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High Matter, Dark Language

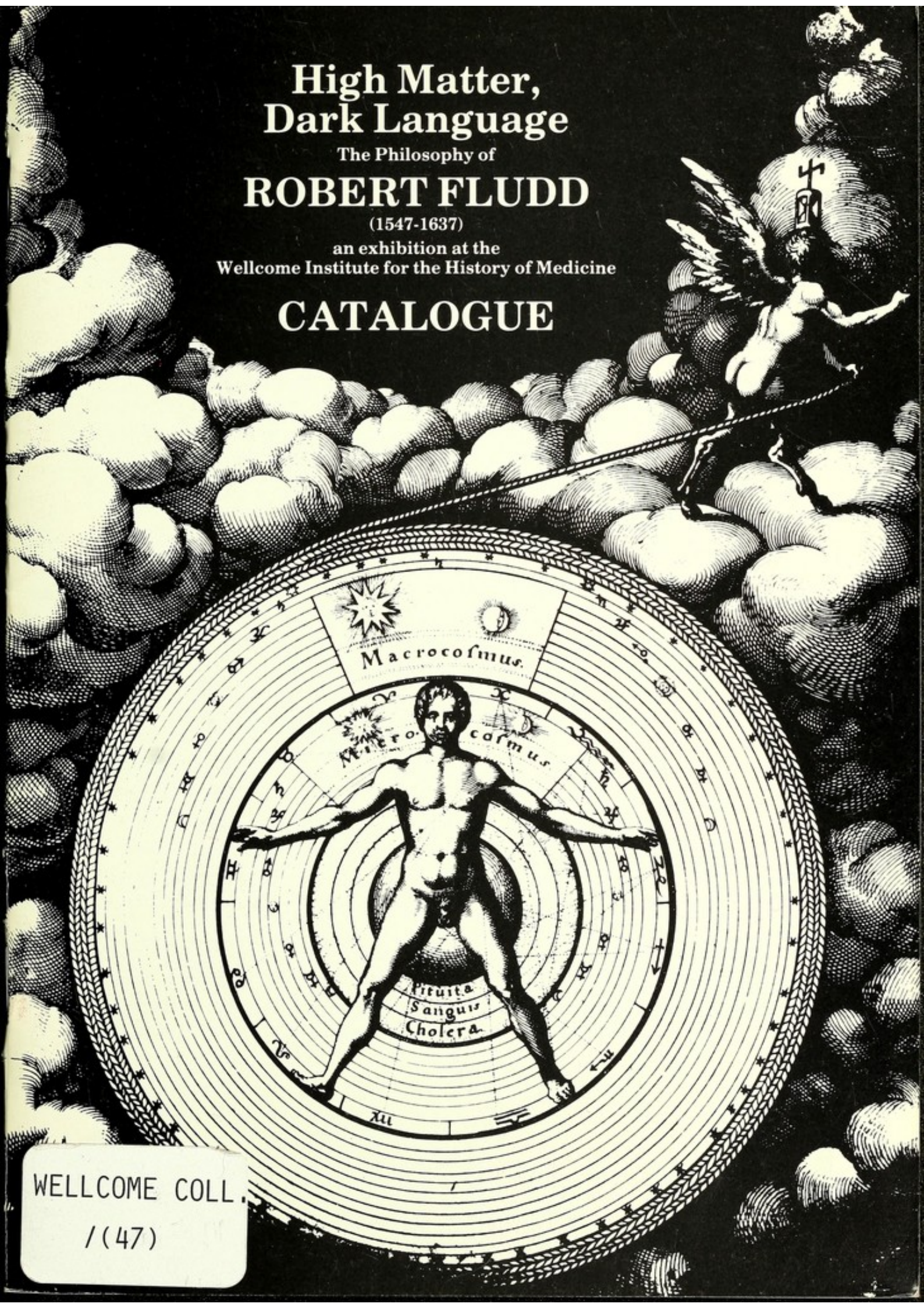
The Philosophy of

ROBERT FLUDD

(1547-1637)

an exhibition at the
Wellcome Institute for the History of Medicine

CATALOGUE



Introduction

His Books, written in Latine are great, many and mystical. The last some impute to his charity, clouding his high matter with dark language, lest otherwise the lustre thereof should dazzle the understanding of the reader.

(Thomas Fuller, *The worthies of England*, 1662.)

For the modern reader of Robert Fludd's works, Thomas Fuller's judgment that they contain "high matter" and "dark language" may well seem apt and appropriate. Fuller is, however, only partly right. Through the use of superb illustrations, often designed by Fludd himself, whole texts are recapitulated in a few bright images, in order to make accessible the high matter of his philosophy despite the dark language he used to express its implications. These pictures, emblems or hieroglyphs which invite further investigation and contemplation, have made Fludd into a major subject of the illustrations section of many a modern study on the history of Renaissance thought. The lavishness of pictorial material in Fludd's books, covering all areas of early 17th century knowledge, is unusual both in its quality and its diversity.

In this small exhibition of Fludd's works an attempt is made to present the images and the books in which they were published as the visual manifestations of his thought. The work of scholars such as Frances Yates, Walter Pagel, Serge Hutin and Allan Debus, has done much to rescue Fludd from the exclusive attentions of occultists and, by bringing him back to the mainstream of historical research, has contributed to a more balanced view of Fludd's achievements. The "high matter" and the "dark language" may seem at first glance for many to be only "high language" and "dark matter". But a serious effort to penetrate the veils of positivistic thinking which separate our world from Fludd's will reveal the intrinsic value of the matters he discusses. Wolfgang Pauli's judgment on the integration of subject and object in Fludd's world-picture suggests the significance which the study of Fludd's ideas and values could have for those actively researching in science and medicine:

> Even though at the cost of consciousness of the quantitative side of nature and its laws, Fludd's "hieroglyphic" figures do try to preserve a unity of the inner experience of the "observer" (as we should say today) and the external processes of nature, and thus a *wholeness* in its contemplation.

Who was Fludd? This question is not as simple as it appears. The problem with historical figures like Fludd, who were not actively engaged in heroic deeds or great discoveries and who wrote more than 20 books and tracts, is that their biography tends to become a mere bibliography. In this exhibition, we have tried to avoid this trap by including a section on Fludd's personal and professional life. Circles and cycles were central to Fludd's philosophy and it is particularly

appropriate that his life follows a cyclical pattern and ends where it began. Though he died in London Fludd was buried, according to his wishes, at his birthplace, in the church of Bearsted, Kent, where a monument to him was erected by his nephew in 1638, the year after his death. Fludd was born in Milgate House, Bearsted in1574, a son of Sir Thomas Fludd and Elizabeth Andros. Fludd's family was well connected; his father had occupied the important position of Treasurer to the English army in France and the Netherlands under Elizabeth. Robert Fludd himself seems to have had the confidence and patronage of James I, despite the former's sometimes controversial theories.

It is too easy to forget that Fludd was not a philosopher in an ivory tower, but a hardworking physician who had a flourishing practice in London, first in Fenchurch Street, and later in Coleman Street. His early career in medicine, however, was not without its trials and tribulations. Fludd entered St. John's College, Oxford at the age of 18 in 1592. He obtained his B.A. and his M.A. in 1596 and 1598 respectively. From 1598 to 1604 he travelled through France, Spain, Italy and Germany where he had contact with Paracelsian medical circles. On his return to England, Fludd began to study medicine at Christ Church College, Oxford. In 1605 he was awarded the M.B. and the M.D. degrees. He moved to London and sought admission to the London College of Physicians. However, due to his contempt for the doctrines of Galen and his allegiance to Paracelsian principles, he failed repeatedly and was only finally admitted a Fellow of the College in 1609. After these initial problems he established a reputation as a physician with his patients, his colleagues and the College of Physicians, for which he served as Censor between 1618 and 1634. He practised medicine until his death in 1637.

We can get an idea of Fludd's concepts of medicine, and thus of what one could call his "day-to-day" thinking, through his writings on health and disease. The most important of these are the *Anatomiae amphitheatrum* (1623) and the *Medicina catholica* (1629-1631). In these treatises medicine is dealt with in the context of a mystical and metaphysical concept of man as a microcosm of the world. In his *Anatomiae amphitheatrum*, Fludd analysed the mystical and physical anatomy of man in relation to the anatomy of wheat. Associated with this concept of occult correspondences between such seemingly different things as man and wheat was Fludd's theory of the influence (both for good and evil) of the planets and the winds on man's health. Fludd believed that the effect of the wind could be subjected to experiment in the weather-glass, a primitive thermometer, which represented the contraries of health and disease, and good and evil in terms of hot and cold, light and darkness. Fludd adapted this instrument of experiment as a diagnostic tool and adopted it for uroscopy. He gave a full treatment of these subjects in his *Medicina catholica*, a work which he never finished but which had been conceived to be a universal compendium of medicine. Only two parts, which appeared in four volumes, were written.

