

fore the *R. Society*. I have found out a Colour most exquisitely black, & comparable to the best ink; even in the use of the pen, and which will not change by Fire or Salt. This an *English* Vegetable yielded me, and for ought I know (for I have not repeated the trial on any thing else) the like method will succeed to good purpose. I am, &c.

An Account of some Books.

I. *Theodori Kerekringii M. D. ANTHROPOGENIÆ ICHNOGRAPHIA, sive Conformatio Fætus ab Ovo usque ad Ossificationis principia, in supplementum Osteogeniæ Fætuum.* Amstelodami, 1671. in 4°.

After that this Author had the last year published, together with a *Specilegium Anatomicum*, his *Osteogenia Fætuum* (both which were described N^o. 54. p. 1094. *seqq.* of these Tracts;) in the latter of which he had given an Account of the Formation of the *Bones* of an Humane Body, from the *Second* Month after Conception to the very time of the Infants Birth; he considered, that there were two things yet left behind, necessary to the perfect knowledge of *Ossification*; viz. *First*, what might be the Rudiments and Form of an Human Body, before it came to have any Firmness of Bones. *Secondly*, How after an Infants being born, the soft Bones acquire by little and little both their Hardness and Magnitude. Waving for the present the latter of these two, he undertaketh in these sheets (which are but *three*) to deliver the first Elements, as'twere of our Body, *from* and even *before* the time of Conception; affirming.

1. *Non tantùm in nuptis & secundis Mulieribus, sed etiam in Virginibus esse non minùs quàm in Gallinis ova ponentibus etiam citra Galli consuetudinem, ova quædam * pisi viridis magnitudine, in quibus humor latet intus, qui, uti aliorum ovorum albumen & vitellus, dum coquitur, indurescit: Porro, ova illa mulierum, pelliculis extrinsecus circumdari, quæ postquam in uterum prolapsa sunt ova coitu secundata, in Amnion & Chorion brevi commutentur; ova autem ipsa, duorum vel trium dierum spatio ad cerasi nigri majoris magnitudinem excrescere.*

* Vide Nic. Stenonis Musculi Descriptionem Anatomicam editam A. 1667. & descriptam N^o. 32. Ubi in Narrationum ibi annexarum posteriori dicitur Dn. Steno memorat, per digressionem, dari in Fœminis Testes ovario analogos. Ipse Author nosse observat etiam, Fallopium jam tale quid notasse.

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2. That he once met with and open'd a *fœtus* of but *three*, or, at most, *four* dayes old, (How he came to know and do this, almost incredible thing, the Book it self relateth;) and found in a little Globul, that Nature had already form'd therein the Rudiments of an humane Body, so as that he could plainly distinguish the Head from the mass of the Body, and see in the Head (though but obscurely) several pricked marks for Organs; the Body in the mean time being nothing but an undigested lump.

3. That in a *Fœtus*, *fifteen* dayes old, he could distinguish the Eyes, Nose, Mouth and Ears, Arms and Feet.

4. That in another, *twenty and one* dayes old, he was able to separate the matter prepared for Flesh and Skin, from that which was to be hardened into Bones. As also, that the Head seem'd nothing but a membrane distended with wind and spirits; but its Arms and Hands were figured, and the Fingers and Toes themselves distinct. Besides, that in that Cartilagineous part, designed for the Bones, he could number the Ribs.

4. That in one of the age of a *Month*, he discover'd some more consistency, and the upper and lower Jaw-bone represented by two Bony pricks; besides the *Claviculæ* form'd, and almost all the Ribbs distinct, the Shoulder-blade, and Elbowes, Thigh-bones, and both the Leg-bones, call'd *Focilia*; (where, by the by, he intimateth, that a certain Acid spirit in the world is the Efficient, as of all Firmness & Solidity, so of that in Bones.)

5. That *lastly* in a *Fœtus* of six Weeks he found, that it only differ'd in Bigness from that of *Two Months*, by him formerly described in his *Osteogenia*; but that the main thing, he took notice of in this, was the distinction of six small Bones in the lower Jaw, which after the production of the *Fœtus* into the world do coalesce into one.

All this the Author hath represented by *Schemes*, and endeavoured to confirm by answering what may be objected against his Observations. Meantime 'tis hoped, that what hath been performed a good while since, upon this very curious and nice subject in *England* by the Learn'd Dr. *Timothy Clark*, one of his Majesties chief Physicians, will at last be made publick to the ampler satisfaction of inquisitive Anatomists, and the more intimate knowledge of that most admirable contrivance and structure of Man.

