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ON PROPORTION
AND BEAUTY





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PRESENTED BY
PROF. CHARLES A. KOFOID AND
MRS. PRUDENCE W. KOFOID









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$\frac{6}{15}$

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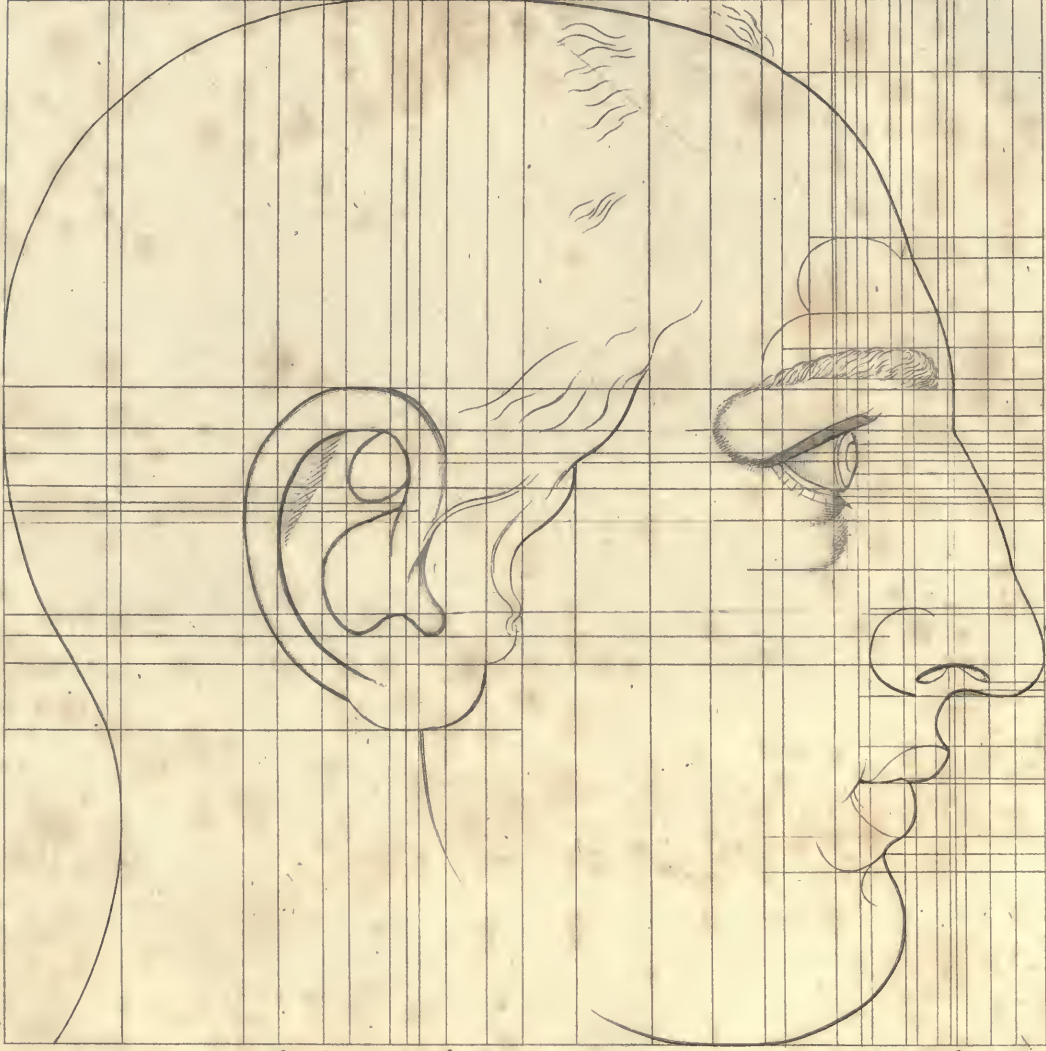
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15:16

10:13
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7:10

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21:32
17:50

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6:8

1:12

9:16

8:25

16:30

1:2

7:17

7:18

3:10

P A N H A R M O N I C O N

DESIGNED AS AN ILLUSTRATION OF AN ENGRAVED PLATE,

IN WHICH IS ATTEMPTED TO BE PROVED,

THAT THE PRINCIPLES OF HARMONY MORE OR LESS PREVAIL

THROUGHOUT THE WHOLE SYSTEM OF NATURE;

BUT MORE ESPECIALLY IN THE HUMAN FRAME:

AND THAT WHERE THESE PRINCIPLES CAN BE APPLIED TO WORKS OF ART,

THEY EXCITE THE PLEASING AND SATISFYING IDEAS

OF PROPORTION AND BEAUTY.

BY
Francis
F WEBB.

I am inclined to believe some general laws of the Creator prevailed with respect to the agreeable or displeasing affections of all our *senses*; at least the supposition does not derogate from the wisdom or power of God, and seems highly consonant to the simplicity of the Macrocosm in general.

Sir ISAAC NEWTON.

THE HISTORY OF THE

REIGN OF

CHARLES THE SECOND

BY

JAMES OGLETHORPE

ESQ.

LONDON

1719

LONDON:

PRINTED BY NICHOLS, SON, AND BENTLEY,

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PANHARMONICON.

ALTHOUGH the engraved Plate to which the following pages refer, may be sufficient to afford a general idea of the curious and pleasing subject which is meant to be illustrated thereby; yet the Author, in compliance with the request and advice of some learned friends, ventures with great diffidence, and all imaginable deference to the taste and judgment of his readers, to offer something on the subject of which it treats, in general, as well as in particular respecting the ingenious Artist, the late Giles Hussey, Esq. by whose accurate and elegant delineations, he has been enabled to illustrate this his own imperfect attempt: in which he really has, and pretends to have, little other merit, but that of bringing into one point of view the observations of far more learned and accomplished men. And from hence alone it is, he entertains the hope, that this his imperfect attempt will meet with a candid and liberal reception from those of the highest class of Science; who may, perhaps, from mere curiosity, be induced to inspect the Plate, and peruse these imperfect, concomitant pages. For imperfect indeed they are, when the subject of them is considered; and will appear more so, when the cause which first gave rise to the design, and its subsequent execution, are made known.

This was at first undertaken merely for amusement, when the Author from bodily indisposition was unable to exercise his mind by more serious study, and closer application. The subject ever was, from his earliest days, up to those of his present very advanced years, pleasing and attractive. And he feels at the present moment of recital, though, with abated energy, the rapture which he experienced when in the course of his juvenile studies, that beam of

B

to man only, it is the first, the most profound, most secure, and unshaken foundation-stone both of Physiognomy and the delineating art." And truly wonderful is it to reflect on what we behold, that whilst such a generic, characteristic *similarity* obtains throughout the several classes of beings, but more especially in man; such an identical, personal, specific *dissimilarity* should exist, that no two human beings are to be found, amidst the countless multitudes who do, or have ever existed, exactly alike; nay who do not most manifestly differ in form, in voice, in motion, and in all respects. And although the final cause, and the consummate wisdom of the great Creator be manifest in such a characteristic and identical difference, as it effectually prevents that infinite confusion, and even destruction, that would otherwise prevail; yet the fact is no less astonishing.

Thus every individual of the human race is, if we may be allowed the expression, himself, and himself alone: and that in all respects whatever, except in the general character which he has in common with those of his species.

This fundamental principle admitted, it follows, that human countenances differ in those degrees which are in proportion to the number of the individuals of the human race: which number, in the present case, may be taken for *infinite*. Nor, according to our ingenious Artist, is this all: for he was wont to say, "*that whatever was the cast of features, or character of any human face, this cast, or character was the result of the combination of the several parts forming the whole.*" And further, "*that be the countenance whatever it may, all things remaining, it could not be otherwise than it is; nor can it be altered but for the worse, as every human face is in harmony with itself; even though it should be* HARMONIA DISCORDS."

Agreeably to these principles, Mr. Hussey would say on sketching a likeness, "*I have now made this drawing as like the original as I am able: and my eye, as well as my hand, is pretty accurate. But how shall I be certain of the exactness of my drawing? and without this, the exact similarity of the sketch and the original, cannot possibly be determined; and the least deviation from the truth of expression, though minute as a stroke, will detract so much from the likeness.—Why, says he, as every face is in harmony with itself, we must seek for some scale applicable thereto; and thereby discover the system on which that particular countenance is formed. In other words, what is the key-note of the face. Now this scale, by long study, experience, and use, I*

find to be the Harmonic scale. This I apply to the delineated head, and observe the coincidences of all the minute parts of the head with the several parts, or harmonical divisions, of the scale; and if in my drawing I find any the least deviations in any drawn line from those points of coincidence which ought in any given instance to take place, I thus far rectify the drawing; and by such rectification, or correction, obtain the utmost possible likeness to the living Archetype." But as all this will be rendered more plain, and be comprehended the better by a drawing illustrative both of the principles and their application; a head engraved from an original drawing for this purpose, by Mr. Hussey, is annexed: and also the following letter to a friend on this subject* (printed in the improved Edition of Hutchins's History of Dorset,) which will mutually explain each other.

DEAR SIR,

All the numbers of your Monochord are discoverable by my rules of practice, and in particular cases will answer when beauty and delicacy of character are not required. The human features are so modified and varied by nature, that without a much greater number of major and minor intervals than are generally known to investigators of harmonical combinations, it will be impossible to express them. We agree perfectly in all the characters of the fundamental intervals. We differ in the major 4th and lesser 5th. I express them by $\frac{5}{7}$ and $\frac{7}{10}$, you by $\frac{32}{43}$ and $\frac{45}{64}$; the difference by the Rule of Three is,

$$\begin{array}{r|l}
 5 : 7 :: 32 : 44\frac{2}{3} & 7 : 10 :: 45 : 64\frac{2}{7} \\
 \hline
 7 & 10 \\
 \hline
 5) 224 (44\frac{2}{3} & 7) 450 (64\frac{2}{7}
 \end{array}$$

To find my number between the 5th and 4th, put down the ratios of the 5th and 4th as extremes.

- 2 : 3 = the 5th.
- 7 : 10 = the lesser 5th.
- 5 : 7 = the major 4th.
- 3 : 4 = the 4th.

The sum of the extremes is the major 4th, and the sum of the major 4th and 5th, is the minor 5th.

* For the use of this plate, as well as for that prefixed to this work, the Author acknowledges himself indebted to the liberality of Mr. Nichols.

The minutiae of this construction may be useless, for aught I know, in the harmony of sounds; but they are necessary in the formation of a human head.

In the horizontal base the numbers are taken as concords to the minor octaves. Their relations will be found if the denominators are multiplied by 2, and the numerators are subtracted.

$$\begin{array}{r} \text{Thus, on the left hand, } \frac{1}{3} : \frac{2}{9} \times 2 = 10 : 8 \\ - 1 : 2 \\ \hline = \frac{9}{10} : \frac{8}{9} \end{array}$$

These are your seconds.

