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BOOKSHELF BROWSING

AN INQUIRY INTO SEVERAL BELIEFS HELD BY MAN REGARDING THE ANATOMICAL SITE OF THE SOUL*

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“ . . . **A**MONG knowable things, nothing is alike noble, as is the knowing of the Soul itself. . . . ”—VAN HELMONT.

INTRODUCTION

Since the beginning of Time apparently man has busied himself with the enchanting, fascinating but still unsolved question, “Where and what is the soul?” There have been individuals who have doubted its being, arguing that it did not exist; others have held that because there is life, a soul, whatever it may be, must be present also. Ignorance has not prevented the writing of an almost countless number of tomes regarding the exact nature of the soul, and in all ages there have been religious factions and cliques which held stoutly to this creed or to that opinion. It is possible here to mention but a few of these many theories.

Soul Sleep or Psychopannychism. This idea apparently originated with the Armenian and Arabian sects and, although it was condemned by the various Christian Councils of the Middle Ages, Pope John

XXII accepted it openly. At the time of the Reformation it was revived by several factions and was even extensively developed by the Anabaptists. One of its chief theological opponents, by the way, was the dour Swiss, John Calvin, the “father” of Presbyterianism.

Soul-death or Thnetopschism, is another development of this “motif” and it was believed, for example, by one Petrus Pomponatus (circa 1500 A.D.) that the soul was actually “dead” from the death of the body to the moment of the beginning of the “Last Judgment.”

Transmigration of Souls. It is well known that this is a common belief of many peoples and races.

Soul Sex. Some philosophers affirm that the various viscera have their own separate male soul. The Sages of China have elaborated upon this dogma and some of them have maintained that every human being is provided with both a male and a female variety, and explained this physical hermaphroditism by the “need” of a harmonious cooperation of these two into one organic unity!

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Traducianism, the theory of the derivation of the child's soul from that of his parents; *Creationism*, that every soul born into the world is a fresh creation, *Phyletic Psychogenesis*, the tissue soul of Haeckel, are only a few more mellifluous labels that have been plastered onto this problem. Dozens of others might be discussed but it is not the purpose of this brochure to review such polemic discussions, for it is concerned only with the alleged *place* or the "anatomical abode" of the soul. As we have said, the topic has ever been a great subject of discussion though candidly there is perhaps no better or more applicable statement than that taken from Lucretius, "None knows the nature of the soul, whether it be born with us, or infused into us at our birth, whether it dies with us, or descends to the shades below, or whether the gods transmit it into other animals." (*De Rerum Natura* 1: 112.)

However, in extenuation and in partial justification, at least, for this monograph we quote from the *Oriatrike* of van Helmont: "He that shall first draw forth the essayes of the Soul and afterward drink down the juices of Nature, in his Return . . . shall be of a larger capacity than he was in his former reading. . . ."

Assyrian. Jastrow has given us an excellent description on the importance of the liver in the religion of antiquity. With the Assyrians this organ was the site of the lower emotions such as envy, jealousy, and ill humor. They also argued that since life of all kinds was due to the gods a part of some one object in man acted as a representative of the deities, and was therefore the site of the soul. Or to phrase it another way, a certain portion of the body was really the mirror in which the gods' minds and actions were reflected and to these dwellers by the Euphrates the liver seemed to be such a center of vitality. Hepatoscopy was done to such an extent that in Assyria sheep livers were used for divination as early as 3000 B.C., and special attention was then paid to the importance of the various lobes, the gall bladder and

the portal vein. Indeed, the Babylonian priests prepared clay models to be used by their young theological students and specimens may be found today in almost any museum of Oriental lore.

Egyptian. The Egyptians considered that after death their soul assumed the shape of a bird which in the early years of the country's existence was a heron but in later dynasties became a human faced avian. But besides this soul, man also possessed a kind of guardian angel called *Ka*, which was incarnated into one or more material objects in the tomb and which represented a "material" support which "lingered" long after the mummy had disappeared. The soul of a dead man always appeared before Osiris to be weighed and forty-two judges sat in council, each individual being compelled to answer a great number of questions. After proper and unbiased judgment the good became "Osireses" and thereby identified themselves with the royal deity. The bad were packed off into Hell.

Greek. Plato's (431 B.C.—351 B.C.) essay "Timaeus," well known and often quoted, divides the soul-matter into an upper and a lower kind. The lower soul is endowed with "courage and spirit . . . they settled in the interval between midriff and neck . . . and as the heart was liable to become heated . . . lung was implanted to help as a buffer and to act as a cooling agent. . . . The part of the soul which desires meats and drinks they placed between midriff and the navel (in) the liver, the immortal part or reason in the head."

In "Phaedrus" is the famous comparison of the dual soul of man with a pair of winged chariot horses in harness. The human charioteer drives one of noble breed and one of ignoble, and his chief aim of life is to keep the two under control.