Fludd's works on medicine allow us to get a clear picture of the methods he used in diagnosing illness. We know less about his methods of treatment. Joscelyn Godwin suggested in his book on Fludd that he was probably something of a "psychic healer". Anthony à Wood remarks of Fludd that "he spoke to his patients amusing them with I know not what, till by his elevated expression he operated them into a faith-natural, which consequently contributed to the well working of the physic"; this suggests not so much a psychic healer as simply a humane physician. The only treatment of Fludd's which we know a good deal about is the weapon-salve, because Fludd's defence of it caused a pamphlet war.
As a physician, Fludd was completely *au courant* with contemporary developments in his field. Especially interesting in this respect is his close association with William Harvey. Despite their different world views, these two friends supported each other, endorsing one another's theories in their written works, both in the formulation of the theory of the circulation of the blood and in the subsequent controversies with Mersenne and Gassendi.

Fludd was a loyal defender of those people, ideas and developments he believed in. After his first great journey through Europe, he never lost touch with the developments on the continent. The first three books he wrote were apologies for the Rosicrucian movement which had suddenly arisen in Germany at the beginning of the century, only to be crushed in the Hapsburg onslaught on the Winter King and his allies in 1620. The centre of the Rosicrucian Enlightenment was the Palatinate. The printer Johann Theodor de Bry, who had workshops both in Frankfurt and Oppenheim, published many of the important books of the Rosicrucian movement. Fludd's *Utriusque cosmi...historia* (1617-1621) published by De Bry, was meant to provide a kind of broad "scientific" basis for the religious and revolutionary ideas and ideals of those reformers, who hoped that under the banner of Frederick V of the Palatine, a new era of prosperity, freedom and enlightenment would be created. In the same way that Fludd's mystical theories on medicine were rooted in everyday problems of diagnosis and treatment, his apparently esoteric compilation of all that was to be known about the world and man was rooted in the real world of political hopes and ambition. The basic concepts which these volumes defended, such as the continuum between spirit and matter, between man's inner experience, the external processes of nature, and the Primary Cause, God, were basically the same as those which were implicit in the ideals of the universal reformation of the Rosicrucians. The defeat of the Rosicrucians prevented Fludd's *Historia* from becoming the *Encyclopèdie* of the 17th century. However Fludd's ideas, even without the backing of a political movement, were considered important by his contemporaries. They could not be ignored by those who claimed to find an explanation of natural phenomena by means of secondary causes independent of God and man. The resulting controversies between Fludd and Johannes Kepler, Marin Mersenne and Pierre Gassendi, which cover a total of 10 publications between them, dating from 1619

to 1633, have an important place in the history of science, as landmarks in the emergence of empiric and rationalistic science out of 16th century chemical and hermetic philosophy.

Robert Fludd attempted in his many works to create a reformation of knowledge, but part of his method of achieving this was to charge old commonplaces with new meaning and significance. Although Fludd was an innovator, his work was built upon the foundations of the already formulated Renaissance concept of the three worlds. This concept is described for example in Pico della Mirandola's *Heptaplus:*

> Antiquity imagined three worlds. Highest of all is that ultramundane one which theologians call the angelic and philosophers the intelligible, and of which, Plato says in the *Phaedrus* no one has worthily sung. Next to this comes the celestial world, and last of all, this sublunary one which we inhabit. This is the world of darkness; that the world of light; the heavens are compounded of light and darkness.

If the division of the world into three parts created a vertical hierarchy, thus giving the cosmic map of the Renaissance mind three basic degrees of longitude, it was the notion of the unity of all these worlds which gave the map its degrees of latitude. Pico explains this as follows:

> It should above all be observed, a fact on which our purpose almost wholly depends, that these three worlds are one world, not only because they are all related by one beginning and to the same end, or because regulated by appropriate numbers they are bound together both by a certain harmonious kinship of nature and by a regular series of ranks, but because whatever is in any of the worlds is at the same time contained in each, and there is no one of them in which is not to be found whatever is in each of the others.

The system of horizontal and vertical coordinates thus created were mapped out by Fludd in many diagrams, of which the most sophisticated is without doubt the engraving published in his *Monochordum Mundi* (1623). The horizontal coordinates create a unity between the different realms in which the three worlds manifest themselves. In the universe or macrocosm these are, as stated by Pico, the intelligible or supercelestial world, the visible heavens and the mundane or terrestrial world; in man the microcosm these three worlds are his mind, his soul and the body itself. The mind can understand the nature of the intelligible world; the soul can be in harmony with the planets of the celestial world and the body is ruled by the terrestrial world. At the same time these worlds are one, and thus the macrocosm and the microcosm are also one, enabling a process of ascent and descent between the lowest and the highest.
With this background in mind we can proceed to look at specific aspects of Fludd's philosophical ideas as exhibited in his books and illustrations.

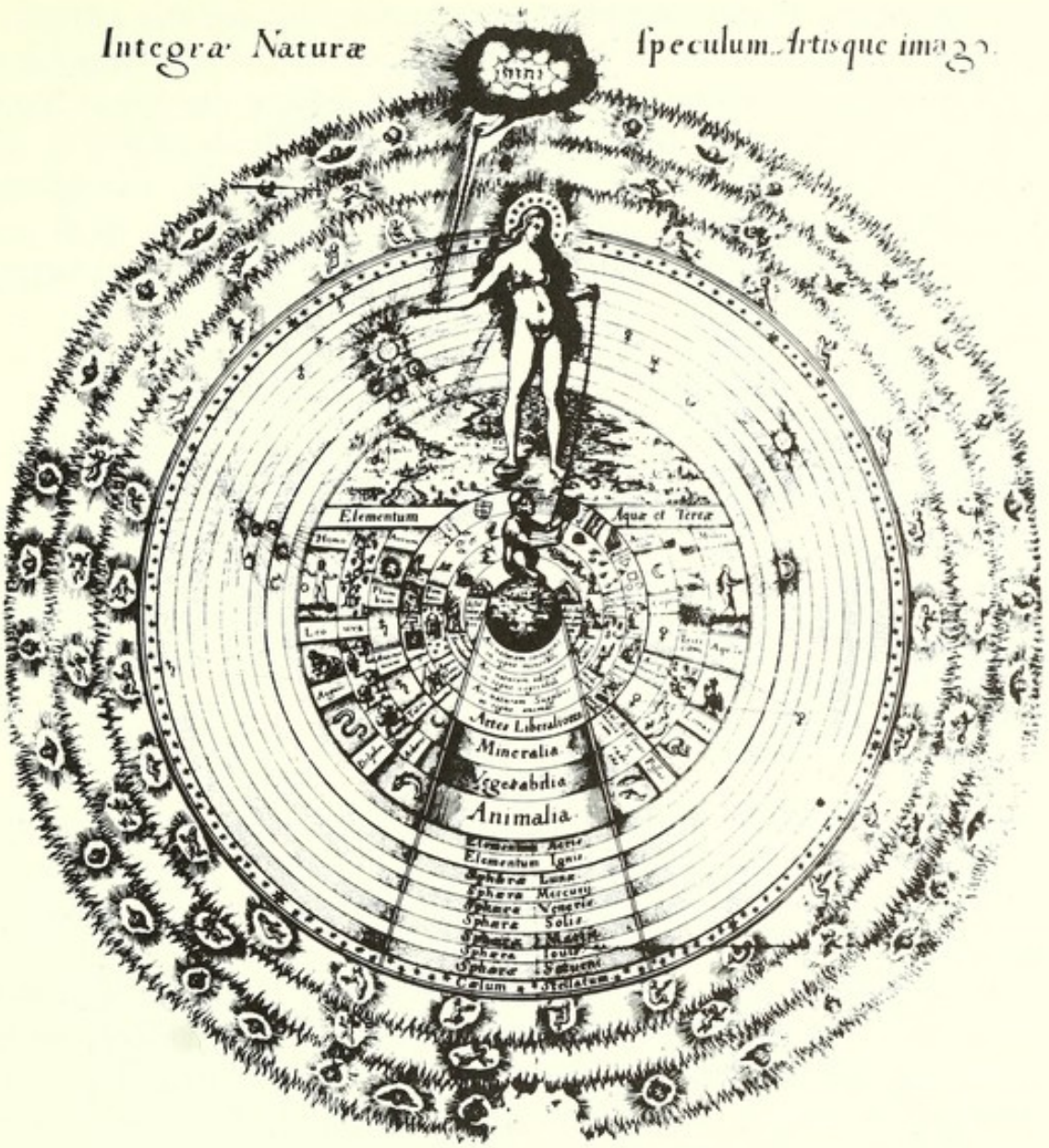
A note on portraiture

Two portraits of Fludd were published in his lifetime. Matthias Merian's etching and line-engraving (A) appeared in Fludd's *Philosophia sacra*, Frankfurt 1626. Its harsh emphasis on the cranial structure at the expense of psychological expression suggests derivation from a smaller miniature or a sculpture (compare Droeshout's Shakespeare or Marshall's John Donne). The differences between this image and the more sympathetic engraving in Fludd's *Integrum morborum mysterium*, Frankfurt 1631 (B), probably from a drawing from the life, suggest that Fludd was dissatisfied with (A). The 1631 plate (B) models the surfaces of skin and flesh more sensitively, places the Hebrew word YAHWEH in the sun, simplifies the

