



SWEDENBERG AND MODERN SCIENCE

By Dr Ian J. Thompson.

This year is the 300th anniversary of the birth of Emanuel Swedenborg (1688-1772). Although he worked in the eighteenth century, his investigations into the nature of physical, physiological and spiritual processes are still relevant today, although they are not as widely known as they deserve. In this article, I will briefly describe the stages in Swedenborg's life, and outline his mature teachings with particular reference to what is relevant to the concerns of contemporary science, and to the concerns of those wishing to extend that science.

Life

Swedenborg went to University in Sweden just when the new Newtonian ideas of mechanical explanation were beginning to supplant the older Cartesian views. For the first part of his life, Swedenborg was an enamoured physicist. He followed up lines of investigation in fossils, sailing, salt and mineral production, longitude determination, magnetism, and various chemical processes (to name only a few). He developed crude ideas for submarines, and flying machines and designed more practical things such as dry docks, pumps, and a way to transport small ships fourteen miles overland to help the king win a battle. From the age of 28 he was an Assessor for the Royal College of Mines, having a full position from 36.

All through this time, however, he was interested in the foundations of physics. After three years he published his great work, *Opera Philosophica and Mineralia*, of which the first volume was called *The Principia, or The First Principles of Natural Things*. In this, Swedenborg positioned atoms within atoms, or discrete orders of particles, such that the smaller or more fundamental particles had discretely higher energies and moved internally in rapid vortical patterns. The appearance of solidity was provided by the speed at which the internal parts moved, and because this motion was in a directed spiral, there was a *polarity* to the motion which Swedenborg used to explain the magnetisation of solids. The ultimate constituent was the 'natural point' which was infinitely small and had infinite tendencies to motion. He then proceeded on the astronomical scale to explain the origin of the solar system as the progressive condensation of solar matter.

There are considerable similarities of these early ideas with what science has subsequently discovered. The modern atom with its rapidly circulating electrons appears to be solid in the same way he suggested, and rather differently from what Boyle and Newton imagined. Modern physics too has realised that the constituents of atoms have higher and higher energies, with the proposed *quarks* having energies much larger than appear in normal molecular, atomic, or nuclear processes. His ideas of intrinsic polarity in the constitution of particles is a remarkable anticipation of the notion of spin in modern particle physics, while the same ideas applied to magnetic materials produced pictures of magnetisation which are still valid today.

By means of his theories of physics, he was trying to answer the question, 'how can an Infinite Being create a finite world?' The intermediate nature of the 'natural point', being in some respects finite and in some respects infinite, was in part his solution to this problem.

The Search for the Soul

He had a second question in mind too: 'what is the place of the human soul in nature' (what we call today 'the mind-body problem'), and this led him on from considerations of physics to investigations in anatomy and physiology. He read all the anatomical studies available, and travelled extensively talking to those working in these fields. He performed some dissections himself, but soon decided that this biased his theoretical speculations, and that he should confine himself to using the results of others.

He was particularly interested in the structure and function of the nervous system, and was impressed by the hierarchical substructures of organs, bundles, and then single nerve fibres. As with the physical world, he understood that the human body was constructed of smaller units, and these of still smaller entities. He postulated what he called 'cerebellula' ('little brains') as the smallest functionally autonomous units in the brain, and, against Descartes, became convinced that psychological functions were mediated by the cerebellula themselves. Various observations convinced Swedenborg of the primacy of the cerebral cortex, and also that different regions of the cortex were specialised for particular functions. This is the beginning of the theory of cerebral localisation. He also speculated that various subcortical grey matters (in particular the cerebellum, the oblongata, and parts of the spinal medulla) had the capacity to act as motor centres in their own right, and allow highly developed motor habits in humans. These views demonstrate Swedenborg's remarkable intuitive grasp of a subject which others have had to elaborate over a long period.

He didn't find the soul in the brain, however, and he was led to investigations in psychology. Here he again applied his scheme of 'discrete degrees' of organisation. He saw the capacities of the mind to have sense data, to organise these into thoughts and ideas, and to judge those thought and ideas as three levels of sensation, thought and reason or judgment, with each level being discretely higher than the previous. This idea of stages of psychological development reappears today in the theories of Piaget and Erikson.

