounce and a half of lead. He then promised to return at nine the next morning, and to show Helvetius the method of using the Medicine.

The next day Elias did not appear; but at half-past nine a stranger came in his stead, explaining that his friend was detained on urgent business, but would come at three in the afternoon. But Helvetius waited in vain until almost eight, and began to doubt the truth of the matter. His wife then came and persuaded him to try the transmutation himself, which he eventually did, ordering his son to kindle the fire. He asked for some yellow wax, with which his wife wrapped the matter of the stone, and himself cut off an ounce and a half of lead, which was fused in the crucible. His wife then threw the little mass upon the molten lead; the crucible was covered over, and in a quarter of an hour the whole mass of lead was transmuted into the best gold. [pp. 70-73.] They then hastened with this gold to a goldsmith, who tested it carefully and found it to be very pure, and worth fifty florins an ounce. The next day, the rumour having spread, the gold was tested, at the request of Dr. Porelius, General Examiner of the Moneys of the province, by a silversmith of the name of Brechtel, with the result that this singular gold was found to have transformed into its likeness two scruples of the silver with which it had been melted. Thrice after this was the gold tested by antimony, with the result that each time every drachm of gold produced, at the expense of the silver, an increase of a scruple of gold, whilst the silver itself was pure, good, and very flexible. [pp. 74-77.]

These tests are referred to in a letter of the philosopher Spinoza, addressed to Jarrig Jellis, and dated Voorburg, 25th March, 1667, in which he says: "Having spoken to Voss of the Helvetius business, he laughed at me, surprised at seeing me pay any attention to such trifles. To ease my mind on the subject, I went to the minter, Brechtel, who had tested the gold. He assured me of the fact that, in the melting, the gold had increased in weight when the silver had been thrown upon it. This gold must therefore have been of a very peculiar nature, since it changed silver into more gold. Not only Brechtel, but several others who had witnessed the test, assured me that such had been the case.

Then I went to Helvetius himself, and he showed me the gold and the crucible, which still had some gold adhering to its sides. He told me that he had thrown on the molten lead scarcely a quarter of a corn-grain of the philosopher's stone. He added that he would let everyone know of this. It seems that this adept had already made this experiment at Amsterdam, where he might still be found. This is all I could find about the matter." [B. D. SPINOZA: *Opera Posthuma*, p. 533].

This letter disposes of the theory that the account of Helvetius' transmutation was faked, either by Helvetius himself or with his connivance; unless indeed we go to the length of supposing that Helvetius, Brechtel, and probably also Porelius, all men of good standing, and having nothing to gain by such a fraud, were in collusion with one another, a supposition which I think we may dismiss as absurd, especially in view of the fact that Helvetius had been, prior to this event, a declared adversary of Alchemy.

But may it not be possible that Helvetius was in some way deceived? In a paper published in the *Mémoires de l'Académie des Sciences de Paris*, 15th April, 1722, entitled: "Des supercheries concernant la pierre philosophale," Geoffroy l'Ainé exposed the various frauds by which charlatans imposed upon a credulous and ignorant public, often with the object of securing large sums of money under various pretences. The full text is reproduced in Figuier's work, p. 381. Of the various tricks explained therein, only three could apply in the case of the transmutation of Helvetius. They are: (1) crucibles with false bottoms, consisting of a small heap of oxide or alloy of gold concealed under a layer of crucible-powder mixed into a paste with a little gum or wax; (2) hollow stirring rods of wood, filled with gold-powder; (3) chemical reactions then unknown, though quite familiar to modern chemists. The second I include merely because we are not specifically told that Helvetius did not stir the molten lead before covering the crucible. But for these tricks to be successful, be it remembered, either the alchemist himself, or some accomplice of his, must be present at the operation, or else the implements and materials must have been previously tampered with. Now the only persons present at Helvetius' experiment were his son and his wife. Could either of these, especially the wife, who threw the particle wrapped in wax into the crucible, have been persuaded, by some means or other, to hoodwink the experimenter? But surely Helvetius would have noticed whether something were thrown into the crucible, other than the philosopher's stone, or that the wax pellet supposed to contain it was unduly bulky. And if some gold or alloy of gold had been cleverly introduced in this way, or by means of a hollow stirring rod, what became of the lead that Helvetius,

a competent chemist, had with his own hands cut and weighed and put into the crucible? The same objection would apply equally to the case of a prepared crucible, even supposing that the accomplice had correctly guessed which crucible Helvetius was likely to use, and taking it for granted that the unaccustomed weight of the prepared crucible had passed unnoticed. The only way out of the difficulty would be to suppose that for the lead had been substituted an alloy of gold so cleverly prepared that a chemist was deceived into thinking it lead, even when melted, and the substance alloyed with the gold was so completely volatile as to leave no trace after completion of the operation. Of such an alloy it is difficult for even a modern chemist to conceive; but apart from this, we have to take into account the fact that the crucible was covered over during the essential part of the operation, thus preventing or at least impeding the process of volatilization, and then, of course, the presence of some impurity would have been detected in the testing. Furthermore, the ingot of gold would have weighed much less than the piece of supposed lead, and this fact could not have escaped discovery. Finally, how came it that the product had the power of turning into its likeness some of the silver introduced by the assayer, without the quality of the remaining silver being in the slightest degree impaired? Any one of these objections seem to me unanswerable, and taken together they constitute an insuperable obstacle to the theory that Helvetius could have been imposed upon. We have already seen that the testimony of the witnesses is unimpeachable.

Here we have an instance of authentic transmutation withstanding the severest criticism. One such instance would suffice as a proof. Yet there are two others perhaps equally valid. That of Claudius Berigardius is particularly striking. "I will relate", he says, "what once befel me when I was extremely doubtful of the possibility of changing mercury into gold. I received from an able man, who wished to remove my doubts in this matter, a drachm of powder of the colour of the wild poppy, and in odour recalling that of calcined marine salt. In order to remove all suspicion of fraud, I myself bought the crucible, the charcoal and the mercury at different dealers, so that no gold could have been concealed in these, as is the practice of charlatans. To ten drachms of mercury I added a little of the powder, put the whole on a sufficiently hot fire, and in a very little time the mercury was converted into nearly ten drachms of gold, of the genuineness of which various goldsmiths held no doubt. Had not this happened in a secluded place, out of reach of strangers, I might have suspected fraud; but I can confidently assert that things happened as I have stated." [*Circulus Pisanus Claudii Berigardii Molinensis . . . De veteri &*

peripatetica philosophia. Utini, 1643. Circulus XXV, p. 154.] Here we have the testimony of one versed in the natural sciences, and aware, moreover, of the deceptions practised by adventurers. The precautions he took preclude the possibility of fraud. But was he an unimpeachable witness? Apparently he and his works were held in good regard, since the *Circulus Pisanus*, from which the above extract is taken, bears the imprimatur of Fr. Antonius Vercellus, Inquisitor General of Padua, dated 12th May, 1641. Add to this the entire absence of motive, for Berigardius had nothing to gain by faking such a story, any more than Van Helmont. Indeed, he ran the risk of being accused of charlatanism, as was the case with the latter.

The transmutation of Van Helmont is the third well-authenticated instance to which I have alluded, and was perhaps as free from the possibility of deception as that of Berigardius. Van Helmont tells us that he himself transmuted, in his laboratory, eight ounces of mercury, with one quarter of a grain of the philosopher's stone, which had been given him by a stranger, who was not present when the operation was performed. The gold obtained weighed eight ounces less eleven grains. Van Helmont's own words are quoted in Redgrove's *Alchemy: Ancient and Modern* [p. 82]. It would have been no easy matter to deceive so eminent a chemist, and all accounts that we have of his life give us no warranty for accusing him of charlatanism. Besides, I repeat, what could he have gained by such deceit?

Here then are three cases of transmutation, one of which at least can be said to be proved as absolutely as it is possible to prove any historical fact, and the two others supported by evidence scarcely less impressive. I cannot see, therefore, how we can reject this accumulated testimony, without rejecting the validity of all human attestation, and thereby assuming all history to be based on a foundation of sand.

The only remaining obstacle to our accepting the truth of transmutation seems to be our inability to explain the process, at any rate as carried out by the methods of the alchemists. And though I hold that to disbelieve a sufficiently attested fact, because of lack of explanation, is unscientific, yet I will admit that, in some minds at least, the inability to explain a fact tends to beget doubt as to its authenticity. I will therefore endeavour to suggest a line of thought along which may be discerned, more or less dimly, some explanation of the *magnum opus*. This I will term the deductive evidence, as it is based on an attempt to harmonize what we know of matter and energy by means of a hypothesis as to the genesis of matter from Aether, and the modifications of Aether, and consecutively of matter, by spiritual activity.

If we allow our minds to soar over the vast field of natural science, in the endeavour to trace its outlines, we shall be struck by two features pervading the entire range of phenomena. The one is the tendency of all matter to dissociate, the other is the presence of some force, manifested variously as gravitation, cohesion or chemical affinity (Prof. Andrew Gray inclines to the opinion that they are in essence the same), tending to oppose the dissociation of matter, involving itself more and more in the production of new and ever more complex forms, and manifesting an activity—as, for instance, in the process of crystallization—which might well be called, in an analogical sense, intelligent. It is not here my intention to array the facts which justify this generalisation; they will be sufficiently familiar to those acquainted with the advance of modern physics. Suffice it to say that the universality of the dissociation of matter is strikingly brought out in Gustave Le Bon's *Evolution of Matter*, already referred to. I may also mention Charles Maurain's work on *Les Etats Physiques de la Matière* [Paris, 1910,] as an excellent exposition of the multitudinous aggregations of matter in all its states, and particularly of the phenomena of crystallization. What immediately concerns us is: can we frame any theory of the genesis of matter which will embrace these two great generalizations—dissociation on the one hand, aggregation on the other? In the absence of any definite formulation of such theory, at any rate that I know of, I venture to put forth mine. I do not propose, even were it possible, to give an account of how the theory originated in my mind, but will simply state it in the briefest possible outline.

