THE NEW PHILOSOPHY.

VOL. V. APRIL, 1902. No. 2.

ANALYSIS AND REVIEW OF THE "WORSHIP AND LOVE OF GOD."[1]

INTRODUCTORY.

IN order that we may acquire a true conception of the quality and value of the *Worship and Love of God* it is of the greatest importance to view it in the series of scientific and philosophical writings of which it was the last to be produced.

Within the last two years attention has been very forcibly drawn to the great value of the works on science and philosophy which came from Swedenborg's pen, before his illumination and inspiration as the Servant of the Lord in His Second Coming. It has been shown that the natural truths announced in those works are in full agreement with the Spiritual and Divine truths of the theological works, where they are frequently restated in general and particular, and which truths they fit as the glove fits the hand, and clothe as the body clothes the mind and soul.

These scientific and philosophical works may be divided into two grand series, *first*, those dealing with the *macrocosm*, or the universe as a whole; and, *second*, those which explain the

[1] Read at the Regular Meetings of the Principia Club for December, 1901, and February, 1902. In the references *W.* denotes the *Worship and Love of God* (1885), and *D.* Dr. R. L. Tafel's *Documents concerning Swedenborg.*

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microcosm, or man, according to the universal laws formulated in the first series. The importance of the *Worship and Love of God* is seen when it is known that in it are brought together the results of both series; it is the synthesis of all of Swedenborg's previous scientific and philosophical studies, epitomized in a representative and oft-time correspondential form. In addition, it contains a number of doctrines not previously treated in full, especially in regard to the creation of men, animals and vegetables, the spiritual world, spiritual heat and light, and the spiritual sun.

It will readily be seen that a complete examination of the doctrines contained in the *Worship and Love of God* involves an examination of the whole system of which it is the epitome. To do this fully very much space and time would be required; therefore, in this paper only some of the fundamental doctrines will be considered and an account given of the unprinted *Third Part,* lately transcribed and translated by the writer. In conclusion, a general review and an historical and bibliographical sketch of the whole work will be given.

THE DOCTRINES OF THE "PRINCIPIA" RESTATED.

An interior and complete comprehension of any subject cannot be acquired without entering into its first principles, for those things which are first are also the most interior. The interiors are understood when the mind sees how universal laws are operative in singulars or leasts. For this reason Swedenborg was prepared to understand the creation of the universe as a whole, and of man in particular, by studying for many years the constitution and activities of the interiors and leasts of nature, the sun and atmospheres, by which the earth with its kingdoms and finally the human body are first created and afterwards held in a state of integrity. Consequently, in the *Worship and Love of God,* whose special object is to teach the doctrine of the creation and preservation of man, the reader is first invited "to contemplate the face of the universe in the mirrors presented by the singular things of which it is composed," so that from them "the stated circumstances of times and of ages" may be unfolded.[2]

[2] *W.,* n. 2.

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Besides the many places where it is stated that there are degrees of substance in the interiors of nature, as where auras, ethers, atmospheres and their properties are mentioned, the process of creation as given in the *Principia* is clearly outlined.

The "first substance of the world" gave birth to the starry heavens.[3] The planets were formed on the surface of the fiery solar mass and sent forth to gyrate about it. As to the mode of origin of the children of the sun, or the planets, it is said:

> Nevertheless it was impossible he could carry in his burning focus, and afterwards bring forth such heavy and inert productions, and therefore such burdens must have been the effects of his exhalation, and of the powers thence flowing and efficient. Hence it follows, that the sun primitively was overspread with effluvia excited and hatched by his real eradiation, and flowing together in abundance and in every direction to him, as an asylum and only harbor of rest; and that these fluids, in process of time having condensed, there existed a surrounding nebulous mass, or a mass like the white of an egg, which, with the sun included in it, would resemble the GREAT EGG OF THE UNIVERSE.[4]

In this way a kind of crust or shell was formed about the solar mass, and from the crust—when it burst, from "the inward heat and agitation"—the planets. In one of the notes Swedenborg further describes the incrustation of the sun and formation of planets as follows:

> It is manifest that similar incrustations have also not unfrequently appeared in the starry heavens; for occasionally new stars have been seen, shining with great brightness, and presently by degrees growing obscure, yet afterwards either returning to their former splendor, or altogether vanishing; which is a sure proof that those stars, in consequence of a conflux of parts excited by their exhalation, have been covered over with a similar crust, which would either be dissipated, or would altogether hide them so as to withdraw them from our view. Besides, if we compare the immense magnitude of the sun with the planetary bodies which revolve around him, we may easily be instructed, by a slight calculation, that such a surrounding crust would have sufficed for producing so many and so large bodies. This egg was the chaos, so famous in old time and at this day, consisting, as is supposed,

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[3] *W.*, n. 6, note b.

[4] *W.*, n. 9.

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of the elements of all things in a heap of confusion, which afterwards being arranged into the most beautiful order, produced our world.[5]

The planets began their gyrations about the sun because they were in the flux of an ether. That this ether is none other than the magnetic element or aura of the *Principia* is proved by the statement that—

Both the declinations and inclinations of the magnet, as well as its attractions, which are so many visible effects of the determination of that ether, confirm also the same conclusion.[6]

Elsewhere the first element or aura of the *Principia* also may be identified, for it is taught that the spirituous fluid was formed by a determination in the "supreme aura of nature," [7] which is thoroughly in harmony with the doctrine of the blood as given in the *Economy,* and elsewhere.

The luminiferous ether, or third element of the *Principia,* may be identified with one of the "middle" ethers, where it is said that "nature, taking her birth after an egg, and from an egg, first excited the supreme and most simple auras or atmospheres, also middle ones, and finally the last or ærial." [8] It is also said that "ether produces light." [9]

The fourth aura, or the ærial element of the *Principia,* is said, according to the poetical language of the *Worship and Love of God,* to have been produced by a marriage of the active principles of nature with the passive ones:

For two principles of nature were now come to their birth and luxuriance, viz., active principles and passive, the former of which filled the whole universe, for ether was the atmosphere of such principles or forces; but the latter, or passive principles, were heaped together into one, and constituted globes suspended and equally balanced in the centres of the circumgyration of the active forces. But these principles were to be joined together, and one was to be given to the other in a kind of marriage, that a new and mediating atmosphere

[5] *W.*, n. 9, note d. This statement of the formation of planets from a solar chaos has recently been confirmed by the remarkable observations, in America and Germany, of the new star in the constellation Perseus. Cf. *Astro-Physical Journal,* September and November, 1901; *Proceedings Royal Society,* Vol. lxix, Nov. 19, 1901; *Science,* Nov. 29, 1901; *Nature,* Nov. 22, 1901.

[6] *W.*, n. 11, note g.

[7] *W.*, n. 33.

[8] *W.*, n. 22, note o.

[9] *W.*, n. 13, note h.

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might be conceived, which might proximately encompass the orb, etc. . . . After that this atmosphere was hatched from the most attenuated principles exhaled from the bosom of the orb, and married to ether, and thereby began to temper the heat which flowed from the fiery fountain so near at hand, then our liquid orb began to contract a crust, or to be superinduced with a kind of coat, at first rare or attenuated, but presently denser, which continually increased according to the affluence of the parts emerging from beneath: for as yet it boiled from its very bottom. The orb being carried around, and, as it were, clad with this superficies, then first assumed the appearance of an earth, and induced a clean and beautiful appearance, for it was a perpetual plane, without spots or hills and valleys, one sphere without a boundary, which was divided by rivers and streams springing up from hot baths; and being overspread on all sides with a dewy mist, which entered the new-born atmosphere, and relapsing into the warm bosoms of the earth, cherished it with continual vapour.[10]

A page before the above quotation it is said that the globe was as yet "not earth, but an uncovered wave, the whole being without a shore or slime, and thus a large fluid heap of principles of inert nature," which, it is said, must have undergone innumerable changes before "these principles or elements of inert and heavier nature might coalesce into secondary new principles of water, salt, earth and the like."

Here, then, is an outline of how the earth was produced and prepared for the production of the vegetable kingdom, and a comparison shows that the doctrines of the *Principia* have been restated in regard to the sun, atmospheres, planets, and the final production of water, salt and earth. The restatement of the doctrines of the *Principia* in regard to light and heat will be considered later.

SEEDS, PRODUCTION AND PROPAGATION.

In the production of anything there are two states which invariably follow each other; the *first* is the formation of a chaos or egg in which the *second* state is fulfilled, when the product has been formed and issues forth. It has been seen how the earth itself was produced from the solar chaos and it will now be shown that in the new series the earth itself is the chaos in which *seeds* are produced and from them in turn the vegetable and animal kingdoms. The earth was like a—

[10] *W.*, nos. 13, 14.

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. . . kind of new egg, but which was laden with as many small eggs collected at its surface, or small seeds of its future triple kingdom, viz., the mineral, the vegetable, and the animal. These seeds or beginnings lay as yet unseparated in their rudiments, one folded up in another, namely, the vegetable kingdom in the mineral kingdom which was to be the matrix; and in the vegetable kingdom, which was to serve as a nurse or nourisher, the animal kingdom; for each afterwards was to come forth distinctly from their coverings.[11]

Elsewhere it is said that the earth—"as an ovary, contained together, and in one complex, all the offsprings of its kingdoms, and by means of the fecundating spring hatched one in order from another." [12]

Compare this teaching with the *Divine Love and Wisdom*, n. 312, where, after many universals concerning the first productions from earths are given, it is said that *"The first production from those earths when they were still fresh and in their simplicity was the production of seeds; the first conatus could not be any other."* The *Adversaria* also says that at one time the crust of the earth was filled with seeds from which the vegetable kingdom was produced.[13]

How were these seeds produced? In general the answer of the *Worship and Love of God* is that they were produced by a spontaneous generation in the earth, of the auras determined into it, i. e., the atmospheres, *"or their individual forms or substances, which are the most active forces of the universe, she [nature] conjoined, by the mediation of the sun's rays with the principles of the earth, endowed of themselves with no activity; and thus she conceived new forms, which being enclosed in seeds, were to be the most fruitful principles of new fœtuses or productions."* [14]

It should be borne in mind that the seeds and their offspring were brought forth in a most favorable climate, for there was a perpetual spring on account of the earth's rapid revolutions and proximity to the sun. Under these circumstances—

There was a time therefore when the vegetable offsprings first of all burst forth from the seeds wherein they were deposited; and when the animals themselves, both those which swim and fly, and also those

[11] *W.*, n. 15.
[12] *W.*, n. 28.
[13] Vol. I., p. 3.
[14] *W.*, n. 22, note o. Cf. n. 20, note m.

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which creep and walk, were unfolded from their first wombs and eggs, etc.[16]

The animals were produced by the formation of new ovaries in the vegetables, in which they were formed and nourished by the finest juices and essences.[16] The conatus to do this lay inwardly concealed in the generating nature of vegetable seeds.[17] After the first production, however, of the vegetables and animals, each species propagated itself, either by seeds, eggs, or ovaries. In them are gathered the prolific principle and thus by a new growth the species is continued. This is taught as follows:

All formations, as was observed above, agree in things most general, and especially in this, that inmost or purest principles, which are essences themselves, or essentials, when they have unfolded themselves in suitable forms, even to ultimates, by wonderful insertions betake themselves to inmost things; as seeds, when they have put themselves forth into leafy trees, afterwards concentrate the purest essences of their juices again in new seeds; in what manner they betake themselves towards inmost principles is presented to view in the fruits themselves; for in the inmost parts of the fruits they form to themselves repositories, and encompass these and themselves in foldings and membranes; in these lie the veriest seminal powers themselves, which do not burst forth until the foldings are laid open.[18]

How absolutely this agrees with the teaching in the theological writings, that propagation is but the continuance of creation; and with the same law stated under another form, that preservation is perpetual creation, or subsistence is perpetual existence! The latter form of this law is also repeatedly stated in the *Worship and Love of God*, as where it is said that "every effect is a continuity of causes from the first cause; and the cause by which anything subsists is continued to the cause by which it exists, since subsistence is a kind of perpetual existence;" [19] and elsewhere that "subsistence is perpetual existence, and perservation is perpetual creation," [20] "for we subsist from the principle which gave us existence, and we are renewed by that which first made us new." [21]

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[15] *W.*, n. 18.
[16] *W.*, n. 24.
[17] *W.*, *Ibid.*
[18] *W.*, n. 55, note r.
[19] *W.*, n. 7.
[20] *W.*, n. 57e; *et passim.*
[21] *W.*, n. 62.

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In the formation of a seed and the production of a vegetable or animal from it and the subsequent formation of new seed, is mirrored the order of the universe, the whole series of involution from firsts to ultimates, and from them the evolution and revolution to firsts. This creative order of involution and evolution is fully developed in the *Worship and Love of God* as follows:

For all and singular the things in universal nature, and in each of the kingdoms which have a determinate course, perform and accomplish revolutions of this sort, viz., they commence from their first natures and from them proceed in order to last or lowest things; and when they have there established new principles, they return from them in a like order to first or supreme things; so that they descend, and from newly excited principles ascend: this is a constant effect, not only in the vegetable kingdom, but also in the animal, which kingdoms, in their most general principles, have reference to, and resemble, each other.[22]

Whatever is born from seed or an egg . . . is bound to run through this revolution or orb: Plants, flowers, and trees, from their seed, unfold their nature, and grow into trunks or branches as into their bodies and ultimate members, and from these return again to their beginnings, or conceive and hatch seeds; so that all the revolution which they perform is only a kind of excursion of mediating causes, to the intent that they may return to their first principles, and thus bring forth fruits or uses. The case is similar in the animal kingdom. Such an order also existed and was derived from the grand egg of the world; for seeds and ovaries took their beginnings from the first and most perfect nature, and their increments from posterior and more imperfect nature; but by an inverse method they unfolded themselves from ultimate to first principles; in like manner also the fœtuses of the animal kingdom.[23]

THE FIRST MEN AND THEIR PRIMEVAL STATE.

When the vegetable and animal kingdoms had been successively produced, as described in the preceding section, and all things were in a most beautiful and flourishing state, the earth "being enriched with its living creatures, and so amply furnished and adorned with delightful fruits," [24] and all things delightful to the senses were at hand—

[22] *W.*, n. 22, note o.
[23] *W.*, 31, note u.
[24] *W.*, n. 29.

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There was still wanting a being who could refer these gratifications of the senses to a sort of proper mind, or to his own consciousness and perception, and who, from the faculty of intellect, might decide upon the beauty resulting from all these harmonies, and also from beauties might perceive delights; from delights, grounded in a true origin, might form conclusions concerning goodness; and, lastly, from goodness might comprehend the nature of blessedness: there was wanting, I say, that son of the earth, or that mind under a human form, which from the paradise of earth might look into the paradise of heaven, and from this again into that of earth, and thus, from a kind of interior sight, could embrace and measure both together, and from the conjunction of both could be made sensible of essential pleasure to the full; consequently, who, from a kind of genuine fountain of gladness and of love, could venerate, and adore, above everything, the bestower and Creator of all things. There was no object, not even the smallest, from which some resemblance of deity did not shine forth, and which, in consequence, was not desirous to offer itself to the enjoyment of such a being as could return immortal thanks to that Deity for Himself and for everything.[25]

Then follows the creation of the first man as the last and crowning work of creation, which is also the teaching of the theological works.[26] The bulk of the first Part and also the second Part of the *Worship and Love of God* are very largely a description of the creation of the first man and woman, and how their minds were successively opened to the wonders by which they were surrounded. Of all this only a general account can here be given, especially as concerns the development of the mind, to understand which the doctrines of the brain, bloods and fibres should be correlated.

In "the most temperate region of the orb" there was a grove,—

A Paradise in a Paradise, or the delight and crown of every grove and garden of the earth; it was also the latest in its formation, and crowned this centre of the solar rays. In the midst of it again was a fruit tree, which bare a small egg, the most precious of all others, in which, as a jewel, nature concealed herself with her highest powers and stores, to become the initiaments of the most consummate body: the fruit tree was from hence called the TREE OF LIFE.[27]

[25] *W.*, n. 30.

[26] *Divine Love and Wisdom*, nos. 65, 171. *Apocalypse Explained*, n. 1207; *et passim*.

[27] *W.*, n. 32.