costume and excludes the sinister side of the coat of arms. The still more jovial portrayal in Boissard's *Icones*, Frankfurt 1645 and 1650 (C), contaminates the traditions of (A) and (B). Its wide diffusion is attested by such epigones as R. Cooper's stipple of *c.* 1820 (D). The early posthumous bust in the Church of the Holy Cross, Bearsted, Kent (E), was erected (at Fludd's request) in 1638. It appears not to derive from any of the prints. Its more assertive portrayal may have a privileged source. Two later portraits, which minister to Fludd's memory without being able to claim historical authenticity, are derived from (B): an intentionally crude engraving with archaic lettering and the coat of arms reversed (F), probably designed to appeal to Georgian antiquarian curiosity; and a pseudo-Jacobean panel painting (G), a product of this century, the boldest but not necessarily the last attempt to provide students of Fludd with an image of their hero.

Cases 1 & 2: The unity of Arts and Sciences

Fludd's concept of the unity of the arts and sciences was based on his view of the unity of the cosmos. The link between the cosmos and the arts and sciences was formed by Nature, personified as a woman, whom he also identified with the world soul. As such she bridged the chasm between the purely spiritual world of God and the material world of man. Her main instruments of power were the stars and the planets of the celestial world, through which she influenced the sublunary world below. In a diagram illustrated here, entitled 'The mirror of the whole of nature and the image of art' which was published in the first volume of Fludd's *Utriusque cosmi...historia*, Nature is depicted chained to God, but in her turn chaining the mundane world. According to Fludd, man's role is to bring about the perfection of nature through the arts and sciences which he labels 'the Ape of Nature'. Through the arts and sciences, such as those discussed in Fludd's treatises, man is able to reform his corner of the universe. The realm of nature consists of the mineral, vegetable, animal and celestial worlds and the Ape of Nature has four corresponding arts or sciences. The science perfecting nature in the mineral world is alchemy; agriculture assists nature in the vegetable world. The third science supplants nature in the animal realm; medicine is its most important aspect. The final group of arts, the liberal arts, were said to direct man's mind to the celestial world. Dealing as they did with mathematical ideas of perfection in number and measure these arts demonstrated an order in our world, allowing man to conceive of the order governing the celestial and, by extension, the supercelestial worlds.



In the frontispiece to the second treatise of the *Utriusque cosmi . . . historia*, which deals exclusively with what Fludd calls the liberal arts (cosmography, astronomy, music, arithmetic, geometry, painting, fortification, engineering, geomancy, time-keeping and perspective-drawing) we see the Ape of Nature between the different disciplines he rules. He points to a book on arithmetic, indicating that all these arts and sciences are based on number. It is interesting that Fludd did not follow the traditional arrangement of the seven liberal arts. His selection of subjects seems to have been derived from the arts and sciences which Vitruvius recommends in his treatise on architecture; hence they are known as the 'Vitruvian subjects'.

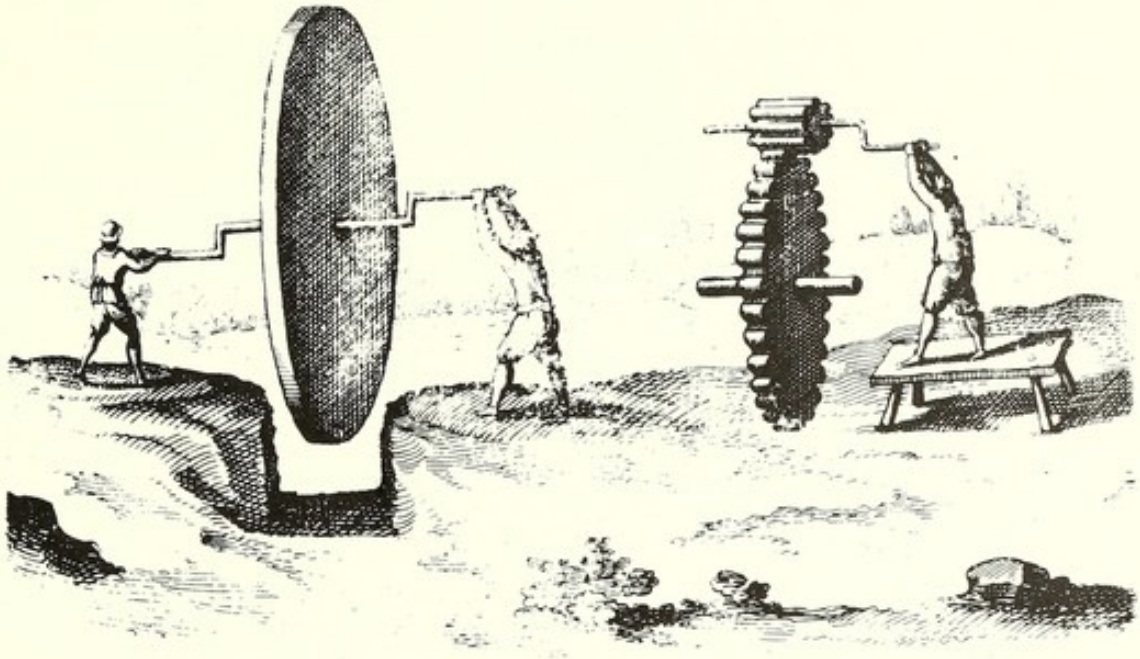
In the image of the 'mirror of the whole of nature' we see the external world depicted with the Ape of Nature which is able to imitate and transform that world. Just as the macrocosm is mirrored in the microcosm man, so the Ape of Nature has its microcosmic counterpart. This ape of inner nature is described in the first treatise of the second volume of the *Utriusque cosmi . . . historia*. The arts here are those which help man to know himself: prophecy, geomancy, the art of memory, astrology, physiognomy, palmistry and what Fludd calls 'the science of pyramids'. This last branch of science links man to the macrocosm.

Cases 3 & 4: Experiments

At the beginning of the 17th century the concept of experimental experience was not yet well defined. This uncertainty is reflected in the differing validity of the experiments Fludd describes and illustrates in *Utriusque cosmi . . . historia*. Here are three examples of his approach to experiment.