To find the numbers of the nostrils between the extremes,

$1 : 2$ } multiply
and $2 : 3$ }

$$\begin{array}{l} 1 : 3 \text{ by } 3 = 3 : 9 \quad \text{Then } 3 + 1 \text{ and } 9 + 2 = \frac{4}{11} \\ 1 : 3 \text{ by } 10 = 10 : 30 \quad 10 + 1 \text{ and } 30 + 2 = \frac{11}{3} \\ 1 : 3 \text{ by } 16 = 16 : 48 \quad 16 + 1 \text{ and } 48 + 2 = \frac{17}{6} \end{array}$$

The eye situated between $\frac{1}{3}$ and $\frac{2}{3}$ of the major octave, requires more numbers to form it than any other feature: and the rule to find them is very simple and commodious.

Place the extremes

$$\begin{array}{ll} - 2 : 3 = 5\text{th} & 4 : 7 = 7\text{th minor} \\ 7 : 11 = 5\text{th major} & 5 : 9 = 7\text{th} \\ 5 : 8 = 6\text{th minor} & 6 : 11 = 7\text{th major} \\ 3 : 5 = 6\text{th} & 8 : 15 = 7\text{th major} \\ - 7 : 12 - & - 1 : 2 = \text{octave.} \end{array}$$

Take the sum of the extremes — 3 : 5.

Then 3 + 2 and 5 + 3 — 5 : 8

8 + 3 and 5 + 2 — 7 : 11.

Then descending,

$$3 : 5 + 1 : 2 = 4 : 7 + 1 : 2 = 5 : 9 + 1 : 2 = 6 : 11.$$

Resolve the octave ratio 1 : 2 into 2 : 4. Then 2 + 6 and 4 + 11 — 8 : 15.

All these numbers are of the first order. Between them are found those of the second: for example,

$$\begin{array}{l} 3 : 5 \\ 7 : 12 \\ 4 : 7 \end{array} \left. \vphantom{\begin{array}{l} 3 : 5 \\ 7 : 12 \\ 4 : 7 \end{array}} \right\} \text{ is an arithmetical mean between } 2 : 3 \text{ and } 1 : 2.$$

Two more numbers remain to be found, to form the under eye-lid, which are not in your monochord. To find them, take the arithmetical mean 7 : 12 for one extreme, and 1 : 2 for the other. Multiply 1 : 2 into 14 — 14 : 28

Then 14 : 28

+ 7 : 12

— 21 : 40 is one required.

Multiply 1 : 2 into 24 — 24 : 48

+ 7 : 12

31 : 60 the other required.

Without these 10 means between the 5th and octave, the eye will be incomplete. Therefore the sum of the means and extremes taken together, must be a modus of the 5th and octave.

The sum of the Numerators,

2 . 7 . 5 . 3 . 7 . 4 . 5 . 6 . 8 . 21 . 31 is 99 — 18 ÷ 9 — 2, Rem. 0.

3 . 11 . 8 . 5 . 12 . 7 . 9 . 11 . 15 . 40 . 60 is 181 — 10 ÷ 7 — 1, Rem. 3.

Otherwise, 18 ÷ 7 — 2, rem. 4.

10 ÷ 7 — 1, rem. 3.

Thus the relation of the octaves, and of the 5th to the major and minor octave, is complete; and the sums of the quotients and key-notes will resolve them all into a 5th. 2 — 4 — 6.

1 — 2 — 4.

All the projections of the features are found by similar additions of extremes and means, within 4 octaves of the transverse fundamental; so that nothing is left to conjecture: and the order of nature in harmonical progression of numbers, becomes the rule of art; from which we cannot deviate without falling into error.

I remain, &c.

G. HUSSEY.

These specimens of our Artist's peculiar method of deducing his harmonical principles, and applying them in the manner described, the Author presents as matter of curiosity, and a proof of singular ingenuity at least, in whatever light they may appear to some who have not much attended to this very curious subject; and less to the particular application of these principles, although known, to that art, in which, by their assistance, Mr. Hussey so confessedly excelled. How far the whole of what that eminent man has advanced, may

claim the serious attention and sedulous practice of the young, or of the more experienced, Artist, the Author presumes not to judge or determine. But it is universally and unequivocally granted, that Mr. Hussey greatly excelled in point of accuracy of drawing, and in the elegance, beauty, and dignity of the human form, and more especially of the human head; of which the one now presented is a specimen; and this he always declared he was enabled to do by these principles *alone*. Therefore, it is but fair to conclude, that whatever opinions others may form of this matter, these principles afforded special assistance to our extraordinary Artist. And as far at least as this goes, we have a proof from *fact* of Mr. Hussey's system, and of the *principles* on which he *declared* it was founded.

That all Sciences and Arts, from those of the highest to the lowest class, have their first elementary principles, is universally acknowledged: and whatever these are, every one who is desirous of becoming a proficient in that Art or Science which depends on them, should be well grounded, and so constantly employed in their application, as to gain such a practical knowledge and habitually easy practice in the science or art, as should render frequent recurrence to the principles unnecessary. For by this means the energies of the mind are transferred to the senses: and the eye and hand of the Artist become more expert and exquisite; the one in discernment, the other in execution.

In this place, and in this connexion, it would be a kind of injustice both to Mr. Hussey and to his art, to withhold the gratuitous, and honorable testimony, of two very eminent and distinguished Artists in favour of his great and acknowledged merits.—The first which we shall mention, is one of the highest authority, being no less than that of the President of the Royal Academy, who no doubt will pardon the liberty which the Author takes by introducing his illustrious name on this occasion; and informing his readers, that several years ago he had the pleasure and satisfaction of hearing from the President himself, free, unqualified, and liberal praise of Mr. Hussey at the time he produced two penciled drawings of our Artist, purchased at the sale of the late M. Duane, Esq. These were pronounced, by this able and competent judge, as specimens of extraordinary excellence, and of truly Grecian elegance, taste, and beauty.—The worthy President being questioned by the Author, if he had ever seen any of Mr. Hussey's performances in oil colours, replied in the affirmative; and mentioned two, the one a Bacchanal, the other a Bacchanté, both in the

collection of his Grace the Duke of Northumberland. On the former of these very high praise was bestowed: the latter was spoken of in such a tone, and in such terms, as led the Author to conclude that it possessed excellence almost above the reach of praise.---From such high, established authority there will scarcely be any appeal.

At mention of the name of the other illustrious and competent judge, who has passed sentence on the merits of our Artist, the tributary, heart-derived tear for unrewarded, suffering merit, exasperated by feelings excited to morbid sensibility, must spontaneously and irrepressibly flow—BARRY is that name. In the great, and inadequately-remunerated work of this accomplished Artist, with which the Grand Room of the ARTS and SCIENCES in the ADELPHI, is honoured and adorned, this name, and the merits of him by whom it was borne, will be for ever recorded.---The Artist is himself the best eulogist of his fame.

In the account which Mr. Barry published in 1783, of the comprehensive design of these pictures, he informs us, that in the concluding picture of the series, which occupies one whole side of the room above forty feet in length, it was his wish to bring together in Elyzium, those great and good men of all ages and nations, who were cultivators and benefactors of mankind.---It forms, as he expresses it, a kind of apotheosis, or more properly a beatification of those useful qualities which were pursued through the whole work.

In this his Elyzium he not only assigns to each beatified character his appropriate place, and attendant companions; but also the reason why such particular station and associates are allotted to them.---And thus he speaks of our Artist:

“ Behind PHIDIAS I have introduced GILES HUSSEY, a name that never occurs to me but with fresh grief and shame, at the mean wretched cabal of mechanics, for they deserve not the name of Artists, and their still meaner assistants, that could have co-operated to cheat such an Artist out of the exercise of abilities, that were so admirably calculated to have raised this country to an *immortal reputation*, and for the *highest species* of excellence.---The public are never likely to know the whole of what they have *lost* in Mr. Hussey; the *perfections* that were *possible* to him, but a very few Artists can *conceive*; and it would be time lost to attempt giving any *adequate* idea of them in *words*. My attention was first turned to this *great character*, by a conversation I had

early in life with Mr. Stuart, best known by the name of Athenian Stuart. The discourses of this truly intelligent and candid Artist, and what I *saw* of the works of Hussey, had altogether made such an impression on my mind, as may be *conceived*, but cannot be *expressed*. With fervour I went abroad eager to retrace all Hussey's steps through the Greeks, through Rafaele, through dissected Nature, and to add to what he had been torn away from by a laborious and intense study and investigation of the Venetian School.---I endeavoured to recommend myself to the acquaintance of such of Mr. Hussey's friends who were still living; who all spoke of him with delight; and from the whole of what I could learn abroad, added to what I received from my friend Mr. Moser, since my return, Hussey must have been one of the most inoffensive, most amiable, friendly, and companionable of men."

This candid, generous, and noble tribute of one great Artist to the memory and abilities of another, does equal credit to them both.

Whatever the opinions may be which are formed of our Artist, and of his peculiar mode of applying the principles of harmony, the general doctrine that these principles do obtain throughout the great system of Nature, is of high antiquity. The Chaldæan philosophers of the earliest ages, who read the heavens as well as the great volume of Nature which this earth in such an infinity of characters, written by the hand divine, opened to their view, taught this doctrine, *that the universe abounded with images of celestial truth; among which Harmony was the chief*.---The sublimity of the doctrine, indeed, according to the opinion of some, carried them into the regions of extravagance; as their enquiries were not stopped till they arrived at the GREAT FIRST CAUSE of ALL. For PYTHAGORAS, who had drank deep of the delightful and exalting streams of this primitive philosophy, hesitates not to affirm, "*that the deity himself was NUMBER and HARMONY*."---The divine Plato, as he has been called, and perhaps not improperly, taught, and somewhat improved, the same doctrine. Philosophers also of later ages have been captivated by the sublime truths which they discovered, or thought they discovered, in the lessons of these ancient sages. Of this, that very learned and laborious scholar, ATHANASIUS KIRCHER, has afforded an illustrious instance, by applying the principles of harmony even to the inanimate parts of nature and to vegetables (as appears in the plate to which these pages relate) as well as to the human form in its several proportions. Vide Musurgia, Ed. Hared Fran. Corbeletti, Romæ, p. 402.

Nor was he content to stop here, and confine himself and his principles to our sublunar sphere; but with a bold flight, like our immortal MILTON, "Into the heaven of heavens he presumed," and wrote "*de Harmonia hierarchica, seu Angelorum distributorum,*" &c. — Vide Musurgia sub fine.

But these were bold and daring flights; to which, — as some learned Men have observed, — "*the old philosophy held out a fascinating and flattering lure.*" — Let us, therefore, descend from this elevation down to that temperate clime of calm Philosophy in which Newton breathed the air of inspiration; and whose eye, quickened almost to angelic intuition, saw heaven-born Truth clear of the dazzling confusing light, as well as from the mists and clouds of error, in which she had been for countless ages involved; and by which all her native charms, simplicity, and beautiful proportions, had been obscured; but whom we now behold throned by Harmony and Science on the adamantine rock of DEMONSTRATION.