II. PHILOSOPHIA VETERUM, é mente Renati Des Cartes
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breviter digesta, ab Antonio le Grand. Londini, apud J. Martin, R. Soc. Typographum, ad Insigne Campanæ in Cemiterio S. Pauli. An. 1670. in 12°.

This Epitome of the *Cartesian Philosophy*, digested by the Author for the use and advantage of those, that have inclinations to initiate themselves in the doctrine of that Famous Philosopher, begins this his Book by delivering the main Rules, by him esteem'd necessary to the acquisition of Truth. Thence he proceeds to those simple Notions, of which our Cogitations are compounded, and concludes this part with a short doctrine of the *Syllogism*.

Having succinctly dispatcht this, he passeth on-to treat of *Physiology*, and exploding the *Materia prima*, the *Substantial Forms*, the *Real Accidents* (as these are vulgarly taught) he maketh it his business to prove, That there are Bodies extended in Length, Breadth and Depth, to which belong *Figure*, *Motion*, *Scite*, &c. no otherwise than as some distinct *Modes*. After this, he considers the *Heavens*, *Earth*, *Water*, *Air* and *Fire*, and of what parts they are constituted. Next, he explains the Fabrick of Man; and giveth an account, how he comes to move and have perception. And he closeth all with a Demonstration (as he supposeth it to be) of the Existence of a God.

But we shall say no more of this, since we find our selves obliged to discourse somewhat more largely of an ample Treatise of this same Argument, lately come to our hands from *Paris*; viz.

III. *TRAITE DE PHYSIQUE* par Jaques Rohault. A Paris, 1671. in 4°.

After that the Author hath in this Ingenious Treatise assigned the Causes, why *Natural Philosophy* hath been sterile for so many Ages, and found them to be these, viz. the too servil addiction to Authority; the resting in Metaphysical, abstract and general speculations; the severing of Reason and Experience; and the Neglect of the *Mathematiques*; He divideth it into *Four* principal parts.

In the *First*, he treateth of the *Body Natural*, and its chief Proprieties, Divisibility, Motion and Rest; as also, of the Elements and the sensible Qualities; where he insisteth at large upon the Explication of the Nature and Qualities of Vision, not scrupling to affirm, that upon this subject alone he hath collected

lected and deliver'd more Truths in eight or nine Chapters, than are contained in many great Volumes, which treat of Opticks, Dioptricks and Catoptricks after the manner of the Antients. In this part 'tis chiefly that *Aristotle*, but especially his quarrelling and clashing Commentators and Followers, are taken to task; the Author representing the *Peripatetick Principles* as altogether insignificant and useles, for a rational **Explication of any effect** in Nature, and taking notice, that *Privation* (one of those principles) is not in things nor concurs to their composition; that *Matter* (another principle) is, according to them, a something I know not what, and *Form* (the third) such another I know not what; as if giving a meer Name to a thing not known, were enough to make it known. Besides which, he observeth, that the same Sect hath introduced in Philosophy store of specious notions, altogether Chymical, as Nature's *Abhorrency of a Vacuum*, *Attraction*, *Sympathy* and *Antipathy*, &c. invented to give a reason in shew of what was not at all understood. For, saith he, what doth it teach a man of the Nature of a *Loadstone*, to say, it hath an *Attractive* vertue, or a *Sympathy* with Iron. And the *Fear of a Vacuity* answers a Question no more; than if a man, being asked, *How the Wood came to Paris* out of remote Provinces, should answer, It came there by the *Fear of Cold*, that is, answer from the *Final* cause, when the *Efficient* is demanded. Moreover, he rejecteth the *Aristotelian Elements*, as well as the common *Chymical* ones, and endeavours to establish the three *Cartesian*; proceeding from the *First Divison* and *Motion*, supposed to have befalln the Uniform Matter produced by the first Author of things. He noteth further, that the *Peripaticks* explain not to any purpose, wherein the Sensible Qualities do consist, teaching nothing satisfactory of *Siccity*, *Humidity*, *Hardness*, *Fluidity*, *Heat*, *Cold*; *Taste*, *Odour*, *Sound*, *Light*, *Colour*, &c; that they make Vessels burst *ex metu Vacui*; and assign the cause of the roundness of Drops to be the Mutual Love, which the parts of the same Liquor have for one another, whence a close union, and so a roundness; that they affirm of Heat and Cold only what they *do* (and that erroneously too) and not what they *are*; that they teach nothing of what maketh a Body savoury, sonorous, lucid, colour'd; that they make a great but vain shew with their unconceivable *intentional species*; that they assert *Vision* to be made in the *Chrystallin*, &c.