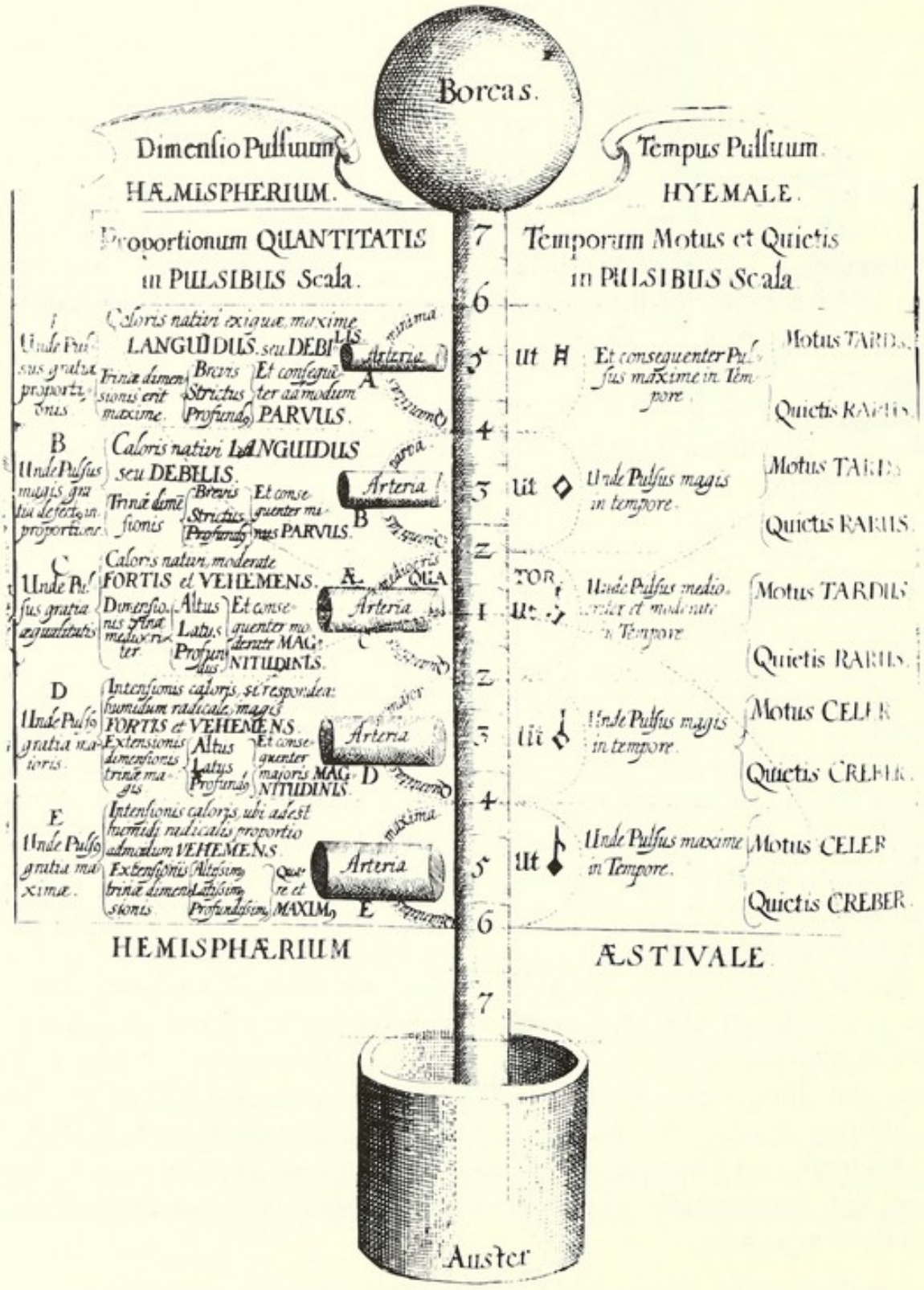
In one instance Fludd adopted a scientific theory from classical tradition and proposed to apply it without ever proving its practicability. This theory was meant to prove that the four musical consonances, understood as numerical proportions, could be heard by striking four hammers, the weight of which would be of the same proportions: 6, 8, 9, 12 ounces. This analogy between consonant intervals, number proportions and weights was first invented by Pythagoras (7th century B.C.), and during the whole of the Middle Ages its truthfulness was believed but never proved by experiment. It could never have been so proven, because the proportions mentioned are valid only for string instruments, comparing the length of the string, but not for weights of hammers which would have to be in square inverse proportions in order to produce consonant intervals, provided they give a definable sound at all. Fludd, however, relied on this hypothesis and stated the possibility of transferring the proportions mentioned to all musical instruments in order to produce musical consonances. He admits unwillingly that he never executed the experiment.

If Copernicus' theory that the earth was not the centre of the universe but a revolving body circling the sun, had been widely believed it would have destroyed Fludd's philosophy. Indeed the Copernican theory threatened to reduce man's dominant role within the universe. Fludd therefore had to try to refute Copernicus' theory and he did this by "experiment". This experiment illustrated here



showed two wheels, one of which was turned from the centre and the other from the periphery. This experimental image was invented in order to fit Fludd's theological theory, in which God, the source of all power and movement, is placed at the periphery of the universe, whereas at the centre, furthest from God, lies the solid unmovable earth. Thus his theory about the structure of the universe was determined by his theological principles, and the experiment he introduced was devised solely to support his religious belief. Nevertheless, Fludd thought that he had refuted Copernicus' ideas.

Fludd shared the interest of his time in the invention of machines that could produce extraordinary effects. Scientists were fascinated by the idea that nature could be dominated by man's intellect. In his *Utriusque cosmi . . . historia* Fludd describes and illustrates a whole range of machines including those for digging mines, hoisting devices with pulleys and mechanical instruments to make music. It is in this book that Fludd seems to have finally arrived at an empirical approach to nature. Yet, paradoxically, the miracles and mysteries he constantly pursued are never so evident as here.


Boreas.
Dimensio Pulsuum
HÆMISPHERIUM.
Tempus Pulsuum.
HYEMALE.
Proportionum QUANTITATIS in PULSIBUS Scala.
Temporum Motus et Quietis in PULSIBUS Scala.
7
6
5
4
3
2
1
2
3
4
5
6
7
A
Caloris nativi exiguæ, maximè LANGUIDUS. seu DEBILIS.
Arteria
Trinæ dimensionis erit maximè.
Brevis Strictus Profundus
Et consequenter ad modum PARVUS.
ut
Et consequenter Pulsus maximè in Tempore.
Motus TARDUS.
Quietis RARUS.
B
Caloris nativi LANGUIDUS seu DEBILIS.
Arteria
Trinæ dimensionis
Brevis Strictus Profundus
Et consequenter minus PARVUS.
Unde Pulsus magis in tempore.
Motus TARDUS
Quietis RARUS.
C
Caloris nativi moderate FORTIS et VEHEMENS.
Arteria
Dimensionis Trinæ mediocriter
Altus Latus Profundus
Et consequenter moderate MAGNITUDINIS.
Unde Pulsus medio-criter et moderate in Tempore
Motus TARDUS
Quietis RARUS.
D
Intensionis caloris, sic respondens humidum radicale, magis FORTIS et VEHEMENS.
Arteria
Extensionis dimensionis trinæ magis
Altus Latus Profundus
Et consequenter majoris MAGNITUDINIS.
Unde Pulsus magis in tempore.
Motus CELER
Quietis CREBER.
E
Intensionis caloris, ubi adest humidi radicalis proportio admodum VEHEMENS.
Arteria
Extensionis trinæ dimensionis
Altissimus Latissimus Profundissimus
Quare et MAXIMUS.
Unde Pulsus maximè in Tempore.
Motus CELER
Quietis CREBER.
HEMISPHÆRIUM
ÆSTIVALE.
Auster

Case 5: The weather-glass and urine analysis

The weather-glass, introduced in the second part of the *Medicina catholica*, was simply a glass tube with heated bulb which stood in water. The water, drawn up the stem towards the bulb as it cooled, rose and fell with changes in temperature. It could be used both as a barometer to predict changes in the weather and as a thermometer to register the temperature of a patient. In Fludd's diagrams the weather-glass symbolised the universal opposites of heat and cold and the two hemispheres of the earth. In a medical context it was used as a scale to measure what Fludd took to be the direct relationship between the weather and disease.

In the diagram shown, called (typically) the 'system of the universal pulse', the strength and frequency of the pulse are set out along the graduated scale of the stem of the weather-glass. The strength of the pulse is illustrated by arteries of varying thickness. Musical notation is used to indicate the beat of the pulse. In the text following the diagram in the *Medicina catholica* the use of this system in diagnosis and the relation between the pulse and illness is explained.

Fludd also adapted the weather-glass for urine analysis, to indicate how the variation of colour in urine related to heat and cold. A whole book of the *Medicina catholica* is devoted to uroscopy. To demonstrate how traditional much of Fludd's medical theory was, his chart of urinary colours is juxtaposed with an almost exactly similar chart from a 15th century printed book by Johannes de Ketham.