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In the midst of this egg, by the "intercourse of spiritual essence with the supreme aura of nature," [28] the human form began to be developed, degree following degree, until it was fully formed for birth into the world.

"All things were now prepared; the parturient branch, according to the times of gestation, declining itself by degrees towards the ground, at length deposited its burden commodiously on the couch underneath." [29]

The first-born, when he had broken through "the bars and bands of his enclosure," "drew in with his nostrils and breast the air, which he saluted with a light kiss." [30]

In order to clearly understand much that follows it should be remembered that the first men were created into the order of their lives, not being so entirely helpless at birth as they are at this day. Thus the first-born was enabled to feed himself from the surrounding vegetables, and developed rapidly, all of which is most beautifully described.

In agreement with the teachings of the theological works, that the first men were like wild beasts, walking on all fours and afterwards raised upon their feet in the process of development, we are told that "the infant as yet crept, and differed nothing from the wild beasts in his manner of moving, which being observed by the soul with a mixture of concern and indignation, she used all her endeavours to lift him up on high, and to set him erect on his feet." [31] Elsewhere we are told that he was raised up from "that low life, or from his creeping state," [32] and set upon his feet, in order that the whole Garden of Paradise might be presented to his view.

The theological works clearly teach that the men of the Golden Age were born into the order of their lives and did many things naturally which men today must learn by education and training. Compare the doctrine with what is taught in the *Worship and Love of God,* of the state of the firstborn:

Brute animals, which are born into the obedience of their soul from the first moment of their nativity, have also power over their limbs

[28] *W.*, n. 33.
[29] *W.*, n. 38.
[30] *W.*, *Ibid.*
[31] *W.*, n. 44.
[32] *W.*, n. 46. Compare nos. 53e and 89e in regard to the ignorance of what evil was and that at first there was no need of language.

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and muscles, stand upon their feet and walk, and skillfully enter on the performance of functions of their nature, still more wonderful than what are above recounted; and from the same moment they enjoy in full vigour the external senses; but it is otherwise with the human race in their most tender infancy: the reason is, because we enjoy a certain proper mind, which is called intellectual and rational, from which, as from its fountain, the will proceeds: this our mind is what governs the muscles and sensories of the body; wherefore also the actions, which are determined by means of the muscles, belong to it, and are called voluntary, which are so far rational as they descend from the purer and more sublime intellect of that mind. This our mind, which, as was said, presides over the muscles and organs of sense, is not born together with the body, but is opened, grows, and is perfected, in process of time, by the beneficial aid of the senses; and this is the reason why we are born into such impotence of acting and feeling. It was altogether otherwise in our first-begotten, whose rational or intellectual mind was not to be instructed and perfected in a similar manner, or from the bodily senses, but from the soul itself, while the sensories of the body only administered and were subservient; for he was born into a state of the greatest integrity, and into perfections themselves; wherefore full power must of necessity have been given, from the first moment of life, to his soul, enabling it to operate upon the muscles and sensories of the body, without the mediation of this secondary mind and its will: but that the case is otherwise in his posterity, is a most evident sign of imperfection.[33]

THE TWO WORLDS; THE SPIRITUAL SUN WITH ITS HEAT AND LIGHT AND THEIR NATURAL CORRESPONDENTS; THE DIVINE ATTRIBUTES.

From what will now be shown from the *Worship and Love of God* it may be seen how distinct was Swedenborg's understanding of the differences between the spiritual and natural worlds, each with its own sun, heat and light, and how the spiritual sun is present throughout the universe by means of its heat and light, and that thus the Divine Providence is in the leasts of all things and reigns universally. With this introduction the reader will be enabled to understand the meaning of the wonderful vision into the spiritual world, and the doctrines concerning it, as presented in the Third Part.

[33] *W.*, n. 43, note c. Compare nos. 52, note n; 53, note q; 63, note d; *et passim.*

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In at least two places it is definitely taught that there is a "kingdom to be inhabited by souls," [84] and that "the world was created by the Supreme for the sake of heaven;" [85] and in addition, the existence of the two planes and their distinctions are clearly defined as follows:

> That there are two principles most distinct from each other, one natural, the other spiritual, is a conclusion which follows and is demonstrated by all the subsequent passages in this work; also that the natural principle derives its birth immediately from the sun of the world, but the spiritual from the fountain of life itself, or the supreme Deity. . . . [Natural] forms, or the atmospheres arising from them, as the active powers of nature, are all inanimate, as everything is which derives its birth from the sun, the fountain of natural things. . . . [Above this is the] SPIRITUAL [form], containing in it nothing but what is infinite, flowing from the irradiation of the sun of life itself, as the other forms flow from the irradiation of the sun of the world; and as this flows immediately from the Infinite, or from God Himself, who alone IS, therefore in itself it lives, and is that which animates the souls of living things for the uses of their life; not that it is an universal soul, but that it animates those things which were born and made for the reception of life; for every soul is a substance by itself, which is perpetually excited, like natural essences by their auras, to live its own life.[86]

How closely this agrees with the oft-repeated teaching of the theological works that there are two suns, one natural, the other spiritual, and that all things arising from the spiritual sun are living, while all things arising from the natural sun are dead!

Long before he wrote the *Worship and Love of God* Swedenborg taught in the *Economy* that there were two suns, the one natural, but the other spiritual; and a long series of numbers develops the doctrine. This same doctrine under various forms makes its appearance again and again in the *Worship and Love of God*. The spiritual sun is called "the sun of life," "the fountain of love," "the sun of intelligence and wisdom," heaven's "own sun," "the supreme fountain of life." [87] Elsewhere reference is made to the two suns and the two lights

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[84] *W.*, n. 23.
[85] *W.*, n. 84.
[86] *W.*, n. 24, note q.
[87] *W.*, nos. 25, note r; 63; 64, note f; *et alibi.*

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and luminaries.[38] Besides this it is taught that natural light and heat correspond to spiritual light and heat, or to truth and good, and that as in the ray of natural light natural heat is enclosed, so within the spiritual rays of light, or truths, goods are contained; besides many other related teachings familiar to readers of the theological works. A number of the more remarkable passages will now be quoted:

. . . . these two lights and luminaries, together with their two heats, are so distinct from, and so unlike each other, that they mutually shun and put each other to flight, still they do not disagree, but are in accord and unite in a friendly manner with each other, since one is for the sake of the other.[39]

. . . it is evident, that natural things were made to serve spiritual, as an instrumental or organic cause; in like manner, that this whole universe, which is subject to the sun of the world, was created by the SUPREME FOUNTAIN OF LIFE to serve as a medium for arriving at ultimate ends.[40]

[From the Supreme Deity] "as from the only fountain and highest sun of wisdom, all truths flow down as rays into our understanding."[41]

[The nature of the Supreme is such that] "the rays of His light are so many truths, and the fires of His rays are so many goodnesses."[42]

Into our minds also two lights flow in, one which is called spiritual, from the Supreme and His Love; the other natural, from the sun of our world and its heat; these lights meet together in our minds, and from their meeting together they become as centres of the whole universe, that is, of heaven and of the world.[43]

Light and intelligence, heat and love, "exactly correspond to each other;" . . . "love or spiritual heat."[44]

He is in our inmost principles, and also in the highest, Himself and His Heaven being in the former and the latter; all inmost principles are full of His rays, and where His rays are, there is His sight from the highest or His throne, consequently His presence, for rays continue objects to the sight.[45]

For our soul represents the Supreme Mind from which the universe was created, since she also in like manner, like the goddess of her little world, or a vicarious deity, resides in supreme and inmost principles, and in her own sacred temple, from which she governs her little universe; to her also is granted a similar species of Omnipresence, of

[38] *W.*, n. 56. 64, 74.
[39] *W.*, n. 64.
[40] *W.*, n. 64, note f.
[41] *W.*, n. 2e.
[42] *W.*, n. 49.
[43] *W.*, n. 56.
[44] *W.*, n. 67.
[45] *W.*, n. 56.

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Omniscience, and of Omnipotence, but within the limits of her own kingdom; nothing also has its life therein, except from her life; for she has constructed, and, as it were, built all things from her own fibres, as from rays derived from the fountain of her life; yet she has not done this herself, but our Supreme, with His Love, by means of her.[46]

After the argument has been presented that "there are two lights altogether distinct from each other and differing in their natures" the series is continued as follows:

. . . heaven borrows nothing from the light of the sun to increase its lustre, but only from its own Sun, whence it derives its all. And if the lights are distinct, so must also their effects be, for effects make one with their causes, and conjointly mingle together their several properties. Heavenly light does not give the faculty of seeing forms, such as the eye transmits, but such as are their uses and goodnesses; for these are the ends, for the sake of which those forms were created, which ends are not marked in the earth, but in heaven. The rays of that light, in like manner, are continuous and discrete suns, or continued streams of their fountain; and whereas we are rendered more intelligent and wise, in proportion as we suffer ourselves to be more enlightened by it, hence it follows that that light flows only from the Sun of intelligence and wisdom itself, or from our Supreme; also that all things, which thence derive their origins, in like manner as those which are derived from solar light, are His types and images, and worship Him as their Parent. From the solar rays we are also instructed, what is likewise contained in the rays of this latter sun, viz., that both light and heat are contained, but that the light is spiritual, whence comes intellectual sight, or the understanding of truth, and that the heat is spiritual, or that it is love, whence comes the sensation of good.[47]

In the *Angelic Idea of the Creation of the Universe by the Lord,* after the angels' idea of the creation has been given as the production of great circles or atmospheres, one after another and from another, throughout which the Lord is present by His spiritual heat and light, moving and governing the whole creation as a single continuous chain, the angels' idea of the Lord is given as follows:

From this continuity as a one they have their idea of the Lord, that He is the all in all things, that He is omnipotent, omnipresent and omniscient, that He is infinite and eternal; and also their idea of the

[46] *W.*, n. 70. [47] *W.*, n. 63.

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order according to which the Lord, through His Divine love and Divine wisdom, disposes, provides and governs all things.

How wonderful was the preparation which enabled Swedenborg to have an understanding of these sublime truths! The evidence in the *Worship and Love of God* that he did understand them is too complete to leave room for doubt; especially is this true of the Third Part, but before proceeding to it some additional evidence will be presented to show what a true idea of the Divine Providence Swedenborg had at this time:

Providence is called universal, because it is in things most singular, everything universal being known, existing, and being denominated from presence and power in things singular, as what is general is known, exists, and is denominated from its parts and particulars. What is universal is the complex of all things singular, as what is general is the complex of all things particular; unless what is universal be in things singular and with things singular, or in least things as in greatest, it is not universal; wherefore if we take away from universal providence, providence in things most singular, or separate one from the other, we destroy the very essence of universality.[48]

[Those who are deceived by the affections of the animus are] "altogether ignorant that the universe, consisting of infinite universes, with all those little worlds and orbs of minds, stands under the auspices of one deity, or of our Supreme, and of His Love, and is constantly governed by His Providence. They assign indeed the government of the universe to some Supreme, but the care of individual things they know not how to allow to any deity, therefore they adjudge it in part to their own providence, which they call prudence, in part to fortune; not knowing that Divine Providence cannot be universal, unless it be in things most singular, and that from these latter things it alone derives the name of universal; or that what is universal derives its essence and actuality solely from the individual things from which it exists; wherefore when they affirm the one, and deny the other, they destroy both." [49]

THE THIRD PART.

The whole of the *Worship and Love of God* has never as yet appeared in print, as we stated at the outset. Besides the reprints of the Latin text of Parts I and II of the *Worship and Love of God*, originally published by Swedenborg in 1745, and the various translations which have appeared, some otherwise

[48] *W.*, n. 26, note s. [49] *W.*, n. 77.

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inaccessible portions of the work are contained in Volume VII. of the series of photolithographic facsimiles made by Dr. R. L. Tafel. In this volume are contained reproductions of Swedenborg's own printed copies of Parts I and II, and in addition all that is extant of Part III.

Throughout Part I, which is about four times as long as either Parts II or III, Swedenborg entered marginal notes, sometimes short, at other times of considerable length. These notes are sometimes of value in the interpretation of the text, and were probably made by Swedenborg to facilitate the preparation of an index.[50]

One might easily suppose that the *Worship and Love of God* was meant to close with the last number of Part II, but in this *"Third Part concerning the Married Life of the Firstborn Pair,"* there is given a description of a wonderful vision in which the first pair behold the spiritual sun and representations of the fates and destinies of the universe. The contents are truly amazing, and of the utmost importance to a true and comprehensive understanding of the author's career; they also constitute the climax of the work, the preparation for which was made in the two preceding Parts.

The first portion of the text of Part III, as reproduced in photolithograph, consists of carefully-corrected proofsheets; the remainder, of manuscript, written in a large legible hand, from which it may be deduced that Swedenborg at one time intended to publish it. This is further confirmed by two interesting fragments of what was evidently a first draft. There is also a fragment of a sketch of the whole of Part III, corresponding closely with a portion in the text proper.[51] In the

[50] *D.*, Vol. II., p. 854.

[51] Further information concerning the Codex containing Part III., and the photolithographic copy of it made by Dr. R. L. Tafel, is contained in the following quotation from *D.*, Vol. II., pp. 853-854:

"This Codex contains the materials of the unfinished third part of the work on 'The Worship and Love of God.' It exists from nos. 11 to 125 in proof-sheet (16 pages), with the exception of page 11, which is blank. Nos. 118 to 131 exist in manuscript, and from this the contents of the missing page 11 can be supplied. The work was evidently never finished by Swedenborg; for at the close of the Codex is a plan of the whole work, in which those parts which had been written out by him have been checked off. Swedenborg's printed copy of Part II., which

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middle of a sentence in n. 131 (the Part begins with n. 111), the MS. comes to a close, and according to Dr. Tafel it was never finished.[62]

After a short introduction, describing the honeymoon of the first pair, there follows the description of the vision. Then, after the manner of the *Economy* and other previous works, but not in keeping with the style of Parts I and II, the subject-matter is taken up point by point and elaborately treated. Both the firstborn and his consort carry on the conversation, but chiefly the former, explaining what was meant by the heavenly phenomenon which they beheld. As usual, there are copious notes in elucidation of the universal laws referred to in the text.

There now follows a translation of part of the general description of the vision:

In the early morn, when Aurora sent forth on high the rays of the rising sun, like arrows tinged with gold, into the hemisphere of heaven, they both awoke at the same time from a most sweet sleep in the conjugial couch which they had shared, for a kind of heavenly lightning glanced over their eyes, driving away rest and drawing the attention of both away from each other and to itself. There appeared something in a middle region of heaven which was to display and signify the universe with its destinies and inmost certainties; this presented itself to the sight of both as in clear daylight. FIRST, there shone forth a Centre of Dazzling Light, of such infinite brightness, that the solar flames, radiated from Aurora, retired into the shade, and the glowing torches of the constellations immediately disappeared. Thence also the eyes of both began to blink so that they were altogether compelled to close them with their veils, but nevertheless the

had been published by him in London, 1745, is likewise bound up in this Codex; but his printed copy of Part I. is no. 68 of the collection. Short abstracts of the contents are written on the margin of that volume probably for the purpose of compiling an Index.

"All these three parts, i. e., Part I., with its marginal notes, Part II., and Part III., which consists partly of proof-sheets, and partly of manuscript, have been Photo-lithographed as Vol. VII. of the Photo-lithographed MSS. of Swedenborg. Parts I. and II. which were printed in quarto in 1745, for the sake of uniformity, were reproduced in folio. Of Part III., nos. 111 to 119 were copied from the proof-sheets, and nos. 120 to 131 from the MS. The Photo-lithographed copy covers 114 pages in folio."

Further information on this and related subjects may be found in the last section of this paper.

[62] *D.*, Vol. II., pp. 854, 950.