I postulate as the basis of all matter an undifferentiated Aether, a philosophic continuum, imponderable, incompressible and absolutely non-rigid. Upon that Aether a Stress acts, with the result that some portion, more or less vast, of the Aether, becomes differentiated into innumerable vortex-rings, inconceivably small even when compared with an atom, and relatively close together; thus transforming the Prime Aether into a dense medium corresponding to the ether of the physicists, and capable, as Boussinesq shows in his *Théorie Analytique de la Chaleur*, of behaving as a perfect fluid towards the comparatively slow motions of the heavenly bodies, but as an extremely rigid solid in relation to the inconceivably rapid transversal vibrations of light. But whereas Boussinesq postulates an ether consisting of isolated corpuscles, endowed with rapid motion, I conceive of these "corpuscles" as being vortex-rings in a perfectly fluidic continuum, and endowed with considerable inertia in virtue of their gyration, in accordance with Kelvin's idea.

The Stress continuing to act, a portion of this now differentiated ether is thrown into spiral motion, the vortical

corpuscles beginning to close together, thus forming a (comparatively) huge spiral Vortex or "electronic nebula". This electronic nebula condenses, much in the manner of celestial nebulae, tending to give rise to an "electronic system". This tendency I call "electronic *metabasis*". The Stress which has thus endowed the inert Aether with motion, I call at this stage "electronic *kinesis*", and I conceive it as acting centripetally, although in the very acceleration of movement due to the condensation which it causes, the vortical corpuscles tend to fly off tangentially. Hence the beginning of a struggle which is continued throughout the entire genesis of material forms. The first outcome of this struggle is the production of an "electronic system", in the course of the formation of which some vortical corpuscles escape, the others held together by the counteracting *kinesis* constituting the "planets" of the system. By the continued action of Stress, a number of electronic systems, or electrons, are thrown together, the result being "atomic *metabasis*", or the genesis of an atomic system, such as the most recent theories have imagined. Be it noted, however, that to the "positive nucleus" corresponds simply the "atomic *kinesis*" (as at this new stage I will call the all-compelling Stress), the effect of which is to make things appear *as if* there were a centre of attraction in the midst of the system, whether or not there be at that centre a corpuscule more or less material. This idea will not seem strange if we bear in mind that the term "attraction" denotes purely the behaviour of two or more bodies in a particular manner, and leaves us in complete ignorance of the *nature* of that which has caused the behaviour. It is quite possible, therefore, that the so-called "positive nucleus" will never be isolated, being perhaps only an abstraction. And here it is well to remember also that when we apply the terms of the phenomenal world to the ether or to electrons, we are only speaking analogically, since the *atom* may be said to be the limit of even potential sense-perception, in relation to which (physical) perceptions alone those terms were originated. But to return to our atomic system. In the course of the atomic *metabasis*, a number of electrons escape, just as vortical corpuscles did in electronic *metabasis*, the remaining electrons going to form the atom, under the stress of the counteracting *kinesis*. This escape of electrons is made manifest to us in radio-activity and allied phenomena.

Proceeding in the same way, we shall find atoms thrown together to form inorganic molecules, under the continued influence of Stress, here called "chemical *kinesis*" or chemical affinity. In the course of chemical *metabasis* appear the various chemical phenomena. Inorganic molecules, again, continue to form organic (or colloidal) molecules, under the influence of "organic *kinesis*". Lastly, after

organic metabasis comes vital metabasis, or the formation of the cell, in the largest sense of that term. Needless to say, vital kinesis plays an important part in all vital phenomena, its actions determining anabolism, its inaction allowing the process of desintegration to begin—for desintegration is but the triumph of dissociation over aggregative kinesis.

The scheme I have just outlined will give us, I venture to think, some faint conception of the genesis of matter from Aether, in terms of aggregation and dissociation. But one thing remains dark, *viz.*, the nature of that Stress which manifests itself, under various aspects, as a universal aggregative force, or "kinesis", throughout the evolution of all natural forms. It is certainly not phenomenal. It can scarcely be said to be noumenal, since, of itself, it could not, lacking the Aetherial substance, be the cause of sensation. But do we know of any other category in which we could place it? To answer this question—and by so doing we shall gain a glimpse of the alchemical secret—we must turn for a moment to psychology.

Resting with eyes closed after some deep reflection, we may become aware of an ideal percept, as though the memory of something actual, and, opening our eyes, we will perceive the corresponding actuality. Or, intent upon a piece of work, we may, releasing for a moment our attention, "have an idea" that some friend is in front of us, and, looking around, we shall find the actual person of our thought sitting behind us, silently waiting: we had been too busy, so he explains, to notice his entry. Such occurrences as these seem capable of no other explanation but that sensations may affect us, sufficiently to be remembered, without actually entering our consciousness at the time. To test this theory, we can experiment, and we shall find that we can at will, by concentrating our attention on some idea, become unconscious of percepts which, under conditions in every other respect similar, we should almost certainly perceive. Hence sensations, and the being aware of sensations, are, with the highest probability, different things: sensations are capable of affecting, more or less permanently, a something which we call "mind" (of the nature of which we may devise various theories, according to the lights of our science); but the "awareness" of sensations (and affections, to which the same remarks apply) is something quite distinct, capable of being directed upon some part of the mind to the exclusion of others—hence the faculty of abstraction. This "awareness", being non-sensational and non-affective, is incapable of being described or analysed in any way; it is, indeed, in a new and special category, to which we will give the term "spiritual".

By its very definition, or rather lack of all positive definition, this spiritual category stands entirely apart from the

phenomenal or noumenal categories, and cannot therefore be said to be subject to the laws which obtain with these. It appears as unconditioned and free, and, under the aspect of awareness, capable of singularly affecting the process of thought and thereby of action. Moreover, we have no justification for declaring the mental attribute of awareness to be the sole aspect of the spiritual; indeed, if only from its character of indefinability, we have every justification for placing Stress in this same category, and considering it as being but another aspect of the spiritual. We might go yet further, for certain philosophical considerations make it probable that we have to look to this spiritual category for the origin of Aether and matter and the laws governing them. In the degree that man attains to the freedom of the spirit, it would thus be possible for him to modify nature, directly or indirectly, in the manner indicated by the alchemists. And if any analogy can be traced between the doctrines of the alchemists and the hypothesis I have here set forth, it would lend unusual interest to those cases of transmutation which seem sufficiently authenticated.

ABSTRACT OF DISCUSSION.

MR. SIJIL ABDUL-ALI said that the thesis presented, in regard to what the lecturer called the "positive deductive" evidence, seemed to him of such ingenious originality that he was prepared to make only some tentative remarks. He considered it doubtful whether there was scientific justification for placing gravity, cohesion and chemical affinity in the same category. At any rate the same mathematical law could not be held to obtain in the cases of cohesion and chemical affinity as in gravity. The force would have to be considered to vary inversely as some power of the distance higher than the second; otherwise, as Sir O. Lodge had pointed out [*The Ether of Space*, 1909, p. 116], the force between two atoms would be insufficient to produce an appreciable acceleration at molecular distances. It seemed probable that chemical affinity should be regarded as a purely electrical phenomenon, probably superadded to gravitation. But at any rate the three forces were connected by the fact that they were all bound up with the concept "ether".

MR. J. W. FRINGS, after having expressed his appreciation of the lecture, suggested that it might be possible to explain the action of the philosopher's stone as that of a catalyst. The theory of the evolution of matter which the lecturer had advanced was one that he also embraced. The ultimate particles,—the electrons,—were, he thought, undoubtedly nothing more than etheric "whorls", or force-centres. All matter was radioactive and, therefore, potentially dissociative. In dissociation it lost all physical charac-

teristics, and, thus, ceased to be matter. This fact indicated the identity of the underlying substance and the practical homogeneity of all the elements when reduced to their primal essence. Admitting this there was no reason to doubt the possibility of transmutation. In the cases dealt with the lecturer had shown the improbability of the operation of trickery from outside sources. That the evidence of those recording the transmutations was itself quite dependable was a point that should be made quite clear.

THE CHAIRMAN said that he considered the lecture as very suggestive and containing novel views. In the days when Dalton's theory was accepted in its original form the possibility of transmutation could not be tolerated. Modern scientific research not only indicated this possibility, but also the means whereby it might be actualised. If the electrical theory of the constitution of matter was true, what was needed to bring about transmutation was energy in a highly concentrated form. The only known available source of such a form of energy was the spontaneous disruption of the atoms of niton and other highly radioactive elements. And Sir William Ramsay's experiments indicated, though they must still be regarded as *sub judice*, that he had succeeded in effecting certain transmutations by such means. But the highly radioactive elements were unknown to the alchemists; hence, whilst modern scientific research indicated the possibility of transmutation, it also indicated the improbability that the alchemists accomplished it. For it seemed certain that no mere compound of stable atoms, such as alchemical methods for preparing the philosopher's stone would yield, would evolve, by its dissociation, energy at a sufficiently high potential. He was not prepared to accept the lecturer's theory of the apparently miraculous creation of the philosopher's stone by the power of spirit, not because he disbelieved in the potency of spirit, but because he regarded spirit as always operative and manifest in the normal phenomena of nature. He was, however, much impressed with the historical evidences of transmutation, which had been passed over too lightly by chemists. Helvetius, van Helmont, Berigardo of Pisa and Spinoza, were all men of high standing, and it was very improbable that any of them would have committed a fraud. But if a method for converting base metal into gold had been discovered, it seemed almost incredible that the secret should never have leaked out. We were thus led into a mental *impasse* from which the speaker saw no escape.