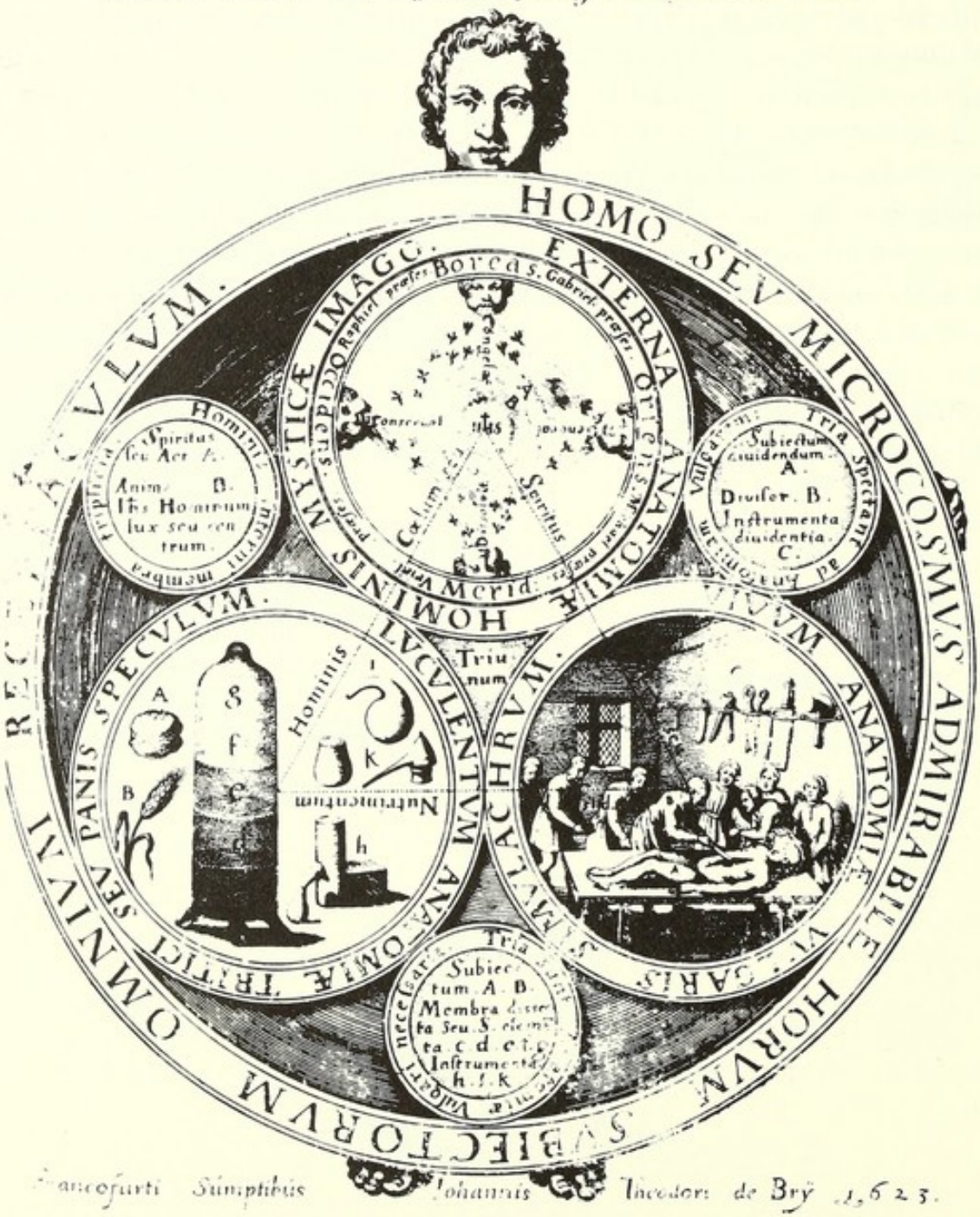
ANATOMIÆ AMPHITHEA-

TRVM EFFIGIE TRIPLICI, MORE

ET CONDITIONE VARIA, DESIGNATVM

Authore

Roberto Fludd . . . *de Fluctibus, Armigero & in Medicina D. Ox.*

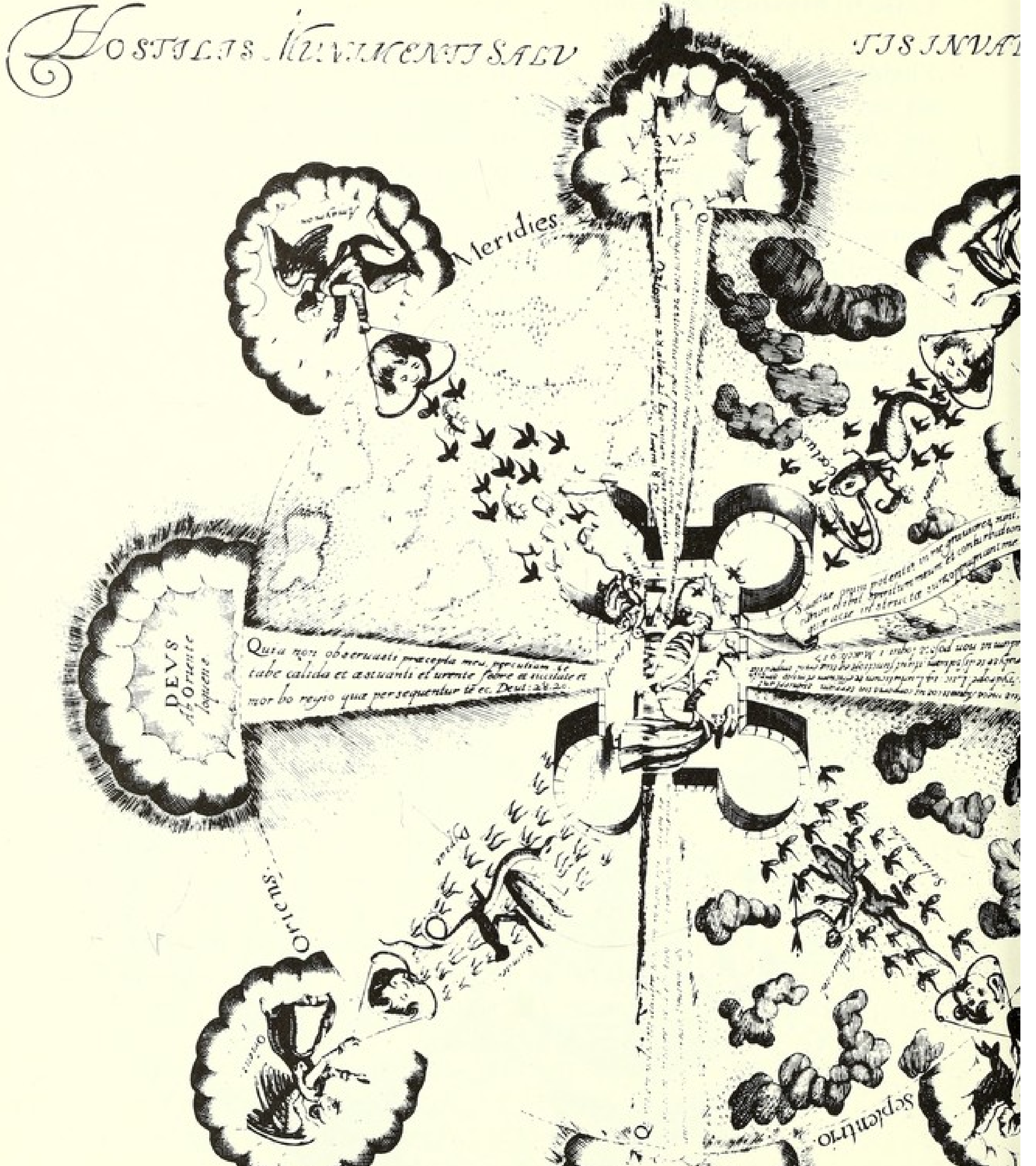


Francofurti Sumptibus Johannis Theodori de Bry 1623.

Case 6: Mystical anatomy

Fludd's *Anatomiae amphitheatrum* is a work in three parts the contents of which are set out diagramatically on the engraved titlepage. The first part concerns wheat and chemical experiments to extract its essence, the apparatus for which is shown on the left side of the illustration. The second part deals with corporal anatomy, represented by the picture of a dissection on the right. The final part 'mystical anatomy', that is the spiritual properties and significance of the parts of the body, especially the blood, seminal fluid and the brain, is represented in the top roundel of the titlepage by the four winds each controlled by an archangel surrounding the sacred monogram.

The first and last parts are illustrated by crude woodcuts which make an odd contrast to the engraved plates of the second part. These plates were first used in Caspar Bauhinus' *Theatrum anatomicum* published by De Bry in 1605. They were reused by De Bry, against Fludd's wishes, for reasons of cost and because of the labour involved in engraving new ones. Fludd apologises in his text for this cost-cutting, expressing his disappointment and his wish to avoid the charge of plagiarism.


HOSTILIS MUNIMENTI SALU
TIS INVA
Meridies
DEVS
Ab Oriente
loquens
Quia non obseruasti praecepta mea, percutiam te
tabe calida et aestuanti et urente febre et incendio et
morbo regio quae persequentur te ec. Deut: 28.20.
Oriens
Septentrio

Case 7: The winds and disease

In Fludd's meteorology, the four corners of the world shared the nature of the four elements, which corresponded to the four humours. The North was cold and dry and therefore related to earth and melancholy; the South, hot and wet, was linked to air and blood; the East, hot and dry, to fire and choler and the West, cold and wet, to water and phlegm.

The winds, which were believed to be the carriers of disease, had the same properties as the cardinal points from which they blew. Using the weather-glass, Fludd charted the mental and physical diseases brought by each wind. The north winds inflicted sadness and melancholy, the south winds raised the choleric passions, anger, lust, and diseases, such as syphilis, plague, fever etc.