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splendor shone so clearly that it flashed through to the purest points of the fibres. This Centre so poured forth Its Light through the universe that its terminations or ends vanished from the sight, and then, because of the incomprehensibility, a blackish stupor was poured forth into the spheres of all the senses. SECONDLY, Round about this Most Bright and Spacious Centre there appeared to be produced a Border, purple from brilliancy, but flamy, glittering with a transparent beauty, tinged with a Tyrian hue, a circle of gems. This was flowing about into perpetual orbits, in number like the endless Meander. The gyres of the orbits went into perennial courses and revolved their ends from firsts to lasts and when they had revolved insinuated them again in firsts. The gyres were constant, but because they entered into and receded from each other, the sight following them was led into errors, although the revolutions of all flowed and reflowed most uniformly. This border and its meandering banks were crowned by most beautiful faces and forms of bodies the foreheads of which were covered by diadems, set with gems like little constellations. All the forms resembled the firstborn and his most beautiful companion and represented loves like them in the beautiful couch in which they reclined.[53]

The quotation just given constitutes a little more than one-third of the description of the whole vision, and it is this portion which Swedenborg fully developed, explaining what was represented by the Most Brilliant Light whose rays streamed forth to the ends of universe; what by the purplish, flamy border that appeared to surround the Central Light; and what by the intricate gyrations and appearances of the Border. In the remainder of the vision some highly interesting things are presented which will be considered after Swedenborg's own explanations of the first part of the vision have been given.

Thus runs the description of this marvellous vision which the parents of the future human race beheld on their wedding morning. Their first astonishment was succeeded by the desire to unravel the meaning of the representation.

Amazed by these sights they again contemplated each other, and each wished as it were to read from the face of the other what lay more deeply hidden within these things.[54]

Each "reasoned similarly and framed a series from firsts to lasts."[54] The youth, noticing this comprehension of the meaning of the vision, "touched her cheeks with the palm of

[53] *W.*, n. 112.

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his hand and gently asked her to bring forth from the shrine of her mind what she knew to be the interpretation of this heavenly phenomenon."[54] But she "modestly replied that she considered things so deeply hidden in the arcana of heaven and involved in the progressive evolutions of so many events, as they appeared in the vision, to be of so high an import, that, as regarded them, she did not dare to open her mind, which ran over the surfaces of things so lightly and cursorily; but she wished, if he would only regard her desire favorably, to depend upon his statement in these and similar matters, for he had examined such subjects more thoroughly, because more slowly and maturely, and had explored them more sharply in their interior chains of connection."[55] She then proceeds at some length to present her view of the vision as a whole, introducing it by the declaration that what she knew she had perceived "by a certain favoring consent, which I received from thy face, which reveals the ideas of thy mind to me."[55] But how glad we should be that she determined to speak, for the result is a universal view of the whole universe and the reason of its creation. She says that heaven and the world and all things in them—

> —constitute a great series and an immense complex of means to a certain ultimate and most holy end, for the sake of which there are the creations of so many uses and hence of so many effects. . . . For this universe, which we behold, is only the complex of means and ends, tending and conspiring towards an only [End]. For the Supreme Mind, or the Architect of the things of the universe,—who sees most minute things, even those of the future, as present together in Himself and thus in His Own Clearest Light,—foresaw and provided Ends, before times and spaces arose, thus from eternity, which should continually flow forth from the First Itself to ultimates and from these flow back again to the First Itself; therefore He established and instituted a great orbit, or He founded the universe, heaven as well as the world, according to such a design that Ends foreseen and provided might exist in act and thus put on the reason of uses and the form of effects and so revolve in their gyres.[56]

She then continues the argument showing that "our minds, which are most finite and in shadows, by a gross view of things separated from their connection and by a vague regard of

[54] *W.*, n. 113. [55] *Ibid.*

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means at the greatest distance from the end, and also by regarding a few things only,—may fall into error and their ideas be easily taken away." [56] Not so the Infinite—

—For the Infinite sees nothing in our finite things except the Infinite; for all the orbits which we speak of are only designs from His Ends as from centres, and, as was said, determinations to uses and the forms of uses and thus centres of centres arranged as it were into fluent circumferences. Hence is the consent and the harmony of all things; for the ultimate end of the First, or the first end of the ultimate end, rules and disposes the middle ends, and these, withersoever they turn, bear in their bosoms or faces, as in a mirror, the image of that only End.[57]

In this view the universe "consists of perpetually smaller and thus of least orbits, so chained together that they flow into each other and flow in such order into the great orbit that no accidents whatever occur." [57]

This view is further developed in a note as follows:

That the Supreme Mind, according to Considerations [*Intuitiones*] of Ends from eternity, established the universe, which was to be a complex of ends or means, we may contemplate in our own minds as it were in mirrors, or rather as in types. We also, before the origin and existence of means, regard and intend some end, for which, in order that it may exist in act, we seek means, or mediate ends, which shall all promote the first and relate to it, or as it were portend its image, for we as it were see the principal end joined with the mediate ends, which is the reason that we embrace the means with as great a love as the end itself. These means, taken together, constitute a certain world, in which all the mediate ends are called uses, and all uses existing in act are called effects; thence is our moral world. Such little worlds, which are a complex of means, every rational mind establishes, and whatsoever does not tend and conspire as a means to its first end it discharges from its little worlds, or rejects and proscribes as vile. Since our finite minds, wrapped in nothing but shades, design such things, what not the Infinite Mind in which there is no shade, but which sees most single things in the clearest day and to which Omniscience, as also Omnipotence, are adjoined that the results of ends may be provided. The life and essence of all minds consist in the intuition of ends, and at the same time in their disposition to some ultimate end, which, because it was also the first, reigns as it were alone in all and single means. From this very life the excellence of human minds should be judged, which, if they regard the love of self or a

[56] *W.*, n. 113. [57] *W.*, n. 113.

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similar love as an end, will also attribute a kind of previdence and providence to themselves, so that they strive to appear as deities and deduce all the courses of ends from themselves and lead them to themselves; but of what quality their providence or prudence is, will be, God willing, disclosed in what follows.[58]

After the bride of the firstborn finishes her explanation and again entreats him to tell her what was meant by the representations in the vision, he makes a few general statements and then begins a particular explanation, as follows:

But let us examine the singulars in the series in which they appeared, and as we evolve them, let us determine the connection of the things which followed with those that preceded, and thus behold the order; and finally, from the End of ends, the wonderful progression and correspondence of the intermediate causes; for only in the ultimate which crowns the work is seen the relation of the things which preceded and the provided agreement of apparent disagreements shines forth. Thus are dissipated obscurities, which have arisen from an unconnected series of perceptions and hence a prejudged Order of the things of the universe, as of a machine composed of parts, some of which are not yet prepared or seen.[59]

The first point taken up is the Centre of dazzling light whose Brightness put to flight the flames of Aurora and the glowing torches of the constellations. He says:—

In order that we might by the images of nature behold heavenly forms, the Supreme Life of Minds wished to represent Itself by a Dazzling Light, which poured itself forth from a spacious centre, as if from a Sun, into the ends of the universe. Thence Heaven took its origin and thence the world, Heaven mediating. That Light, or Life, shone forth from the Sun of Life of all things, or of the Intelligence, Wisdom, Justice and Glory of all things: for there are as many determining forms of truth, whence is intelligence, as there are rays flashing forth from that Light or Life; there are as many Goodnesses [*Bonitates*], whence is Wisdom, as there are Sacred Torches within the rays. The Order thence flowing is called Justice, whence are the Laws by which the whole world is ruled.[60]

The number concludes with the statement that the Glory of that Infinite Life is of such splendor that all other things appear as shadows in its presence, which was represented by the disappearance of the flames of Aurora and the glowing torches

[58] *W.*, n. 133, note a.
[59] *W.*, n. 116.
[60] *W.*, n. 117.

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of the constellations. In the following number the reason is given why their eyes began to blink: so that they were obliged to cover them with their lids or veils, viz., because no one can bear to behold the Infinite Itself for—

It would be as if someone dared to look into the most Holy Shrine of that Wisdom, or enter the court of Its Justice, and there search into and unfold the Laws decreed from eternity; he would be immediately punished for the temerity of such daring; for such a vertigo would seize the sight of his mind, and shade would blind it, as would befall the sight of the eye of him who gazed steadily at the sun, the pupil of his eye not being protected; on account of this danger arose our blinking and the veiling of our eyes by their lids.[61]

But even then "the splendor shone so brightly that it flashed through to the inmost points of the fibres," because –

The Divine Life signified by this Light is the only Life of living things; they are only rays of the Light of this Sun, or streams of the Life of this fountain, which It as it were modifies in various ways. Thus it grants its light to the sight of our minds, that is, life, which is Intelligence and Wisdom, [and so our life] consists in the cognition of truth and the perception of good. [The Supreme Life and Light] penetrates our lights (*lumina*), with whatsoever veils they may be covered, for whatever of light (*lux*) there is in the lights (*lumina*) of the universe, or whatever of life there is in souls, minds or animi, and in the senses and actions of their body, is derived from that alone; but where it is without the mediating Light, Life and Justice of Its Only-begotten, there is not light but shade, not life but death, for there is not Justice but the punishments of Justice on account of injustice. Our soul, which does not live its life itself, but from that Only Life, is in all the beginnings of the fibres of its body, not only as the reason of their existence, but also as giving them birth; for organic or compounded things are nothing but principles or simple things, determined into various forms according to uses. This also was the reason that the Splendor of that Light, the veil not hindering, shone so brightly that is flashed through to the purest points of the fibres. Thence it also appears that nothing can be so skilfully covered over in outmosts, and that nothing can be so artfully concealed in inmosts, which the Omniscient will not see through most clearly in Himself or in His Light.[62]

Then follows the explanation of the sentence that "This Centre so poured forth Its Light Through the universe that Its terminations or ends vanished from the sight." It did so because—

[61] *W.*, n. 118. [62] *W.*, n. 119.

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In this Light, or Life, there is nothing but the Infinite. Our sight or understanding, which is circumscribed by most finite boundaries, either falls into delirium, or into a swoon, or perishes as a sailor in a great ocean, if it dares to behold and still more if it dares to examine the infinities of the Infinite.[63]

The number continues the argument, showing that because the Divine Light is Infinite its terminations vanish from sight. A notable definition is contained in the words that the sight of the human mind is "the understanding of truth and good." [63]

There now follows the particular treatment of what was signified by the great Limbus or Border which appeared around the Central Light or Solar Space. Wonderful definitions are given, from which it is evident that by this Border was meant nothing less than the Mediate Life, Wisdom and Love, the Son of God from Eternity, or the Divine Existere, which makes it possible for men to be conjoined with the Divine. We cannot but conclude, after weighing the evidence, that Swedenborg here meant to teach that no one cometh to the Father except by the Son. But hear the evidence itself:

The Splendor of that Light, or the Glory of that Life, which poured itself forth to the ends of the universe, that is, through ages of ages, from eternity to eternity,—could not be communicated to our minds, and still less to the other or lower powers of our lives, without manifest danger of death. For what else would result from a communion of the Infinite with finite beings, or of the Most Holy and Just, with us who live from the dust and in it, but that we would be accused of impurity by Its Holiness, condemned by Justice and sentenced to death; therefore, He begot His Image, or Son, from Eternity, through Whom or through Whose Life He might inflow mediately into the faculties of the life of our body; Who, because He was born a mediation and Only Love of the Supreme, is His Life, which is signified by the Flamy Border purple from brilliancy, which appeared round about this most bright and spacious Centre. This is the Life which is properly called Heavenly and which excites the understanding and will of our minds. For Life is twofold, one is heavenly and the other is natural, but both are derived from the only Life of the Supreme. Natural life without the mediation of the heavenly, is, as was just said, not life but spiritual death in its image; for there is no Love, no Holiness and no Justice which mediates, from which division between the Divine Life and the natural life of man perpetual combats arise.[64]

[63] *W.*, n. 120.

[64] *W.*, n. 121.

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The few sentences which follow the above quotation are the climax of the *Worship and Love of God*, and present the truth which the author had most in view in writing the book.

That Heavenly Life, represented by the Flamy Border, not only pours Divine Light into our minds, which live it, and thus transforms them into intelligences, but it also pours in the Flame, purple from brilliancy, from which the intelligences also become wisdoms. For it is the Divine Life, from which is the intelligence of truth, represented by the brilliant Light, and joined to Love, effigied by the purple Flame, which causes intelligence to become wise, namely, that it not only perceives from truth what good is, but also from good what truth is, and thus from truths and at the same time from goods, he worships and loves the Best, that is, the Supreme; wherefore without an interceding or mediating Life of that Flame or Love, the Best or Supreme could not at all be approached because not conjoined by Love, for APPROACH BY WORSHIP IS SUCH AS IS CONJUNCTION BY LOVE: this Intelligence, together with Wisdom, it was, which glittered with a transparent beauty, tinged with a Tyrian hue, a circle of gems.[65]

This doctrine, prefaced by a description of the operations of the human mind, is further developed in a long note, as follows:

To understand and be wise are two altogether distinct things, for we may understand and still not be wise; but one leads us to the other, namely, science to the cognition of Truth (*Veri*), and truth (*Veritas*) to the cognition of Good, and it is the good which is sought for. But in order that we may be wise, it is necessary, not only that we should know and thus understand what truth and good are, but that we should also be affected with the love of them. Therefore, in the degree that there is good or the truly useful in the objects of the intuition of our minds, which objects we embrace and consequently pursue as an end, in that degree we are wise. This we may clearly see from the operations of our minds, or from the series of progression of the operations, which is this: *First*, by way of the senses, which is called the posterior way, we either immediately seize that which will be a help or instrumental cause leading to the cognition of things, or we take it from the memory, into which the objects of the senses are brought under the appearance of material ideas. *Second*, we take that which is perceived by our inmost sense, or laid up in the memory, and as it were introduce it into our intuitive or rational mind and there turn it about and rationally discuss it, although we should view it only from above and thus revolve our intellectual ideas above it; this is called thought.

[65] *W.*, n. 122.

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Third, these ideas, or thought, frames its reasons into a series and thus forms a certain analytic equation, or a chain entwined by reasons, which is called judgment or the formation of judgments from the objects of thought. *Fourth,* under these, as in calculations, we draw a line and from them we argue as in logic. But these, which have hitherto been turned about in the sphere of the mind, are mere inquiries of truths, and by means of these inquiries, or their series, inquiries of goods. But in themselves they are bare cognitions and pertain to the first faculty of the mind or the understanding, that is, to intelligence. But here the hinge as it were turns, for this first scene of the operations of the mind is immediately succeeded by another, namely, *Fifth,* to choose from the calculations and conclusions of judgment that which will regard the end or use, is called the election of good, and *Sixth,* this is finally brought to a certain principle of actions called the will, within which are all those things which preceded and were chosen. For, as all the essentials of motion are within the conatus, so all the essentials of action are within the will, so that the will is a certain living conatus to which those essentials are brought according to the series bequeathed by the understanding. *Seventh,* concerning this wisdom may now be predicated, for in the degree that the good or the truly useful is within the thoughts, judgments, conclusions and selections, that is, in the will, in which they are all together, and in the degree that this is produced in act, in that degree we are said to be wise. . . For what are truths without an ultimate regard for good! Or what is the understanding of the mind or intelligence, unless to know how to choose the Good, to prefer the Better, and finally, to will the Best. To this nature herself impels our minds, that is ourselves, for everyone desires and pursues happiness; neither is happiness given except in Good, consequently neither the greatest happiness except in the Best; nor does Good flow except from the Best and indeed by mediation. Wherefore to know much and also to understand, and not to be wise, is to rave in the midst of the sciences, or like Tantalus to be surrounded by water, but never to drink a drop; for it is Wisdom which completes and crowns intelligence and effects that intelligence may understand. But what is the Best? All truths promptly disclose it with one consent, namely, that the Best is that which is the first Origin of all goods and truths, or from which, as from an inexhaustible and perennial Fountain, all goods flow as streams; or, more simply, it is the First, for this is also the Supreme or Highest, whence it follows, that it is God, or that it is in God. . . . From all these things it follows as a conclusion that the highest of all cognitions is to know how to approach God, in Whom is the Best, and also the Greatest Happiness. But, to *approach* in spiritual things is to be *conjoined,* while to recede is to be disjoined. Conjunction, however, is only given by Love, for Love is union itself or spiritual connection, for by its conjunction even disjoined things are connected. Love also is the soul of all happinesses, for we only enjoy that which we

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love. Love is also the very Life of our minds, for if you remove the loves, our minds grow torpid and as it were die, but such as is the love such is their life. Thence now it follows that as the highest of all intelligence is to know how to approach God, in Whom is the Best, and also the Greatest Happiness, so the highest of all wisdom is *to be conjoined to God by love;* this now is that which was said, *that such is approach by worship as is conjunction by love.*[66]

Let us now pause a moment and reflect upon this mass of evidence. In the preceding section it was shown that Swedenborg teaches in numerous places that there are two worlds, and that in the higher and interior world there is a Spiritual Sun, whose rays appear as truths, within which there are goods. This is confirmed again and again in Part III, with a unique addition, viz., it is actually represented in the narrative as having been seen by the first pair, because, as is said, "the Supreme Life of minds wished to represent Itself by a Dazzling Light, which poured itself forth from a spacious centre, as if from a Sun, into the ends of the universe." It is furthermore taught that "thence Heaven took its origin and thence the world, Heaven mediating." The same truth is taught in the Writings. Truths are described as "rays flashing forth from that Light or Life" and "there are as many Goodnesses, whence is wisdom, as there are Sacred Torches within the rays." The most sublime truths are here presented arrayed in the poetical garb of representations and sometimes as true correspondences. How beautiful the idea that the flames of Aurora and the torches of the constellations vanished on the appearance of the Spiritual Sun! How true and clearly stated is the definition that our life "consists in the cognition of truth and the perception of good!" Were it not too prolix, example after example might be adduced showing that the terminology and the distinctions observed are often identical with those in the Writings. What light, too, is contained in the statement that "organic or compounded things are nothing but principles or simple things determined into various forms according to uses!" There is a clearness and weight in the original which cannot be fully carried over into English. In that universal statement are contained the laws of the *Principia* which unlock-

[66] *W.*, n. 122, note b.