Mr. G. DE MENGEL, in replying, said that we could conceive of the attraction due to Stress following the law of inverse squares for comparatively large distances, but some other law—say that of the inverse fifth power—at molecular distances. We had no means of ascertaining according to

what law Stress itself acted; we could only measure its effects, which might be considerably modified in close proximity to proto-atomic elements. Electrical phenomena were themselves but effects of Stress, according to his hypothesis. Catalytic action, he replied in answer to Mr. Frings, might be in essence analogous to that of the philosopher's stone; though such action did not change a substance, but simply facilitated the combination of two substances. He did not consider the electrons to be etheric "whorls", but rather aggregates of etheric "whorls". With reference to the Chairman's remarks, he said that he would hardly consider the philosopher's stone to be a compound of stable atoms: he regarded it as one in which Stress was peculiarly active, manifesting its activity, under special conditions, upon outside bodies. Since the nature of man was in part spiritual, it was conceivable that he might act directly upon nature by the operation of his free spiritual activity, and even communicate this activity to some extra-human substance. Alchemists might disguise spiritual processes under physical terms. That their secret should not leak out was in no way wonderful—esoteric secrets, when real, were too carefully guarded for that.

REVIEWS.

A History of Chemistry from the Earliest Times till the Present Day. By the late James Campbell Brown, D.Sc., LL.D. [Edited by Henry H. Brown.] 8 $\frac{3}{4}$ ins. \times 5 $\frac{1}{2}$ ins., pp. xxx + 543 + 1 plate. London: J. & A. Churchill, 7, Great Marlborough Street, W. Price 10s. 6d. net.

Most histories of chemistry treat of the alchemical period with the utmost brevity. This is not the case with the late Prof. J. C. Brown's book. 191 of its pages deal with "Ancient History", and, in fact, we do not lose sight of the alchemists until some two or three chapters later. The chapter on Paracelsus contains views at variance with those of modern scholarship. Prof. Brown recognises the good Paracelsus did in breaking away from old traditions and widening the aims of chemistry; but he says "there is good reason to believe that he was on the whole a vain and self-seeking quack, who neither understood the nature of chemical science nor undertook any regular or successful investigation", and he accuses him of greed and intemperance. These rather extreme views are no doubt derived from the misstatements of Oporinus. There is a note by the Editor aiming at modifying them.

Prof. Brown had little liking for the mystical views of the alchemists; but (excepting Paracelsus) he has treated them with praiseworthy fairness and impartiality, and the first part of his scholarly work (with which this notice is only

concerned) forms one of the completest histories of Alchemy, written from the scientific standpoint, in the English language. Prof. Brown indicates that all the alchemists were not the knaves they have been accused of being. He says, "in fairness it ought to be said that, after allowing for all their shortcomings, the writings of the philosophical alchemists are not such nonsense as they seem to a modern student. We have lost the key to much of their symbolism, and the mysterious allusions with which they are filled no longer appeal to scientific thinkers. To us, therefore, they have little to say; but it was not so in the Middle Ages. Then they were studied not only by quacks, who sought to discover in them modes of enriching themselves at the expense of others, but also by earnest men, whose work resulted in a gradual improvement in chemical processes, and a steady, if slow, increase in the number of chemical compounds produced." (p. 73). Indeed, in one place he goes even further than this and suggests that the philosophy of the alchemists may not after all be entirely erroneous. He says, "the philosophy of the alchemists . . . when fully considered, is by no means despicable. The knowledge which was at that period available did not permit of the practical application of this philosophy, and the sages did not rightly understand their own theories. Yet we must not forget that while there is much that seems absurd and nonsensical, there is much which is not inconsistent with recent researches and discoveries of science. These old philosophers had a wonderful grasp of general principles. It may be that those doctrines of the unity of matter and the mutation of form, which they taught in the light of deductive philosophy, will ultimately by the use of inductive methods be established as the true explanation of phenomena at present inexplicable and outside the domain of science." (p. 134). These are highly suggestive words, and indicate a greater sympathy with Hermetic philosophy than one gathers from other remarks of the writer. He indicates, too, the existence of a purely mystical type of alchemist, who was concerned only with psychological processes in man; though, as he points out, there were not many of this sort.

Regarding the origin of the belief in the Philosopher's Stone, Prof. Brown says, "The conception of the philosopher's stone . . . originally arose from the practical work of goldsmiths in making debased gold and silver, or spurious imitations of them. This work being confined to members of the royal and priestly house, great revenues were derived from the art. But the writers of text-books in later times, losing touch with practical men and absorbing false philosophical notions from Greek ideas, evolved from the inner consciousness of the philosophers, and promulgated without the slightest attempt to test by experiment the truth

of the assumptions, drifted further and further from a knowledge of laboratory work." (pp. 178 and 179). This is, no doubt, in the main correct; but it confuses, I think, between cause and effect. Assuming that the alchemists misinterpreted the recipes of the old metallurgists, this was not the cause, but the result, of their views (formed *à priori*) concerning the nature of the metals and the possibility of transmutation. Moreover, although, no doubt, there was misunderstanding of details, there seems to have been no misunderstanding as to the possibility of transmutation, for, as Prof. Brown points out, the ancient Greek and Egyptian jewellers, imbued with the idea of the unity of matter, considered that, when they alloyed gold or silver with other metals (and thus "debased" it, as we should say) they had really increased the amount of gold or silver, providing of course the product resembled the noble metal; and they entertained similar ideas concerning alloys of common metals which superficially resemble silver and gold. Hence, it is to the mystical philosophy of Egypt and Greece and the prevalence of *à priori* reasoning that we must look for the real origin of the doctrines of Alchemy, rather than to any misunderstanding of ancient metallurgical recipes. Possibly this is Prof. Brown's view also, but he does not make it quite clear.

Prof. Brown's book, I may remark in conclusion, is enriched with very many illustrations (the alchemical portion contains 85), though they are, unfortunately, rather small in size and not very well produced. The book bears every sign of being the result of deep and extensive study, and should be in the library of everyone interested in the history of Alchemy.

EDITOR.

PERIODICAL LITERATURE.—

The Path, for April, contains the first instalment of a work on synthetic philosophy by Mme. Isabelle de Steiger, entitled "Superhumanity: A Suggestive Enquiry into the Material and Mystic Meaning and Condition of Regenerate Humanity." Of course, it is not written in the interests of historical research; but since many of the views advanced therein are stated to be based upon or in harmony with those of the alchemical philosophers, the work will no doubt be of interest to members of THE ALCHEMICAL SOCIETY as an interpretation of Hermetic philosophy. It is, judging by the first part, certainly suggestive and by no means lacking in interest.

EDITOR.

THE JOURNAL OF THE ALCHEMICAL SOCIETY

EDITED BY H. STANLEY REDGROVE, B.Sc. (LOND.), F.C.S.

VOL. I. PART 5.

MAY, 1913.

REPORT OF FIFTH GENERAL MEETING.

THE fifth General Meeting of THE ALCHEMICAL SOCIETY was held at 8.15 p.m., on Friday, May 9th, at The International Club, Regent Street, S.W., the chair being taken by Professor John Ferguson, M.A., LL.D., F.I.C., F.C.S.

The Chairman announced that the Council had decided to alter the time of the General Meetings of the Society from 8 p.m. to 8.15 p.m., in accordance with the wish expressed at the previous General Meeting.

A paper by the Venerable J. B. Craven, D.D., Archdeacon of Orkney, on "A Scottish Alchemist of the Seventeenth Century:—David, Lord Balcarres", was read, in the absence of the author, by the Honorary Secretary. (The paper is printed in the present number of the JOURNAL.)

A vote of thanks was passed to Archdeacon Craven for his paper.

REPORT OF THE FIRST ANNUAL MEETING.

THE first Annual General Meeting of THE ALCHEMICAL SOCIETY was held at 9.30 p.m., on Friday, May 9th, at The International Club, Regent Street, S.W., the chair being taken by Professor John Ferguson, M.A., LL.D., F.I.C., F.C.S.

The Reports of the Honorary Secretary and Honorary Treasurer (printed hereunder) were read and adopted.

The Chairman announced that the Council had decided that, as no member of Council had yet held office for a complete year, there should be no compulsory retirements under Rule 10 of "The Constitution and Rules" of the Society, until next May. It would, however, be necessary to elect a new Honorary Secretary, owing to the much-regretted retirement of Mr. W. Gorn Old from that office, one new ordinary member of Council, and to appoint auditors. A ballot was held and Mr. Sijil Abdul-Ali was elected as

Honorary Secretary, Mons. W. de Kerlor as an ordinary member of Council, and Messrs. Leonard F. Pembroke and B. R. Rowbottom were appointed Auditors.

The Acting President announced that the Council had been considering the desirability of holding an Annual Dinner of the Society and wished to gain the opinion of the Annual General Meeting on the matter. The suggestion met with warm approval and it was decided that a Dinner be held on June 6th. (Further particulars will be found on the cover of the present number of the JOURNAL.)

A very hearty vote of thanks to Prof. Ferguson for the admirable and genial manner in which he had filled the office of Chairman at the meeting was proposed, and carried by acclamation.

REPORT OF THE HONORARY SECRETARY.

It is gratifying to observe that, from the inception of this Society and its formal inauguration on January 10th., 1913, the membership has been steadily increasing and at this date the Society constitutes a body of some strength, having representatives in many centres of intellectual activity throughout the world. Doubtless, as the aims and objects of our Society come more generally to be known and appreciated, there will be a further influx of members and a corresponding increase in our activities.

During the present session, ending May 9th, five General Meetings of the Society have been held, at which the following papers have been read and discussed:—

H. STANLEY REDGROVE, B.Sc., F.C.S. : *The Origin of Alchemy.*

ARTHUR EDWARD WAITE : *The Canon of Criticism in respect of Alchemical Literature.*

SIJIL ABDUL-ALI : *An Interpretation of Alchemy in relation to Modern Scientific Thought.*

GASTON DE MENGEL : *The Evidence for Authentic Transmutation.*

Ven. Archdeacon J. B. CRAVEN, D.D. : *A Scottish Alchemist of the Seventeenth Century : David, Lord Balcarres.*

These papers have been published in the JOURNAL of the Society and may be taken as the solid part of our activities. The JOURNAL has met with considerable appreciation and the press-notices have been quite satisfactory.