The disease-bearing winds were subject to the world of spirits. Though ultimately under the dominion of the four archangels, the winds also had presiding demons. These malignant spirits released the aerial contagion, in continual conflict with the archangelic defenders of health. In the double-page engraving illustrated here the sick man is besieged in the fortress of health which has been breached by the demons and diseases of the south wind. A physician stands beside with urine flask in hand. It is apposite that he is shown in the process of diagnosis rather than administering a remedy, since Fludd's medical writings centre on diagnosis. There is relatively little about methods of cure. Some receipts are given and the means of preserving health by observing correct procedures for particular times and seasons. But as the biblical texts in the illustration imply, disease was seen as the result of sin and the only sovereign remedy was prayer. A section of the *Medicina catholica* contains prayers for the preservation of health and for use in times of plague.

Case 8: William Harvey and the significance of the blood

Fludd is believed to have known William Harvey from the days when they were both students at Padua. A friendship certainly developed between them during their later careers when as colleagues and co-Fellows of the Royal College of Physicians of London they were part of the committee preparing the London Pharmacopoeia and serving as Censors for the College. Fludd and Harvey shared an interest in anatomy albeit from different points of view. They seem to have been familiar with one another's theories and anatomical investigations, and both referred to the other in their published works.

In a general way Fludd anticipated Harvey's *De motu cordis* by putting forward a theory of the circulation of the blood in the section on mystical anatomy in his *Anatomiae amphitheatrum*, published four years before Harvey's work. Here Fludd drew a parallel between the sun and its position in the planetary world and the heart. The spirit of life is carried by the four winds whose movement is controlled by the sun and follows the sun's circular orbit round the earth. In the same way the spirit in the blood circulates from the east, i.e. the heart, round the body.

Fludd appears to have played a part in the publication of the *De motu*. The book was first published in Frankfurt in 1628 by William Fitzer. Fitzer, a native of Worcestershire, was the son-in-law of Johann Theodor de Bry and carried on the publishing business after Johann Theodor's death. Fitzer subsequently published Fludd's *Medicina catholica* and his *Clavis philosophiae*. It is likely that Fludd was involved in Harvey's decision to send his book abroad for publication.

In his *Medicina catholica* Fludd devotes an entire part of the work to the pulse, *Pulsus seu nova et arcana pulsuum historia*, completed in 1629. Before dealing with diagnosis from variation in the pulse, Fludd sets out again his theory of the circulation of the vital spirit in the blood in parallel with the movement of spirit in the universe. For him the contraction and expansion of the heart echoes the pulse of the universe. The opposing principles of light and dark, heat and cold and their reactions against one another can be seen at work in the human body as in the external world and can be measured in both by the weather-glass. In this general context Fludd cites Harvey's *De motu* as an authority for the circulation of the blood, the first printed reference to Harvey's book.

Case 9: The weapon-salve

In the final years of his life Fludd was involved in a controversy about the efficacy of the weapon-salve, a Paracelsian cure, which had already been the subject of debate on the continent. Fludd first defended the use of the weapon-salve in a passage of his *Anatomiae amphitheatrum*.

The weapon-salve was an ointment the active ingredients of which were skull-moss and mummy (human flesh from the body of a hanged man) and the patient's blood. The *weapon* which caused the wound was anointed with this salve while the wound itself was merely cleansed with urine.

According to Fludd the vital spirits in blood would set up a magnetic attraction between the blood in the salve and the patient's body. The curative power would pass through the air from the weapon to the patient effecting a cure without the need for surgery. For Fludd this process was entirely consonant with his view of the unity of the spiritual and physical worlds but for others, notably William Foster, it savoured of witchcraft.

Foster was the incumbent of the parish of Hedgerley in Buckinghamshire, an obscure opponent for an eminent London physician and philosopher. However, Foster's attack on Fludd, *Hoplocrisma-spongus, or a sponge to wipe away the weapon-salve*, was delivered in such a way that Fludd had no alternative but direct reply. Foster even caused the titlepages of his tract to be nailed to Fludd's door by night. The following extracts demonstrate the seriousness of his accusations:

> . . . but for his Weapon-Salve: whether that be Witchcraft or no? Surely his very defence of it is enough to make it suspected, himselfe being accused for a Magician, by Marinus Mersennus, with a wonder that King Iames (of blessed memory) would suffer such a man to live and write in his Kingdome. . . . For first, I deny that Scull-mosse or bones, Mummy and man's Fat have (though they be medicinable) any natural balsame or radicall humour . . . residing in them, sympathizing with the hyposticall balsame remaining in living man . . . Secondly, I deny that mans bones have their beginning and aliment from blood . . . Thirdly, I deny that any spirits reside in separated blood . . . Fourthly, I deny that the soule resides after any hidden manner in the spirits . . . Fiftly, I deny Master Doctors carrier, viz. his direct envisible line carrying the sanative vertue so many miles from the weapon to the wound. Surely this is Tom Long the Carrier, who will never doe his errand. . . . And so Master Doctors argument of sympathy, and his sympathizing Salve, cannot be salved to be naturall and sympathize with reason, though he hath fetched an argument from Dyers and Lyers, from the Divell, the father of Lyers to maintaine it.

Fludd's defence, *Doctor Fludds answer unto M. Foster, or the squeesing of Parson Fosters sponge*, was published shortly afterwards; the only one of Fludd's works to be written in the vernacular and published in London.
Without naming him directly, James Hart continued the attack on Fludd in his *Klinikae* whilst Fludd returned to the subject of the weapon-salve in his last work, *Philosophia Moysaica*. Fludd had no doubts about the value of the weapon-salve; he gave examples from his own experience of cures performed by this means; he had experimented on himself with 'northern mummy' and found it had a powerful effect. In his *Philosophia Moysaica* he defends the salve both in the context of William Gilbert's work on the magnet and from his own empirical investigation.

Case 10: Fludd against Kepler.

Fludd and Johannes Kepler (1571-1630) were both interested in theories on the harmony of the world. Between 1617 and 1619 both of them published books on this subject using the same publisher and both dedicated their works to James I. In content and method, however, the two authors differed so much that a controversy arose between them which continued until 1623 without arriving at a resolution. In his *Harmonices mundi* Kepler criticised Fludd saying that his theory of harmony, as expressed in *Utriusque cosmi . . . historia*, was based on arbitrary connections between different parts of the world whereas Kepler claimed that he could prove mathematically that there was a harmonic relationship between the distances and speeds of the planets and that therefore harmony existed in the world. Fludd answered Kepler in his *Veritatis proscenium* saying that this was not a mathematical matter. In his book he wanted to present a diagrammatic picture of the world, contemplation of which would give the reader a mystical experience of the ascent from earth to heaven. He believed that there was a spatial continuum between man and God. All beings were assigned to their place in a hierarchy. The spiritual ascent of man represented by the ascent of a staircase, started from the sublunar world in which we live, passed through the world of stars to the world of angels and culminated in God following the day of reckoning.

Fludd did not intend to prove his theory scientifically in the modern sense of the word. He was afraid that in Kepler's system of universal harmony, based on astronomy, the unity of nature would be abandoned. Kepler defended his theory in a treatise he called *Apologia*, justifying the restricted scope of his arguments by providing a new certainty for the human knowledge of the stars. In his second answer, the *Monochordum mundi*, Fludd reiterated his rejection of Kepler's limitation of the concept of cosmic harmony to the celestial world, since this would separate the other parts of the universe from God and interfere with the penetrability of the cosmos when man tries to ascend to God.

Case 11: Fludd against Mersenne and Gassendi

Marin Mersenne (1588-1648), educated in a Jesuit college, before he became a Franciscan, participated in the intellectual discussion of the early 17th century as an orthodox Catholic. He was very much afraid of the Rosicrucians, whom he considered wicked magicians, subversive agents and heretics. Robert Fludd seemed to him a typical Rosicrucian. Mersenne was not willing to accept that Fludd in his *Utriusque cosmi . . . historia* had described the beginning of the world by referring to sources from the Hermetic tradition as well as the Bible. Mersenne, in his own commentary on Genesis, *Quaestiones in Genesim* (1623) only used as authorities the Fathers and accredited doctors of the Church. On this basis he condemned all the magical and divinatory arts Fludd had taught, such as prophecy, physiognomy and chiromancy.

Six years later Fludd answered with a book, called *Sophiae cum moria certamen* (Strife of Wisdom with Folly), dedicated to prove Mersenne wrong point by point. Fludd was very much concerned to prove that his ideas were in agreement with the teaching of the church. His methods of refuting the attacks of Mersenne, therefore, consisted of using quotations from the Bible. Furthermore he made a distinction between divine and human magic, calling the second one evil, whereas he believed himself to be a divine magician.