But we must not omit in this place and connexion, noticing a modern performance well worthy the attention of the curious, intituled HOMOGRAPHIA, an Essay on the proportions of Man's body; and of the origin and harmony of Numbers—by W. S. Stevens.

The Author observes, "*The subject is Man, the first and most interesting object of human investigation.*" "*The whole reasoning,*" he says, "*of the Essay, and the Appendix, (which is singularly ingenious, and original) is founded on the Equilateral Triangle; to which Figure have been ascribed great properties and powers by the Sages of most of the ancient nations of the World—Hebrews, Indians, Bramins, Persians, and the Chinese.*"

It is somewhat remarkable, that Mr. Hussey used to declare, "that it was from this Figure he gained the knowledge of the principles of his Art; and even before he was instructed in the principles of harmony." — The author, therefore, of these pages ventures to offer a few observations, formerly made to him by Mr. Hussey; which, should they ever meet the eye of the ingenious Essayist, may afford him some satisfaction; and confirm his Theory in such a degree and such a manner, as may perhaps agreeably surprize him.

If Mr. Stevens will please to take a series of *both* those Equilateral Triangles, by which his figure in the Diagram is circumscribed, and by which his system is illustrated — and let fall a perpendicular from the Apex of each Triangle to

their respective bases ; and draw lines from the outer left angle of the first Triangle to the Apices of the successive Triangles ; he will find that the several intersecting points of such lines in the perpendiculars and sides of this series of Triangles, give all the arithmetic, geometric, and harmonic proportions, or correspondent, exponent ratios to any extent, *i. e.* to any number of Octaves. And if it be also observed, what parts of the delineated human figure are intersected by these lines, a rule, or scale will be found, by which (agreeably to Mr. Hussey's system and practice) any unharmonious part may be corrected, and the whole made thereby more perfect and beautiful.

The Equilateral Triangle certainly did make a part, and *only* a part of the ancient Philosophy. For, as it referred to the whole system of the Universe, it assumed, for its illustration, those symbols which were supposed most appropriate. Therefore the Circle and the Quadrate,—the one a symbol of the heavens, and Eternity ; the other of immobility, or immutable stability,—were added to the Triangle. According to which system, our admirable Spenser thus learnedly describes the human form :

“ The frame thereof seem'd partly circulare
 And part triangulare—O work divine !
 These two the first and last proportions are ;
 The one imperfect, mortal, fœminine ;
 Th' other immortal, perfect, masculine :
 And twixt them both a Quadrat was the base,
 Proportion'd equally by seven and nine ;
 Nine was the Circle set in heaven's place :
 All which compacted made a goodly Diapase.

Faerie Queen B. II. Stanza 22. of Cant. ix.

After what has been offered on this most curious and interesting subject, perhaps it may be imagined by some, that we have only lightly skimmed the surface, and not dived deep enough for the Pearl.—Let us then endeavour to dive lower, and take the matter deeper, in order to discover the PRINCIPLE of our PRINCIPLES, taking the latter only as *effects* ; and trace these up to the great FIRST CAUSE. — Now as the subject of our enquiry is MAN, let us consider him in the abstract, if it be possible to consider that being in the abstract who contains in himself all the diversified excellences which in the round of

created earthly beings are to be found*, with this wonderful addition, that he is endowed with powers, capacities, and intellect peculiar to himself; by which he is specifically, characteristically, and essentially distinguished from all other earthly beings; and by which he is allied to those of higher order, and superior dignity.—Nay, still more, for we have sacred authority for asserting, that Man was formed in the *divine image*; or rather according to the perfect ideas conceived previous to his creation, in the divine mind.—It therefore follows, that whatever portion, or degree of excellence has been imparted to Man by the omnipotent, all-wise Creator, the *exercise* of those powers and capacities in which such distinguishing excellence consists, of what nature soever they may be, is not only correspondent to, but perfective of his nature. And further, that those things which are the *Objects* of the exercise of these powers and capacities, are by no means to be considered, in any respect whatever as *arbitrary* relative to MAN; altho' they are all resolvable into the *divine WILL*.

Now apply this reasoning to our subject. Man is so formed as to be pleased, delighted, and satisfied by the perception and contemplation of order, proportion, regularity, and beauty, in whatever part of nature, or in whatever object, they appear, or by whatever means these ideas are excited in the mind. And these several different terms, as will be shewn, are all contained in the significant comprehensive term, HARMONY. Which term, with the most correct philosophical propriety, may be used both in a *moral* or in a *natural* sense: that is, in whatever relates either to *mind*, or to *body*.—In short, all that is *perfective* of MAN, and of his *happiness*, must by the *constitution of nature*, be *consonant*, *concordant*, and in *perfect union*, or *unison*; that is, in *harmony*.—In fact, Nature abhors a *Discord*, save her own *concordia discors*.

Thus then the *required* PRINCIPLE of our PRINCIPLES is found, and found to lie deep indeed; even in the *profundity* of the DIVINE MIND.

Now as Man was formed in, or according to, the image of the great Creator, as before explained,—these *principles* also are to be considered (speaking after our very imperfect manner and inadequate conceptions) as *existing* in the

* Homo Microcosmus post reliqua factus est, ut divina bonitas in ipso sub brevi quodam compendio, quicquid diffusè antè fecerat exprimeret; si enim exactam singulorum comparationem instituamus, reperimus nihil in mundo majori, cujus proprietas non etiam in Homine mundi filio, tanquam in omnium rerum mensura et compendio elucescat.

their respective bases ; and draw lines from the outer left angle of the first Triangle to the Apices of the successive Triangles ; he will find that the several intersecting points of such lines in the perpendiculars and sides of this series of Triangles, give all the arithmetic, geometric, and harmonic proportions, or correspondent, exponent ratios to any extent, *i. e.* to any number of Octaves. And if it be also observed, what parts of the delineated human figure are intersected by these lines, a rule, or scale will be found, by which (agreeably to Mr. Hussey's system and practice) any unharmonious part may be corrected, and the whole made thereby more perfect and beautiful.

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After what has been offered on this most curious and interesting subject, perhaps it may be imagined by some, that we have only lightly skimmed the surface, and not dived deep enough for the Pearl.—Let us then endeavour to dive lower, and take the matter deeper, in order to discover the PRINCIPLE of our PRINCIPLES, taking the latter only as *effects* ; and trace these up to the great FIRST CAUSE. — Now as the subject of our enquiry is MAN, let us consider him in the abstract, if it be possible to consider that being in the abstract who contains in himself all the diversified excellences which in the round of

created earthly beings are to be found*, with this wonderful addition, that he is endowed with powers, capacities, and intellect peculiar to himself; by which he is specifically, characteristically, and essentially distinguished from all other earthly beings; and by which he is allied to those of higher order, and superior dignity.—Nay, still more, for we have sacred authority for asserting, that Man was formed in the *divine image*; or rather according to the perfect ideas conceived previous to his creation, in the divine mind.—It therefore follows, that whatever portion, or degree of excellence has been imparted to Man by the omnipotent, all-wise Creator, the *exercise* of those powers and capacities in which such distinguishing excellence consists, of what nature soever they may be, is not only correspondent to, but perfective of his nature. And further, that those things which are the *Objects* of the exercise of these powers and capacities, are by no means to be considered, in any respect whatever as *arbitrary* relative to MAN; altho' they are all resolvable into the *divine WILL*.

Now apply this reasoning to our subject. Man is so formed as to be pleased, delighted, and satisfied by the perception and contemplation of order, proportion, regularity, and beauty, in whatever part of nature, or in whatever object, they appear, or by whatever means these ideas are excited in the mind. And these several different terms, as will be shewn, are all contained in the significant comprehensive term, HARMONY. Which term, with the most correct philosophical propriety, may be used both in a *moral* or in a *natural* sense: that is, in whatever relates either to *mind*, or to *body*.—In short, all that is *perfective* of MAN, and of his *happiness*, must by the *constitution of nature*, be *consonant*, *concordant*, and in *perfect union*, or *unison*; that is, in *harmony*.—In fact, Nature abhors a *Discord*, save her own *concordia discors*.

Thus then the *required PRINCIPLE* of our PRINCIPLES is found, and found to lie deep indeed; even in the *profundity* of the DIVINE MIND.

Now as Man was formed in, or according to, the image of the great Creator, as before explained,—these *principles* also are to be considered (speaking after our very imperfect manner and inadequate conceptions) as *existing* in the

* Homo Microcosmus post reliqua factus est, ut divina bonitas in ipso sub brevi quodam compendio, quicquid diffusè antè fecerat exprimeret; si enim exactam singulorum comparationem instituamus, reperimus nihil in mundo majori, cujus proprietas non etiam in Homine mundi filio, tanquam in omnium rerum mensura et compendio elucescat.

divine mind.—And the human mind was formed by infinite wisdom, capable of receiving impression from things, whether of a mental or corporeal nature, which are the result of these divine archetypical ideas.

Man was formed capable of this divine impress; and this capacity is a proof of his divine origin *. Were not MAN the *offspring* † of GOD, he could not delight either in his *works*, his *ways*, or his *word*. Nor could he, his powers and faculties considered, delight in *himself*: in other words he could not possibly be *happy*.—That is, he could not have attained the *end* of his *being*.

Behold how the great system of nature and of Man's wonderful frame are, upon these principles, formed for harmonious association.—Were not this the case, (the great end of Man considered as just explained) all would have been made in vain, and a scene of confusion must have prevailed.—For as all Nature would have been a dreadful blank to man deprived of sight; so would it be nought but discord, if his ear had not been delighted and charmed by the universal harmony that prevails. But the human eye as well as ear, is formed to delight in, and to be charmed with, those proportions in which harmony consists. Nay, it may be shewn, that each sense, according to its respective constitution, is also thus affected in a certain degree. ‡—In short *Nature* in every part, as well as in the whole, is *harmony*. And man may be considered as a mighty instrument capable of receiving sympathetic impressions from each part, and from the whole: For there is not a part but what is in itself, or by Art may be made capable of conspiring to form the harmony of the whole.—The skin, or intestines of a quadruped; the trees of the forest or garden—the dull, inactive ore buried in the very bowels of the earth; the coarse dead sea-weed, and the trodden sand on which it indolently lies, when the flinty-stone is joined thereto; afford materials to Man's plastic Art of which to form the instruments of harmony.—Yet all these were vain, did not the air, that imparts life and energy to Man, impart also life and breath to harmony. This is the inspiring soul of all, and is in *itself* harmonious. Witness that pleasing, soothing, wonderful instrument, the *Æolian-harp*, whose plectrum is the fine-

* Hoc habet animus argumentum suæ divinitatis, quod illum divina delectant. Seneca.

Σημιωθέν και τυπωθέν σφραγίδι θεῶν. Philo apud Euseb. L. 7. C. 1.

† Τῷ γὰρ και γενεῶν ἕομεν. Aratus apud Sanct. Paul. Act. Apost. Cap. 17. v. 23.