New Insights

At the age of 55, however, his life began to change in unexpected ways. Where previous he had always had an intellectual approach to life, now he was having a disturbing series of dreams which were forcing him to reconsider his intellectual pride and his repression of affectional processes. From this time on, he systematically recorded his dreams and inner experiences in what became his *Journal of Dreams(1)* and his five-volume *Spiritual Diary(2)*. He gradually began to have psychical experiences and visions which even persisted in his waking state. In a sense he was developing the capacities to investigate the deepest realms of the mind itself, and finally to answer his search for the soul. He began forming his 'post-illumination' philosophy and spiritual insights, in a kind of 'rational mysticism' which he then consistently expounded in his writings and conversations for the remaining 25 years of his life.

The Importance of Swedenborg

Swedenborg is important because, although his is in general agreement with the esoteric teachings of ages before and since, he worked from within a distinctly Western and Judeo-Christian tradition. This may not seem a strong

recommendation given the widespread uncertainties in that tradition today, but he is important precisely because he tackles and provides answers for what is today most uncertain. Very few people today (especially among the present readership) would believe, for example, that the Christian idea of the Divine Trinity (of three persons but not three Gods) is a coherent rational doctrine, that faith alone (without works) is what is important, or that Jesus of Nazareth died to appease the wrath of an angry and vengeful Divine Father. Swedenborg saw one of his tasks as replacing these ideas with what he regarded they should have been all along, and this he did with attention to logical and psychological detail which has rarely been equalled.

My task here is not to explain his ideas about ethics, religion and theology, although he would see those as central to his understanding, but to give an introduction to some of the consequences of his teachings with particular relevance to current topics of concern. I will first outline his general scheme of existence, and then explain how it fits into the operation of the physical world as discovered by modern science. Finally I will briefly discuss his interpretations or solutions to a number of phenomena and problems which are being discussed in psychology, psychological studies, and spiritual development.

Mature Teachings: The World as Hierarchical Structure of Propensities (Loves).

Swedenborg describes the world as made in the pattern of end-cause-effect (or goal-propensities-actualities). Each of these three stages is a discrete level or degree, and each is itself sub-divided into goal-propensities-actualities sub-degrees, and so on in a nested fashion. The outermost 'actuality' degree we call the physical world, the propensity 'degree we call the mental world, and the 'goals' degree we call the spiritual world. The physical world then has sub-degrees we call goals, propensities and effects; the mental world then has subdegrees we call desires, intentions and sensations/actions; and the spiritual world then has subdegrees he calls love, wisdom and use. The life of all degrees and sub-degrees is their derivative from the Divine Source, so that they are all like temporary pools in a cascade of life from the source to the ultimate effects. In this way is formulated a *qualitative nested hierarchy* of beings and processes.

The prior degrees are not localised in space, in contrast to the ultimate effects. Minds, not being in space, are therefore individuated not by 'multi-dimensional position' or 'frequency of vibration', but by their varying uses (*functions or effects*) with respect to the physical world.

Causal Connections: The events at any stage depend on the propensities in that sub-stage, and on the events in the corresponding positions in the prior stages. What goals and propensities are present depend on the past actualities in both that sub-stage and in the *following* degrees. There is thus an appearance of bi-directional interaction between all degrees, but this is always based on a principle of **Conditional Forward Production**: 'The propensities at any stage are those derivatives of preceding propensities or loves which accord with what is already actual in that stage'. The processes at any stage are therefore the join production of 'Principal Causation' from the preceding propensities, and of 'Instrumental Causation' from which effects are already actual. Only in the instrumental sense can events ever said to be causally efficacious.

Interconnectedness in the Physical World: The physical world is *in itself* fragmented and without consciousness, but is being continually produced from prior propensities. The substances in the physical world are all interconnected via this connection with their non-localised source degrees.

and have only local connections among themselves. (It is only a matter of convention whether these prior degrees are called *within* or *external* to the physical world, as, strictly speaking, spatial descriptions do not apply).