The best thanks of the Society are due, and will, I am sure, be heartily accorded to Messrs. William Rider and Son, Ltd., for the use of their offices as headquarters, and to the Managing Director of The Internation Club for the use of a room for the meetings of the Society and of the Council. It is highly desirable, however, that permanent premises be

obtained as soon as possible. Indeed, it may be hoped that the membership of the Society will soon swell to such an extent that such a step will be imperative. At such time it may be possible to consider the question of the founding of a library of alchemical literature. The formation of such a library is very desirable in the interests of our movement.

In accordance with the Rules and Constitution of the Society, a full complement of Officers, save one ordinary member of Council, has been elected, and these, in their several capacities, have done their part in somewhat difficult circumstances to forward the interests of the Society and fulfil their several functions, though an increased attendance at meetings of the Council is highly desirable. Especial note should be made of the assiduous work of the Acting President, Mr. H. Stanley Redgrove, B.Sc., F.C.S., who has not only presided at the majority of the meetings of the Society, and attended all meetings of the Council, but, in addition, has contributed to the proceedings and has edited the *JOURNAL* from the beginning. An adequate expression of our appreciation of his work would, perhaps, be invidious and supererogatory, seeing that to his initiation the existence of the Society is due.

Our best thanks are also due to Mr. Philip S. Wellby, M.A., for his work as Honorary Treasurer.

The Honorary Secretary has occasion to regret that the calls on his time and energies are so numerous as to prevent him from adequately discharging the duties which, in a newly-constituted society, are multifarious and increscent. There is so much that might be done and ought to be done towards the upbuilding of the Society for which one who has many duties in other directions has but scant time.

On the whole, therefore, it will be seen that the Society has cause to regard with satisfaction the progress that has been made and to look forward with considerable confidence to its development in the future. The aims and objects of the Society are sufficiently inclusive to give place to many and varied aspects of scientific and speculative thought, and the fullest scope is provided for the expression of every kind of thought that is pertinent to the main subject of our enquiry. This attitude of the Society should certainly prove attractive and, if more generally voiced by members, will no doubt lead to a considerable increase in membership.

WALTER GORN OLD,

HONORARY SECRETARY.

REPORT OF THE HONORARY TREASURER.

GENERAL ACCOUNT OF THE ALCHEMICAL SOCIETY
TO MAY 9TH., 1913.

RECEIPTS.	EXPENDITURE.
£ s. d.	£ s. d.
Subscriptions ... 24 2 0 Sale of Journal less publisher's Commission ... 1 1 3 Advertisements .. 0 15 0 <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> £25 18 3	Paper for Journal 2 3 0 Printing Journal, Nos. 1, 2 and 3 8 5 0 Stationery and Postages ... 6 11 1 Advertising ... 1 8 6 Balance in hand, May 9th., 1913 7 10 8 <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> £25 18 3

PHILIP S. WELLBY,
HONORARY TREASURER.

Audited and found correct.

SIJIL ABDUL-ALI,
LEONARD F. PEMBROKE,
Auditors.

A SCOTTISH ALCHEMIST OF THE SEVENTEENTH CENTURY:—DAVID, LORD BALCARRES.

BY THE VENERABLE J. B. CRAVEN, D.D.,
ARCHDEACON OF ORKNEY.

THE best account of the earlier and later alchemists of Scotland is that given by Mr. John Small in volume xi of the present series of *Proceedings of the Society of Antiquaries of Scotland*. The sketches of the earlier students of the Art deal with Michael Scot, King James and the Abbot of Tungland, and Sir George Erskine of Innesteil. The last, in the words of his grandson, Lord Cromartie, made "considerable advancement in the hermetick school, and had a correspondence in very remote parts with the sonnes of Hermes, and of whose fruites of his expensive and secret correspondence with them I have deposited some volumes of manuscripts mostly of his own handwriting in the Library of the Royal College of Physicians of Edinburgh, in 1707. Several of these treatises are relative to the rules of the Society of Rosicrucians," and it is believed were brought to Scotland by "Dr. Politius (a Polonian or Silesian)" supposed to have been "one of the missionaries sent from Germany to propagate their tenets. . . . Among the Erskine MSS. is the first part of a kind of Rosicrucian treatise, entitled *Arbatel, or the Magick of the Auncient Philosophers, the Chief Studie of Wisdom*, and written in 1602." [*Proceedings of the Society of Antiquaries of Scotland*, vol. xi., 1875, p. 179.] In Mr. Small's article on Lord Innesteil, a long account from his ms. of the alchemical process is given.

The later series of sketches includes accounts of John Napier of Merchiston, with a sum of his conference with a German adept, Daniel Müller, doctor of medicine, in 1607; and of Robert Napier, the second son of John's second marriage. Robert was the author of a treatise, still extant in ms., entitled *The Revelation of the Mystery of the Golden Fleece*. There is also a treatise published at London in 1623, and entitled *A Revelation of the Secret Spirit, declaring the Most Concealed Secrets of Alchemie, translated into English by R. N. E. Gentleman*, which initials were believed by the late Dr. D. Laing to mean "Robert Napier Esquire". Mr. Small's other sketches deal with Sir David Lindsay, Patrick Ruthven, the well-known Alexander Seton, and Patrick Scott.

Some years ago, through the kindness of my old friend, Mr. J. P. Edmond, then librarian at Haigh Hall, I had access to several of the mss. formerly belonging to Sir David Lindsay, first Earl of Balcarres. Lindsay was the second son of John Lindsay, Lord Menmuir, Privy Seal and Secretary of State for Scotland. He was created "Master of the metals and minerals within the Kingdom". [*Proceedings of the Society of Antiquaries of Scotland*, vol. xi., p. 420.] Sir David succeeded his elder brother John in the family estates, and in 1633 was created Earl. He married Sophia, daughter of his guardian the great Earl Dunfermline, Lord High Chancellor of Scotland. At an early date he had the royal licence "to pass forth of the realme of Scotland to the realme of France, or any other parts beyond the sea, he please, there to remain for the space of seven years next after the dait hereof, that in the meantime he may attain to learning and haif the insight of their languages and behaviour". [LORD LINDSAY: *Lives of the Lindsays*, vol. II, 1849, p. 4.] On his return to Scotland he devoted himself to the pursuits of science. "He added to his father's librarie till it became one of the best in Scotland . . . He thought a day misspent", says his daughter-in-law, "on which he knew not a new thing . . . natural philosophy, particularly chemistry, and the then fashionable quest of the *elixir vitæ* and the philosopher's stone, occupied much of his attention." [*Proceedings of the Society of Antiquaries of Scotland*, vol. XI, p. 421]. "Ten volumes of transcripts and translations from the works of the Rosicrucians, models of correct calligraphy, remained in our library", says one of his descendants, "covered over with the venerable dust (not gold-dust) of antiquity. They survived their author, but have now dwindled to four, which still hold their place in the library of his representative, along with his father's well-read Plato—the favourite author, I have little doubt, of his son likewise." [*loc. cit.*] His great friend and fellow book lover was Drummond of Hawthornden, the well-known poet. In correspon-

dence the latter bears witness to the excellence of the library of Lord Balcarres. It was "a difficulty to send him a book he had not already". [*loc. cit.*] Sir John Scot of Scotstarret, another literary friend, bears the same testimony to his love of books.

It is also worthy of note that Lord Balcarres' daughter Sophia became the wife of "that good man and accomplished gentleman, Sir Robert Moray, the first President, the life and soul of the Royal Society, Justice-Clerk and Secretary of Scotland" [*Lives of the Lindsays*, vol. 11, p. 32], and according to Bishop Burnet, "the wisest and worthiest man of his age". Sir Robert Moray's connection with the earliest speculative membership of the Masonic Order is well-known to all students of early masonic history.

Lord Lindsay, from whose *Lives of the Lindsays* I have already quoted, calls him "the happiest and most favoured of the whole line of Lindsays", and informs us that "He lies interred in the Chapel of Balcarres (in Fifeshire) built by himself in the Gothic style of the revival under Charles I, as a burial place for his posterity—now a picturesque ruin—overgrown with lichen and ivy, embowered but not secluded in wood—

"Of it, or legends err, at evening-tide
From grave to grave the awakened spirits glide,
And dimly flitting in the moon's pale ray
Hold sweet communion till the dawn of day."

Lord Balcarres designed for his crest, embossed in gold on his book-covers, a pavilion azure, semée of stars or; and he chose for his motto, in symbolism at once of the Christian pilgrimage and the goal to which it leads, the words "*Astra Castra*".

The books remaining from his library, together with those recovered, are "only enough to fill a couple of shelves at Haigh, where one reads with interest the signatures 'Johannes Lindsay', and 'Balcarres', on the title-pages." [*Proceedings of the Society of Antiquaries of Scotland*, vol. XI, p. 421.]

Amongst the printed works preserved are Maier's *Tripus Aureus*, 1618, and copies of two of Fludd's works bound together, namely the *Philosophica Moysaica*, Gouda, 1638, and the *Responsum ad Hoplocrisma-Spongum*, of the same place and date. The volume is in small folio and bears the stamped design mentioned above and the signature "Balcarres." Both books appear as clean as when newly issued, and thus seem not to have been studied particularly.

Lord Balcarres had neat and beautiful ms. copies made of works referring to his favourite studies. His MSS. contain, amongst others, copies of the following:—

(I.) THEOPHILUS SCHWEIGHART: *Speculum Sophicum Rhodostauroticum, hoc est ampla declaratio Cologii.*

et axiomatum illius singulariter illuminata fraternitas Rosæ Crucis. 1618.