‡ See Sir John Harington's Letter to Sir Isaac Newton in the Appendix: and Sir Isaac Newton's answer, as illustrative of the present subject.

spun, sightless air. Of this Instrument we may rapturously exclaim with the amiable, delightful Poet—

Ah me! what *hand* can touch the strings so fine,
 Who up the lofty Diapason roll
 Such soft, such sweet, such solemn airs divine,
 Then let them down again into the soul?
 Now rising love they fann'd; now pleasing dole
 They breath'd, in tender musings, through the heart;
 And now a graver sacred strain they stole,
 As when seraphic hands an hymn impart:
 Wild-warbling nature all, above the reach of art.

Thomson's Castle of Indolence, Stan. 41.

This seemingly mysterious Instrument has been well explained in a very ingenious essay on sounds, by Mr. Young. — Mr. Stillingfleet also, in his valuable work, the PRINCIPLES of HARMONY, observes, that from the phenomenon of the Trumpet marine, it is proved, that if an aliquot part of a musical string be sounded, the longer as well as shorter part sounds in its respective totality. And that when a musical string is sounded, the 3d, 5th, or rather the 17th, and 12th, are heard, and also the Phenomenon of the 3rd sound.—The experiment may be made on two Violins tuned in concert. If any one string be stricken of one instrument, the correspondent string of the other instrument will vibrate. And if two Violins, in circumstances now mentioned, be distant from each other about 30 feet, and a 3rd be forcibly excited on one Instrument, and the octave, or fundamental on the other, and held out or prolonged, the 5th will be very audibly perceived. And this also has been experienced as to human voices in like circumstances: for that great philosophical Artist and Author, Tartini himself, heard, when Rosini and Guadagni were singing a duet in an opera, and the one edited a 3rd, and the other the fundamental note, the 5th almost as plain as if a third person had been singing.

Here then we have a proof convincing, as it is astonishing, of the wonderful *disposition* of the *Air* to *generate*, and *propagate* harmonical sounds; as well as to *correct*, and *subdue* discords: for if the latter, as well as the former, were not true, the Æolian Harp, so far from producing almost heavenly Harmony, would produce nought but dissonance.

But perhaps, after all, it may be, as it has been, said by superficial and incredulous persons, that all this is mere *arbitrary Theory*; especially what relates to the *materials* of which the several sorts of *musical instruments* are formed; seeing they are wrought up to a capacity of thus *editing* musical sounds, by the *Art of Man*. But who *insited* these capacities in such materials of *being wrought* into such *instrumental forms*? who breathed into Man the breath of life, and the spirit of understanding?—Who but that Almighty being by and in whom, he not *only* “*lives and moves and has his being,*” but who—stupendous glorious thought! lives and energizes in Man? and his—est Deus in nobis et suâ calescimus aura—divine spirit pervades and actuates ALL?

— Deum namque ire per omnes

Terrasque tractusque maris cœlumque profundum.

What little has been said may be sufficient in proof of the *principle*, or *cause* of the *principles* of harmony. And, perhaps, it may be both pleasing and satisfactory to enquire, or rather show, how our reasoning and proofs are confirmed by *facts*.

And here it is obvious to remark, that all the ages of the world from its beginning, concur in affording proofs that POETRY, which certainly is a *part*, and no *small part*, of *harmony*, is cœval with and connatural to Man.—In the first ages of the world, it has been observed, that Priests, Philosophers, and even Statesmen, delivered their precepts and laws in poetry. And we cannot in this connexion omit remarking on that sublime description contained in the very ancient and poetical* Book of JOB, of the Creation, “*when the morning stars sang together, and all the sons of God shouted for joy.*” Thus this World is ushered into being by angelic harmony. Thus its history first began—and in the primitive ages of the World, HISTORY, ELOQUENCE, POETRY, and MUSICK, were *all* of the same CAST. And they continued inseparable associates through succeeding ages after the Creation, down to, and far beyond, the time of the great Hebrew Legislator; who informs us in the 4th ch. and 24th verse of the Book of Genesis, that JUBAL was the parent, or first master of those who played on musical instruments. And we find that in the solemnities of divine worship among the Hebrews, Musick made so important a part, that no less than four thousand persons were employed in conducting this part of their religious

* For this and what follows see Bishop Lowth, De Sacra Poësi Hebræorum.

ceremonies. Twenty-four Levites were appointed to preside over an equal number of bands of musicians, who served by turns in the temple.—The institutions of David relating to the musick of the temple, are more costly, splendid, and magnificent, as Dr. Blair observes, than ever obtained in any other nation in the world. And although it be foreign from the professed design of this short essay to enter into a description of the beauties, excellence, and sublimity of the sacred writings, which has been done in so masterly a manner by the learned and eloquent prelate in his work just quoted; yet the temptation of presenting one passage from the Psalms of David, to the notice and attention of the reader, is not to be resisted, as a specimen of the highest order and species of poetry; and a signal illustration of the force and effect of the chief figure of poetic description, the prosopopœia.—Suppose David the king, and with him all the people, and the Levites, and their numerous attendants, accompanied with all the instruments of musick, slowly and solemnly leading the way to the temple of JEHOVAH.—Behold the grand procession approach the doors of the tabernacle.—Hear the chorus, the whole band of instruments accompanying, in loud acclaim shouting forth, “*lift up your heads, ye gates, and be ye lifted up, ye everlasting doors, and the King of Glory shall come in;*” and then pronounce, if a sight more august and solemn,---or a scene of greater effect, and an apostrophé more sublime, can be conceived.

From this source of sacred eloquence and harmony, flowed a rich and copious stream through other regions besides that of Judea, till the time, or, more emphatically, the *fulness* of time was come, when the grand prophecy should be fulfilled, and the glory of Israel, and the expectation of nations, should be seen and gratified by the appearance of the PRINCE of GRACE and PEACE; at whose advent the earth was glad, and the heavens rejoiced: and Harmony descended from her celestial seat with the exulting song of a multitude of the heavenly host, hymning, “*Glory to God in the highest, on earth peace, and good-will towards men.*”—Thus the birth, as well as the triumph, of this mighty one, was attended, as our immortal bard represents it,

With heav'nly acclamation and the sound
Symphonious of ten thousand harps that tun'd
Angelic harmonies: the earth, the air
Resounded—

The heav'ns and all the constellations rung :
 The planets in their station list'ning stood,
 While the bright pomp descended jubilant.

Paradise Lost, B. vii. l. 558, &c.

And this angelic song of Jubilee, has been, and shall be, adopted and continued till the consummation of all things; and a "*new heaven and a new earth appear*:" when the pomp and song shall be renewed with grandeur more sublime and magnificent, and in more elevated notes, agreeably to the glorious description given by him, the heavenly-favoured one, who saw, and heard in vision, "*the voice of many angels round about the throne; and the number of them was ten thousand times ten thousand, and thousands of thousands:—* and a voice came out of the throne, saying, *Praise our God, all ye his servants, and ye that fear him, both small and great. And there was heard a voice of a great multitude as the voice of many waters, and the voice of mighty thunderings, saying, ALLELUIA—for the LORD GOD OMNIPOTENT REIGNETH.*"

Apocalypse, chap. v. 11. and chap. xix. 5, and 6.

Thus in this triumphant song was found, as Milton says,

No voice exempt—no voice but well could join
 Melodious part—such concord is in heav'n.

In the same spirit and manner does he describe the *hallowed day*, when the Creator is represented as resting from the great work of creation, and by the angelic host kept holy :

But not in *silence* holy kept—the harp
 Had work and rested not, the solemn pipe
 And dulcimer, all organs of sweet stop,
 All sounds on fret, by string, or golden wire,
 Temper'd soft tunings intermix'd with voice
 Choral, or unison.

We have now traced Harmony from earth up to her native seat, "*the heaven of heavens*," for so high is she sphered, although she deign to dwell with man on earth; to mingle intimately with him both in *body* and in *soul*; to delight his senses, and enrapture his mind; to controul his passions; and to

join in all the interests not only of his *mortal*, but *immortal* state. And although she be not *all in all* to man, she is no inconsiderable *part* of his *all*; as we have seen how much she conspires to *perfecting* his nature; for which we have the concurrent testimony of the best and wisest men in all ages of the world. An ancient scholiast cites Aristophanes to prove, that the phrase *Citharæ callens*, was not intended merely to describe an accomplished performer on that instrument; but, as taken in a more general; extensive, and figurative sense, to designate one who was accomplished in all the graces and perfections of the mind. For the ancients formed so exalted an idea of Harmony, that they supposed the person who was insensible to it, formed of *discordant elements* both of *body* and *mind*. Nay, so exalted was the opinion they formed of musick, that they believed a mortal could attain to the knowledge of it only by the inspiration of the gods.—Agreeably to this opinion, we find the most antient artists who excelled in this divine science, such as ORPHEUS, LINUS, and AMPHION, were held also to be of divine origin. Vide Malcolm, ch. 13. § 3.

There are some lines of Horace, in his *De Arte Poetica*, so apposite to these last observations on the subject, that the Author cannot refrain from quoting them :

Silvestres homines, sacer interpretisque, deorum,
 Cædibus et victu foedo, deterruit Orpheus :
 Dictus ab hoc lenire tigres, rapidosque leones :
 Dictus est Amphion, Thebanæ conditor arcis,
 Saxa movere sono testudinis, et prece blanda
 Ducere quo vellet. Fuit hic sapientia quondam,
 Publica privatis discernere, sacra profanis :
 Concubitu prohibere vago : dare sacra maritis :
 Oppida moliri : leges incidere ligno :
 Sic honor, et nomen divinis vatibus, atque
 Carminibus venit.

To the above description of the part which Harmony takes, as before observed, in the great and general interests of man, may be added, from this Prince of Lyrics, what relates to her influence over the emotion of his mind :

Pectus inaniter angit,
 Irritat, mulcet, falsis terroribus implet.

And also what the accurate and eloquent critic, Quintilian, says on the particular species of harmony we are now considering, MUSICK, as quoted by the learned Mr. Harris, in his treatise on this subject.

Namque et voce et modulatione grandi elatè—jucunda dulciter—moderata leniter canit—totaque arte consentit cum eorum quæ dicuntur AFFECTIBUS.

The description which Macrobius gives in favour of the wonderful effects of Harmony, in this respect, is to the same purpose, and more amplified.

Omnis habitus animæ cantibus gubernatur, ut ad bellum progressui et item receptui canatur, cantu et excitante et rursus sedante virtutem; dat somnos adimitque, necnon curas et immittit et retrahit; iram suggerit, clementiam suadet.

Of the wonderful power and effects of Harmony, both sacred and profane history furnishes strong and indubitable proof. And in all ages of the world, and in nations more or less civilized, as by a natural impulse, we see men have recourse to musick when passions of the more violent and nobler kind are to be excited, or appeased; or when those of the milder nature are to be raised, soothed, and indulged.

Athenæus reports, that Clinias the Pythagorean, who was subject to sudden fits of extravagant anger, assumed his lyre to allay the tumult of his rising passion.

Agreeably to these principles, Homer represents Achilles after his violent dispute with Agamemnon, having recourse to the same remedy, and calming his spirit by singing to his lyre.