Being, Substance, and Love: In *Divine Love and Wisdom*, his most philosophical work, Swedenborg explains how the substance of a thing is the propensity or love which constitutes it. Things are therefore *forms of propensity*, as quantum physics is finding. Aristotle's ultimate underlying matter is thus the originating love. The true nature of something (or someone) is its set of propensities or dispositions, and are hence only apparent in freedom and/or unusual 'experimental' situations. Love is not a late addition to a person, but is his or her very being.

A Dynamic World: His is an intrinsically *dynamic* view of the world, as it is being continually produced, now, at many simultaneous levels of operation by an immanent Divine Source. The 'Eternal Now' is the exploration of these degrees, and is *not* a global view of all past, present and future time in some immobile 'block'. There is a tension in Capra(3) for example, between the *static* eternity of Minkowski space-time and the *dynamic* eternity 'where life quivers in its true sense' (3), p. 198). Swedenborg is adamant about the absence of any predestination and about the preservation of human freedom. Spiritual processes operate in time, but as prior levels concern themselves with longer-term goals, in a sense they encompass larger stretches of physical time.

Personality: The nested hierarchy of degrees and subdegrees make up a person, as they constitute the human functions at the physical, mental and spiritual stages. Therefore, wherever these degrees are found, persons will be present. (To Swedenborg's initial surprise, he found that the origins of the soul's intentions were in a spiritual world peopled with men and women, all of whom had once lived on earth). He also applies the 'principle of personality' to the Divine Source, and we have *our* structure, he claims, because we are an image of a Source with that structure.

Survival After Death: Because the production of intermediate layers is normally conditioned on existing actualities, the mental and spiritual stages depend on the physical world as does a house on its foundations. However, as we live we are also forming *intermediate* actualities in the mental and spiritual levels, and it is these, Swedenborg proposes, which enable us to exist as individuated persons even after the disintegration of the physical body.

Quantum Physics

Schrodinger's equation describes the quantum propensities for actual events that would result from measurements, and these propensities are there even if no measurements are actually performed. Consciousness seemed to play a role in producing these actual events, but this is what Swedenborg might expect, as physical actualities and mental sensations are the final sub-degree in their respective degrees, and hence should depend on each other as explained above. They have the same functional role in the physical and mental stages, and hence correspond to each other in the relation of cause and effect.

Physics has long ago given up the idea of solid material corpuscles (or at least ought to have done so), and is now moving to the idea of objective distributions of propensity which manifest themselves intermittently and probabilistically in suitable circumstances (see (4)). The mind-dependent nature of these circumstances, however, will only become clear in the

context of a general theory of mind and nature, such as Swedenborg begins to provide (as explained next).

The Mind - Body Problem

Swedenborg explains how there is an intimate relation between the mind and the body (even though they are distinct degrees) because of what was called above the principle of Conditional Forward Production, (what Swedenborg calls the principle of 'spiritual influx'). Because of this principle, human desires, intentions, actions and sensations require a *corresponding* structure of physical actualities in order for them to be maintained, and this structure, Swedenborg observed, is just the structure of the human body - brain, organs, cellular structure and all. The brain, for example, is the base for goal-aspects, and by the operation of the propensities it thereby contains, it controls the person's deliberate actions. Thus if the brain is diseased, it does not permit certain normal mental dispositions to operate, and if the disease is permanent, they might never develop in the first place. All physiological processes are in fact significant, as they are related to specific psychic processes by similarity of function (for details, see e.g. (5)). Swedenborg gives us the beginning of a detailed theory of psycho-physical correspondences, a branch of science which should be compatible with all the observations of neurophysiology and of psycho-physical connections.

Near-Death Experiences

The first survey ((6), pp. 122-126) of this field drew attention to Swedenborg's description in *Heaven and Hell* (§445-452) of the stages in the processes of dying. Swedenborg does not however describe cases of returning to the body, except that he went through these experiences himself, and did return. David Lorimer (7) has recently described these phenomena (and Swedenborg's contributions) in more detail.

Altered States of Consciousness (ASCs)

In his book *The Natural Depth in Man*(8), Van Dusen explores the realms of self-reflection, feeling-imagery, dreams, hypnagogic imagery, hallucinations and preliminary mystical experiences. He bases many of his insights on Swedenborg's *Diary of Dreams*, and on his understanding of Swedenborg's mature writings.