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ed for Swedenborg the secrets of the universe and the human form.

The sublimity of the representation of the Divine Communication, represented by the Flamy Border, has been already adverted to, and it is inspiring to think that such a doctrine was the culmination of Swedenborg's preparation, involving the truth that the End of Creation was the Conjunction of the Creator with the human race. Such was Swedenborg's thought at this time; it was the inspiration which led him to write the *Worship and Love of God*, and it is now clear why he so entitled the work, because the whole argument is made to show that "the highest of all cognitions is to know how to approach God," but since "to approach in spiritual things is to be conjoined" and conjunction "is only given by Love, for Love is union itself or spiritual connection," therefore "the highest of all wisdom is to be conjoined to God by Love," "wherefore without an interceding or mediating Life of that Flame or Love, the Best or Supreme could not at all be approached because not conjoined by Love, for APPROACH BY WORSHIP IS SUCH AS IS CONJUNCTION BY LOVE." In the manuscript itself this climax is twice underscored, showing that it was meant to be printed in small capitals; it is also repeated in the note in italics. Readers of the Writings will recognize the familiar truth that the real quality of external worship is determined by the state of internal worship, which with the celestial is love to the Lord and with the spiritual charity to the neighbor.

But to return to the thread of the narrative. In the numbers following those which have been quoted from,—and especially in a long note,—the doctrine of forms and the brain are considered, subjects of such an extensive and intricate nature that they cannot be advantageously treated here. Such meandering gyres were also seen in the Flaming Border and the author thus states the general law:

If we diligently investigate, with an interior keenness of vision, our minds and their modes of turning, we will see meanderings of a similar fluxion, such as in this most beautiful Border, which represents in an effigy the Heavenly Life, and the Heaven of our Love, or the Only Begotten of the Supreme. For their substantial form is such, by whose

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variations, or mutations of state, are formed and produced those rational series, by means of which ends are defined as uses, and these determined into acts; for human minds are little effigies of the great Heaven, that is, so formed that they both can and should live the Heavenly Life; for when they are led by the Heavenly Life, they perceive truths, which are the objects of their sight; and it is the spiritual Flame, or Love, which so leads them, for Love alone excites the lives of minds to action. . . . In general it must be maintained, that the Supreme has transcribed into us, as into small types, the ideas (*ideas*) as well of His Heaven as of the world, in order that the gyres of His Ends and Means, from firsts to lasts and from lasts to firsts, might go forth and return through us.[67]

The importance of the general subject is dwelt upon in the following language:—

—From our very selves, if we will only distinctly examine our faculties, we may clearly see of what quality the universe is, as well Heaven as the world. These things, although they are the marrow and essence of the Sciences, are nevertheless more deeply hidden in shade than anything else, and nothing is less cared for than to know our spiritual lives, which is to be attributed to no other cause than that we do not live the Heavenly Life, whence is the light of intelligence, but a natural life, or only in the senses, the body and the world, which life involves all things in mere shades.[68]

After the first pair had seen the Flamy and Purple Border and its wonderful gyrations, they noticed another Border forming around it similar to a fiery river. By the first Border was represented the Heavenly Life and by the second one the Natural Life. While it remained in order and in connection with Heavenly Life, its color remained the same; but presently it began to change, first into a brazen and afterwards into an iron color, by which was represented the separation of natural from spiritual life, and the origin of what was merely natural not spiritual. There also appeared a great congeries of eggs on the surface of those Borders, and, wonderful to relate, they began to be animated by rivulets of influx from the Borders. Those which communicated with the inner or Heavenly Border assumed a human form, while those which partook only of the outer or Natural Border appeared like beasts. The human forms looked within and the beastly forms without, and finally

[67] *W.*, n. 124. [68] *W.*, n. 124, note e.

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they separated from each other. The next scene represented a great pyramid or cone on which there appeared an immense human body, which was swept up into Heaven, no doubt representing the formation of the Grand Man out of the human societies which,—it is said in Part III itself,—were represented by the great body. This is the substance of the evidence and thus closes this remarkable vision.

GENERAL REVIEW.

Probably no work written by Swedenborg has been so much misunderstood as the *Worship and Love of God.* Besides the usual cause, that of carelessness in reading the book, there are several others. Among them may be mentioned the ignorance and lack of comprehension of the works written prior to it, especially the *Principia;* misconceptions concerning the style, such as taking certain statements literally, when they are defined in the work itself to be representative; and, on the other hand, supposing some things to be allegorical which the author meant as scientific facts. And finally, particulars have been viewed by themselves, out of the general series and apart from the universal laws which they were meant to illustrate.

It is just as necessary to understand the *Principia* if we are to enter into an interior examination of the *natural* world, and the human body, as it is to comprehend the subjects treated of in the *Divine Love and Wisdom* if we are to really understand the *spiritual* world and the Grand Man.

The *style* of the work under review is that of a prose-poem, presenting synthetically all of Swedenborg's previous scientific and philosophical studies in a representative and ofttime correspondential epitome. In poetry the past and the future often appear as present, and in a seed is seen, as if before the eyes, all things which will grow out of it. The *Worship and Love of God* is full of examples of this. In the new-born earth is seen its future triple kingdom, mineral, vegetable and animal. The work itself presents the law as follows:

> This is the common case in generations which arise by a successive series, that in themselves they represent things prior, and contain things posterior, as present; for everything is produced to be an image of the

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form of its genetrix, and includes in it the general destinies of the future offspring as if they were present.[69]

A good example is seen in the Third Part, where the fates and destinies of the *future* human race are pictured in the liveliest fashion.

It has been supposed that parts of the early teachings of the *Worship and Love of God,* culminating in the birth of man in a matrix on a tree, were written allegorically, when nevertheless all the tenor of Swedenborg's previous writings, the doctrine of Discrete Degrees, and even the authority of the Writings, leave no room for doubt that it was meant as a scientific fact. It is a constant law that no new form is created on any plane without the planes prior to it successively contributing to its formation; there is no skipping of degrees. If objections are found to man's having been created by means of a vegetable matrix, precisely similar objections will have to be met in regard to the first creation of vegetables by seeds formed in the mineral kingdom; the difference is merely one of degree. But the creation of seeds in the mineral kingdom is plainly taught in the Writings; besides, there is the law that sustenance is from the same plane as creation.[70] The case was well summed up by the President of the Swedenborg Scientific Association, when he said that the doctrine of the *Worship and Love of God* was at once most rational and beautiful. The doctrine involves Swedenborg's whole philosophy, for the point itself is the seed of its universe; all effects are potentially contained in causes and the causes similarly in the ends.

The wisdoms and intelligences have been taken to be real spiritual beings, although Swedenborg distinctly states that—

By his discoursing with his intelligences is to be understood that he discoursed with himself, that is, that he thought; for thought is a certain species of discourse with man's self; for since the operations of our mind are real activities, or changes of state by variations of form, it follows that they also constitute a species of interior speech; etc., etc.[71]

Elsewhere, in connection with the introduction of celestial

[69] *W.*, n. 19, note l.
[70] *Divine Love and Wisdom,* nos. 310-312.
[71] *W.*, n. 53, note p.

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wisdoms and intelligences "under the appearance of infants," it is taught that—

The discourses of all celestial intelligences are mere representations by images, which actually exist before them, and are so contrived that hence every truth may plainly and clearly shine forth before our eyes; he who understands these representations understands also the discourse of heavenly beings, or heavenly discourse, etc.[72]

In another place it is said that sportive infants "represented goodnesses under the appearance of loves." [73]

Criticism has a true and important place; it is as necessary for us to discriminate in regard to what we admit into the mind, as, on the bodily plane, care should be exercised in the choice of food. But there is a limit, a golden mean; the substance of things should be examined rather than the form; there should be a constant effort to get at the spirit of things; for "the letter killeth, but the spirit giveth life." The firstborn was thoroughly imbued with this truth, for he said "I do not look at leaves, but at fruits and their seeds, nor do I relish shells, but kernels; for their goodness and usefulness delight me more than their most ornamented forms." [74]

An application of this method will teach us to avoid the formation of hasty conclusions, and reading ideas into statements which they were never meant to express; for in this way the mind arrives at those principles which, Swedenborg was told, would enable him to soar whithersoever he willed.[75] He himself says when treating of the method which will dispel obscurity:

But the cause of this obscurity is merely an inversion of our state, by virtue whereof things prior must be unfolded and viewed from things posterior, and thus finally wisdom be attained: for in things posterior things prior lie concealed, as causes and principles in effects, consequently they are concealed as in a shade: but that one thing may come forth from another, and we may view it distinctly, it is necessary that we view it from what is prior, or from light itself, whether inspired or revealed, and thus by that order which is treated of in this article. . . . But what is the nature of that order, and what the nature of influx according to that order, must be drawn from the doctrines of order

[72] *W.*, n. 57, note u.
[73] *W.*, n. 59.
[74] *W.*, n. 53.
[75] *Animal Kingdom*, Part IV., p. 82.

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and of degrees, also from the doctrines of influxes, which ought to be cultivated.[76]

By virtue of this disposition Swedenborg arrived at his wonderful laws, culminating in such views as, that the universe is a great progressive orbit, ruled by the Divine Providence in the lesser orbits, which all lead back to the Divine Itself; that in the Divine are Ends, in the spiritual world causes and in the natural world effects, represented in the vision by the Solar Centre and the two great Borders around it; and finally, that the Supreme is truly worshiped in the degree that man is conjoined to Him by loving Him.

In conclusion, we think that we can in no better way throw light on the work under review than by unveiling some of the stars in the brilliant constellations of the *Principia, De Infinito* and the *Economy.*

The reason why man in a state of integrity was made a complete philosopher, was, that he might better know how to venerate the Deity —the Origin of all things,—that Being who is all in all. For without the utmost devotion to the Supreme Being, no one can be a complete and truly learned philosopher. True philosophy and contempt of the Deity are two opposites, (etc.) [77]

Primevally his [man's] delights wholly terminated in the love of God, —a love which exhausts and replenishes all sense of delight. . . . Supreme veneration and supreme love of the Deity could not exist without the supreme worship of Him. What we venerate and love, this we worship; for the utmost degree of veneration conjoined with love must needs be active and operative, and must extend to the will and actions.[78]

[By an undoubting faith man] "is sensible in love, or delight resulting from love, of a peculiar connexion with the infinite. But where he doubts, he does not acknowledge, and the divine is not in him. All divine worship proceeds from this fountain of faith and love. Of worship, however, we must treat in another place, the subject being one of immense extent and difficulty: enough for the present to know that it is given in revelation. Thus the true divinity in man, who is the ultimate effect in which the divine end dwells, is no other than an acknowledgment of the existence and infinity of God, and a sense of delight in the love of God. . . . Therefore the acknowledgment of God, with faith for its ground, is the foundation for all divine worship."[79]

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[76] *W.*, n. 66, note h.

[77] *Principia*, Part I., Chap. I., p. 35.

[78] *Ibid.*, p. 44.

[79] *On the Infinite*, etc., pp. 71-2.

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The means by which man can prepare himself to communicate with the Divine Life and Love are, understanding and wisdom. "Thus, in human subjects, there is a more excellent and greater life, according to the degree of intellect that is brought into play in the regard of the more universal ends," [80] for, "between love and love there is not a closer nor a sweeter bond than wisdom." [81]

HISTORICAL AND BIBLIOGRAPHICAL SKETCH.

From the quotations just made it appears that even in 1734 the subjects of the worship, veneration and love of God were occupying Swedenborg's mind to no small extent, and from the work on the *Infinite, etc.*, we learn that it was the author's intention to treat of those subjects in a future work. In the present section such other statements by Swedenborg as bear on the *Worship and Love of God* will be briefly considered. In addition some account of the bibliography of the work will be given and a brief collation will be made of such historical and critical matter as is at hand. The arrangement will be chronological as far as possible.

In that remarkable document, Swedenborg's *Book of Dreams,* are contained a number of statements which show what was Swedenborg's state of mind just before and during the time when he wrote the *Worship and Love of God.* These statements illustrate n. 2951 of the *Spiritual Diary,* where Swedenborg says that for some years he was *informed by dreams* concerning what he was writing.

On October 7th he writes:—

> I was further informed respecting my book upon the *Worship and Love of God,* which was said to be a divine Book (*man sade at den wore en Liber divinus de Dei cultu et amore*). I believe it was to contain also something about spirits; my book on the Infinite (*de Infinito*) I thought treated on something similar; but I did not receive an answer to this.[82]

On October 10th he writes:—

[80] *Economy of the Animal Kingdom,* Part. II., n. 236.
[81] *W.,* n. 55.
[82] *D.,* Vol. II., pp. 209-10, n. 182.

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Afterwards there was signified to be by a representation . . . that on the previous day I was engaged with my work [*Worship and Love of God*], which is entirely different from the other [*Animal Kingdom*], and [proceeds from] an entirely different love; and [I was in doubt] whether the former work should prevail (*om den skulle rada*), and whether it should not rather be regarded as mere talk and as a plaything only, when compared with the other. Upon awakening I fully made up my mind to abandon the former work.[83]

Dr. R. L. Tafel, in another place,[84] in quoting the statement in the *Book of Dreams* for October 9-10, ceases to quote at the above point, which gives a different impression from what is given if what immediately follows be added:

..and I should have done so, if it had not afterwards seemed to me in my sleep, that I had been sent to a certain place with a letter. I did not find the way; but my sister Hedwig saw the letter, and said it was intended for Ulrica Adlersten, who had it appeared longed for me. I went there, and saw also Schonstrom. Afterwards I had continually a sensation as if they went up to the brain and down again.—By this I was confirmed to go on with my work. May God grant that this be not against His good pleasure, since as soon as I break off my sleep I at once come into the effort to abandon it; besides God Himself helped me to arrive at this resolution. To God alone be praise and honour!

Dr. R. L. Tafel interpreted the whole quotation differently at different times. First, in the translation in the *Documents*, he states in the notes that the work to be abandoned was Part III of the *Regnum Animale* and that the other work alluded to was the *Worship and Love of God*. In *Words for the New Church* he reverses the order by inserting in brackets the titles of the works as he thought they were related. According to the latter interpretation, which we think is the true one, the "other" work is the *Regnum Animale* and the work which he meant to abandon is the *Worship and Love of God*. For this reason we think that the quotation should be made in full, because thus it is seen that in spite of the temporary thought of abandonment Swedenborg "was confirmed to go on" with his work, i. e., the *Worship and Love of God*, and *not* the *Regnum Animale*.

Further information is contained in the succeeding paragraph, where Swedenborg says:—

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[83] *D.*, Vol. II., pp. 212-13, n. 191.

[84] *Words for the New Church*, Vol. I., p. 528.