In the *Second* part he treateth of the *System of the World*; according to the Three celebrated Hypotheses, of *Ptolomy*, *Copernic*, and *Tycho*, but giveth the preference to the *Copernican*, as the plainest and the most rational; esteeming mean while, that, as to the scituation of the parts of the Universe, *Tycho* agreeth with *Copernic*, except that he maketh the Firmament to have the Earth for its Center; so that all the difference between these two Opinions as to the Earth, related

ted to the Fluid matter of the World through which it passeth, consists only in this, that *Copernis* speaketh of the motion of the Earth, as one would do, that being to tell how he had been in a Coach from *Paris* to *Orleans*, would mark a certain way, and say, he had passed over it by the motion of a Coach drawn by horses; whereas *Tycho* would speak as another man, who though he had likewise been in a Coach from *Paris* to *Orleans* the same way, yet would not acknowledge any motion neither in the Coach nor in the Horses, but maintain, that the *Way* it self had moved, and the wheels of the Coach had only turn'd about their Axle-trees, and the Horses done nothing but lifted up their legs, to let the way slide away under them. He observeth further that the *Copernican* systeme rightly understood attributeth no motion at all to the Earth: For, Motion being taken for nothing else than for a successive application of a Body to the several parts of the immediately encompassing and neighbouring Bodies, 'tis plain, that what is call'd the *Diurnal* motion of the Earth, belongs rather to the Mass compos'd of the Earth, the Seas, and the Air, than to the Earth in particular, which is to be esteem'd in a perfect Rest, forasmuch as she is carried away by the Torrent of the matter wherein she swims; just as we say, that a Man is at rest that sleeps in a ship, whil'st the ship is indeed in motion: And so that which is called the *Annual* motion of the Earth, doth not all appertain to her, nor even to the compos'd mass of Earth, Water and Air, but to the Celestial matter, which carrieth this Mass about the Sun. After this he discourseth of the Nature of the Stars and their influences. Next, he renders an Account of *Gravity* and *Levity* (which for want of premises, he could not speak of in the first part) and maketh Gravity nothing else but a less Levity. And lastly, he concludeth this part with the doctrine of the *Flux* and *Reflux of the Sea*, as depending from the Pressure of the Moon.

In the *Third* part he explains the nature of the *Earth*, and Earthly Bodies, that is, such as are either contain'd in it or are about it, as the Air, Water, Fire, Salts, Oils, Mettals, Minerals, and Meteors. Where, among many other Remarques, he declareth, that though the Transmutation of baser mettals into Silver or Gold be not *absolutely* impossible, yet *morally* 'tis; forasmuch as men not knowing in particular, which is the Figure and Size of the little particles that enter into the Composition of Mettals, nor the shape and size of the other ingredients, that may be necessary to effect this Transmutation, nor have yet found the secret to unite them together; that therefore it may very well be concluded, that if it be true what is said of some Chymists having formerly converted Lead into Gold, it hath happen'd by so great a chance, as if a handful of sand being let fall from on high upon a Table, the grains had so orderly ranged themselves, as to make one read distinctly a page of *Virgil's Aeneids*.

In the *Fourth* he hath endeavour'd to comprife all what he thinks is hitherto with any certainty known of the *Body Animate* : where, amongst a great number of other *Phænomena*, he giveth a particular explication of *Fevers*, esteeming, that all the strange Symptoms thereof may be very well explain'd by only supposing, that a little portion of our Blood, or of some humor mixing with it when it passeth to the Heart, comes to be stop'd by some cause or other, in some place of our Body, whence it begins not to flow but at the end of a certain time, and when it is so corrupted that it somewhat resembleth *Green Wood* in its manner of kindling, that is to say, this Wood being cast into the Fire, seems at first to have no disposition at all to take fire, but appears rather capable to extinguish it ; so also this portion of corrupted humour is at first indisposed to be heated and dilated, when it comes to pass through the Heart ; but then as the *Green Wood* burns at length more fiercely than what is *Dry* ; so this humour may at last be heated and rarified much more than the Blood is in its ordinary temper, &c.