Timotheus is reported to have fired Alexander to such an extravagant rage of passion amounting to frenzy, that he slew one of his companions; and that by a sudden change of the mode to the Lydian measure, he as soon softened the hero to pity and repentance. But what is more, Terpander is reported to have quelled a Sedition at Sparta by the means alone of musick.—And sacred history informs us, that the Dæmon of hatred, which had taken possession of Saul was cast out, by the enchanting and disenchanting harp of that very person who was the object of his rage. Vide Malcolm, ch. 14, § 3.

Several ancient philosophers and physicians assure us of the wonderful efficacy of Harmony in the cure of many diseases. And this has been reported and believed by persons of no mean credit and skill even in modern times, with regard to those who have been stung or bitten by the tarantula.

But such cases as these (though they should not be admitted) are yet to be considered as out of the ordinary course of things, and extreme instances of the power of harmony. Let us therefore briefly notice those of a more common nature; which, by the concurrent experience and testimony of all ages and nations, have invariably obtained, in which Harmony has exerted her powers, and mingled her mighty, but milder *charms*.—And it is obvious in the first place to remark on these, in a case of the most transcendent nature; which is the solemn and sublime services of divine worship; in which when employed, musick is, by way of eminence, very properly styled *sacred*. In this connexion, musick was held both by ancient Philosophers and Legislators of such importance, that the regulation of it in their temples was prescribed by the laws; and subject to the inspection of those who were appointed by the state to superintend this important part, as it was deemed, of the commonwealth. And it was held equally criminal to innovate, or disturb the laws and ordinances of *this part* of religious solemnities, as to violate any other *established law* of the state. This we learn from the high authority of Plato himself. And when it is considered how musick, properly chosen and adapted, is fitted to soothe and tranquilize, as well as elevate the mind, and thereby fit it in a peculiar manner to receive impressions (suitable to so favourable a state), of the higher order, we shall evidently perceive how well suited this must be to the solemnities of Devotion, by drawing off our attention and affections from the present imperfect state; and raising them to the contemplation of divine things, the perfections of the deity, and spiritual objects; by which means a holy ardor, reverence, and love are excited; and the mind disposed to receive with delight and joy instruction from the oracles of God delivered in his sacred temple.—No doubt but the mind of Milton had often experienced these effects of sacred musick; as he, in his *Il Penseroso*, describes them in so sweet and extatic a manner:

There let the pealing organ blow,
 To the full-voic'd quire below,
 In service high, and anthems clear,
 As may with sweetness, through mine ear,
 Dissolve me into extasies,
 And bring all heaven before mine eyes.

And here we cannot but remark on, and severely condemn, the *abuse* of sacred musick, in our churches, and especially in the cathedrals, by those *voluntaries*, as they are called, often of such a light and desultory nature, as to border on indecency and profanation. Let those who have the direction of sacred musick, remember, how careful the heathens were of preserving a solemn, decorous behaviour, in all respects, during the time of their religious services in their temples.

With the ancients, next to the celebration of the praises of their Gods, was that of celebrating the praise of illustrious men; who, by their wisdom, eloquence, heroic and martial deeds, were esteemed the benefactors of mankind; and in such an eminent degree, that they were deemed and stiled demigods; to whom even divine honours were paid; and their deeds of renown made the subject of the triumphant song of poets, in such strains, as while they immortalized others, immortalized themselves.—Witness the sublime strains of the eagle-winged, bold, adventurous PINDAR—And the less daring and unrestrained, but steady and moderate flight of the *Roman swan*; who nevertheless, with some portion of our Milton's elevated spirit, soared so high, as to venture to boast, *sublimi feriam sidera vertice*.

HOMER, mighty bard, it was who first led this august band, and VIRGIL, keeping an attentive eye on this his great and revered master, swept his sweetly-tuned accordant lyre with a correct and skilful hand, and reduced it to a milder tone than that of his grand and bold original.—These were the boasted sons of *Greece* and *Rome*.—And so, indeed, were those of inferior rank, the lofty *Statius*; and the fatally rash, adventurous rival of a vain, conceited tyrant, the eloquent declaimer in the sacred cause of freedom, the ill-fated *Lucan*; whose life was a forfeit to his fame. And such was he, our own, to none inferior, who although he had, with these, drank deep of the Piërian spring, indeed so deep, that it may be truly said of him,

Hic totas Heliconis aquas; hic flumina Pindi
Tota hausit,—

yet he had drank as deep “*of Siloam's sacred brook, that flowed fast by the oracle of God.*” And his muse, “*who nightly whisper'd to his ear,*” begirt his honoured head, not with fading laurel, or with bays, the meed of common bards; but with “*wreath of Amaranth, with which the spirits elect bind their*

resplendent locks.—MILTON, immortal bard! we bow to thee in homage, such as mortals may to mortals pay, as to one,

Qui genus humanum ingenio superavit; et omneis
Præstinxit stellas, exortus uti ætherius sol.

Next we see the sons of harmony of great, though of inferior note and fame, who cull up kings and heroes from the tomb to “tread the mimic stage for our amusement;” and as the stagyrite says, to purge the sordid passions, and elevate the soul; the rival bards SOPHOCLES and EURIPIDES.—Time has graciously spared such relicks of their works as will gain his sanction and passport through all succeeding ages as far as his records shall extend.—And he too, our boasted own SHAKSPEARE, Nature’s legitimate son, is seated on the rock of Fame by Nature and Genius.—Nor shall his favourite name diminish or decay, till

The cloud-capt towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve.

Nor will Harmony permit us to pass over in silence two other of her worthies, OTWAY and DRYDEN; the latter of high rank and place.—Had we no other proof of his legitimate claims to such eminent station, but his celebrated and incomparable Ode on the power and wonderful effects of harmony, this would be sufficient to immortalize the Poet.

But let us now descend from these heights to the level of ordinary life, and see how harmony befriends us here.—And first with Milton let us “hail wedded love, true source of social bliss.”—The description and celebration of which we have in the rich and highly finished Epithalamium of SOLOMON, denominated his Song; in which all the beauties, elegance, and sublimity of oriental poetry are displayed.—Pity ever to have taken it out of its proper place, and to have given it a “*new name which none can read,*” save those of spiritual, and spiritualizing minds; who in order to display its beauties to greater advantage, have officiously thrown over the plain, but becoming, wedding-garment, the sacred stole of Religion.

But if not equal, great praise indeed is due to our Poet, the Lord of Fairie regions, for his nuptial songs and hymns in favour both of earthly and of heavenly love, breathing the purest spirit of harmony in the following charming strain;—

For Love is lord of truth and loyaltie,
 Lifting himselfe out of the lowly dust,
 On golden plumes up to the purest skie,
 Above the reach of loathly sinful lust,
 Whose base affect through cowardly distrust
 Of his weak wings, dare not to heaven flie,
 But like a mold-warpe in the earth doth lie.

Nor does Harmony desert us when we are in need of her soothing, consolatory, or sympathetic aid:—For she, like divine Charity, can “*weep with those who weep,*” as well as “*rejoice with those who rejoice.*” She willingly joins in the mournful Dirge, or in the complaining Elegy—And while she lends her cheerful notes to a Solomon, can graciously condescend to assist Ovid, Tibullus, and even Corn. Gallus, while they pour forth their plaintive strains. And gladly did she join with her favourite GRAY, who, in some of his sublime odes, evinced that he had caught the lofty spirit of PINDAR.—But we have another illustrious instance of her kind and fostering influence, in the abstractedly refined, and lofty genius of COLLINS; who has in a most expressive and energetic ode, aptly and wonderfully described the powers of harmony. This ode, with that on the *poetic character*, may be considered as singular and extraordinary proofs of the exquisite taste, refined, elevated, and original genius of this exalted Poet, and depressed, unhappy man: to whose memory while we give just and unqualified praise, we cannot but afford a tributary tear of sorrow; and lament, that the intellectual powers of this Bard so highly worthy of that dignified name—for of him we may appropriately say,

Infundit lumen Camœnis, et cedere nescit
 Græcorum ingeniis—

should have been, by any earthly cause, subdued to imbecility: And the brilliant light of his elevated soul extinguished, before that of his vital lamp.

The Author who ventures to pay this unavailing posthumous tribute to this great genius, cannot repress the abortive, involuntary tear, which he has oft-times shed, while contemplating the Tablet sacred to his memory, inscribed by a living Poet of distinguished talents, genius, and learning; which we cannot peruse without recalling to mind the mournful stanza of the Poet's own;

Each lonely scene shall thee restore ;
 For thee the tear be duly shed ;
 Belov'd, till life can charm no more ;
 And mourn'd, till Pity's self be dead.

Thus, tho' transiently, we have seen how Harmony in general and in particular, is suited to Man's nature, accommodated to his pleasure, improvement, and delight, from the sublimest degree of the *worship of the Deity*, to that of recording the merits and praise-worthy deeds of *Demigods*, and of all those illustrious characters, who have by their virtues and wisdom been the *benefactors* of *Mankind*—how much man is indebted to this sovereign power in all circumstances either of a *prosperous*, or *adverse* nature, to heighten his joy, or afford him soothing consolation—to calm the turbulent passions of his mind ; and by refining them from all sordid ingredients, to purify and spiritualize it in this world, so as to fit it, in concert with religion, for the enjoyment of a more exalted and glorious state.

We should now, agreeably to our plan, show how the principles of Harmony can be applied to *inferior* beings, and to *inanimate* nature, and to the *works of Art* : But as these are illustrated in the Plate, to this the Author must refer the reader. All that he would say in addition to what is contained therein, is, that with respect to plants, besides the *Equisetum*, mentioned by Kircher, we may observe the *leaves* of some fruit-trees, flowers, and plants ; especially those of the *Vine*, the *Sycamore*, the *Plane*, and the *Chesnut* ; and others of this class : which if severally taken, and brought to the harmonic scale, in like manner as applied to the Butterfly in the plate, will show how nearly they approach to this standard of proportional beauty. And though no two leaves, any more than any two persons, creatures, or things, are exactly alike ; yet these nice dissimilarities are not to be regarded, as they will when brought to the scale, point out the harmonical arrangement or system to which they belong.—The same may be said of the works of Art ; for, *wherever* these principles, or the scale, can be *applied*, it will be found, that as they are more or less capable of such application, they are to the eye, which, as well as the ear, is pleased with harmonic proportions, most pleasing and satisfying. And *whatever* object has this pleasing effect, that object we call *beautiful*. And the *feelings* attendant on the perception of such objects, constitute or discover

what is called *taste*; which, like all other faculties,† may be improved, and by use made more exquisite.

But we cannot conclude this subject without noticing that part of it which is of the greatest importance, and therefore reserved to the last, as an impressive improvement, and application of the whole.