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A child fell over my foot, hurt himself and screamed; I helped him to get up, and said, Why do you race so?—This no doubt meant that I was too much in a hurry with that [i. e., the second work, or the *Worship and Love of God*].[85]

On October 26-27 Swedenborg writes:

It was foretold to me that the twenty-seventh of October would come again; when I undertook the *Worship and Love of God* (*Sades mig forr at d 27 oct: skulle komma igen. da jag tog mig fore cultum et amorem Dei*).[86]

The translation given is according to the *Documents,* but in *Words for the New Church* the translation is given, "it was foretold to him that the twenty-seventh of October would come again when he *would enter upon 'The Worship and Love of God.'*" [87] From the words *"would enter upon,"* which we have italicized, the casual reader might infer that on the *succeeding* twenty-seventh of October the work was to be begun, which is contrary to fact. What then does the passage mean? We know very well that Swedenborg had all along been engaged on Part III of the *Animal Kingdom,* which he published in 1745, and that in the early days of October, 1744, he was at least thinking about the *Worship and Love of God,* as may be seen from the references already made. Did he then only think and plan about the work during the days of October previous to the twenty-seventh, and on that day begin the actual composition? More light will be thrown on the question by the following quotation, also written on October 26-27. After rooms and apartments have been treated of, concluding with the words, "Afterwards I went into my own little chamber, which was also shining," the explanation is given as follows:

By this is signified the whole of that work upon which I am now entering in God's name; in front, before me, is the part on the *Worship of God,* at the sides that treating on *The Love* [*of God*]. There is also signified thereby that I must not take of the articles manufactured by others, as those were contained in the saloon which I had rented; but that I must use my own. My chamber, which was adjoining, signified this other work; and the room at the side signified the one which

[85] So interpreted by Dr. R. L. Tafel in a note, *D.,* Vol. II., p. 213.
[86] *D.,* Vol. II., p. 217, n. 202.
[87] *Words for the New Church,* Vol. I., p. 529.

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did not belong to me. May God lead me in the right way! Christ said that I must not undertake anything without Him.

I mounted a fine black horse. There were two of us. The horse was fiery; it first went out of the way, but afterwards turned round.—This signifies my undertaking, which as yet appears dark to me, but at last will move in the right track.[88]

In the following paragraph his "new work" is mentioned.

The part on the *Love of God,* which lay at the sides, perhaps refers to the third Section of Part I; the part concerning which we are at a loss, is that on the *Worship of God,* which lay in front, unless indeed it refers to Part III. Perhaps the solution of the whole problem is that Swedenborg on the days previous to October 27th was at work on a sketch and first draft of the proposed work, and that on the day itself he started in anew; for he says that the undertaking "as yet appears dark" to him, but at last will "move in the right track." This view is confirmed by the facts that in several other cases Swedenborg made sketches and drafts of works to be written, and that fragments of what was evidently a first draft of Part III have actually been found.

In 1745 Swedenborg published Parts I and II of the *Worship and Love of God* at London in Latin. The Parts were published separately, each with its own title page and pagination. The title pages in full read as follows:—

Pars Prima de Cultu et Amore Dei; ubi agitur de Telluris Ortu, Paradiso et Vivario, tum de Primogeniti seu Adami Nativitate, Infantia, & Amore, ab Eman. Swedenborg. Londini. MDCCXLV. [*4to, pp. 120.*]

Pars Secunda de Cultu et Amore Dei; ubi agitur de Conjugio Primogeniti seu Adami, et inibi de Anima, Mente Intellectuali, Statu Integritatis & Imagine Dei. Ab Eman. Swedenborg. Londini: Apud Joh. Nourse & Richard Manby. MDCCXLV. [*4to, pp. 24.*]

The translation of the title pages will be given presently when we come to discuss the first English edition.

In 1745, the same year in which Swedenborg published the *De Cultu, etc.,* he began his study of the Sacred Scriptures.

[88] *D.,* Vol. II., pp. 217-18, nos. 203-4.

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These studies are collected in the *Adversaria*. The first of the series, a treatise on the first three chapters of *Genesis*, called *The History of Creation as related by Moses*, thus refers to the *Worship and Love of God*:—

It has been treated of the earth's origin, paradise, the nursery of the living, and the birth of Adam in Part I of my treatise on the *Worship and Love of God*, but according to the leadership of the understanding or the thread of reason; but since human intelligence should not be trusted to by any means unless inspired by God it is of importance to truth that those things which are taught in the little work mentioned be compared with the things revealed in Sacred Scripture and here with the history of Creation revealed by God to Moses, and thus to examine how they agree; for whatever does not altogether agree with things revealed must be declared altogether false, or the delirium of our rational mind;[89] with this end in view I felt it necessary to present in advance a brief commentary on the first chapters of *Genesis*.

When now I carefully compared them [i. e., the commentary and the *Worship and Love of God*], I was astonished at the agreement.[90]

He then proceeds to institute comparisons between the solar chaos, planets, atmospheres, and the creation of vegetables, animals and man, as treated of in the two works. Elsewhere he recurs to the creation of man in a vegetable matrix and to the formation out of a rib, of the first woman, evidently referring to the *Worship and Love of God*.[91] In two other places,[92] when treating of man's primal integrity and the degrees of the mind, he refers the reader to the treatment of those subjects given in Part II of the *Worship and Love of God*.

Dr. Beyer, in 1776, in a letter to C. F. Nordenskold concerning the theological works, after adverting to Swedenborg's investigations of natural things, refers to the *Worship and Love of God* as follows:

For this reason the work *De Cultu et Amore Dei* is not of importance in respect to theological doctrine; but in respect to natural truths it contains many beautiful and profound thoughts. On the subject of

[89] At this point of the passage, Dr. R. L. Tafel, in quoting it in the Chronological Account, breaks off abruptly. The force, however, is lost unless the following sentences be also considered. Cf. *D.*, Vol. II., p. 950.

[90] *Adversaria*, Part I., Vol. I., p. 7.

[91] *Ibid.*, pp. 13, 10.

[92] *Ibid.*, p. 34, n. 10 and pp. 97-8, n. 131.

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God, and love and wisdom, on the Son, the person of Adam, the sources of life, and imputation, he expressed himself quite differently after he had received instruction from the Lord in the above manner; wherefore the above work is never cited in the other works.[93]

In 1814 a letter was sent by a Swedish gentleman living in London to G. Bilberg, the secretary of the Society *Pro Fide et Charitate*, which existed in Sweden from 1795 till about 1835,—asking for information regarding the *Worship and Love of God*. This letter, as inserted by Dr. R. L. Tafel in the *Documents*, reads as follows:—

Mr. Tulk requests the Society in Stockholm to communicate to him either directly, or through the writer of the letter, their ideas about the first work which Swedenborg wrote after his revelation in 1743, entitled, *De Cultu et Amore Dei*, published in 1745. He believes, as does also the Rev. Mr. Clowes, who is the most enlightened man in England in Swedenborg's doctrine, and who has translated all his writings into English, that it contains a genuine description of the creation, especially as Dr. Beyer frequently quotes it in his 'Index,' of which Swedenborg no doubt was aware. Mr. Tulk's own words on the subject are as follows: "Dr. Beyer has included this work in his references in his *'Index Initialis.'* Now we have reason to think that his Index was made with the knowledge and approbation of Swedenborg, and if so, Emanuel Swedenborg must have known of the insertion of the *De Cultu*, &c., in the work by Beyer. We wish therefore that you yourself, or some kind friend, would inquire of the friends in Stockholm, and discover if possible Dr. Beyer's sentiments upon it, which he may possibly have left in writing or otherwise transmitted orally, as the decisive opinion of Swedenborg upon it. The *De Cultu*, &c., was published in 1745, two years after his revelations, and before he published the first volume of the *Arcana*, which was in 1749." . . . If you or any one else can furnish some light on this subject, it would be most welcome to the Messrs. Tulk and the friends in London, who are particularly engaged upon that work at present.[94]

The *Documents* add:—

The following answer of G. Bilberg to Mr. Tulk was found among the papers: "Dr. E—m has told me that you wish to know our opinion respecting the truth of the work *De Cultu et Amore Dei*. I am able to tell you on the authority of Christian Johansen, who interrogated Swedenborg himself on this subject, that he obtained from him the following answer: 'It was certainly founded on truth, but that some-

[93] *D.*, Vol. II., p. 427.

[94] *D.*, Vol. II., pp. 709-710.

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what of egotism had introduced itself into it, as he had made a playful use in it of the Latin language, on account of his having been ridiculed for the simplicity of his Latin style in later years. For this reason he did not regard it as *equal* to his other works.'"

This evidence is interesting as showing the state of thought of early New Churchmen in regard to the *Worship and Love of God,* but as concerns the validity of the statement attributed to Swedenborg we agree—

..that with all deference to so respectable an authority we feel a strong inclination to reject the whole statement, as one bearing intrinsic evidence of having no foundation in fact, or else of having been vastly changed from its original form. Swedenborg was not the man, least of all at this time of life, to be driven by the ridicule of others into the adoption of a new style of writing. The style itself is indeed elegant and ornate, such as would entitle the work to be placed by the side of any of our greatest modern epics, including the *Commedia* and the *Paradise Lost*, but it is, at the same time, the one alone adequate and perfectly adapted to the matter in hand. Moreover, Swedenborg was not, so far as we are aware, in the habit of passing judgment on his own writings, asserting that one was not the equal of others, etc.[95]

In 1790 a translation of the *De Cultu, etc.,* was begun in the *Magazine of Knowledge,* Vols. I and II. It was not completed.

In 1791 Robert Hindmarsh reprinted Part II in quarto, pp. 26. Whether he also reprinted Part I we have thus far been unable to ascertain.

In 1812 another translation was begun in the *Halcyon Luminary.* It was not completed.

In 1816 a Swedish translation, entitled *Om Dyrkandet och Karleken till Gud* (Stockholm, Deleen), was begun, but "Only 48 pages were printed. The translation is the work of the Rev. A. A. Afzelius, a famous Swedish prelate, poet and hymnologist, member of the Society *'Pro Fide et Charitate.'*"[96]

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[95] Rev. Frank Sewall in *The New-Church Review,* Chicago, 1882-4, p. 180, in *A Drama of Creation.* This notable contribution to the study of the *Worship and Love* of God was republished, with slight alterations, in *New Metaphysics* by Frank Sewall, James Speirs, 36 Bloombury Street, London, 1888, pp. 208. The above quotation will be found on pp. 188-9.

[96] *Annals of the New Church,* by Rev. C. Th. Odhner, Vol. I., p. 253.

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In 1816[97] appeared the translation into English of Parts I and II, 8vo, pp. 291. The title pages read as follows:—

Part the First, on the Worship and Love of God; treating of the Birth of the Earth, of Paradise, and of Living Creatures, also of the Nativity, the Infancy, and the Love of the First-Begotten, or Adam. Translated from the original Latin of Emanuel Swedenborg. Manchester: Printed by F. Davis, 5, Hanging-Ditch. Sold by Messrs. Clarke, in the Market-Place, Manchester; and in London, by E. Hudson, Cross-street, Hatton Garden; T. Goyder, 8 Charles-street, Westminster; and may be had of all other Booksellers. 1816.

Part the Second, concerning The Worship and Love of God; treating of the Marriage of the First-Begotten, or Adam, and, in connection with it, of the Soul, the Intellectual Mind, the State of Integrity, and the Image of God, by Emanuel Swedenborg.

As an "Advertisement" to Part II, the following short paragraph, which has been retained in all subsequent editions of the translation, was inserted by the translator:—

The Treatise which follows is evidently a continuation of the foregoing one, though published by the Author as a distinct work. It is therefore thought proper to give it the distinct Title in the translation which the Author has given it in the original.

In 1828 the first edition of the English translation was followed by a second; 8vo, pp. 210. The title pages are not changed from those of the first edition, but it was published at London; "*Printed and Published by J. S. Hodson, 15, Cross street, Hatton Garden; and sold by T. Goyder, Dartmouth street, Westminster; W. Simpkin and R. Marshall, Stationers' Hall Court, Ludgate street; and by W. and W. Clarke, Manchester. 1828.*"

In 1832, at Boston: "*Published by John Allen, No. 11, School street,*" appeared the "First American from [the] Second London Edition." No change was made in the title pages, except that the words "Part the First" were omitted in the first one. The volume is in 12mo, pp. 213.

In 1864 followed the "Second American Edition." It ap-

[97] *Not* in 1801, as stated in *D.*, Vol. II., p. 209 *et alibi.*

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peared at Boston: "*Published by T. H. Carter & Company, No. 21 Bromfield street. 1864.*" 12mo, pp. 240.

In 1870 appeared the photolithographic facsimile of all of the text of the *De Cultu, etc.*, that is known to be in existence. For fuller information see the section of this paper devoted to *The Third Part.*

In 1883 the Latin text of Parts I and II was republished at London by Thomas Murray Gorman,—*Ad Fidem Editionis Principis 1745 Londini Excusæ denuo edidit Tho. Murray Gorman, M. A., e Coll. Hert. Oxon. Londini: Apud Kegan Paul, Trench, et Soc. MDCCCLXXXIII.* The title page of Part II is dated MDCCCLXXXII, probably due to an oversight. The reader may also see a reprint at the end of Part II of the advertisement contained in the *editio princeps* of the *De Cultu, etc., Regnum Animale,* and *Oeconomia Regni Animalis,* showing at what a very low price the works were sold. The volume is in 12mo, pp. 223.

In 1885 there appeared at London: "*Kegan Paul, Trench, and Co. 1885,*" a slightly revised edition of the English Edition of 1828; 12mo, pp. 253. The editor was Thomas Murray Gorman. The words *et Vivario,* rendered "and of Living Creatures" in the title page of Part I of previous editions, are now rendered "and the Abode of Living Creatures." In all editions of the work in English an alphabetical Glossary of mythological terms, inserted in the first English edition of 1816, has been retained, and in addition the "Translator's Preface" was retained in all the translations, except the two issued at Boston in 1832 and 1864. In the edition of 1885 the editor, Thomas Murray Gorman, added an "Address to the Reader," which shows him to have been an earnest student of his author, although in his eagerness to establish his position he sometimes employs farfetched arguments and comes to erroneous conclusions. But we are in entire agreement with his general position as defined in the following passage, which we think is one of the strongest and most lucid statements in regard to Swedenborg's preparation that has ever been penned:—

Swedenborg's preparation for his unique mission is a subject to which the mass of his admirers have given too little attention. By some

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it has been disregarded, and even despised. By others it has been considered in the most superficial manner. By none has it ever been seriously and methodically examined. And yet what a preparation that was! Apart from any opinion that may be formed respecting the validity of his claim or his teachings, it will be found, after due examination, that this orderly and thorough preparation for a special work has no parallel in the history of the race. The stupendous course of study which he pursued made his mind a clear mirror for reflecting the most important and firmly established results of the best experience and thought of all past ages until his own day. As a master of the highest and noblest human cognitions, seen in clear rational light, and without fundamental fallacy, he stands altogether alone. It was not, therefore, to be wondered at that many and singular mistakes respecting his teachings should be made alike by friend and foe.[98]

In the same Address the writer refers to the translator of the first edition into English and the quality of his work as follows:

Considering the character of its contents, the marvel is that this work should so soon have found a translator. In due course the task was undertaken, in the order of Divine Providence, by one who was in entire sympathy with the author, and who performed his labour of love in a spirit of genuine affection and deep reverence for the sacred and mysterious subject of which it treats. Thus the strange little book, with its twofold title, was not doomed to utter neglect and oblivion.

In the year 1816, nearly half a century after the decease of its heaven-illumined Author, an anonymous translation appeared from the pen, as is now well known, of the Reverend John Clowes, who was for upwards of sixty years rector of St. John's Church, Manchester. A second edition, still without a name, was issued in the year 1828.[99]

Passing over the references to the *Worship and Love of God* contained in the biographies of Swedenborg, which have either been very brief or have not entered deeply into the spirit of the work, we would direct the attention of the reader to the excellent contribution to an understanding and appreciation of the work made by the Rev. Frank Sewall, entitled *A Drama of Creation*, which we have referred to and quoted above.[100] Besides the general view of the whole book afforded by the account of the work, which is supplemented by liberal quotations, the author analyzes the *style* of the *Worship and Love of God*

[98] Pp. xxv.-xxvi.

[99] Pp. x.-xi.

[100] Cf. note 95.