IV. *Novæ Hypotheseos de PULMONUM MOTU & RESPIRATIONIS USU Specimen.* Londini 1671. in 8°.

The *Anonymous* Author of this small Tract being of opinion, that none of those, that have hitherto written of the *Motion* of the *Lungs* and the *Use* of *Respiration*, have lighted upon the truth ; undertaketh to shew, that the *Lungs* do not, as hath been hitherto received, follow the *Motion* of the *Thorax* and *Diaphragme*, nor are moved and filled, like *Bellows*, because they are distended ; alledging that he hath observed from the shape and Scituation of the *Diaphragme*, and from its Connexion with the other *viscera*, and the *Breast* and *Abdomen*, that the said *Diaphragme* cannot be moved up and down, or the *Chest*, by the *Systole* thereof, be dilated and *Inspiration* performed ; forasmuch as it is both above and below, by the intervention of divers membrans, so connected with other parts, that it can neither rise nor subside, no not so much as be impelled up and down : But that this *Riff* can only be moved forwards *extrorsum* and backwards *introrsum* ; forwards in *Inspiration*, backwards in *Exspiration*. And esteeming this to be its proper motion, most suitable to its *Fabrick*, *Scite*, and the whole work of *Respiration* ; he declareth openly, that the *Motion* and *Inflation* of the *Lungs* depends not upon the *Motion* of the *Thorax* and *Diaphragme*, but that, for *Inspiration*, the *Lungs* are dilated by the *Elastick* force of the *Air* rushing in ; and that upon their *Dilatation* follows the *Intumescence* of the *Diaphragme* as of a *Sail*, and its protrusion forwards, and thereupon further the propulsion of the *Thorax* : And that for *Exspiration*, the *Diaphragme* is again contracted, and restored to its just figure and consistence, and the now effete, clogg'd and spring-less *Air* driven out : This Author conceiving, that as long as the force of the *inspired* *Air* exceeds the *Elastic* power or the resistance of the *Air* or the halituous substance

stance included in the Chest, so long lasts *Inspiration*; but when the force of the included Air, by means of the Contraction of the Diaphragme and its pressure, overcomes the strength of the inspired Air, then begins and so long lasts *Expiration*. So that, according to him, *Respiration* is nothing else, than a Reciprocation of the Air inclosed in the Chest, and an Alternate motion of the Lungs and the Diaphragme; whereby the external Air becomes the first origin of all the Animal motion.

As to the *Uses* of Respiration, he esteems, both from a certain Relation to be found in *Fontana*, and from the structure, Motion and Scite of the Diaphragme, that there are other Uses of it, than the Cooling of the Heart, the Fanning of the Blood, the Discharge of steams, the Conveyance of a Nitrous aliment, the Comminution and subduing of the Blood, and its intimate commixture with the Chyle, and the promotion of the Blood from one ventricle of the heart to the other; for all this, he saith, is perform'd by the help of the *Lungs*, (which is but *one* Organ of Respiration:) But then he would maintain, that by the other Instrument of Respiration, the *Diaphragme* and its Pressure, there are effected such other things, as are no less necessary to the preservation of life, than the former; *viz.* The continual Pressure of the Chyle out of the stomach into the intestins, and from thence by the Milky veins into the Glanduls of the Mesentery, and so further into the Chyliferous Channel; as also the Motion of the Blood out of the *Porta* into the Liver, and out of the Liver into the *Cava*; and that of the Gall into the Bladder of Gall, and thence into the common *ductus* and the Guts: perhaps also that thence proceeds the first Natural Instinct or Perception, exciting also the Animal motions.

Which being thus proposed and deduced by him, he endeavours to satisfy the objections that may be made against this Hypothesis; for which, and many other particulars, we refer to the Author himself.

N O T E,

AT the end of p. 2125. the Reader is desired to add, to prevent all mistakes, what the Author of that Letter signified April 21. 1671. to the *Publisher*, since that was Printed, *viz.* That in a very sharp Frost the Bleeding is stop'd till the weather begins to change; but in a moderate Frost, though it stop in the night, yet in the day-time, if the Sun shines out, the Trees will bleed, though the Frost continue. What we said in our Letter, Printed N^o. 57. p. 1166. l. 45. that Cold did not promote but hinder bleeding; we find holds true, if the Cold be without Frost.

Besides, p. 2126. at the end of Mr. *Wilkoughby's* Letter may be added, what he further imparted in the above said Letter of Apr. 21. *viz.* That since his last, he had made tryal upon *Walnut* and *Sycamore* as to the transmitting of Water, and found, that the water runs through both. but nothing so fast as thorough *Birch*.

E R R A T A. In Numb. 69. p. 2091. l. 24. r. and *purse*.
In this Numb. 70. p. 2128. l. 17. r. 9th *instant*. p. 2130. l. 3. r. *descent*.

L O N D O N,

Printed for *John Martyn*, Printer to the *Royal-Society*. 1671