- (2.) MARCELLUS PALINGENIUS: *His Capricorne.*
 "Bot Riches is it possible a happy lyf to lead
 Alace how often vertue poor does mourn with heavie
 head," etc.
 "Balcarres. 1633."
- (3.) *The new chemicall licht from the Fountaine of Natur,
 and manuell experience divydet in two pairts. The first
 contains twelve treatises of Mercurie, the last is of
 Sulphur, the other principle of natur. I am the author
 that loves the generation of Diny.* Leschus. Geneva,
 1624.
 "Astra Castra."
- (4.) *Enchiridion Physica restituta. In quo versus natura
 concentus exponitur, etc. Tractus alter inscriptus
 Arcanum Hermetica Philosophia opus. In quo occulta
 natura et artis circa Lapidis philosophorum . . .
 fiunt manifesti.* Paris, 1623.
 "D. Lyndesius 1622."
- (5.) *The Theorik of the great work of the Philosopher's
 Stone, written by friar PHILIP REMILLASCHE PIEMONTOIS,
 Chief Philosopher in his tym.*
- (6.) *Dictionarium Paracelsicum Dorneri. Tractatuo Sulphure
 altero naturi principi, Astrologia Theologizata.*
 "D. Lyndesius, 1631."
- (7.) *Anent the Philosopher's Stone etc., by ane uncertain
 author. "That gold may be brocht into oyll to cuir all
 Infirmities, consider wiell quhat is underwritten."*
- (8.) *The Storr of Complexione of the perfytt maistrie of the
 art chymicall of JOHN BUNTOTONE of England, written in
 anno 1535.*
 "Explicit 26 Apr: 1585, mane soli Deo honor et gloria."
- (9.) *Praxeos Alchimix. Liber Secundus, Ars Hermetica.*
- (10.) *A Buik named the Brevaria of Natural Philosophie by
 the unlettered Scholler THOMAS CHARNOCK, studious in
 the most worthie Science of Astronomic and Philosophie.
 Anno Domini, 1577, Jant. 1.*
- (11.) *Jhone Dastin his dream.*

But perhaps the most interesting of the MSS. is a translation (marked "Balcarres, 1633") of the *Fama Fraternitas, or the Discouerie of the most laudibill order of the Rosie Cross.* This MS. extends to 65 pages. At the end, in another hand, now scored out by more recent ink, stands this inscription—"M. I. P. anno Domini, 1633, 13 Octr., finis coronat opus—The fear of the Lord is the beginning of wisdom.

"In tym tak tym, or tym be tint,
 For tym will not remaine."

There is no doubt that this translation is the first done into

English (or Scotch) of the far-famed *Fama*. The first printed English translation is, I believe, that mentioned by Mr. Waite in his *The Real History of the Rosicrucians* (1887) as done by Thomas Vaughan and issued at London in 1652 in 8vo. Who Master "I. P.," may have been it is impossible to say. In 1592, a Mr. Pendrie "an Englishman, the minister", is mentioned in the Balcarres' papers, whose contemporaries in Fife were James Pitcairne, parson of Falkland, and James Powrie, parson of Leslie.

A few extracts from this translation of the *Fama* will now be given.—"To all the Potentats and learned in Europ, we the brethrin of the fraternitie of the Rosie Cros send greetting, love and peace to all our Famam with a Christianlyk favour and censure.

"Seeing the only wys and mercifull God in theas laitter days hes ponted out so ritche his mercy and goodness to mankynd, qrby we do attein mor and mor to ye perfit knowledge of his sone Jesus Chryst, and nature, that justlie we may boast of a happie tym qrin their is not onlie discovred unto us the half part of the world quhitch wes hiertofoer unknown and hiddin, but hath also maid manifest unto us manie wonderful and never hiertofoer sien works, and creatures of natur, and mair over hes raised men indeuet with great wisdome, quhitch micht partlie reneu and reduce all airts (in this our age spotted and imperfyt) to perfection, so yt. finallie thairby man micht understand his awn nobilness and worth, and quhy he is called microcosmos, and how far his knowledge extends in natur.

" . . . His new building (called Sancti Spiritus) wes now finished, they concludit to drau and receive yit oys into thair fraternitie. To this end wes chosen brother R. C., his deceased father's son, brother B., a skilfull painter, G. G. and P. D. thair Secretairie, all Germains except I. A. So in all thay wer aucht in number—all Bachelers and of vowed Virginitie."

" . . . The first of this fraternitie quhitch died and that in Ingland was D. O., as brother C. lang befor had fortold him. He was verie expert and wiell learned in the Cabala as his book called H. witnesses. In Ingland he is mutch spoken of, and chiefly because he cuired the young Earill of Norfolk of the leprosy.

" . . . For conclusion of our confession we must earnestlie admonish you, that ye putt away, if not all, yit the most buiks wrettin be fals alchemists quho doe think it bot a jest or a pastym quhen thay ather misuss the holy Terne- tie, qn they apply it to vain things or deceive the peipil with most strang figurs, and dark sentences of speatches, and couden the simple of thair monie.

" . . . Evn in sutch maner altho' we micht inritch the hail world and indeu tham with learning, and much relieve it

from innumerabill miseries yet sall we never be manifested to anie man, without the speciall plesur of God. Yea it sall be so far from him quhosever thinks to get the benefit and be partaker of our ritches and knowledge without and agains the will of God, that he sall sooner loss his lyf in seeking and searching for us, yn to find us, and attain to com to ye wished happiness of the fraternitie of ye Rosie Cros. Finis."

Not to speak of the adventures of Bishop Burnet in a Rosicrucian Assembly, and his tales of these brethren, rehearsed in the manse of Salton, when Scougal (afterwards bishop of Aberdeen) and Cockburn were auditors, Fife itself, in the quaint language of an old chronicler, has a good Rosicrucian story, which well illustrates the fantastic views which were once held concerning the "far-famed Fraternity":—"As for the rencontre betwixt Mr. Williamsons, Schoolmaster at Couper [in Fife], who has writ a grammar, and the Rosicrucians, I never trusted it till I heard it from his owne sone, who is at present minister at Kirkcaldy.

"He tells that a stranger came to Couper, called for him; after they had drank a little, and the reckoning came to be payed, he whistled for spirits. One in the shape of a boy came, and gave him gold in abundance. No servant was seen riding with him to the toun, nor enter with him into the innes, etc. He caused his spirits against next day bring him noble Greek wines from the Pope's cellar and tell the freschest news there was at Rome, then trysted Mr. Williamsons at London, who met the same man in a coach neir to London Bridge, who called on him by his name. He marvelled to see any know him ther: at last found that it was his Rosycrucian. He pointed to a taverne, and desired Mr. Williamsons to do him the favour to dyne with him at that house; whither he came at twelve a' clock, and found him and many others of good faschion their, and a most splendid and magnifick table furnished with all varieties of delicate meats, wher they are all served by spirits. At dinner time they debated about the excellency of being attended by spirits, and after dinner they proposed to him, to assume him into their Society, and make him participant of their happy life, but among the other conditions and qualifications requisite, this was one that they demanded, of his abstracting his spirit from all materiality, and of abandoning and renouncing his baptismal engagements. Being amazed at this proposal, he falls a praying, whereat they all disappear and leave him alone. Then he began to forethink, what would become of him if he were left to pay that vast reckoning, not having on him so much as would defray it. He calls the boy, and asks what has become of these gentlemen, and what was to pay. He answered that there was nothing to pay, for they had done it, and ware gone about thair affairs in the City."

NOTE ON THE ROSICRUCIAN SOCIETY.

THE following note on the Rosicrucian Society is abstracted from my *Alchemy: Ancient and Modern* (1911), pp. 62 to 64, and is inserted here as having a bearing on Archdeacon Craven's paper.—“The exoteric history of the Rosicrucian Society commences with the year 1614. In that year there was published at Cassel in Germany a pamphlet entitled *The Discovery of the Fraternity of the Meritorious Order of the Rosy Cross, addressed to the Learned in General and the Governors of Europe*. After a discussion of the momentous question of the general reformation of the world, which was to be accomplished through the medium of a secret confederacy of the wisest and most philanthropic men, the pamphlet proceeds to inform its readers that such an association is in existence, founded over one hundred years ago by the famous C.R.C., grand initiate in the mysteries of Alchemy, whose history (which is clearly of a fabulous or symbolical nature) is given. The book concludes by inviting the wise men of the time to join the Fraternity, directing those who wished to do so to indicate their desire by the publication of printed letters, which should come into the hands of the Brotherhood. As might well be expected, the pamphlet was the cause of considerable interest and excitement, but although many letters were printed, apparently none of them were vouchsafed a reply. The following year a further pamphlet appeared, *The Confession of the Rosicrucian Fraternity, addressed to the Learned in Europe*, and in 1616 *The Chymical Nuptials of Christian Rosencreutz*. * This latter book is a remarkable allegorical romance, describing how an old man, a life-long student of the alchemistic art, was present at the accomplishment of the *magnum opus* in the year 1459. An enormous amount of controversy took place; it was plain to some that the Society had deluded them, whilst others hotly maintained its claims; but after about four years had passed, the excitement had subsided, and the subject ceased, for the time being, to arouse any particular interest.

“ . . . It is clear from an examination of the pamphlets already mentioned that they are animated by Lutheran ideals; and it is of interest to note that Luther's seal contained both the cross and the rose—whence the term “Rosicrucian.” The generally accepted theory regards the pamphlets as a sort of elaborate hoax perpetrated by Valentine Andreaë, a young and benevolent Lutheran divine; but more, however,

* The *Confession* appeared first in Latin, the other two pamphlets in German; translations will be found in Mr. Waite's *The Real History of the Rosicrucians*.

than a mere hoax. As the late Mr. R. A. Vaughan wrote: ' . . . this Andreä writes the *Discovery of the Rosicrucian Brotherhood*, a *jeu-d'esprit* with a serious purpose, just as an experiment to see whether something cannot be done by combined effort to remedy the defect and abuses—social, educational, and religious, so lamented by all good men. He thought there were many Andreäs scattered throughout Europe—how powerful would be their united systematic action! . . . He hoped that the few nobler minds whom he desired to organize would see through the veil of fiction in which he had invested his proposal; that he might communicate personally with some such, if they should appear; or that his book might lead them to form among themselves a practical philanthropic confederacy, answering to the serious purpose he had embodied in his fiction.' [*Hours with the Mystics* (7th. edn., 1895), vol ii, bk. 8, chap. ix, p. 134.] His scheme was a failure and on seeing its result, Andreä, not daring to reveal himself as the author of the pamphlets, did his best to put a stop to the folly by writing several works in criticism of the Society and its claims. Mr. A. E. Waite, however, whose work on the subject should be consulted for further information, rejects this theory, and suggests that the Rosicrucian Society was probably identical with the *Militia Concifera Evangelica*, a secret society founded in Nuremberg by the Lutheran alchemist and mystic, Simon Studion."