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in a most appreciative manner, and discusses the position of the work in the whole series of Swedenborg's writings.

In conclusion, we would give it as our conviction, formed after a prolonged study and analysis of the *Worship and Love of God,* that when the whole sweep of macrocosmic and microcosmic investigations, conducted by Swedenborg from 1710 to 1745, shall have been more thoroughly studied, the book will acquire a force and meaning which can be little more than dreamed of today. May the time soon arrive when New Church men and women will see the glorious light contained in Swedenborg's philosophical system!

ALFRED H. STROH.

NOTE: The foregoing article suggests convincingly the need for a translation of the work, *Worship and Love of God,* into English. It is therefore with great pleasure that we announce that the writer of this Analysis, Mr. Alfred H. Stroh, has prepared a new translation of the *entire* work, including the Third Part, which now exists only in the Photolithographic MSS. Edition.

The Swedenborg Scientific Association desires to publish this work without delay, and will do so, if sufficient funds are subscribed to warrant the outlay. Every reader is therefore invited to assist in the publication of a new and *complete* edition of the *Worship and Love of God,* faithfully translated, printed in large type on good paper, and attractively bound. If the work is published as a result of this call, anyone contributing not less than $1.50 will be entitled to one copy; larger amounts will be apportioned accordingly.

As the possibility of publishing this work at an early date will depend mainly on the co-operation of the New Church Public, we sincerely hope that this will be both general, and liberal, as well as prompt.

Those desiring to contribute will please communicate with the Treasurer of the Association, Mr. Carl. Hj. Asplundh, Huntingdon Valley, Pa.

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SWEDENBORG ON THE APPEARANCE AND DISAPPEARANCE OF NEW STARS.

THE story of the new star suddenly appearing in Perseus in February, 1901, is a late item of the continuous Wonder-Word of Creation, the rumor of which has aroused wide-spread interest even among our busily engrossed public. Not that the birth of a new star, or the rapid obscuration of one newly gleaming out, are rare occurrences in the shining annals of the sky. "Astronomy," Swedenborg says, "is richly furnished with phenomena of this kind;" and he quotes from David Gregory a list of new stars noted from the age of Hipparchus down to 1702.[1] Since which time a number of additional *novæ* have appeared. Again, in the *Worship and Love of God*, where Swedenborg is speaking of a formation of the primitive planetary- or magnetic ether in the immediate vicinage of the active solar area,—he mentions that such an occurrence is not infrequent in the heavens; and instances the occasional appearance of new stars at first shining with a "ruddy-gold effulgence" (*admodum rutile effulgentia*);[2] and presently obscured; to be restored again to splendor. The "obscuration" mentioned being incident to this formation of a dense mass of a primitive planetary-matter about every active solar area at a relatively early epoch after its first establishment; and the sudden restoration of splendor being due to the too great expansion and final breaking up of this encompassing planetary mass under the continued action of the centrifugal force of the whirling motion imparted to it by the axillary rotation of the new star or sun,—assisted by a certain pressure exerted upon it interiorly by the fiery and expansive energy of the central active-area inclosed. Such sudden disruption is followed by an outward-gyre of the planetary masses along a widening helix path as they lose

[1] *Principia*, Swedenborg. Pars III. Paragraphus iv. (7).
[2] *De Cultu et Amore Dei.* Caput I; section I, 9 (d).

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the force of the first centrifugal impetus and are caught up by the large flow of that vast "vortex-ring" of the solar sphere (of magnetic ether) which forms an immense, permanent magnetic field about solar centers, revolving with their motion, and accompanying them as they move along their orbit. Borne by the large flow of this rotary solar-sphere, condensing as they go, and trailing their substance about them, the primordial planetary masses pass outward from the sun in easy gyres toward the place of their final equilibrium and orbit.[3] Thus, according to Swedenborg, there may arise "new heavens," and in the heavens new solar-vortices and systems with their planets; and in this manner, arise new creations in endless succession, at the nod of the Divine power (*si annuat numen*).[4] Elsewhere, as quoted, he instances by name and date several such actual occurrences. So manifestly abundant and present is the continual creative and formative power in the starry deep, and so wonderful its operation, that Swedenborg compares this sending forth of a new system, as it were a new star, to nothing less, for wonder and worth of interest, than the creation and first formation of a new human being,[5] all the miracles of which are directly attributable to the Divine Providence.[6]

This notable new star of February, 1901, the *Nova Persei*, is even not the first star appearing in the constellation Perseus, but the second. It is, however, the first *nova* of which a series of photographs has been obtained, permitting a comparison both of the phases of its rapidly changing and often alternating spectra, and of the successive positions of the several bright condensation centers occurring in the surrounding nebula; from which comparisons a certain trend of cosmic event was manifest, not only in the tremendous operations going on in the active area itself, and its immediate vicinage, but also as making rationally certain the existence of some structural and motive connection between the condensation-masses in the swirl of

[3] *Principia.* Pars III. Paragraphus i. (1-11), III., IV. (1-7), V., XI. (1-7).

[4] *Principia.* Pars III. Paragraphus II.

[5] *Regnum Animale*, Swedenborg. Pars VI. Section II: 41. Inductio.

[6] *Economy Animal Kingdom*, Swedenborg. Part I., 296.
The Divine Wisdom (*A. Ex.*), Swedenborg: II.; [2], [4].

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those far-off and swiftly fading nebulous-wisps and the new-born star, whereby they referred themselves to the active area of the *nova* as to the center of their own immense gyre.

That such an event should have aroused the interested speculation of the whole scientific world was inevitable. On both sides of the Atlantic, astronomers, physicists and chemists have been eagerly engaged on the various aspects of phenomena presented. The possibilities and inferences most pressingly suggested involve not only the direct astronomical interpretation of the phenomena and their bearing on questions of solar epoch *sub judice,* but they touch upon matters of solar physics in such wise as to renew questions as to the origin and maintenance of the great active areas constituting what we call solar centers; and reach to fundamental considerations as to the origin and mode of origin of ponderable "matter" as we know it, from the substance of the imponderable ether. For the impondering ether, being regarded as the sole primordial and all-present or pervading medium, presumably furnishes to matter itself its substratum or substance.

The facts concerning the new star in Perseus, briefly, are as follows:

It appeared February, 1901. In four days its brightness increased from invisibility until it became the brightest star in the northern sky,[7] and Vogel, speaking for the Potsdam observations, says that the brightness of the new star, which according to Pickering was certainly not of the eleventh magnitude on February 19, increased so rapidly that at 10 h. on February 23 it had attained magnitude 0.24; a rapid increase which he says,—"permits us to assume enormous disturbances in the atmosphere of the star."[8] The color of the star, as first seen in the Yerkes Observatory, University of Chicago, February 24, was, G. E. Hale reports,—*Yellow with a reddish cast.*[9]

The Nova then diminished in brightness, irregularly, till on

[7] *Science,* Nov. 29, 1901, page 860: "The New Star in Perseus."

[8] *Astro-Physical Journal,* April, 1901, H. C. Vogel: "On the Spectrum of *Nova Persei.*"

[9] *Astro-Physical Journal,* March 1901; Geo. E. Hale; Bulletin 16, Yerkes Observatory.

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June 1st it was on the limit of visibility. The spectroscopic returns at this time run as follows:

Potsdam Observations (Vogel. *Astro. J.*, April, 1901), report, February 23, at time of the maximum brightness of the new star, that the photographs of its spectrum, "which with a simple ocular spectroscope was very brilliant," were found to be almost without detail, to the no small astonishment of the observers.

There were no emission lines whatever; and of absorption lines only a few of hydrogen, diffuse and weak; and a couple of calcium lines. February 26th—Emission lines begin to appear; and increasing structural detail in spectra of later photographic plates.

The Lick Observatory reports February 24th,—Hydrogen band bright and broad on a strong continuous spectrum. February 25th,—Hydrogen; probably sodium.

The Yerkes Observatory, February 24th, inferred (by comparison spectra) hydrogen, sodium, titanium. On February 28th,—Hydrogen lines, bright and broad; dark lines superposed, probably due to reversal caused by absorption of outer layer at lower temperature. Bright sodium line: Helium line, Calcium lines, magnesium; chief nebular line seems to be present.

From Potsdam, Vogel reports that between February 26th and March 4th there was a change in the spectrum; absorption lines distinct, and accompanied by broad emission lines; and comments: "In a word, the spectrum has become that typical of a new star, and shows on a large scale the changes which Wilsing's observations have shown to occur in the spectra of metals and of hydrogen under high pressure."

Lockyer's observations (Pro. Roy Soc., December 2, 1901) note April lines as broad and hazy,—afterwards narrower and clean edged; the early prominent lines of hydrogen as afterwards weakened; and enhanced lines of iron, magnesium, etc.—conspicuous on early plates—as disappearing later; while Yerkes' Observatory (April. *Astro. J.*) reports,—observations between February 25th and April 10th show falling off in intensity in less refrangible region; continuous spectrum much

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fainter; and early lines diminished in intensity. This is confirmed in general by Bulletin 8, Lick Observatory.

For March, 1901, to May 3, Pickering reports changeable spectrum, varying daily,—but in general fluctuating between two types seemingly connected with marked changes in the brightness of the star itself. One type presented a strong, continuous spectrum, with hydrogen lines normal, and coincided with those periods when the star brightened greatly. The other presented a weak continuous spectrum; lateral extension hydrogen lines; strengthening of various bright lines;—and coincided with periods of minimum light. For June 25th he says: "An examination of the Draper photographs of the spectra of *Nova Persei*, No. 2, . . . shows that, like other *Novæ*, it has been gradually changing into a gaseous nebula;" although comparison with a nebular spectrum seems to show its chief nebular line to be relatively weak (*Astro. J.*, July, 1901). The Lick Observatory, Bulletin, No. 8, reports the spectrum of July 9th as that of a nebula. The particular form characterizing a telescopic star or sun is, however, still retained, as is noted in *Science*, November 29th, 1901. The Nova at that date being "according to the spectroscope a nebula, although retaining to the telescope the point-like form of an ordinary star."

A scheduled summary of reports would run:—*February, 1901*, a new star appeared in Perseus, the light of which increased within four days from invisibility to the greatest brilliancy of all among the many shining star-suns of the Northern sky. It was then of a ruddy gold color, and at that early maximum of overflowing radiance presented the peculiarity that although its spectrum was very brilliant it was almost without structure, having but one or two absorption lines. Then follows the rapid appearance of emission lines; the presence of both emission and reversal lines of hydrogen and the lighter metals. The early haziness of spectrum lines passed into greater definition and detail; and a final fading of the hydrogen and metallic lines on the spectrum coincided with the growing notable indication of the characteristic nebular spectrum; the lines of which have been partly identified, as some of them coinciding with certain hydrogen lines, and some either coinciding

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with or closely approximating certain lines characteristic of nitrogen; the lines of a nebular spectrum not appearing until some time subsequent to the appearance of the star and its early radiant maximum, and then only establishing itself gradually. Thus the nebula is manifestly an effect and not a cause in the production of a new star.

This gradual change in the character of its spectrum occurred in Nova Persei without the new star losing to the telescope the point-like form characteristic of an ordinary star-sun.

It is of profoundest interest to study the series of phenomena by light of that series of event which Swedenborg says follows fast on the creation of any active solar area in that universally-extending volume of First Aura or primal ether, which he says is coextensive with the Universe itself—is *in plenum* throughout the Universe and is antecedent to suns and solar systems.

First of all, he says, there is the expanse of this most pure, serene, primal ether, the First Aura,—quintessential, wonderful, extending throughout the created universe.[10] Then the Lord begins,—establishes,—creates and maintains, somewhere within the universally extending expanse of the Primal Aura, a new solar-center or active solar area, which from the beginning is both kept in those fine alternating expansions and contractions which send out their message of light and power into the surrounding deeps of the Universe; and in a rotary motion which begins to urge and solicit and draw into a like vortico-rotary-gyre that portion of the primal Aura which touches and presses it about. Next there begins,—by instrumentality of the centrifugal force exerted by adjacent layers of Primal Ether already "in gyre," upon layers further away not yet drawn into motion,—a certain compression of the ether-substance itself; at a little distance from the immediate active area.

The first result of this compression is the formation of a layer composed largely of those particular composite-substantial-entities which are termed by Swedenborg, "Third Finites" (or finites of the third grade);[11] which third finites are learned from

[10] *Economy Animal Kingdom*, Part I., 638; Part II., 166; 312; 339. *Regnum Animale*, IV. [VI.]. *Lesser Principia*, 62-3.

[11] *Principia*. Part I.; Chap. VIII., 3-4.

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the connections of their various series of ultimate uses to be the particular grade of primitives-of-ponderable-substance which are basic to hydrogen and the metals. These, excited by the surrounding motion and communicated heat agitations, would at once begin to send out the various vibrations characterizing them, upon the ether, giving rise to their own peculiar spectrum lines.

After the formation of a volume of these is well begun, the volume of magnetic ether can begin to be moulded; not before. For the molecules of units of the magnetic or secondary ether which constitute the proper solar sphere, are vortico-corpuscular forms, the envelope of which is framed of a mass of third finites; the center being far less dense, and occupied only by a very little active area occupied alone by a few flying finites of a finer grade. But so soon as third-finites exist, the volume of magnetic ether begins to be formed about the solar center, and flung outward; flying with tremendous outrush, and gyring as it goes, toward the confines of the sun's active power. Immediately after the formation of the substance of this solar sphere of secondary or magnetic ether,—by means of a compression produced by the greater centrifugal effort and pressure of layers nearer the active area,—and therefore in faster rotation, upon layers further remote,—there begins to be moulded a mass of that distinct Fourth-grade of primeval or primitive matter, called Fourth Finites or substantials. These Fourth Finites constitute the mass of the primeval substance of the planets; and from their connection and relation in other series of use, we know enter into the substance of electricity (Swedenborg's Third Ether), give its characteristic element to the "lightning fire" of Jove, and are part of the constitution of all nitrogen compounds, entering also the carbons.

It is to be noted that this *compression* mentioned as the means of moulding new grades of primeval "substantial entities" to serve among other uses as the primitives of new families of ultimate chemical compound,—does not at all result in the production of a mere general agglutinated and indeterminate mass, as might be inferred. The sort of thing which does result, Swedenborg says, and that necessary substantial and motor basis

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in the material acted upon by the compression which he postulates as a cause of such result, may perhaps be presented justly, although in briefest compass, by an illustration drawn from the Kinetic Theory of Gases; with modifications.

This Theory, as Meyer gives it, is as follows:—"In the gaseous state [the individual particles of matter] are entirely detached from each other; each particle moves around with great rapidity and rushes forward in a straight line until it comes in contact with another particle or some other impediment, from which it rebounds like an elastic ball and continues its movement in a new direction." From the premise in this theory, that the native path of these particles is a straight line, it follows that if a volume of them were confined within finite limits and always colliding with each other, yet they are supposed never to form—and never have any tendency to form—composites and associations among themselves,—but at the end of ages the volume is assumed to be the same volume of unassociated individual colliding particles it was at first.

This assumption, according to Swedenborg, will be true *if* the orbit of the particles *is* a straight line, or is an unclosed orbit. But if the orbit of the particles be a *closed* one, of finite diameter relatively to the boundaries of the space, *it will not be true.* For in case the orbit of the particles be a closed orbit—a ring say,—at the end of indefinite time we would find within our vessel a number of rings, formed by the association of numbers of particles arranging themselves thus, at length, through many collisions, and these rings would exist as substantial entities which would possess something of the known characteristics of matter; i. e.—coherence, permanence, resistance, occupation of space within their boundaries. And this result will, according to Swedenborg, inevitably follow if the path of the supposed particles be a *closed orbit.*

Now according to Swedenborg, the primitive substantial entities first created of all, are to be conceived of about as are the particles or molecules in a volume of gas according to the kinetic theory; *with this alteration of the theory,* that they move, not in a straight line, but in a closed orbit. The closed orbit which he postulates for them is not a simple ring. It might

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be roughly figured by the line the moon traces yearly in its progress round the sun by a circle of some thirteen loops. Or, a length of a dozen loops of spring wire uncoiled carefully from a spool and the ends brought around to meet give a fair idea of it. This closed orbit is supposed, in the case of the primitives of substance, to be of indefinitely small diameter. Now if substantive entities, possessing inherent kinetic energy and running in such a closed orbit, be brought together in a given finite space in sufficient abundance to be perpetually in free collision with each other, at the end of indefinite time great numbers of them will be found to have aggregated and associated themselves together in such a manner that they have formed a number of new substantial entities of the exact shape or configuration of their orbit; and the new compound-entities will possess a measure of coherence, resistance, permanence. In addition, if the closed orbit be of the postulated form, it can be seen that in the secondary-entities just spoken of, each given block of the substance composing it, will be tumbling or running around the entire ring, and thus the center of gravity of that block must be running around it also. This would result in "inciting" a certain rotary motion in the whole mass. And of the two motions would come a spring and conatus of the whole—under favorable conditions—to run into or describe a certain definite orbit of its own.