It has been before asserted, that HARMONY was not only *connatural* to MAN, but in its order and degree *perfective* of his *nature*.—Now there is such a mutual dependance on, and connexion between, the different (if different they are) capacities or powers of man's *corporeal* and *intellectual*, or *spiritual*, part of his constitution, that each is affected by the other. We have instanced how strongly the passions of the *mind* (the *only percipient principle*) are affected by Harmony; especially the more refined and sublime affections.—As *Virtue*, perfective of man's nature, has, with propriety, been held to consist in the *harmony* of the *several passions*, or *affections*; it follows, that by *whatever means* this harmony is *produced*, those *means*, as far as they extend, may be considered as *perfective* of MAN. But *natural* harmony, as it has been explained, is the *means* of producing this *moral* harmony, in which it is allowed, on all hands, that man's *chief*, or *greatest good*, consists.—It follows, therefore, from the whole, that HARMONY, in its nature, proportion, and degree, is *perfective* of MAN, and of the great end of his *being*: and that *end is HAPPINESS*.

APPENDIX.

As the following letters, preserved in the “*Nugæ Antiquæ*,” printed in 1769, are in themselves so very curious and interesting, and peculiarly pertinent to the preceding subject, and come recommended by the highest authority; the reader cannot but be highly pleased and gratified by their insertion.

Letter from Mr. (afterwards Sir) John Harrington to Sir Isaac Newton; with a scheme of the Harmonic Ratios*, preserved in “*Nugæ Antiquæ*,” printed in 1769.

SIR,

At your request I have sent you my scheme of the Harmonic Ratios adapted to the Pythagorean proposition; which seems best to express the modern improvements; as the ancients were not acquainted with the sesquialteral divisions, which appears strange. Ptolemy’s Helicon does not express these intervals so essential in the modern system; nor does the scheme of 4 triangles, or 3, express so clearly as the squares of this proposition. What I was mentioning concerning the similitude of ratios, as constituted in the sacred architecture, was my amusement at my leisure hours, but am not master enough to say much on these curious subjects. The given ratios in the dimensions of Noah’s Ark, being 300, 50, and 30, do certainly fall in with what I observed; the reduction to their lowest terms comes out 6 to 1, which produces the quadruple sesquialteral ratio; and 5 to 3, is the inverse of 6 to 5,

* This scheme is given in the hour circle of the plate, and the explanation of it in the margin.

which is one of the ratios resulting from the division of the sesquialteral ratio; the extremes are as 10 to 1, which produce by reduction 5 to 4, the other ratio produced by the division of the sesquialteral ratio. Thus are produced the 4 prime harmonical ratios, exclusive of the diapason, or duple ratio. *I have conjectured that the other most general established architectural ratios owe their beauty to their approximation to the harmonic ratios: and that the several forms of members are more or less agreeable to the eye, as they suggest the ideas of figures composed of such ratios.* I am sensible these matters have been touched upon before, but my attempts were to reduce matters to some farther certainty as to the simplicity and origin of the pleasures affecting our different senses; and try, by comparison of those pleasures which affect one sense from objects whose principles are known, as the ratios of sound, if other affections, agreeable to other of our senses, were owing to similar causes.

Your obedient Servant,

Wadham College,
May 22d, 1693.

JOHN HARRINGTON.

Sir Isaac Newton's answer to the foregoing.

SIR,

By the hands of your friend, I was favoured with your demonstration of the Harmonic ratios, from the ordinances of the 47th of Euclid. I see you have reduced from this wonderful proposition, the inharmonics as well as coincidences of agreement, all resulting from the given lines 3, 4, and 5. You observe that the multiples hereof furnish those ratios that afford pleasure to the eye in architectural designs; and that the ideas of beauty in surveying objects arises from their respective approximations to the simple constructions, and that the pleasure is more or less, as the approaches are nearer to the harmonic ratios. I believe you are right; portions of circles are more or less agreeable, as the segments give the idea of the perfect figure from which they are derived. Your examination of the sides of Polygons with rectangles, certainly quadrate with the harmonic ratios.—In fine, *I am inclined to believe some general laws of the Creator prevailed with respect to the agreeable, or unpleasing affections of all our senses; at least the supposition does not derogate from the wisdom or power of God, and seems highly consonant to the simplicity of the Macrocosm in general.*

Your humble Servant,

May 30, 1693.

ISAAC NEWTON.

The following very curious and important discoveries are so illustrative of the doctrine attempted to be established in the preceding pages, that the Author cannot but think they will be a valuable addition to the work.

The first is by that eminent Geologist, Mr. Farey, published in the Monthly Magazine for October 1813. The second by the ingenious and excellent C. Lofft, esq. published in the same Magazine for August 1812.

On Chemical and Musical Numbers.

“When a great number of things which are related to each other, are required to be accurately discriminated, no other method is so simple or effectual, when it can be done, as a number appropriated to each. This truth has received a very happy illustration, in the rapid progress of Chemical analysis, since the important work of Mr. Dalton appeared; showing that Chemical substances combine always in definite proportions, and the consequent appropriation of *a number* to each known elementary substance and chemical compound; by the help of which number, every possible combination may be anticipated by a calculation; and a degree of precision and evidence given to the analysis of substances, which was before unattainable.”

Now it is found, by experiment, that the numbers which are the means of such discovery, are those of musick, or the harmonic ratios; which is proved and illustrated in a most satisfactory manner by tables subjoined to the above introduction to this very curious and even wonderful discovery; to which tables the inquisitive reader is earnestly requested to have recourse.

The following are the ingenious and elegant illustrations of Mr. Lofft.

It has long been recognized, that there are but three primary colours, as well as three primary tones; and that these are in the same order in the visual and auditory sextant:

red.	orange.	yellow.	green.	blue.	indigo.	violet.
1st.	2nd.	3rd.	4th.	5th.	6th.	7th.

Then come in both, the repetition, or octave to the colour or tone. And experiment shows another curious analogy: that every ray contains as it were a

brede of the three primary colours: its own principal, and the two others in subordinate proportion. This confirmation of the Newtonian theory is very valuable. It is also very curious, that the distinctive harmony to thirds, yellow, and blue, is frequent in the mixture of the colours of flowers. Of the harmony of the fifths, red and blue, the Fuchsia is an elegant instance. Of the connective discords to seconds, green and yellow, green and blue, the florist sees the earth full of examples. The mixture of all colours in white, may be regarded as a diapason. Orange and yellow are also frequently and beautifully united in flowers. And blue, in its several contiguous tints. The vernal earth and sky are a fine example of the connective seconds in blue and green. The common principle, paradoxical as it might seem, runs throughout; that discords are connectives, and the primary harmonics disjunctives: and that thus, by union and disjunction, the fair order of the universe is maintained. In Summer, the strongest colours abound, red, orange, yellow. In Autumn and Spring, white and blue more predominate, in the daisy, the violet; and yellow, as Spring advances, butter-cup, marsh marygold, &c. In the close of Autumn, the more refrangible, weaker colours; the blue of the asters, the purple of the meadow saffron, the white of many of the Autumnal flowers. Winter, and early Spring, present the herbaceous green, pale blue, or white; as hellebore, hepatica, pergatilla, white-nettle, purple dead-nettle, ground and common ivy, holly, and misletoe.

A LETTER

FROM THE AUTHOR OF THE FOREGOING PAGES TO A FRIEND.

On the 22nd Stanza of the 9th canto of the 2d book of Spenser's Faerie Queen.

AT last, my good friend, I shall offer you my thoughts on that stanza of the Faerie Queen, concerning which we had some conversation. At that time I had not seen Sir Kenelm Digby's critique on it preserved in the Cabala, in a letter to Sir Edward Esterling. I have it now before me. Sir Kenelm perfectly agrees with me in the *general principle* of illustration, though we differ in some particulars; to what extent will appear in the following observations. The Stanza is found in the 9th canto of the 2d book of this beautiful poem, and is as follows:

The *frame* thereof seem'd partly *circulare*
 And part *triangulare*: O! work divine!
 These two the *first*, and *last proportions* are;
 The one *imperfect, mortal, fœminine*;
 The other *immortal, perfect, masculine*:
 And 'twixt them both a *quadrat* was the *base*,
Proportion'd equally by seven and nine;
Nine was the *circle* set in *Heaven's place*:
 All which compacted made a *goodly* DIAPASE.

However I may be disposed to agree with Sir Kenelm Digby, as to the genius, abilities, and learning of this truly great poet, yet I cannot join with him in the unqualified eulogy he bestows on this particular stanza; and say with him, "*that were there nothing else extant of his writings, yet these few words would make me esteem him no whit inferior to the most famous men that ever have been in any age.*" For though he has most unquestionably given proofs, not only in this particular place, but throughout his work, of his being deeply learned in the philosophy of Plato, yet I cannot help thinking, that the chief merit of this particular stanza, lies in the compression of the sentiment into the limits of it: for as to the poetic merit, it can boast but little; and Spenser seems to have aimed not at it. Indeed this was so far from being necessary, that he would have been in danger, by poetic description, to have

obscured the philosophy it contains. Not to mention that there are a few inaccuracies, if considered wholly philosophical; such as the word *partly* in the first, and *equally* in the seventh line, and also, *place* in the eighth, and the word *diapase*, for *diapason*. But this last is a liberty he perpetually takes to suit his verse. Nevertheless the stanza has great merit, and comprehends a great deal. This we must endeavour to dilate and explain.

Considering upon what principles Sir Kenelm has very properly expounded the passage, to which I should have supposed the Author's own writings, and especially the opening of this second book, would have given the learned a proper clue; I am somewhat surprized when he informs us, "*that he wonders how he stumbled on it; and that it was Fortune that made him light upon it, when first the stanza was read unto him for an undissoluble riddle.*" What part fortune could have had in this, or the like cases, it will be difficult to conceive. But Sir Kenelm Digby was a man of a very extraordinary cast of character, as well as genius. He changed his tenets of religion I believe more than once; and he credited the accounts given by some romantic traveller, of a petrified city having been discovered in Africa. Yet he was certainly a learned and ingenious man.

But whatever difficulty might attend the explication of this stanza, I can by no means agree with Sir Kenelm in the following remarks, when he says; "*that the Author seems to proceed in a different manner from what he does elsewhere: for in other places (says he) although the beginning of this allegory may be obscure; yet, in the process of it he doth declare his own conceptions in such sort, that they are obvious to any ordinary capacity: but in this, he seemeth only to glance at the profoundest notions that any science can deliver to us; and then of a sudden, as it were recalling himself out of an enthusiasm, he returns to the general relation of the allegorical history that he had begun, leaving his readers to wander up and down in much obscurity, and to rove with much danger of erring at his intention in these lines.*"

With due submission to so great authority, I must confess that I cannot discover such an unusual deviation from his accustomed manner and method; and that the obscurity does not arise from the manner of handling, but from the subject itself, and that system of philosophy which is therein adopted. For

as this stanza, with the others following to the end of the canto, is, as Sir Kenelm Digby properly observes, a description of man, as compounded of body and mind; so, in the stanza in question, he gives, in the Platonic way, a general, or rather summary, and abstract of his frame, as formed of matter and mind; and in the subsequent stanzas, he enters into a more particular and minute detail, especially of the animal functions; in which, by the bye, he by no means appears to have excelled himself in poetic description. Indeed, the subject does not admit of it. But as to order and arrangement of the matter, it is as consonant to the principles of philosophy and true composition, as to those of poetry.