Mersenne, instead of answering for himself, left the reply to his friend Pierre Gassendi (1592-1655), a scientist and philosopher. Gassendi published in 1630 *Epistolica exercitatio*, a criticism of Fludd's works that uses similar arguments to Kepler's texts. Gassendi, too, found that the descriptions of world harmony diagrammatically portrayed in Fludd's *Utriusque cosmi . . . historia* were not in accordance with the real dimensions of space. In opposition to Kepler and Mersenne, however, Gassendi thought that Fludd had never meant that the monochord (see case 13) should be taken as a statement of quantitative measurement but as "mere symbolism". Gassendi criticised Fludd for not clearly separating statements on physics and metaphysics. He thought the idea that all life is the product of alchemical processes would affect the Christian doctrine of God as the creator of the world out of nothing. But Gassendi did not accuse Fludd of atheism being content to judge his rival as heterodox.

Just as in his controversy with Kepler Fludd reserved the last word for himself. His *Clavis philosophiae et alchymiae* (1633) dealt exclusively with Gassendi's criticism using biblical quotations to refute theological attacks as he had done before in his argument with Mersenne. Fludd confirmed that he did not consider the Monochord of the world to be a natural thing but only a "most exact symbol of nature".

Case 12: Music

The encyclopaedic survey of arts and sciences Fludd undertook in his *Utriusque cosmi . . . historia*, had, without question, to include a treatise on music. The text of this was written originally for one of the students he had taught while staying on the continent between 1598 and 1604. As elsewhere, he tried here to give a comprehensive idea of the content on an engraved title page. This one showed the façade of a temple. The temple is symbolic: each of its architectural parts contains musical symbols that represent the sections of the treatise. For example, a lute in the engraving demonstrates that Fludd incorporated one section to instruct the reader on how to tune and play a string instrument.

The treatise itself introduced the reader to the system of intervals, the notation of pitches and rhythms, the rules of composition and, finally, to a mechanical instrument of Fludd's own invention.

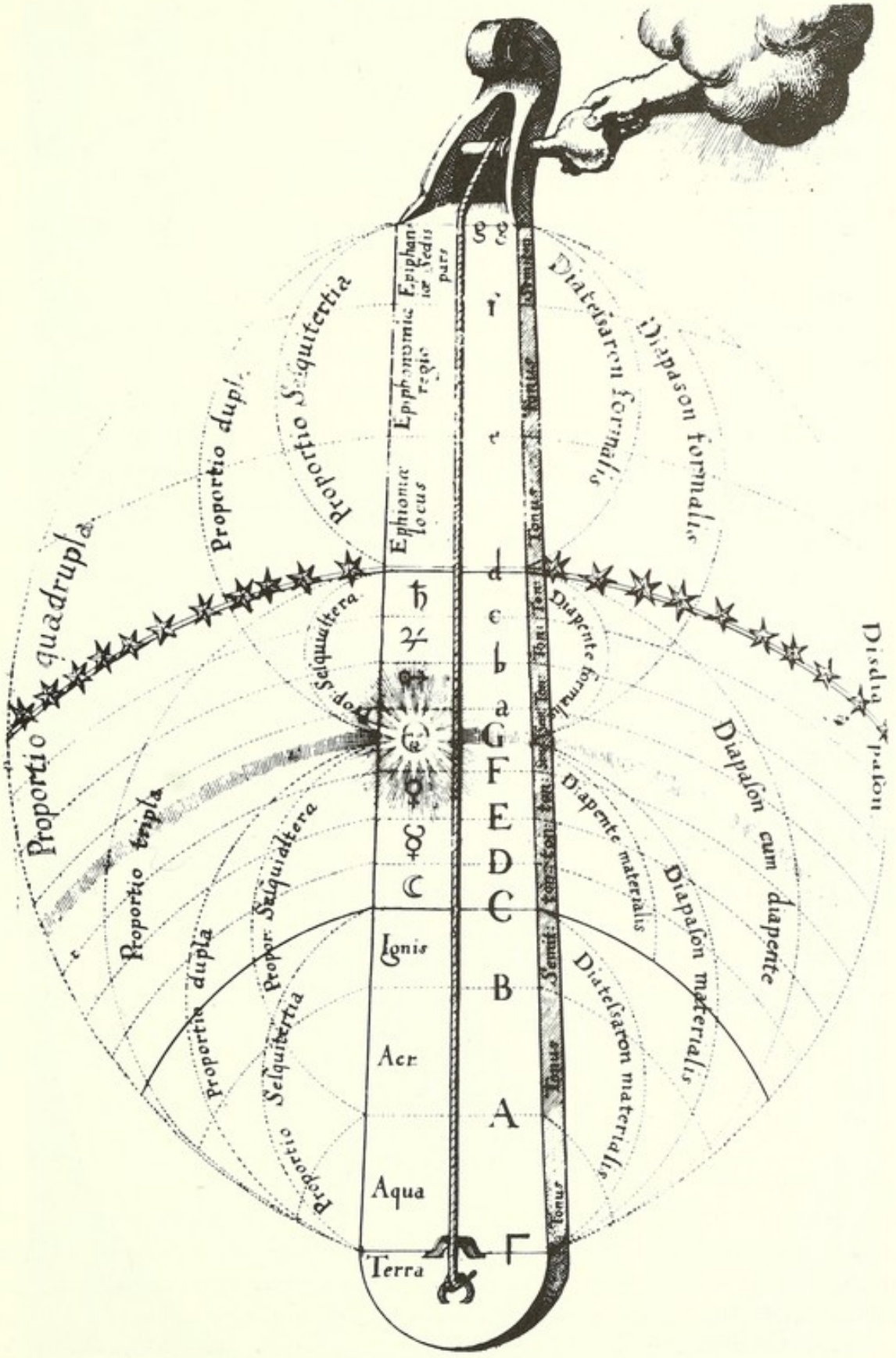
The content of his musical theory is rather traditional, being based on Boethius and Guido Aretinus, the two most influential musical theorists in the Middle Ages. It seems that Fludd never came into contact with the contemporary movement by Italian composers and theorists, such as Monteverdi and Vincenzo Galilei, which led to the birth of modern opera. But Fludd appreciated the new stylistic ideal of composition that was based on the simultaneous sounding of two or more notes. Like his Italian predecessors Vicentino, Zarlino and others, he designed a triangular table that classified all the intervals that would produce harmonic relationships when sounded together. Fludd viewed this as a means to aid and organize composition. The musical results however, which Fludd produced by this method and presented in his treatise, prove that having a sequence of chords is useful as a basis but is not a musical composition in itself.

Case 13: The monochord

Without exaggeration we can say that Fludd's theory of the harmonic state of man and world would have been impossible without music, that is, without the experience of pleasing sounds. The consonances in music provide an example of harmony which Fludd applied to man and the world, thereby 'proving' their harmony. Fludd used the monochord as a means of illustrating his idea.

The monochord is a Greek instrument with a single string, that was used by musical theorists especially to determine musical intervals throughout Antiquity, the Middle Ages and the Renaissance. The intervals, and particularly the consonant intervals, could also be described by numerical proportions which were in accordance with the relations of lengths of the string.

Fludd used the monochord mostly to depict the musical intervals and numerical proportions, but he also went further than this and integrated other relationships such as parts of the human body or the stars into the framework of the musical instrument, as the illustration shows. It is clear enough that Fludd meant to present in this way an ensemble of harmonies that was shown in its completest form in the *Monochordum mundi*. But he was never affected by the difference which exists for us between the harmony of an instrument and the symbolism of all the other harmonies.


Proportio quadrupla
Proportio dupl.
Proportio Sesquitertia
Diatessaron formalis
Diapason formale
Disdiapason
Proportio tripla
Proportio dupla
Proportio Sesquialtera
Proportio Sesquitertia
Diapente materialis
Diapason cum diapente
Diapason materiale
Diatessaron materialis
Ignis
Aer
Aqua
Terra