Swedenborg himself had extensive experience with his 'double sight', and was able to trace back to their sources in the spiritual world those things which influenced him for good or ill (see e.g. *Arcana Coelestia*, § 6191). He also had many deeper mystical experiences, but afterwards, tended to compalin that he could not put them into words (rather difficult for the intellectual type to admit!).

The contemporary mathematician J.H.M. Whiteman has been a 'practising mystic' for the past 60 years (see refs. (9), (10) and (11)), and has found much useful guidance in Swedenborg. Whiteman has described (in (10)) the hierarchical potentiality-actuality structures in physics, and has attempted (in (11)) an extensive classification of ASCs. He incorporates many of Swedenborg's ideas, though not always without alteration.

In *Heaven and Hell* § 256, Swedenborg interestingly provides an alternative explanation of the states of consciousness in which people under hypnosis recall memories of lives before they were born, memories which are usually taken as evidence for reincarnation.

Symbolism in Depth Psychology and Religion

Universal Correspondences: There are prior-post correspondences not only with the parts and functions of the human body, but with all animals, plants and natural things. All these correspond to specific psychic propensities

(states), according to the functions performed. Now these prior propensities can be given a 'free hand' in dreams and visions to create images of what best would correspond to them, and thus they can represent themselves in such forms. When we see these dream images, we are often able to discern the originating psychic state, using a kind of 'language of correspondences'. This principle is the basis of innumerable myths, parables and allegories from all religious traditions. Dante and Blake explicitly write in this manner. The correspondences are not *merely* metaphors or analogies, however. The true correspondent of any natural object is, strictly, that spiritual entity by means of which the object is created and sustained in the natural place.

Swedenborg claims that much (but not all) of the Bible is written in the language of correspondences, such that the originating psychic states are telling their own 'internal stories' which are typically about spiritual development (David Jenkins has *some* correct ideas here). This is not to say that none of the events actually occurred (only Genesis chs. 1-11, Job and Revelation are all mythical, he claims), but only that many of the historical reports could be of 'acted out parables'.

Conclusion

Swedenborg never forced his views on anyone, saying they will be mainly of interest to may people (like himself) who 'have to understand before they can believe'. His ideas had a mixed reception in his lifetime. Some, like Blake (12) and Kant (13), found much material to accept, but ultimately turned away from him. His ideas are perhaps more in line with a 'New Age' now, but much of what he said is still for the future.

I.J.T.

- (1) Swedenborg's Journal of Dreams, 1743-1744 Commentary by W. Van Dusen, 1986, Swedenborg Foundation, New York.
- (2) Swedenborg, The Spiritual Diary, 5 vols: Vol. 1, 1962. Swedenborg Society, London, Vols 2-5, 1962, Academy Book Room, Bryn Athyn, Pa.
- (3) F. Capra, The Tao of Physics, Fontana, 1976.
- (4) I.J. Thompson, 'Real Dispositions in the Physical World', Brit. Jnl. Philos. Science, to appear.
- (5) Emanuel Swedenborg: The Universal Human and Soul-Body Interaction, Classics of Western Spirituality Series, Paulist Press, 1984.
- (6) R. Moody, Life after Life, Bantam, New York, 1976.
- (7) D. Lorimer, Survival: Body, Mind & Death in the Light of Psychic Experience, Methuen, 1984.
- (8) Wilson Van Dusen, The Natural Depth in Man, Swedenborg Foundation, New York, 1972.
- (9) J.H.M. Whiteman, The Mystical Life, Faber and Faber, London, 1961.
- (10) J.H.M. Whiteman, Philosophy of Space and Time, Allen and Unwin, London, 1967.
- (11) J.H.M. Whiteman, The Meaning of Life, Colin Smythe, Gerrards Cross, U.K., 1986.
- (12) H.F. Bellin & D. Ruhl (eds), Blake and Swedenborg: Opposition is True Friendship, Swedenborg Foundation, New York, 1985.
- (13) I. Kant, Dreams of a Spirit-seer, 1768. See especially Sewall's Commentary, 1900.

Swedenborg's books are published in the U.K. by The Swedenborg Society, 20-21 Bloomsbury Way, London WC1A 2TH.