EDITOR.

REVIEWS.

THE METALS IN ANTIQUITY. By William Gowland, Assoc. R.S.M., F.R.S., F.S.A. 11ins. × 7½ ins., pp. 53 + 5 plates. London: Royal Anthropological Institute of Great Britain and Ireland, 50, Great Russell Street, W.C. Price (paper covers) 1s. net.

This is a reprint from the *Journal of the Royal Anthropological Institute* of the Huxley Memorial Lecture for 1912, which was delivered by the Emeritus Professor of Metallurgy at the Royal School of Mines. It is a most valuable and interesting contribution to our knowledge of the metallurgy of pre- and proto-historic man. The author combines an extensive knowledge of archæology with an equally extensive knowledge of metallurgy; and he is thus enabled to correct some of the theories of other archæologists, who lacking a good knowledge of metallurgy and relying upon philology and other less reliable evidence, have been led to erroneous conclusions. Thus, for example, the comparatively late discovery of iron is commonly said to be accounted for on the ground that a very high temperature is required for the smelting of iron ores. A high temperature is, indeed, required for cast iron; but as Prof. Gowland points out, malleable iron may be

obtained at a lower temperature than is necessary for the production of copper; and malleable iron was utilised for centuries before cast iron was prepared. It is interesting to note that in prehistoric times Africa and Asia were much in advance of Europe in metallurgical knowledge, Egypt, Assyria and China being of special importance. Of course Prof. Gowland's lecture deals primarily with metallurgy before the days of Alchemy or of speculations that have come down to us; but passing reference is made to the theories of ancient Chinese philosophers concerning the origin of tin, which are markedly akin to those of Western Alchemy, and suggest an interesting enquiry as to this similarity in the views of two schools between which no interchange of thought took place.

EDITOR.

THE COMTE DE ST. GERMAIN: A monograph by I. Cooper Oakley. 7½ ins. × 5 ins., pp. 284 + 8 plates. Milan: "Ars Regia", Casa Editrice del Dott. G. Sulli-Rao. Price (paper covers) 4s.

The eighteenth century had, perhaps, no figure more mysterious than that of the so-called Comte de St. Germain. His parentage is unknown; numerous sources have been suggested; Mrs. Cooper Oakley believes him to have been a son of Franz-Leopold, Prince Ragoczy, of Transylvania. It has also been asserted that he was the illegitimate son of Marie de Neubourg, widow of the last King of Spain of the House of Austria. Louis XV. of France, who appears to have held him in high favour, employed him on secret diplomatic missions with England, which were not, however, successful. Mrs. Cooper Oakley has collected much information concerning this phase of St. Germain's life from "The Mitchell Papers" and elsewhere. She regards St. Germain as a great mystical and philosophical adept, though there is little evidence for this and he does not appear to have enriched either philosophical speculation or scientific investigation. Popular opinion, when it has not credited him with all the powers of a thaumaturgist, has reckoned him a charlatan. In all probability he was a genial adventurer, who had no desire to swindle persons or to deceive them for ulterior ends, but was amused at the fantastic powers with which he was credited—including the discovery of the *elixir vitæ*—and encouraged these beliefs from a sense of humour. He is said to have discovered a method of restoring fractured diamonds and other stones, to have invented certain pigments of extraordinary brilliancy, and to have lived for more than a century without showing any signs of the encroachments of age. It is said that he revealed certain of his chemical secrets to Graf. Karl Coblenze in 1763, who intended to build a factory for the manufacture of the recipes, paying the inventor a just

page 77 precedes page 1

For notice of next General Meeting see inside cover.

Vol. I. Part 1.

January, 1913.

The
Journal
of the
Alchemical Society

Edited by

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.

LONDON:

Published for the Alchemical Society

BY

H. K. LEWIS,

136, Gower Street, W.C.

PRICE: TWO SHILLINGS NET.

All rights reserved.

Original from
UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

The Alchemical Society.

Officers and Council for 1913.

Prof. John Ferguson, M.A. (Glas.), LL.D. (St. Andrews), F.I.C., F.C.S.,
Honorary President.

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S., *Acting President.*

Arthur Edward Waite. *Honorary Vice-President.*

Mme. Isabelle de Steiger. *Honorary Vice-President.*

W. Gorn Old. *Honorary Vice-President and Secretary.*

Philip S. Wellby, M.A. (Cantab.). *Honorary Treasurer.*

Miss Clarissa Miles.

THE ALCHEMICAL SOCIETY was founded in 1912 for the study of the works and theories of the alchemists in all their aspects, philosophical, historical and scientific, and of all matters relating thereto. Papers dealing with these subjects for reading and discussion at the meetings of the Society and for publication in the Journal, will be welcomed by the Council. Further particulars, copies of the Rules, and application forms for membership, may be obtained from the Hon. Secretary, Mr. W. Gorn Old, c./o. Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. Subscriptions should be forwarded to the Hon. Treasurer, Mr. Philip S. Wellby, M.A., c./o. Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. All communications concerning the Journal should be addressed to the Editor, Mr. H. S. Redgrove, B.Sc., F.C.S., 138, Tottenham Court Road, W., from whom particulars as to advertising rates for the Journal may be obtained.

The next General Meeting of the Society will be held on Friday, February 14th, at 8 p.m., at The International Club, 22a, Regent Street, S.W. (entrance in Jermyn Street), when an important paper will be read by Mr. Arthur Edward Waite.

The responsibility for all statements in papers etc. published in the Journal rests entirely with their authors, and neither with the Alchemical Society nor with the Editor of the Journal.

H. K. LEWIS,

Publisher and Bookseller,

ORDERS BY POST OR TELEPHONE PROMPTLY EXECUTED.
Complete Stock of TEXT-BOOKS and WORKS in TECHNICAL
: : : MEDICAL and GENERAL SCIENCE of all Publishers. : : :

TECHNICAL AND SCIENTIFIC CIRCULATING LIBRARY.

Covering the widest range of subjects, including Anthropology, Chemistry (Technical, Theoretical and Applied), Electricity, Engineering, Geography, Geology, Microscopy, Mining, Physics, Physiology, Travels, Zoology, etc.

NEW WORKS and NEW EDITIONS are added to the Library immediately on Publication.

Annual Subscription (Town or Country) **from One Guinea.**

136 COWER STREET. AND 24 COWER PLACE,

Telephone—
10721 Central.

LONDON, W.C.

Book to Warren St. (Tube)
Euston Square (Metro.)

Alchemy: Ancient and Modern.

Being a brief account of the Alchemical Doctrines and their relations, to mysticism on the one hand, and to recent discoveries in physical science on the other; together with some particulars regarding the lives and teachings of the most noted alchemists.

By H. STANLEY REDGROVE, B.Sc. (Lond.), F.C.S.

Author of "On the Calculation of Thermo-Chemical Constants,"

"Matter, Spirit and the Cosmos," etc.

With 16 full-page illustrations. Demy 8vo, cloth gilt, 4/6 net.

CONTENTS.—The Meaning of Alchemy—The Theory of Physical Alchemy—The Alchemists—The Outcome of Alchemy—The Age of Modern Chemistry—Modern Alchemy.

"He has sympathy with mysticism, and a wide knowledge of science, so that between the two one gets an admirable and balanced study of a subject which in less capable hands would offer many possibilities of extreme and erroneous statement."—*Pall Mall Gazette*.

"A thoroughly well-informed study of the subject which has the merit of being more sympathetic than such studies often are, and not less learned."—*Scotsman*.

"Mr. Redgrove gives a careful and unbiased account of alchemy, and traces its progress until it is absorbed by scientific chemistry. He also gives, from the layman's point of view, perhaps the most lucid account that has yet been rendered of the modern theories of matter and the ether."—*Outlook*.

"The author is not only a man of scientific attainments, but is, as his writings show, strongly in sympathy with the mystical trend of the alchemists, and the result is an exceedingly interesting study of their doctrines."—*Knowledge*.

"We do not know of any modern scientific writer who has succeeded as well as Mr. Redgrove in interpreting the conceptions of the alchemists."—*Dr. Stokes in the Oriental Esoteric Library Critic*.

WILLIAM RIDER & SON, LTD.,

8, PATERNOSTER ROW, LONDON, E.C.

And of all Booksellers.

Original from

UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

For notice of next General Meeting see inside cover.

Vol. I. Part 2.

February, 1913.

The
Journal
of the
Alchemical Society

Edited by

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.

LONDON:

Published for the Alchemical Society

BY

H. K. LEWIS,

136, Gower Street, W.C.

PRICE: TWO SHILLINGS NET.

All rights reserved.

Original from

UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

The Alchemical Society.

Officers and Council for 1913.

Prof. John Ferguson, M.A. (Glas.), LL.D. (St. Andrews), F.I.C., F.C.S.,
Honorary President.

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S., *Acting President.*

Arthur Edward Waite. *Honorary Vice-President.*

Mme. Isabelle de Steiger. *Honorary Vice-President.*

Ralph Shirley. *Honorary Vice-President.*

W. Gorn Old. *Honorary Vice-President and Secretary.*

Philip S. Wellby, M.A. (Cantab.), *Honorary Treasurer.*

Miss Clarissa Miles.

Lt.-Col. Jasper Gibson, V.D., LL.B. (Lond.).

B. R. Rowbottom.

THE ALCHEMICAL SOCIETY was founded in 1912 for the study of the works and theories of the alchemists in all their aspects, philosophical, historical and scientific, and of all matters relating thereto. Papers dealing with these subjects for reading and discussion at the meetings of the Society and for publication in the Journal, will be welcomed by the Council. Further particulars, copies of the Rules, and application forms for membership, may be obtained from the Hon. Secretary, Mr. W. Gorn Old, c/o. Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. Subscriptions should be forwarded to the Hon. Treasurer, Mr. Philip S. Wellby, M.A., c/o. Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. All communications concerning the Journal should be addressed to the Editor, Mr. H. S. Redgrove, B.Sc., F.C.S., 138, Tottenham Court Road, W., from whom particulars as to advertising rates for the Journal may be obtained.