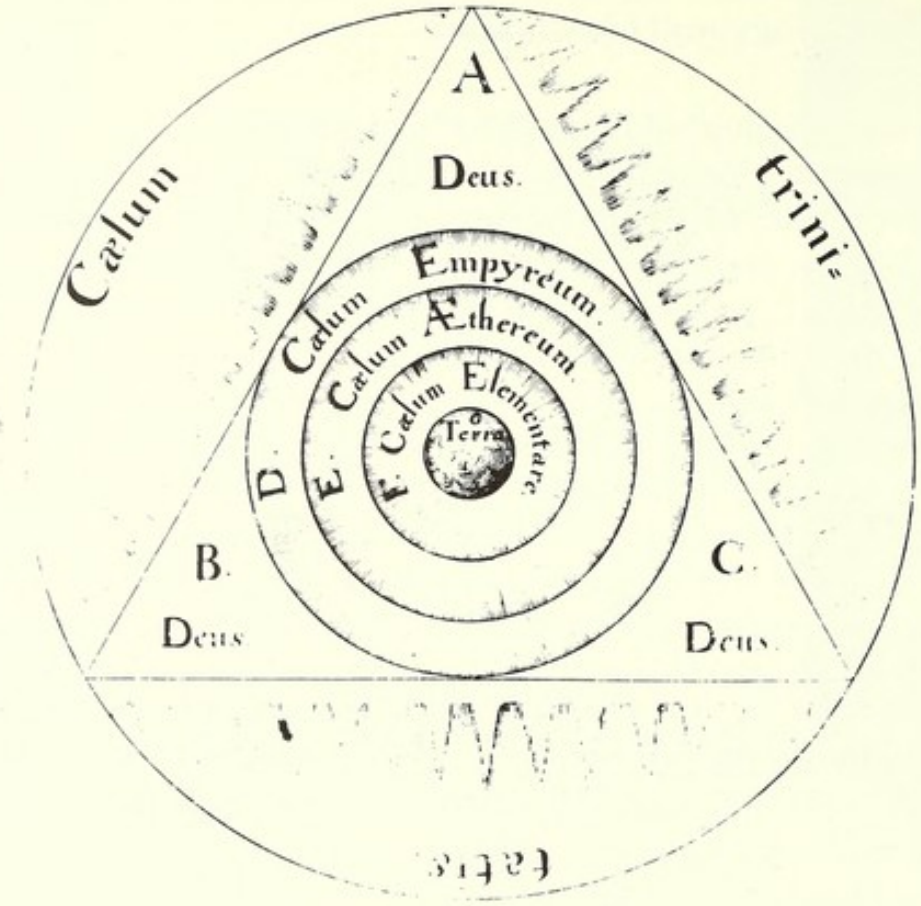

TOMVS SECVNDVS
DE
SVPERNATVRALI, NATURALI, PRÆTERNATURALI ET CONTRANATURALI
Microcosmi historia, in Tractatus tres distributa.
AUTHORE
ROBERTO FLUD alias de Fluctibus Armigero & Medicinæ Doctore Oxonienſi.
Oppenhemij Impenſis Iohannis Theodori de Bry, typis Hieronymi Galleri 1619.
Mens
Intellectus
Ratio
Hyerarchia ſuprema.
Hyerarchia media.
Hyerarchia infima.
cosmus
Epiphania.
Epiphonomia.
Ephiona.
Pituita.
Sanguis.
Cholera.
Angeli.
Archangeli.
Virtutes.
Potestates.
Principatus.
Dominationes.
Throni.
Cherubin.
Seraphin.

Case 14: Cosmology and Cosmogony

In the cosmology which Fludd presented in his works, the universe never ceased to be foremost a world for and of man. In the famous cosmic schemes which serve as the engraved title pages to the first and second volume of the *Utriusque cosmi . . . historia* the world and man are shown in their mutual dependance.
On the engraved title page of the second volume, illustrated here, we see in the middle the earth, with the three other elements water, air and fire, interpreted in their microcosmic meaning as three humours: phlegm, blood, choler. Then follow the seven planetary spheres with the signs of the zodiac. The correspondences between the signs of the zodiac and the parts of the body are clearly indicated: e.g. Aries is connected with the head, Taurus with the neck, Gemini with the arms etc. The outer circle depicts the supercelestial worlds with the nine orders of angels and the threefold hierarchy of man's spiritual faculties: Reason, Intellect and Mind. These are placed outside the material sphere in which man's body and soul are imprisoned. God is represented in the triangle outside the concentric circles, as is proper for the creator of heaven and earth. The engraving on the cover of this catalogue, the title page to the first volume, is limited to the world that is controlled by Time, personified as a figure pulling around the world of the planets and of men by a rope.
Closely linked to Fludd's cosmology are his theories concerning the creation of the worlds. In the first volume of the *Utriusque cosmi . . . historia* Fludd included three series of images which show different stages in the cosmogony. Man does not figure in these. The first series describes the creation of light out of the darkness, the division of the waters, the following chaos of the elements and the final order of the elements around the central sun, symbol of the divine within the material world. The second series shows the simultaneous creation of the three worlds. Fludd traces the creation of the three worlds to the first three days of creation described in the Bible, each of which begins from the creative word *Fiat*, "Let there be". A third series shows the creation, on the fourth day, of the stars, the planets and the sun, which give the second world their ultimate character.

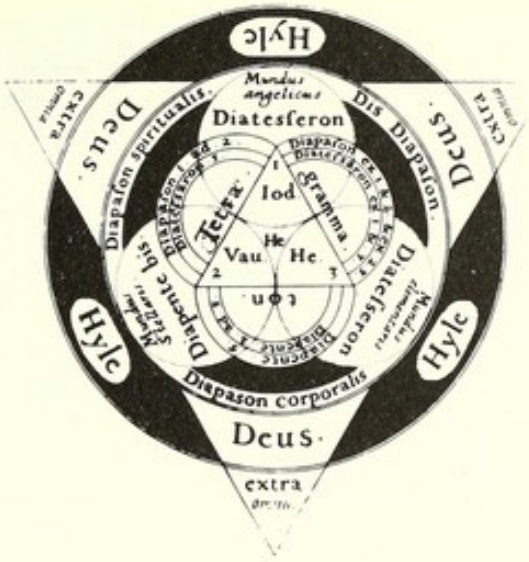
Case 15: Cosmogony and Theology

As the world cannot be considered without man, so the creation of the world cannot be contemplated without God. Fludd never engaged himself in the theological controversies on questions of how God ruled the world which then were dividing Calvinists, Anglicans and Catholics. But this doesn't mean that he did not speculate on the nature of God's creative powers. Fludd took his ideas regarding the birth of the universe as being a contraction of God, from the writings of Christian cabalists such as Francesco Giorgi. The importance of geometry in the formulation of his ideas on the creation of the world is worthy of note.



In the first diagram we see a triangle representing the threefold God inscribed in a circle, symbolising God in his greatest perfection. The circle represents perfection, since it encloses, given a certain radius a greater surface than any other regular figure; the triangle represents God at his greatest contraction, since it encloses the smallest surface of all regular figures. Thus we see how the one God has contracted himself in the threefold God, who contains within Himself the three worlds, which in their shape refer back to the perfection of God before the process of creation started.

In the second diagram we see a variation on the theme of triangle and circle. The triangle of the cosmos creating God is seen here in conjunction with the black matter. As a result of this the three worlds are created, which are linked together by the inverted triangle which symbolizes God's name, JHWH, which is composed of the Hebrew letters Iod, He, Vau and He. Combining the first three verses of the Gospel of Saint John, "In the beginning was the word: the Word was with God, and the Word was God" with traditional Jewish notions of great powers of God's name, Fludd speculated upon how the creation of the three worlds was nothing but an unfolding of the four letters of God's name into ever increasing material reality. In a further diagram from the *Medicina catholica* entitled "mirror of universal causation" we find both the letters of the tetragrammaton JHWH and the other names of God, which the cabalists claimed to be derived from JHWH (Ehieh, Iah, Elohim, El etc.) prominently displayed as the causes and stages from which the creation emanated. This diagram must be read as a circle starting from



the black triangle of nothingness, the concealed God in the night before creation, who then passes through the phases of dawn, the day of existence itself which is nothing but an unfolding of God's name, to the twilight at the end of days, when all is again united in the void and emptiness of the divine power.

Case 16: The art of memory

In order to be effective, Fludd thought that his ideas needed to be remembered by those who had been confronted with them. The importance of memory as the link between understanding and action is displayed in Fludd's analysis of the human brain. In the illustration memory is shown at the back of the head, placed between reason, intellect and mind on the one side and motion on the other. Fludd included in his *Utriusque cosmi . . . historia* a whole book on the art of memory, which was directly based on earlier treatises such as those of Giordano Bruno and Guilio Camillo. The art of memory was basically a simple system designed to increase the capacity and accuracy of memory. It consisted of an imagined structure like a building in which images could be arranged in a certain order. The images were meant to carry the thoughts and concepts that were to be remembered. The relation between the idea and its symbol or image was one of simple association. The structure in which the images were arranged served solely as a means of creating a coherence and order from the pool of memory-images in the brain. If the act of memorising was like taking a walk through a building and hanging pictures on its walls, the act of remembering was then to retrace one's steps through the same building, looking at the pictures to recall the original ideas with which the images were invested. One of the buildings Fludd proposed as an ideal memory structure was the stage of a Renaissance theatre with its ceiling decorated with the circle of heavens and the zodiac. Frances Yates believed that Fludd took the Globe theatre as his model in this section of the treatise.

This exhibition has itself been something of a memory theatre, presenting images from Fludd's works encapsulating complex concepts. We hope that it has shed some light on the 'high matter' of Fludd's philosophy.

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