Perhaps, from what I have already written, you will think that I shall not so fully agree with Sir Kenelm as you expected from my declaration in the beginning of my letter. I agree perfectly with him in the great leading principles; *viz.* the adoption of the Platonic philosophy, and that the poet here describes man as compounded of body and mind: though I cannot say I shall enter so far as he does into astrology or spherical predominances, or adopt some other particulars on which he has enlarged, no further indeed than I am warranted by the system of Plato himself.

I am sure I need not caution you against supposing that I here adopt the Platonic doctrines; I only adduce them by way of illustration. At the same time I cannot omit this opportunity of giving my humble testimony in favour of the most sublime genius that ever adorned the Pagan world: and though we are more enlightened by a system really divine, yet have we not of late, at least in some instances, returned to the old philosophy? I cannot here omit the observation of that accurate philosopher, M^c Laurin, on the wonderful discoveries of Sir Isaac Newton, respecting the harmony of the prismatic colours; and especially that respecting the planets.—*If* (says he) *we suppose musical chords extended from the Sun to each planet; that all these chords might become unison, it will be requisite to increase or diminish their tension in the same proportion as would be sufficient to render the gravity of the planets equal: and from the similitude of these proportions the celebrated harmony of the spheres is perhaps derived. Certain as these harmonic coincidences is now become, till Sir Isaac Newton demonstrated the laws of gravitation in*

relation to the planets, this, as well as the Pythagorean system, must have passed for an Utopian dream."

I beg pardon for this deviation, and hope you will excuse it. Return we now to our Poet, and let us consider his comprehensive stanza, line by line. To begin :

The *frame* thereof seem'd partly *circularæ*
And part *triangularæ* :

Sir Kenelm Digby very properly observes, "*that the Poet means the mind and body of man : and it was by these the Platonists explained it.* And though I am ready to grant, that the frequent observation of Aristotle and Clemens is true, that principles and conclusions must be within the sphere of the same science; and that leaping à genere ad genus, and transferring principles into sciences to which they do not belong, may be prejudicial to knowledge (which some have objected to the Platonists, respecting numbers, &c.) yet I must confess, the more I consider the great system, as well as its constituent parts, and see evidently to what an extent the principles of harmony prevail, I am rather inclined to suppose, that the application of these, and the numbers which compose them, is not altogether within this Aristotelean rule or observation. But I shall insist no further on this, but only observe, that it is in these principles we are to find a just explanation of the meaning of our Poet.—But to proceed,

The circle, as Sir Kenelm Digby observes, is used for perfection, as a symbol of the divine mind, it being the most perfect figure, and including the greatest space, without angular interruption, or break ; without composition, and pure in itself. The divine mind has thereby been aptly signified, whose centre is every where, but its circumference no where. But as to derived beings, such as man, his circle is limited, and only in form resembling the divine mind ; which is the great centre to which all minds, when in due order, tend.—Agreeably hereto is the sentiment of the Platonists concerning all the works of God, but especially of this world, and of man, whom they styled *Μικρόκοσμος*, as containing in his body and mind all the excellencies that are to be found elsewhere. Thus Sitzmanus, remarking on Lactantius, and Apuleius de Dogmate Platonis,—*Idcirco autem perfectissimo et pulcherrimo Mundo*

instar pulchræ et perfectæ Sphæræ à fabricatore Deo quæsitum est, ut sit nihil indigens: sed operiens omnia, coërcensque contineat: pulcher, et admirabilis, sui que similis, sibi que respondens.—Anima hominis qui μικρόκοσμος est, perfectissima mentis divinæ imago est; perfectissima, quia intelligens.—Speaking of the spirit that animates the world as well as man, it is observed: Motum dedit illi Deus qui corpori ejus esset aptissimus; *orbicularis* nimirum, qui unus ex septem motibus ad mentem et intelligentiam, νόον καὶ φρόνησιν, pertineret. Itaque cum illum per eadem, et in eodem, et in seipso circumduxisset, effecit, ut *circulari* conversione moveretur. Figura enim orbiculata perfectissima est, ut quæ Aristoteli quoque, μήτε ἀρχὴν, μήτε τέλος ἔχει, ἀλλ' εἰς ἑαυτὸ συνένευκε.—Ideo quoque orbicularis Platoni—πρέπον ἂν εἴη σχῆμα τὸ περιειληφὸς ἐν αὐτῷ πάντα ὁπόσα σχήματα.—Vide Annot. in Boet. Vannini. Lib. iii. Met. ix.

This may be sufficient for the illustration of *circular*: I proceed now to that of *triangular*. The former, as we have seen, is put for, and considered as, the symbol of perfection; and therefore styled by the Poet the *first proportion, immortal, perfect, masculine*; the other, the *triangular*, denominated the *last proportion*, or meanest figure, as a symbol of matter, and *imperfect, mortal, feminine*. On this point I shall quote at first from Sir Kenelm Digby. “*By the triangular figure he very aptly designeth the body; for as the circle is of all figures the most perfect and capacious; so the triangle is the most imperfect, and includeth the least space. It is the first and lowest of all figures, for fewer than three right lines cannot comprehend and inclose a superficies.*” Again, “*As a triangle has three lines, so it aptly represents body, or matter; which has longitude, latitude, and profundity,*” or, as we generally say, length, breadth, and thickness.—Matter or body, till informed, or operated upon by mind, is certainly very properly called *imperfect*—and the body of man, as well as all others, is subject to decay and ruin; which we properly call *mortal*. As the word *masculine* perhaps is meant to signify pre-eminence, superiority, and authority; so the term *feminine* may be used in opposition thereto, as implying *subordination, weakness, and subjection*. Or, if we Platonize on it, we may say, that as the feminine receives perfection from the male, so by the operation of mind on the body, all corporeal actions and functions are generated and produced: and further, that although there is an essential difference between these two, and the one be deemed perfect, and the other imperfect,

yet by their constitution they have reciprocally a tendency to union with each other. Of this union we shall have occasion to remark as we proceed.

And 'twixt them both a *quadrat* was the *base*.

Sir Kenelm Digby is very short in all respects in his explanation of this line, at which I am somewhat surprized, as well as at his entering no further into the extremes and the means by which the body and mind are united; seeing that the Pythagorean system, and the Platonic philosophy, furnish ample matter herein. But indeed he makes an apology for his imperfections, by saying, "*that what he wrote was on the spur of the occasion; and that he had not proper books to consult; which if he had, he might have dived farther into the Author's intention, the depth of which (he says) cannot be sounded by any less learned than he was.*" And also "*that others proceeding upon his grounds, might compose a worthy and true commentary upon this theme.*"—I will not presume mine to be such; yet, for your amusement and mine own, I will venture to enlarge a little.

Sir Kenelm Digby says little more, than "*that this signifies the four principal humours of man's body, according to the old school, choler, blood, phlegm, and melancholy; which while in due temperament and proportion, preserve the health and order of the frame; but if distempered, disorder and dissolution ensue.*" But if the description be confined alone to the construction or composition of man's body, the four elements, according to our philosophy, ought rather to be admitted.—But to proceed:

I shall first quote a general observation from the learned Kircher's *Arithmologia*.—Notandum itaque inter asceticos Ægyptiorum Discipulos Pythagoræos, arcanas quasdam Numerorum dispositiones didicisse, quibus tantum tribuebant, ut nihil non in rerum natura iis se demonstrare posse putarent.—And again; Quadratos autem cum primis observarunt, tanquam rerum omnium in septemplici mundo genesis rationem explicantes.—Further, Alter binarius (scilicet 4), etiam animam signabat, quod cum mens immobilis sit, aut motu uniformi, scilicet *circulari* gaudeat.—Vide Kirch. *Musurg.* L. 7, Cap. i. Atque hinc celeberrima illa Τετρακτύς Pythagorica, fons perennis animæ humanæ, per quam Pythagorici jurare solebant.—And again, Hinc Τετρακτύς ista propter usum tam multiplicem consideratione et admiratione dignissima habita est inter

primas, transtuleruntque eam non ad Physicæ tantum, sed et ad *Animæ* contemplationem, et ad ethicam theologicamque doctrinam.—He proceeds; per quaternarium denotabant numerum *Elementorum*, quæ conjuncta constituunt 10—quo numero omnem notant totius Universi ornatum quo Opifex Max. Rerum id ditavit. Vides igitur quatenam sub hisce harmonicis numeris musicam abscondebatur Pythagorici (et Platonici) eam videlicet quæ non vocibus, et instrumentis, quam mundanæ fabricæ (et hominis structuræ corporis, qui est, ut supra, *Μικρόκοσμος*) scrutinio cumprimis serviebat.—Vide ut supra, *Musurgia*, ad fin. capit. predict.

I shall not press any more quotations into the service, but go on to observe, this philosophy considered the *Quadrat* as a principle of union between numbers and proportions; and therefore may well be considered in the present instance to be so meant respecting the *quadrat* being placed, as a mean, or connecting principle, between the circle and triangle; and therefore may properly be considered and treated of in the same manner as the Platonists did the *tertiam quandam naturam*, which partaking of the quality of body and mind, was the bond by which these were united; which is thus elegantly expressed by that sublime Christian philosopher and poet, Boetius, in his great work, *De Consolatione Philosophiæ*, Lib. iii. Met. 9.

Tu triplicis mediam naturæ cuncta moventem

Connectans animam per consona membra resolvis.

Upon which lines, as well as the whole of the masterly work, the learned and ingenious Vallini has commented with great elegance and ingenuity: I shall transcribe some of his notes, as particularly applicable to our present investigation.—I hope so much Platonism will not be disagreeable to you: but as it will serve to place some parts of this philosophy in its proper light, which has been objected to for want of being well understood, I the more readily venture on it.

And first let us observe, that the following were deemed by the Platonists as the highest primary genera of substances; viz. τ' αγαθόν, τὸ θεῖον, το καλόν, ἡ εὐδαιμονία, ἡ σοφία, and lastly ὁ Θεὸς ὑπερραίνων. Then νῆς, ψυχὴ, σῶμα, ἡ ὕλη, by which the Deity formed the admirable system of this world, and was pleased to make the corporeal part of the universe capable of intelligence and mind:

which Plato explains in his *Timæus*. When the Deity from his goodness determined to form this world agreeably to the eternal exemplar existing in the divine mind, he resolved that it should be corporeal and subject to the sense. But because the matter thereof was rude, and deprived of the quality of figure, and the fluctuating mass was to be moulded into form, it seemed good to the Deity to infuse into it animam, spirit, or soul, by which the mass should be animated and reduced into order and form. But yet, as the mass thus animated, was still obnoxious to error and corruption, and was therefore not the image of the most perfect divine mind, because itself void of mind, the Deity added intelligence thereto, and by this means rendered it perfect; which being thus endowed with a mind to which intelligence was inseparable, should subsist in wonderful order and regularity. This mind or soul, besides reducing matter or body into form, and informing it, is the bond with which intelligence is connected; which without that *middle nature* could not be united with body. Agreeably hereto, Proclus says, that it is impossible that mind should be in aught without soul. He distinguishes here between *Mens* and *Anima*. He also puts it by way of question; how, says he, can the individual eternal essence of mind be united with that which has corporeal form? This, therefore, is the nature and dignity of the soul of the world, which the deity useth, not only as by its spirit to give life to the living, but as a substance (or existence) which partaking of, and imitating the divine intelligence or mind, that mind which is ever the same, kindles the fires of heaven; by its light and heat filleth the air, and raiseth the sea, fecundates animals and plants; and by its alternate influence, moderates the seasons of the year, never departing from its primeval tenour of permanent operation.