The next General Meeting of the Society will be held on Friday, March 14th, at 8 p.m., at the International Club, 22a, Regent Street, S.W. (entrance in Jermyn Street), when a paper by Messrs. L. Pembroke and S. Abdul-Alli, on "The Great Work" of the Alchemists; and its Relation to Modern Scientific Research, will be read.

The responsibility for all statements in papers etc. published in the Journal rests entirely with their authors, and neither with the Alchemical Society nor with the Editor of the Journal.

Original from

UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

H. K. LEWIS,

Publisher and Bookseller,

ORDERS BY POST OR TELEPHONE PROMPTLY EXECUTED.
Complete Stock of TEXT-BOOKS and WORKS in TECHNICAL
:: :: MEDICAL and GENERAL SCIENCE of all Publishers. :: ::

TECHNICAL AND SCIENTIFIC CIRCULATING LIBRARY.

Covering the widest range of subjects, including Anthropology, Chemistry (Technical, Theoretical and Applied), Electricity, Engineering, Geography, Geology, Microscopy, Mining, Physics, Physiology, Travels, Zoology, etc.
NEW WORKS and NEW EDITIONS are added to the Library immediately on Publication.

Annual Subscription (Town or Country) **from One Guinea.**

136 GOWER STREET AND 24 GOWER PLACE,

Telephone—
10721 Central.

LONDON, W.C.

Book to Warren St. (Tube)
Euston Square (Metro.)

Four Valuable Treatises on Alchemy.

THE TURBA PHILOSOPHORUM, or Assembly of the Sages. An Ancient Alchemical Treatise, with the chief Readings of the Shorter Codex, Parallels from Greek Alchemists, and Explanations of obscure terms. Translated with introduction and Notes, by A. E. Waite. Crown 8vo., 4s. 6d. net.

This work ranks next to Geber as a fountain-head of Alchemy in Western Europe.

THE NEW PEARL OF GREAT PRICE. The Treatise of Bonus concerning the Treasure of the Philosopher's Stone. Translated from the Latin. Edited by A. E. Waite. Crown 8vo., 4s. 6d. net.

One of the classics of Alchemy, showing the generation and birth of metals, the death of those that are base and their resurrection in the perfect forms of gold and silver.

A GOLDEN AND BLESSED CASKET OF NATURE'S MARVELS. By Benedictus Figulus. With a life of the Author. Edited by A. E. Waite. Crown 8vo., 4s. 6d. net.

A collection of short treatises by various authors belonging to the school of Paracelsus, dealing with the mystery of the Philosopher's Stone.

THE TRIUMPHAL CHARIOT OF ANTIMONY. By Basil Valentine. Translated from the Latin, including the Commentary of Kerckringius, and Biographical and Critical Introduction. Edited by A. E. Waite. Crown 8vo., 4s. 6d. net.

Orders for the above Works should be sent to the Hon. Treasurer,
THE ALCHEMICAL SOCIETY, 8 Paternoster Row, London, E.C.

Original from

For notice of next General Meeting see inside cover.

Vol. I. Part 3.

March, 1913.

The
Journal
of the
Alchemical Society

Edited by

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.

LONDON:

Published for the Alchemical Society

BY

H. K. LEWIS,
136, Gower Street, W.C.

PRICE: TWO SHILLINGS NET.

The Alchemical Society.

Officers and Council for 1913.

Prof. John Ferguson, M.A. (Glas.), LL.D. (St. Andrews), F.I.C., F.C.S.,
Honorary President.

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S., *Acting President.*

Arthur Edward Waite. *Honorary Vice-President.*

Mme. Isabelle de Steiger. *Honorary Vice-President.*

Ralph Shirley. *Honorary Vice-President.*

Ven. J. B. Craven, D.D., Archdeacon of Orkney. *Honorary Vice-President.*

W. Gorn Old. *Honorary Vice-President and Secretary.*

Philip S. Wellby, M.A. (Cantab.). *Honorary Treasurer.*

Miss Clarissa Miles.

Lt.-Col. Jasper Gibson, V.D., LL.B. (Lond.).

B. R. Rowbottom.

William T. Horton.

J. Arthur Jutsum.

THE ALCHEMICAL SOCIETY was founded in 1912 for the study of the works and theories of the alchemists in all their aspects, philosophical, historical and scientific, and of all matters relating thereto. Papers dealing with these subjects for reading and discussion at the meetings of the Society and for publication in the Journal, will be welcomed by the Council. Further particulars, copies of the Rules, and application forms for membership, may be obtained from the Hon. Secretary, Mr. W. Gorn Old, c/o Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. Subscriptions should be forwarded to the Hon. Treasurer, Mr. Phillip S. Wellby, M.A., c/o Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. All communications concerning the Journal should be addressed to the Editor, Mr. H. S. Redgrove, B.Sc., F.C.S., 191, Camden Road, N.W., from whom particulars as to advertising rates for the Journal may be obtained.

The next General Meeting of the Society will be held on Friday, April 11th, at 8 p.m., at the International Club, 22a, Regent Street, S.W. (entrance in Jermyn Street), when a paper on "The Evidence for Authentic Transmutations," by M. Gaston De Mengel, will be read.

The responsibility for all statements in papers etc. published in the Journal rests entirely with their authors, and neither with the Alchemical Society nor with the Editor of the Journal.

Original from

UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

H. K. LEWIS,

Publisher and Bookseller,

ORDERS BY POST OR TELEPHONE PROMPTLY EXECUTED.
Complete Stock of TEXT-BOOKS and WORKS in TECHNICAL
:: :: MEDICAL and GENERAL SCIENCE of all Publishers. :: ::

TECHNICAL AND SCIENTIFIC CIRCULATING LIBRARY.

Covering the widest range of subjects, including Anthropology, Chemistry (Technical, Theoretical and Applied), Electricity, Engineering, Geography, Geology, Microscopy, Mining, Physics, Physiology, Travels, Zoology, etc.
NEW WORKS and NEW EDITIONS are added to the Library immediately on Publication.

Annual Subscription (Town or Country) **from One Guinea.**

136 GOWER STREET AND 24 GOWER PLACE,

Telephone—
10721 Central.

LONDON, W.C. Book to Warren St. (Tube)
Euston Square (Metro.)

Two Valuable Reprints from *Knowledge*, by
H. STANLEY REDGROVE, B.Sc., F.C.S.

The Transmutation of the Elements.

11½ ins. × 9 ins., pp. 4, paper cover. Price 10d. net.

(Contains portraits of Paracelsus and the two van Helmonts, and photographs of spectra illustrating Sir William Ramsay's experiments on the transmutation of the elements.)

Is Matter Indestructible?

11½ ins. × 9 ins., pp. 3, paper cover. Price 8d. net.

(An important contribution to scientific philosophy.)

A few copies of these reprints remain, and may be obtained from the
Author, 191, Camden Road, London, N.W.

Original from

UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

For notice of next General Meeting see inside cover.

Vol. I. Part 4.

April, 1913.

The
Journal
of the
Alchemical Society

Edited by

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.

LONDON:

Published for the Alchemical Society

BY

H. K. LEWIS,

136, Gower Street, W.C.

PRICE: TWO SHILLINGS NET.

The Alchemical Society.

Officers and Council for 1913.

Prof. John Ferguson, M.A. (Glas.), LL.D (St. Andrews), F.I.C., F.C.S.,
Honorary President.

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S., *Acting President.*

Arthur Edward Waite. *Honorary Vice-President.*

Mme. Isabelle de Steiger. *Honorary Vice-President.*

Ralph Shirley. *Honorary Vice-President.*

Ven. J. B. Craven, D.D., Archdeacon of Orkney. *Honorary Vice-President.*

W. Gorn Old. *Honorary Vice-President and Secretary.*

Philip S. Wellby, M.A. (Cantab.). *Honorary Treasurer.*

Miss Clarissa Miles.

Lt.-Col. Jasper Gibson, V.D., LL.B. (Lond.).

B. R. Rowbottom.

William T. Horton.

J. Arthur Jutsum.

THE ALCHEMICAL SOCIETY was founded in 1912 for the study of the works and theories of the alchemists in all their aspects, philosophical, historical and scientific, and of all matters relating thereto. Papers dealing with these subjects for reading and discussion at the meetings of the Society and for publication in the Journal, will be welcomed by the Council. Further particulars, copies of the Rules, and application forms for membership, may be obtained from the Hon. Secretary, Mr. W. Gorn Old, c/o. Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. Subscriptions should be forwarded to the Hon. Treasurer, Mr. Philip S. Wellby, M.A., c/o. Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. All communications concerning the Journal should be addressed to the Editor, Mr. H. S. Redgrove, B.Sc., F.C.S., 191, Camden Road, N.W., from whom particulars as to advertising rates for the Journal may be obtained.

The next General Meeting of the Society will be held on Friday, May 9th., at 8.15 p.m., at the International Club, 22a, Regent Street, S.W. (entrance in Jermyn Street), when a paper by the Venerable Archdeacon Craven, entitled "A Scottish Alchemist of the Seventeenth Century:—David, Lord Balcarres," will be read. The meeting will be immediately followed by the Annual General Meeting.

The responsibility for all statements in papers etc. published in the Journal rests entirely with their authors, and neither with the Alchemical Society nor with the Editor of the Journal.

H. K. LEWIS,

Publisher and Bookseller,

ORDERS BY POST OR TELEPHONE PROMPTLY EXECUTED.

Complete Stock of TEXT-BOOKS and WORKS in TECHNICAL

:: :: MEDICAL and GENERAL SCIENCE of all Publishers. :: ::

TECHNICAL AND SCIENTIFIC CIRCULATING LIBRARY.

Covering the widest range of subjects, including Anthropology, Chemistry (Technical, Theoretical and Applied), Electricity, Engineering, Geography, Geology, Microscopy, Mining, Physics, Physiology, Travels, Zoology, etc.