From which it would follow that these secondary kinetic entities if brought together under favorable conditions would, by means of collisions, at length arrange themselves by like process into like—but larger-aggregate—unities; with like, but less, kinetic energy,—manifested by an effort toward movement in like, but larger, orbits.

And these, Swedenborg says, are the actual, fundamental postulates of such result in nature: primitive substantial-entities, with intrinsic kinetic energy, moving in closed orbits, and in sufficient abundance to collide perpetually within the given space.

In *Nova Persei*, during the period extending from a time shortly after the first appearance of the new star to the establishment of its nebulous spectrum, there were coincidently pres-

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ent in its spectra pairs of bright and dark lines, or the emission and reversal lines respectively characteristic of a substance in a state relatively active or "fiery" and in one relatively quiescent or "cool;" lines which were probably produced, therefore, by "layers" respectively near to or removed from the star itself. In addition, there occurred a shifting or separation of the adjacent bright-and-dark lines in such fashion as implied that the layers from which they were respectively derived were in tremendous motion,—a motion which, interpreted by Doppler's principle, would indicate that the distance between the respective layers producing the bright and dark lines was rapidly increasing. As this feature of the spectrum of *Nova Persei* is characteristic of the spectra of *novæ* in general, the discussion of the questions involved is of wider interest, because of wider applicability.

In the *Astro-Physical Journal* for May, 1901, Pickering, in confirming the explosion hypothesis of the origin of *novæ* as against the collision, from phenomena presented by Nova Persei, adverts to the general grounds for the former hypothesis in a short article, page 277, from which we quote:

> It was pointed out in *Astronomy and Astro-Physics*, 13, 201, that all the phenomena connected with the spectrum of a *Nova* could be readily explained if we supposed the appearance to be caused by an outburst of hot gases, which cooled as they receded from the star. The approaching gases being comparatively cool on the side turned toward us would present a spectrum of dark lines. The receding gases being hot on the side toward us would give a bright line spectrum. Since the direction of the velocity of the gases on the further side of the star in the line of sight was the reverse of the nearer gases, the latter could not mask the bright lines, and we should accordingly have a superposed spectrum of bright and dark lines as shown.

Later, after a comparison of photographs of different dates made it certain the faint surrounding nebula regarded the *Nova* as its center, about which it was revolving in an expanding or helix spiral,—Pickering sums the situation: "A luminous mass of gas is at the present time found to be receding from the *Nova* in all directions with an enormous velocity;" adding that it now seems certain that the velocities found in the nebula surrounding the *Nova* are very much higher than even the veloc-

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ities that were at first calculated from the separation of the bright and dark lines. "This is a result," he says, "which could probably only be obtained from a continuously acting force." (*Astro J.*, December, 1901.)

On the other hand, Vogel, in considering this general question as to *Novæ* in the *Astro-Physical Journal* for April, 1901, says: "The relative motion of the two bodies, deduced from the separation of the centers of the adjacent dark and bright lines, led, however, to velocities so great as to be quite improbable." And he follows with most interesting applications of Wilsing's theory, to otherwise account for the large displacements of the lines. In the same number also may be found an article by Michelson, *On Doppler's Principle,* discussing the arbitrary application of a principle, based on sound (in which the source of the waves and the condition of the medium of propagation are within our reach), to the displacement of lines in spectra of celestial bodies; and suggesting several reasons for holding conclusions based alone upon such arbitrary application, tentatively only, not as dogmatic assumptions. In particular, he suggests two quite presumable cases in which interpretations of displacements of line in the spectra of celestial bodies, based on the Doppler principle as applied to sound, would certainly not hold good, i. e., in case the medium carrying on the waves of light be not at rest as a whole or in relation to us; and in case the medium through which they travel does not possess unchanged properties, as to density, etc.

The subject is one worth consideration from the point of view of certain cosmic-facts laid down by Swedenborg which may serve us as stepping-stones of approach toward it. For as Swedenborg gives some definite data, and outlines certain laws as to the series of substances and motor agencies concerned in the rise and progress of a new solar system in the universe, even until it is shaped complete,—active solar area, accompanying magnetic field, and planets, ready to offer themselves as fertile ovaries, co-operative, full of power, to the initiament of vegetable life,—what he says on the subject must stand as a general law covering all particular instances;—a law so wide of range, so sound and fundamental to the whole topic, that thought must reckon with it as a premise in all consideration of

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the phenomena in given instances, if its conclusions are to run even fairly true to the trend of the actual developing facts, and attain that measure of certainty apprehendable by finite minds, which Plato would term "true opinion."

Now according to Swedenborg there is a tremendous centrifugally-directed force and pressure existent at and about every solar center or active solar area; and this from two causes. *First,*—the centrifugal push and endeavor of that irresistible rotatory motion in which the solar centre itself is, and into which it carries also its entire connected sphere. *Second,*—the whole force of those undulatory periodic *pressures* of light perpetually communicated by the active solar area to the surrounding ether-sphere; the entire sum of which is of course a centrifugally-directed push and pressure, since it radiates outward from that center in straight lines,[12] and thus acts upon any body only upon the side which faces the sun. For, according to Swedenborg's express statement, light, which is an undulatory motion of the ether,[13] the communicating center of which, in each solar system, is the active solar area central to the same,[14] remains as an actual undulatory motion only while still quite near that central area. For at a little distance from that center, Swedenborg says, the actual undulations become converted into a certain "undulatory pressure," [15] not again to pass into actual undulatory motion until it comes in touch with the tellurian spheres and ponderable matter of the earths.[16] The means by which this conservative transformation of the actual undulatory motions of light, as they exist about that active center, into this "undulatory pressure," are two: *First,* the close contact of those vortico-spherical corpuscles constituting the mass of the magnetic ether sphere itself; and, *second,* the reaction, everywhere exerted, by that "etheron," that cosmic "protyle"—(The Primal Ether or First Aura of Swedenborg,—the same which he says in its volume is commensurate with the uni-

[12] *Principia,* Part III., Chap. V., 20. *Lesser Principia,* 118-130.
[13] *Economy Animal Kingdom,* Part I., 170; Part II., 260, 293.
[14] *Economy Animal Kingdom,* Part I., 170, 299-306.
[15] *Lesser Principia,* 120, 124-5, 130.
[16] *Lesser Principia,* 126.

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verse) [17]—which fills all the interspaces between the individual corpuscles of the magnetic ether sphere, as well as defines and bounds about all the endlessly many solar spheres themselves, and swings them in its vaster flow.[18] The whole force of the elastic reaction or repressure of this Aura,—as it comes in from the surrounding flowing deeps of the universe, is everywhere within the periphery of a solar sphere *centripetally* directed, and convergent in upon the solar center, and everywhere by its efficient reaction prevents the energy of the communicated-motion of the active solar center from being degraded or "dissipated," and conserves it to those proper ends and uses for which it was imparted. These ends and uses are two: The first use is one we partly understand, experiment and thought having in some sort apprehended its fact,—i. e., the motor energies communicated to the tellurian spheres and ponderable matters of the earths. Knowledge of that *Second* use, however, so far as I am aware, we receive from Swedenborg's statements alone. This use,—one operated throughout the area of the magnetic ether, during that period while it remains as a periodic "undulatory pressure" alone,—being not inconsiderable to the magnetic ether itself; for by it the magnetic ether corpuscles (molecules, units) are perpetually stimulated and forced to a certain intra-corpuscular periodic motion,—within their own boundaries alternately condensing and expanding again, as the alternate expansions and contractions of the acting solar area communicate to the substance of its vast surrounding sphere these traveling waves of alternate pressure and release. And some such perpetually-communicated, intra-corpuscular animation, or alternate expansion or contraction, is necessary—Swedenborg states—in the case of all ethers, to the maintenance of the integrity of their corpuscular or molecular form, and the spring, intrinsic motile energy or *vis motiva* characteristic of their primitive substantial entities.[19] For solar systems themselves

[17] *Economy Animal Kingdom*, Part II., 312, 339.

[18] *Economy Animal Kingdom*, Part I., 604, 635-9.

[19] "Wherever in the world, or in the earth's Kingdoms, there are substances endowed with active power and force, and therefore intended for performing certain functions and generating certain effects, there those substances are constantly excited, by extraneous causes, to a

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most widely and simply considered as to substance and force *per se*,—are palpitant spheres; and within the proper boundary of each is going on a fine economic circulation of substance and of motor forces,—the continually renewed spring and energy of which comes from the two great primal motions in which the central active area, the solar center itself,—is perpetually held, i. e., that of rotation, and that of a swift, fine alternating expansion and contraction. Which two motions communicate as it were the cardiac and pulmonic motions to the entire surrounding system. For which two motions—both as to their first origin and beginning in the first initiation of solar centers, and their maintenance so long as those centers last,—the solar centers themselves are interiorly dependent upon the like motions of the spiritual sun. "For that Sun acts these two motions from the Lord." [20]

This is probably because the light and heat motions are listed among the seven things not creatable along with substances, as an inseparable property of substance or any development of its potency of action; so there can be no light and heat motions in the universe, save as the Lord imparts them to it in the first place and momently ever after.[21] Thus for the communication of them the natural universe, as well as the spiritual universe, is directly and momently and forever dependent upon the Lord. "For in the Sun where the Lord is and which is from him, there are these two motions: and hence [they are] in the

species of respiration or animation, and this, both in general and in particular. Apart from such incentives or excitations, the subjects would be bare forms . . subject to collapse . . The same remark applies to the world's atmospheres; were they not to be roused, generally and individually, into something emulous of an animatory or respiratory motion they would instantly . . . change into heavy and sluggish things. . . . Oscillations, vibrations, and modifications are nothing more than reciprocal and alternate expansions or contractions of a mass or volume; of the parts in a mass or volume; or of the individua or singulars in the parts. . . . So likewise in the atmospheres of the world;—if they also in general, or in their greatest volume, or in the least volume, that is in their unit [molecule] alternately contract and then regain their pristine dimension, then, of course, there is no reason why these actions should not be likened to the modes of respiration: for in both cases there is expansion and constriction: and in both cases the subjects are roused to perform operations corresponding to their form." (*Animal Kingdom*, 392 (a, b).)

[20] *Divine Love and Wisdom*, 392.

[21] *True Christian Religion*, 472, 308.

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angelic heaven and in the universe.[22] Thus they are from the Lord; for the Lord only can impart to solar centers the perpetual spring of their radiant light and heat motions.

Now the force of both these solar motions is a centrifugally-directed force; and that from the very initiament and first beginning of an active solar area in the expanse of the primal ether, or First Aura. Thus it would tend to drive all bodies subject to it directly away from the solar center; and that at a great speed.

But there is a second thing to be considered as bearing not less upon the question immediately in hand. This is the rotary drift of the entire solar sphere.[23] This drift is immense; its velocity high; and it affects the motion of every body coming within range of its action. But the layers of this sphere at various distances from the solar center, perform a complete rotation in different times. For instance, in our own solar system the layer nearest the sun revolves with a period about coincident with that of the sun's own rotation, while at the distance of the earth's orbit the period of revolution is some 365 days. Now in every solar system this drift has to be reckoned with; and that from the initiament of the solar area; for the mass and sphere of the magnetic ether is formed about the new solar center previous to the formation of the primordial planetary substance; its gyre and flow being indeed that very stream which, taking the planetary masses while they are as yet an uncondensed congeries of inchoate matter, in fiery freedom of motion bears them in helix gyres, shaping and massing as they go, to that place in its own swirl where the total of substance and kinetic energy in the planet proper, *plus* the like total in the locally surrounding sphere of the electric substance—will be equal to the total of substance and kinetic energy in the volume of magnetic ether displaced by the planet *plus* its surrounding-sphere of electric substance Swedenborg calls the third ether, or finest tellurian.

And if this be so, this drift has to be reckoned with in the interpretation of the spectra of celestial bodies. For it makes it certain that the medium through which the light of the bodies

[22] *Divine Love and Wisdom*, 381.

[23] *Principia*, Part I., Chap. X., 6. Part II., Chap. I., 22. *Lesser Principia*, 124-5.

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is transmitted—is a moving medium, with distinct differences of density as well as of speed of motion. And that there is such a medium revolving about Nova Persei is to be inferred from the gyre the successive midsummer and early fall photographs showed in the fine nebulous condensations surrounding the new star; and also the computed velocity of that gyre at that distance would perhaps give a basis of general estimate as to the time of rotation in the layers nearer the center itself, if compared with what is known of the like rotation in our own system.

Yet, in turn, we should consider that this magnetic sphere did not always exist about the solar center; that in fact the very ether-substance of which it consists only began to be moulded close about that center at a period immediately following the formation of any considerable volume of the Third Finites, or primitives of hydrogen and the metals; and although the magnetic ether was formed in the midst of a rotary movement of the Primal ether, and is itself by nature most apt for the like movement, yet it had to be flung out from that center toward its place of equilibrium, with tremendous outrush and radial expansion, gyring as it went, before it all settled down to its place and the gait of its regular rotation.

Therefore about *novæ*, at that early epoch we should find evidence of the radial outrush predominant over the evidences of rotational drift, although that also must exist. But in old established solar centers we would find the precise contrary,—i. e., the settled rotational movement predominant over the radial; only so much of the latter being present as sufficed to keep up a quiet circulation in and out at the poles and from center to circumference through the vast vortex wheel of that immense field of magnetic ether which surrounds the solar center as an inseparable companion, going with it when it goes, revolving with its rotation, bearing the planets in its flow, and marking the confines of that particular solar system by the limits of its mass.[24]

[24] The centrifugal swing and push of this entire rotary motion, characteristic of active solar areas as wholes, being less at their poles than at their equators, of itself furthers and impels a continual inflow of the surrounding ether volume at the poles and outflow at their equatorial belts, which affords a powerful central spring of stimulus and re-

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But the mention of the midsummer photographs of Nova Persei leads us to the second series of data concerning it; which is perhaps the most interesting of all. For the later series of photographs not only developed the certainty of a structural connection between sundry faint and rapidly fading nebulous swirls surrounding the *nova,* but they made certain the fact, "before the light of the nebulous wisps and condensations went out," that those condensations were in the gyre of a mighty whirl around the new star, at velocities only comparable to the speed of our planets around their sun; the like of which had never been dreamed of in the heavens before,—nor such speed nor the fiftieth part thereof, measured among the stars.

The record of this most notable second series of data covering what is known of "celestial events" attending the appearance of the new star, runs as follows:

Science, November 29th, 1901, states that "in August, photographs were secured at Heidelberg of extremely faint patches south of the star. September photographs, Yerkes Observatory, showed nebular cloud; very nearly circular, varying in intensity in its different parts, with the new star situated near

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newal to the circulations of that large vortical flow of the surrounding volume of ether,—to which indeed the two higher ethers are natively apt and prone whenever and wherever active centers are afforded them for its beginning and maintenance.

In the second place, it is to be noted that while the *Lesser Principia* says certain first-finites,—normally existent between the molecules of Primal Ether,—when that ether begins to be compressed by new forces set up by the activities of the newly established solar center,—being expressed from between those molecules, can betake themselves nowhere save toward the poles; where they may even enter the Active Solar area itself; in which space they are able to abide and be in full freedom of their inherent orbital motions. Yet, since Swedenborg's postulate definition of an active space, or area, is that any finites existent therein shall be so few relatively to the given area that they are at once in full freedom of individual Kinetic activity; and, practically, never collide, —it at once becomes apparent that we cannot look to these finites themselves for the cause either of the establishment, maintenance, or impletion, of such active solar areas amid and against the surrounding pressures of the universe; and that the two great characteristic motions of Solar centers which are the springs and centers of energy to their dependent spheres, are in no manner whatever, even remote, an additive product of the inherent orbital motions of those finites which have, in the given space, found refuge, harbor, and freedom of activity:

But for these things, in beginning and continual maintenance, the serene and omnipotent activities of the Infinite, present in space, without spatial limitations, are alone adequate.