Hinc est quod apud Apuleium [Lib. de Plat. Natur. Phil.] illam coelestem animam, fontem animarum omnium, optimam et sapientissimam, virtutum esse genetricem, subservire etiam fabricatori Deo, et præstò esse ad omnia inventa ejus, Plato pronuntiat. Et Virgilius, ex ejusdem mente, sic eum describit. VALLINI.

Principio cœlum, ac terras, camposque liquentes,
 Lucentemque globum Lunæ, Titaniaque Astra
Spiritus intus alit, totamque infusa per artus
Mens agitat molem, et magno se corpore miscet.

Inde Hominum Pecudumque genus, vitæque volantum,
Et quæ marmoreo fert Monstra sub æquore Pontus.

This is sufficient to give a general idea of this part of the Platonic philosophy. I shall only add, that it is not altogether repugnant to that of modern times, for those two great Philosophers, Sir Isaac Newton, and Dr. Hartley, countenance something like it, though conjectural and hypothetic.

I shall endeavour to shew in what manner the quadrat may be applied, similar to this tertiam animam, by which matter and soul are united to the circle and square, uniting them in like manner—I shall first quote Kircher.--- Si quaternarium sub hisce terminis 1, 2, 3, 4, expansum colligeris, habebis 10, secundam monadem, et angelici mundi radium; denarium si quadres, mox occurret 100, tertia monas, animastici chori exordium; si denique secundam monadem in tertiam, id est 10, in 100 duxeris, exurgit cubus, sive solidum corpus, omnium quæ visui patent, sensibilibus rerum reconditorium.--- In like manner, if you take the successive numbers 1, 2, 3, 4, they will be found to constitute the concords of the octave: from hence, according to the Platonists, deriving a kind of intellectual power, thereby uniting in itself the principles of matter and mind; and therefore the quadrat might be here put, as the above tertia illa natura aut anima, connecting the circle and triangle, or the body and mind; of which they are the symbols.—The numbers by which this quadrat is said to be proportioned will further illustrate this :

Proportion'd equally by seven and nine,
Nine was the circle set in heaven's place.—

Sir Kenelm Digby observes, “*that by this we are to understand the influences of the superior substances which govern the inferior; viz. the stars (of which the seven planets were deemed most powerful), actuating the body; and of the angelic hierarchies, divided into nine orders, actuating and informing the soul of man: which, in his Astrophel, Spenser says, is,*

By Sovereign choice from th' heavenly quires select,
And lineally deriv'd from angel's race.

The Platonists, you know, taught, *that the human soul was an emanation from the divine mind; and was conveyed into the body by the intelligences that move the orbs of heaven (as Sir Kenelm Digby observes), who according*

to their several natures do communicate their special influences, by which both the body and soul are reciprocally affected; and that hence the one takes its peculiar temperament, and the other its peculiar genius*. Agreeably hereto the poet Manilius;

———— Coelum scrutatur in alto,

Cognatumque sequens corpus se quærit in astris.

Let us see further what the Platonist Plotinus says on this curious doctrine.—“ Animæ dum à Deo creantur, à locos upercœlesti seu mundo intelligibili, qui Jovis maximi seu mentis idealis et creatricis sedes est, procedunt, primò in cœlum: ibique corpus accipientes, per ipsum jam in corpora quoque magis terrena labuntur.—Again, Corpus illud, seu quasi corpus ætherium, cœleste esse, ejusdemque cum astris substantiæ Platonici existimabant; animaque in inferiora labenti adhibebant, ut esset non solum quod animaret anima (cui semper adesse oporteat corpus quod animet) sed quemadmodum animæ, qua animalis est, spiritus ille, qui est è puriori tenuiorique sanguinis substantia, pro vehiculo est, quo illa in omnes corporis partes diffunditur. Sic animæ, qua rationalis intellectualis est, in hæc inferiora labenti, adesse corpus illud, ceu quasi corpus, cœleste, seu ætherium volebant! quod tenuissimum cum sit, rectè simplissimæ animæ vehiculum est perhiberetur; quo illa comite in Dei substantiatumque intelligibilium cognitionem tolleretur. Ea enim separabilis a

* As the Poet thus expresses himself in his Hymn on heavenly Beauty:

For when the soul, the which derived was
At first, out of the great immortal spright,
By whom all live to love, whilome did pass
Downe from the top of purest heaven's hight,
To be embodied here, it then took light
And lively spirits from that fairest starre,
Which lights the world forth from his firie carre.
Which powre retayning still or more or lesse,
When she in fleshly seed is eft enraced,
Through every part she doth the same impresse,
According as the heavens have her graced,
And frames her house, in which she will be placed,
Fit for herself, adorning it with spoile
Of th' heavenly riches, which she rob'd erewhile.

corpore cum sit, nihilque communionis utriusque actiones habeant, sequitur illi corpus aliquod aliud adesse, quod purioris sit naturæ quam terrenum, quod nimirum sit intelligentiæ capax, et quandam affinitatem cum corpore tereno habeat.

Ex eo igitur divino et cœlesti elemento humanas animas, in earum descensu corpus divinum et cœleste assumere in corpora inferiora labentes putabant, quod intelligentibus illis esset intellectuale vehiculum, quod Plato vocat ἀγοσιδες, rarum ac splendidum; Proclus vero αὔλον, καὶ ἀδιαίρετον καὶ ἀπαθές, immateriatum, et individuum, et affectionis expers.

“Quod dogma non Platonici philosophi modo, sed et Christianorum multi primis seculis amplexati sunt.” Hence the Poets have been enabled to exalt their theme by the noblest descriptions. Thus Ovid;

Est Deus in nobis, sunt et commercia cœli,

Sedibus ætheriis spiritus ille venit :

And Virgil also, as in the following :

Ignæus est ollis vigor et cœlestis origo

Seminibus.

I trust you will excuse a longer, as it is a more full and sublime, description from Manilius, Lib. IV.

An dubium est habitare animas sub pectore nostro

In cœlumque redire animas, cœlo venire ?

Utque est ex omni constructus corpore mundus

Aëris, atque ignis summi, terræque marisque :

Sic esse in nobis terrænæ corpora sortis,

Spiritum et in toto rapidum quicumque gubernat,

Dispensatque hominem ? quid mirum noscere mundum

Si possunt homines, quibus est et mundus in ipsis ?

Exemplumque Dei quisque est in imagine parva ?

But I fear I shall tire you with so much Platonism : I will therefore conclude, after just observing what the Pythagoreans and Platonists say on the numbers seven and nine ; and offering a few words on the concluding line of the Poet, in which he sums up the whole of his description of this noble structure of man, by calling it a *work divine*.

“Septenarius non gignit, nec gignitur, cum non habet infra se numerum a quo gignitur, neque intra denarium ullus sit quem gignat. Hinc appositè à veteribus Pythagoræis symbolum fuit Ducis et Rectoris omnium, ut qui cum immobilis sit, nec gigni, nec gignere perhibeatur; quæ Plutarchus his verbis describit: Est dux et princeps rerum omnium Deus, semper unus, stabilis, motu carens, ipse sui similis, aliorum dissimilis, septuplo entium choro, stipatus. Eam ob causam Pythagorici hunc numerum Minervæ et Jovis capite genitæ, semper Virgini, sine matre natæ, symbolum posuerunt. Hunc Ægyptii præ cæteris in summa semper veneratione habuerunt, rerum omnium sigillum stantes: hic enim in universo septem entium genera denotat. Vides igitur, quomodò ex monade illa suprema et archetypha septem principalium geniorum regimine munitus prodierit; quomodò illa deindè evoluta et veluti in circulum acta, mundum cœlestem, septem Planetarum choro decoratum produxerit; postea mundum inanimatum; tandem hominem microcosmum omnium complementum condiderit.”—Vide *Mystag. Numer. Kircheri*.

The same learned author observes of the Number 9, as follows:

“Nonarius ex triade in se ducta resultat; tantò arcanior est, quantò triadem trinitè involvens, dum ejus efficit quadratum, majora in se continet mysteria. Angelicæ substantiæ à Deo immediatè productæ primæ creaturarum propaginis, ac novenæ distinctionis symbolum sunt convenientissimum.”

For proof of the poet being a disciple of Plato, Sir Kenelm Digby refers to the 6th canto of the 3d book, especially the 2d and 32d stanzas; and the last of his Epithalamion. To these he might have added, his four exquisite Hymns on Heavenly Beauty and Love.—We come now to the closing line,

All which compacted made a goodly diapase.

Though all the divine works furnish proofs of infinite wisdom, yet as the whole seem formed for man, and for his use, and tend to him as to one common centre; and the perfections every where scattered, as it were, abroad, unite in man*, not only respecting the elements of which his body is com-

* “Homo microcosmus post reliqua factus est, ut divina bonitas in ipso sub brevi quodam compendio, quicquid diffusè antè fecerat, exprimeret; si enim exactam singulorum comparisonem instituamus, reperimus nihil in mundo majori, cujus proprietas non etiam in homine mundi filio, tanquam in omnium rerum mensura et compendio elucescat.”—Vide *Kirch. Musurg.* tom. 2, page 403.

posed, but of that supreme intelligence by which his soul is inspired : and as his corporeal frame is literally harmonically* formed, and his mind capable, by the improvement of reason, and the exaltation of virtue, of assimilating itself to the divine mind, by keeping all in perfect union thereto, by preserving the affections in perfect concord and agreement, not only with each other, but with the divine mind: all this I say is not only a proof of eternal wisdom in forming this *work divine*, but also, that in man the harmony of this lower world is as it were summed up and complete ; and that the great Diapason of Nature is perfected in MAN. FAREWELL.

* “ Certe veteres in microcosmo intuentes perfectissimæ figuræ molem, diversam cœlestium elementariumque varietatem, elegantem magnificentissimarum rerum ordinem, pulchrum venustissimarum rerum consensum et harmoniam, ex structura mirifica numeros, mensuras, proportionales et harmonias dum omnium membrorum invicem mirum in modum proportionatas consonantias et commensurationes observant, invenerunt.” Vide Kirch. Musurg. Tom. 2, page 404.

The first of these is the fact that the...
second is the fact that the...
third is the fact that the...

It is clear that the...
the fact that the...
the fact that the...

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