NEW WORKS and NEW EDITIONS are added to the Library immediately on Publication.

Annual Subscription (Town or Country) **from One Guinea.**

136 GOWER STREET AND 24 GOWER PLACE,

Telephone—
10721 Central.

LONDON, W.C.

Book to Warren St. (Tube)
Euston Square (Metro.)

A Selection of Alchemical Books

FROM THE STOCK OF

WILLIAM TAIT, Bookseller and Publisher,
37, Dunluce Avenue, BELFAST.

ARNAULD (P.)—Philosophie naturelle de trois anciens Philosophes renommez; Artephius Flamel et Synesius; traitant de l'Art Occulte, et de la Transmutation metallique, etc., etc.; 4to, vellum. Paris, 1682. (*Very scarce.*) 17s. 6d.

MUSÆUM HERMETICUM REFORMATUM et Amplificatum, omnes Sopho-Spagyricæ Artis Discipulos fidelissime erudiens, quo pacto summa illa veraque Lapidis, Philosophici Medicina, etc., etc., continens Tractatus Chemicos xxi. 4to, half roan, with engraved title-page, engraved frontispiece (repaired), engraved plates and vignettes throughout, and four large folding plates at end; pp. viii.-864. Francof, 1749. 35s.

PERNETY (DOM A. J.)—Les Fables Egyptiennes et Grecques dévoilées and reduites au meme principe; avec une explication des Hieroglyphes, etc. 2 vols, 12mo, full brown morocco, extra, marbled edges. Paris, 1758.—Dictionnaire Mytho-Hermetique; Dans lequel on trouve Les Allegories Fabuleuses des Poëtes, les Metaphores, les Enigmes et les Termes barbares des Philosophes Hermétiques expliqués, 12mo, uniformly bound with the above two vols. Paris, 1758. 30s.

Fine copies of these indispensable works for the student of Hermeticism. In scholarship and in practical value they are superior to all other Alchemical dictionaries. The Doctrines of the Universal Medicine and of Transmutation are exhibited as underlying principles of Ancient Mythology and Traditional History.

SALOMON (WM.)—BIBLIOTHEQUE DES PHILOSOPHES CHYMIQUES, ou Recueil des Oeuvres des Auteurs les plus Approuvez qui ont e'crit de la Pierre Philosophale, etc., etc. 2 vols. in one. 12mo, full morocco, marbled edges. Paris, 1683. (*Very rare.*) 25s.

Græsse I. 417. Kopp II. 340. Gardner I. 478. Contents:—La Table d'Emeraude de Hermes Trismegiste, avec les Commentaries de Hortulain.—La Tourbe des Philosophes, ou l'Assemblée des Disciples de Pythagoras.—Le Livre de Nicolas Flamel.—Le Livre de Bernard Comte de la Marche Trevisane.—D. Zachaire, Opuscule.—Wenceslas Lavinus de Moravie.—Philaethe ou l'entrée ouverte du Palais fermé.—Les Sept Chapitres de Hermes.—Le Dialogue de Marie et d'Aros.—L'Entretien de Calid.—Le Livre d'Artephius.—Geber, La Somme de la Perfection,

THEATRUM CHEMICUM, Selectorum Auctorum Tractatus de Chemiæ et Lapidis Philosophici Antiquitate, veritate, jure, præstantia, and operationibus, continens: Singulis Voluminibus, suo Auctorum et Librorum Catalogo primis pagellis; rerum vero and verborum Indice postremis annexo. 6 vols. 8vo, vellum, with folding plates, tables, and curious woodcuts. Argent, 1659-61. (*Rare.*) £5 5s.

Brunet V. 773. Kopp II. 342. Gardner I. 520. A collection of 209 Treatises by Masters in Alchemy and the Hermetic Art, comprising Albert, Aquinas, Avicenna, Artephius, Roger Bacon, Colleson, Dee, Ficinus, Flamel, Hermes Trismegistus, Hogheland, Kalid, Lully, P. Mirandola, Plato, Ripley, Sendivogius, Michael Scott, Trithemius, etc., etc.

RARE BOOKS ON OCCULTISM & FREEMASONRY.

A LARGE AND SELECT STOCK ALWAYS ON HAND.

The following Catalogues to be had on application, post free. Correspondence invited.

A Choice Selection from the Library of the late Mrs. ATWOOD,
Author of "The Suggestive Inquiry into the Hermetic Mystery."
56 pp.

Catalogue of Books on Freemasonry and allied Subjects.

Catalogue of New Purchases, comprising many rare and
Items on Astrology, Occult Sciences, Symbolism, etc., in preparation.

For notice of next General Meeting see inside cover.

Vol. I. Part 5.

May, 1913.

The
Journal
of the
Alchemical Society

Edited by

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S.

LONDON:

Published for the Alchemical Society

BY

H. K. LEWIS,

136, Gower Street, W.C.

PRICE: TWO SHILLINGS NET.

All rights reserved.

Original from

UNIVERSITY OF ILLINOIS AT
URBANA-CHAMPAIGN

The Alchemical Society.

Officers and Council for 1913—1914.

Prof. John Ferguson, M.A. (Glas.), LL.D. (St. Andrews), F.I.C., F.C.S.,
Honorary President.

H. Stanley Redgrove, B.Sc. (Lond.), F.C.S., *Acting President.*

Arthur Edward Waite. *Honorary Vice-President.*

W. Gorn Old. *Honorary Vice-President.*

Mme. Isabelle de Steiger. *Honorary Vice-President.*

Ralph Shirley. *Honorary Vice-President.*

Ven. J. B. Craven, D.D., Archdeacon of Orkney. *Honorary Vice-President.*

Sijil Abdul-Ali. *Honorary Secretary.*

Philip S. Wellby, M.A. (Cantab.). *Honorary Treasurer.*

Miss Clarissa Miles.

Lt.-Col. Jasper Gibson, V.D., LL.B. (Lond.).

B. R. Rowbottom.

William T. Horton.

J. Arthur Jutsum.

W. de Kerlor.

THE ALCHEMICAL SOCIETY was founded in 1912 for the study of the works and theories of the alchemists in all their aspects, philosophical, historical and scientific, and of all matters relating thereto. Papers dealing with these subjects for reading and discussion at the meetings of the Society and for publication in the Journal, will be welcomed by the Council. Further particulars, copies of the Rules, and application forms for membership, may be obtained from the Hon. Secretary, Mr. Sijil Abdul-Ali, 49, Brockenhurst Gardens, Mill Hill, N.W. Subscriptions should be forwarded to the Hon. Treasurer, Mr. Philip S. Wellby, M.A., c/o., Messrs. W. Rider and Son, Ltd., 8, Paternoster Row, E.C. All communications concerning the Journal should be addressed to the Editor, Mr. H. S. Redgrove, B.Sc., F.C.S., 191, Camden Road, N.W., from whom particulars as to advertising rates for the Journal may be obtained.

The next General Meeting of the Society will be held on Friday, Oct. 10th., at 8.15 p.m., at the International Club, 22a, Regent Street, S.W. (entrance in Jermyn Street), when an important paper will be read by Professor John Ferguson, M.A., LL.D., F.I.C., F.C.S.

The responsibility for all statements in papers etc. published in the Journal rests entirely with their authors, and neither with the Alchemical Society nor with the Editor of the Journal.

For Special Notices see Third Page of Cover.

The Alchemical Society.

SPECIAL NOTICES.

ANNUAL DINNER.

The first Annual Dinner of the Society will be held on FRIDAY, JUNE 6TH, at Pinoli's Restaurant, Wardour Street, W., at 7.30 p.m. (Evening-dress optional.) Professor John Ferguson, M.A., LL.D., F.I.C., F.C.S., will preside. Members are entitled to invite as many guests as they may desire, and it is hoped by the Council that they will fully exercise this right. *Immediate* application for tickets (price 3s. each) should be made to the Honorary Secretary, Mr. S. Abdul-Ali, 49, Brockenhurst Gardens, Mill Hill, N.W.

SUBSCRIPTIONS.

Members who joined prior to March 30th, 1913, are reminded that their subscriptions for the new Session are now due and should be forwarded without delay, and in any case *not later than June 30th.*, to the Honorary Treasurer, Mr. P. S. Wellby, M.A., c/o Messrs. W. Rider and Sons, Ltd., 8, Paternoster Row, E.C.

The Annual Subscription to the Society is 10s 6d.

JOURNAL.

Members may obtain, from the Publisher, Mr. H. K. Lewis, 136, Gower Street, W.C., copies of back numbers of the Journal, for their private use, at 1s. net per copy.

Binding cases for volume 1 may be obtained from the Editor, Mr. H. S. Redgrove, B.Sc., F.C.S., 191, Camden Road, N.W., both by members and non-members at 1s. 3d. net each. Applicants' own copies will be bound in these cases at 1s. net extra for each volume.

Bound copies of volume 1 of the Journal may be obtained from the Publisher, price 12s. net per copy to non-members, 6s. net per copy to members.

The next number of the Journal (part 6) will be published at the end of October, 1913.

H. K. LEWIS,

Publisher and Bookseller,

ORDERS BY POST OR TELEPHONE PROMPTLY EXECUTED.

Complete Stock of TEXT-BOOKS and WORKS in TECHNICAL

:: :: MEDICAL and GENERAL SCIENCE of all Publishers. :: ::

TECHNICAL AND SCIENTIFIC CIRCULATING LIBRARY.

Covering the widest range of subjects, including Anthropology, Chemistry (Technical, Theoretical and Applied), Electricity, Engineering, Geography, Geology, Microscopy, Mining, Physics, Physiology, Travels, Zoology, etc.

NEW WORKS and NEW EDITIONS are added to the Library immediately on Publication.

Annual Subscription (Town or Country) from One Guinea.

136 GOWER STREET AND 24 GOWER PLACE,

Telephone—
10721 Central.

LONDON, W.C.

Book to Warren St. (Tube)
Euston Square (Metro.)