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the middle of the nebulous ring. And later photographs, when compared with those of September, made certain that the brightest portion of the nebula, and perhaps the whole, had moved to the south-east more than one minute of arc in six weeks. Motion on this enormous scale or a fiftieth part of it has never been observed for any celestial body outside of the solar system."

The event was of sufficient importance to telegraph from place to place and to the editors of scientific journals. *Nature* (November 21, 1901) reports on the photograph of *Nova Persei,* little or no nebulosity immediately about it; completely surrounding the new star, however, is a large elliptical belt of nebulosity, with patches of varying density, the most intense being in the southern half of the ring; the latter, probably identifiable with the four principal condensations previously noted, show evidence of motion of those constituent portions of the nebula. Structure of the nebula very complex;—question whether it is spiral or consists of several annuli with interlacing branches cannot be decided. A later note is made, November 17th;—that the nebula surrounding the new star is probably expanding in all directions.

The *Astro-Physical Journal,*—October,—gives the report of the Yerkes observations of the nebulosity about the *nova* from the photo of September 20th, as showing little or no nebulosity immediately about it, although two nebulous wisps extend from the Nova toward the west, curve north, and merge into the convolutions of the nebula proper. The nebula itself is of complex structure;—difficult to discover whether it was spiral, or consisted of several rings with interlacing and merging branches. In the same number of the *Astro-Physical Journal,* E. E. Barnard gives some pertinent observations made on No. 2392 with the forty-inch Yerkes Telescope. He found a bright star in a brightish ring of oval form almost incomplete in south portion. This ring was surrounded by a vacuity, outside which was a broad ring of light, less than the inner ring, broken on north. The inner ring was filled with nebulous light, which had a bright spot in it, south. Another bright spot was found coming to focus with the nebula and not with the central star—therefore doubtless a condensation of the nebula.

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The December *Astro-Physical* gives a very full report from the Lick Observatory, under the head: "Motion in the Faint Nebula Surrounding Nova Persei." The photograph for November 8th showed that:—

—The strongest nebulosity is very near to the Nova, adjoining it on the south and west. This mass is elongated in a general direction south of east and is nearly two minutes of arc in length. There are a number of very faint wisps south of the Nova—the outer ones being the stronger . . . these outer wisps are concave toward the Nova, on the arc of either a conic section, other than a circle, or of a spiral. . . . To the north of the Nova, and seeming to join it, there is a faint mass of nebulosity, while farther along in the same direction are traces of other masses.

A comparison of this negative with the reproduction from a photograph secured by Mr. Ritchey, with the two-foot reflector of the Yerkes Observatory, on September 20th, reveals some remarkable changes of position in the more pronounced condensations. . . Only four of these condensations are sufficiently defined to make determinations of position certain enough for purpose of comparison. . . The line drawn between these positions—(i. e., positions of the four masses of nebulous condensations on the nights of September 20th and November 7th, respectively), for each condensation, indicates the direction and amount of motion in the interval of forty-eight days. . . It will be seen that the displacements agree well, and amount to about 1½°. The directions are not so consistent and could perhaps be explained by the irregular motions in the nebulous mass, by a general translation of the nebula in one direction, or by a spiral motion. It is certain, however, that the motion is not radial. The amount of motion is almost incredible, being no less than at the rate of 11° per year. The greatest displacement (proper motion) in the stellar Universe so far observed is less than 9″ per annum.

Such an exceptional velocity as is here indicated leaves little doubt of the intimate connection of this nebulous matter with the Nova and its outburst. . . It may be that in the outburst of *Nova Persei* we have seen the formation of a nebula, either planetary or spiral."

To understand the probable significance of the tremendous velocities at which the instanced nebulous condensations appear to be circling the *Nova*,—velocities comparable only with our own planetary velocities,—consider the case of our own solar system. We know that its active solar area possesses a certain motion of translation, at a definite velocity, proper to itself alone. We know, too, that the planets always accompany it as it moves in its own vaster orbit of the ages,—and that they

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perpetually subcircle it, as they go. Thus we know certainly that whatever be the absolute velocity of our sun in its own orbit, its planets are moving much faster. For at every step of the sun's own progression, its planets run entirely around it, making one complete revolution at their respective distances. Now an observer situated at some far, skiey distance, at the present age would be able to see and chronicle only the proper motion and velocity of progression of our sun or star, in its own orbit. The higher speed of its subcircling planets would be an unknown thing, because the faint reflected light they possess at present would not carry far across the skiey deeps. But if he had been able to observe our solar system at that earlier epoch of cosmic history, when the primitive substances of our planets were not yet reduced by environmental instrumentalities to their present relative quiescence, but were still in the state of an uncompacted congeries of the primitives of matter (the "atoms" of which atoms are compounded) in such freedom of motion that their stroke and impetus continually struck out upon the surrounding ether those vibrations which send *light* waves flying,—then the path of these planetary congeries of matter circling their star, and the mighty speed of their motions along that path, would have been made manifest to his eyes; even as the light of a burning ship in a maelstrom will render visible on the darkest night both the dimensions of that circle which it is then traveling and the velocity of its motion therein; or as a blazing torch carried by a runner sends information to farthest beholders both of the path in which he is running, and of his speed.

Somewhat such is the information which has come to us from the series of photographs, fixing the successive positions of the several condensation masses in that far-off and rapidly fading nebulous-swirl developed around *Nova Persei,* and giving data to measure the immense velocity at which those dim, flying-radiances are sub-circling the new star; velocities comparable alone to our own planetary speeds about the active center of our own solar system.

All which affords to thought the happy conjecture that in those far blue deeps the ever-creating Lord of Nature and of Force and of Life has but lately initiated and established a new

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active solar area in an unoccupied expanse of the Primal Ether; and at once, through the proper activity of that central solar area "as father" and the substance and elastic reactivity of the surrounding Primal Ether as "mother," is fast framing the substances and parts of a new solar system; and that the first-shaped masses of the primeval planetary congeries are even now there flying toward their goals in the circling sphere, bye and bye to be moulded into earths whereon will rise the homes of a human race, new-born there from the Lord; glad to be created; and furnishing new brothers for the labors and the loves of heaven. LILLIAN BEEKMAN.

NOTE AND COMMENT.

THE SWEDENBORG SCIENTIFIC ASSOCIATION.

ANNUAL MEETING.

The Fifth Annual Meeting of the Swedenborg Scientific Association will be held in the College Building of the Academy of the New Church, Bryn Athyn, near Philadelphia, Pa., on Wednesday and Thursday, May 28th and 29th, 1902. All reports and communications for the meeting should be sent to the undersigned before May 10th.

By order of the President,

EUGENE J. E. SCHRECK,
Secretary.

4219 Ellis Ave., Chicago, Ill.

The Program of the meeting of the Swedenborg Scientific Association is given on page 100.

Swedenborg and Modern Idealism; a Retrospect of Philosophy from Kant to the Present Time, by Frank Sewall, M. A., has appeared, after long announcement, from the press of J. Speirs, London. It is a book of 244 pages, and embraces, besides some essays which have already appeared in New-Church and other Reviews, an introductory essay on the

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relation of philosophy or of rational thought to theology, and a definition of Idealism in distinction from Materialism and also from a "misconceived Transcendentalism." The author uses "Idealism in its broadest sense, meaning thereby the opposite of Materialism." The motive in calling "Idealism simply the opposite of Materialism was to differenentiate between Idealism and the truths of Revelation, or those which we regard as embraced in spiritual Faith." In defining Idealism more precisely he says, "it means belief in a self-active principle, which as Will and Idea is the object of a most immediate and absolute knowing in ourselves, and which is the only efficient cause of the activities and changes we see in the objective world." In subsequent chapters, after a lengthy treatment of "Swedenborg's relation to Aristotle," and of "Descartes and Leibnitz as reflected in Swedenborg," Kant's whole doctrine of cognition is closely compared with Swedenborg's doctrine of the Rational Faculty and of the Two Worlds, the Sensible and the Intellectual, and many coincidences are pointed out. "Progressive Phases of Idealism from Kant to Lotze" embrace notices of Jacobi, Schelling, Fichte, Hegel, Schleiermacher, and Schopenhauer, and a convergence is shown towards Swedenborg's doctrine of Discrete Degrees and of the World as Love, a statement of Swedenborg's doctrine of this dictinctive philosophic concept being quoted from Prof. Lewis F. Hite, A. M., of Cambridge. Recent works of Professors Royce, James and Ladd, of this country, and of Dr. James Ward, of Cambridge, England; Renouvier, of France, and other European philosophers, are quoted in illustration of the approach in contemporary philosophic thought to Swedenborg's doctrine of the creation of the universe by discrete degrees out of love with a view to an immortal redeemed society of souls. The work also embraces Essays on "Philosophy as affected by Nationality" and on "John Addington Symonds," republished from the "New World" quarterly review.

The habitability of other worlds than ours is discussed in a most engaging and yet thoroughly scientific manner by Garrett P. Serviss in *Other Worlds; Their Nature, Possibilities and Habitability in the light of the latest discoveries;*" D. Appleton & Company, publishers, New York, 1901. To those who are interested in modern scientific corroborations of Swedenborg's distinct teaching of the habitability of the "earths in the Universe" this book will especially appeal. While the author finds it hard to conceive of some of the planets such as Jupiter and Saturn, for instance, as being adapted, in their present liquid condition for the habitations of human beings, he mentions nevertheless the possibility of their being a solid and habitable planet within the nebulous sphere revealed to our vision by both these planets, and he concedes generally the rationality of the hypothesis that the planets of our solar system are made for habitation, and that many of them at present are

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adapted for the existence of beings who resemble ourselves in general, if not in every particular of physical requirements. In his preface the author says:

"The point of view in this book is human interest in the other worlds around us. It presents the latest discoveries among the planets of the solar system and shows their bearings upon the question of life in those planets. . . . It indicates what must be the outlook of the possible inhabitants of some of the other planets towards the earth." . . .

"The subject [of habitability] is by no means abandoned to the tellers of tales and the dreamers of dreams. Men of science eagerly enter into the discussion of the possibilities of other worlds. . . About Mars in particular a lively war of opinion rages. One side holds that Mars is not only a world capable of having inhabitants but that it actually has them and that they have given visible proofs of their existence and their intelligence, through the changes they have produced upon its surface." "And not only Mars but Venus,—the beauteous twin sister of the earth, who, when she glows in the evening sky, makes everybody a lover of the stars,—and even Mercury, the Moor among the planets, wearing "the shadowed livery of the burnished sun," to whom he is "a neighbor and near bred," and Jupiter, Saturn, and the moon itself—all these have their advocates, who refuse to believe that they are lifeless globes, mere reflectors of useless sunshine. The case of the moon is, in this respect, especially interesting on account of the change that has occurred in the opinions held concerning its physical condition. For a very long time our satellite was confidently, and almost universally, regarded as an airless, waterless and lifeless desert, a completely "dead world," a bare, dessicated skull of rock, circling about the living earth. But within a few years there has been a reaction from this extreme view of the lifelessness of the moon."

Treating of the rings of Saturn the author says:

"In this respect the mystic Swedenborg appears to have had a clearer conception of the true nature of Saturn's rings than did Dr. Dick; for in his book on the 'Earths in the Universe' he says,—using the word 'belt' to describe the phenomenon of the rings:

" 'Being questioned concerning that great belt which appears from our earth to rise above the horizon of that planet, and to vary its situations, they [the inhabitants of Saturn] said that it does not appear to them as a belt, but only as somewhat whitish, like snow in the heaven, in various directions.' "

Professor Simon Newcomb, in his article entitled "The Fairy Land of Geometry," in *Harper's Magazine* for January, speaking of the theories of the "Fourth Dimension," remarks that,—"it is very curious that in these mathematical speculations the most rigorous mathematical methods correspond to the most mythical ideas of the Swedenborgian and

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other forms of religion. Right around us, but in a direction which we cannot conceive any more than the inhabitants of "flat-land" can conceive up and down, there may exist not merely another universe but any number of universes. All that physical science can say against this supposition is that even if a fourth dimension exists, there is some law of the matter with which we are acquainted which prevents any of it from entering that dimension, so that in our natural condition it must forever remain unknown to us." This recognition by Prof. Newcomb of Swedenborg's doctrine of the two worlds of discrete degrees of being, one being composed of fixed matter, the other of spiritual substance and its states, the lower being unable to enter the higher, would be more perfect if it were freed entirely from the self-contradictory notion of a "fourth dimension of space," which theory seems like a vain effort to attach dimension to that which is by its very assumption dimensionless. For space, of its very nature, is finite because it involves the idea of large and small, whereas the infinite and the absolute are not to be conceived of as large or small, and spirit partakes of the infinite, in this respect, as having no spacial dimension. At the same time the spiritual world, as the object of spiritual experience, must have the appearance of spaces and spacial dimension to finite minds there, just as everything seen by the mind in nature has to be viewed through the mind's lenses of time-and-space-relations. To be beyond these relations is not to attain, however, to a fourth dimension, but only to be in a world where dimensions are the mind's projection upon its environment, and not a relation unalterably fixed in matter.

A friend sends a clipping from the Boston *Transcript*, in which a correspondent, not named, says: "In justice to the cause of truth, I cannot permit to pass unnoticed Sir Robert Ball's failure in his recent course of Lowell lectures to mention the name of Swedenborg among the earliest originators of the nebular hypothesis. [?] Professor Ball seems to have fallen into the common error of giving to Kant a much more prominent place than he really deserves, and I think it about time the facts were set forth putting the matter in its true light. Kant was born in 1724 and did not publish his great work, "General Natural History and Theory of the Heavens," till 1755. In 1720, four years before Kant was born, Swedenborg wrote his treatise entitled, *Principia rerum Naturalium ab Experimentis et Geometria.* He then proceeds to give the titles of Chapters in the *Principia*, which followed when Kant was only ten years old; and says, "I think it can be stated with perfect truth that of all evolutionists who have existed, Swedenborg was the most perfect. The *Principia,* published as I have said when Kant was only ten years old, was, as it were, a great egg from which he evolved during the years 1734 to 1745 probably what must be considered, when it is

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properly put together and understood, the most perfect system of science and philosophy that human mind has ever conceived."

The correspondent, like most New-Churchmen, fails to make the essential discrimination which exists between Swedenborg's cosmogony and the Nebular Hypothesis.

SWEDENBORG SCIENTIFIC ASSOCIATION.

PROGRAM OF THE FIFTH ANNUAL MEETING

To be held at Huntingdon Valley, Pa. (R. R. Station, Bryn Athyn).

WEDNESDAY, MAY 28TH.

10 A. M. Meeting of the Executive Committee.
11 A. M. Meeting of the Board of Directors.
2:30 P. M. Meeting of the Association. Reading of Reports and Communications.
4:30 P. M. Annual Address, by the President.
6 P. M. Collation.
8 P. M. Social Reception.

THURSDAY, MAY 29TH.

10 A. M. Meeting of the Association. Election of officers.
Paper by Rev. L. F. Hite: "Introduction to Swedenborg's Work on the Infinite."
Paper by George M. Cooper, M. D.: "Swedenborg's Science and its service to Medical Science."
1 P. M. Collation.
3 P. M. Meeting of the Association.
Paper by Rev. Alfred Acton: "An Analysis of Swedenborg's *Ontology*."
Paper by Rev. C. Th. Odhner: "Historical Introduction to the new edition of the *Principia*."
8 P. M. Meeting of the Board of Directors.

Members and friends of the Association, desiring to attend the two days' meetings, are requested to communicate with Mr. C. H. Asplundh, Huntingdon Valley, Pa., before May 20th, in order that arrangements may be made for their entertainment.

Trains for Bryn Athyn leave Reading Terminal at 12th and Market streets, Philadelphia, at 9:28 and 11:13 A. M., and 1:28, 3:13, 4:23, 5:28, and 6:28 P. M.

E. J. E. SCHRECK,
Secretary.

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