Aristotle (B.C. 384–322). Those who know Aristotle will immediately recall his "De Anima" in connection with this subject where the various theories held by prominent men and philosophers up to that time are stated and described. In this

magnificent work is mentioned how Heraclitus identified the soul with vapor from which he derived all other principles and thought it to be in a ceaseless flux, and stated that it is the least corporeal of things. Hippon asserted that the soul was water and based his statement on the fact that the seed of all animals is moist. He continues to argue that the blood could not be the soul because semen is not bloody. In direct opposition to this view, others, among whom was Critias, maintained that the blood held the soul. Diogenes associated the soul with air and thought the latter was composed of the minutest of particles and was the "first principle." Democritus and Anaxagoras treated the mind as a single nature.

Practically all philosophers, according to Aristotle, defined the soul from the three characteristics of motion, perception and incorporeality. Some held to one single element, while others were convinced equally of plurality. Aristotle himself did not believe the soul was capable of motion, although Thales considered it as the cause of motion and affirmed the lodestone to possess a soul because of its property to attract certain objects.

Empedocles, who antedated Plato and Aristotle by two hundred years, is quoted by almost all writers on this subject. He was firmly convinced that the blood was the soul.

In the blood streams, back leaping into it,
The heart is nourished, where prevails the
power
That men call thought; for to the blood that
stirs

About the heart is man's controlling thought.

(Leonard's translation of paragraph 105.)

From Epicurus, the Greek philosopher who lived some three hundred years before Christ, we read:

(63.) . . . You must consider that the soul is a body of fine particles distributed throughout the whole structure, and most resembling wind with a certain admixture of heat, and in some respects like to one of these and in some to the other.

(64.) . . . The Soul possesses the chief cause of sensation, yet it could not have acquired sensation, unless it were in some way enclosed by the rest of the structure. And this in its turn having afforded the soul this cause of sensation acquires itself too a share in this contingent capacity from the soul. Yet it does not acquire all the capacities which the soul possesses; and therefore when the soul is released from the body the body no longer has sensation. For it never possessed this power in itself, but used to afford opportunity for it to another existence, brought into being at the same time with itself. . . .

(65.) . . . Therefore, so long as the soul remains in the body, even though some other part of the body be lost, it will never lose sensation; nay more, whatever portions of the soul may perish too, when that which enclosed is removed either in whole or in part, if the soul continues to exist at all, it will retain sensation. On the other hand the rest of the structure, though it continues to exist either as a whole or in part, does not retain sensations if it has once lost that sum of atoms, however small it be, which goes together to produce the nature of the soul. Moreover, if the whole structure is dissolved, the soul is dispersed and no longer has the same powers nor performs its movement so that it does not possess sensation either. . . .

Epicurus continues and goes on to say that the soul cannot be incorporeal for if it were like the only incorporeal independent existence, the void, it could not act or be acted upon in any way.

Plutarch (A.D. 46-120) in his "Morals" reviews the question of a soul with considerable thoroughness. He declares that Asclepiades, the famous physician, believed that the soul was concurrent with the excitation of the senses. He mentions that Heirophilus put it in the sinus which is at the base of the brain, that Parmenides placed it in the whole breast, Erasistratus in the membrane involving the brain, while the Stoic philosophers thought it equivalent with hot breath. According to the historian this last school said that the soul was composed of eight composite points; five of these are the senses, hearing, seeing, touch, taste and

smell and the other three are speaking, generation and thinking. After locating the soul in the human organism he becomes concerned with the soul of the world itself and cites Heraclitus who thought it to be the "exhalations" (clouds? mist?) which procede from the most part of it.

Roman. Lucretius (B.C. 96-55), that magnificent intellect of the Roman Golden Age who knew something of everything from astronomy to gynecology, who described the atomic theory and even the Weismannian biologic theorems in his beautiful poem "De Rerum Natura," gives us this idea of his conception of the Soul:

Accordingly the whole spirit must consist
of very small seeds being interlaced through
veins,
flesh and sinews; wherefore, when the whole has
already
departed from the body, nevertheless the out-
ward contour
of the limbs presents itself undiminished, nor
is one jot
of the weight lacking . . . (iii, 216 et seq.)

It seemed to this distinguished Latin that the soul was a composite structure for it was composed of breath, heat, air and a fourth nameless substance, a kind of spirit of the spirit, one might say. The mind and the body do not correspond atom for atom as the former are fewer, smaller and even less in number, and when a man dies "piece-meal," as from a gangrenous leg, the soul also dies a kind of a lingering death since it is not confined in any one particular place. Furthermore, this philosopher thought that the spirit is not immortal since an individual can not remember his former existence and he refutes the concept of the transmigration of souls because the person concerned would then show mixed characteristics. The soul may also be subject to disease and death.* Since we felt nothing before our birth we shall feel nothing after our demise.

* This idea would make Lucretius one of the world's earliest psychiatrists.

Marcus Tullius Cicero, in his "Tusculan Disputations" (45 B.C.), gives a birdseye view of the various beliefs held by his predecessors and after admitting and acknowledging his debt to Plato naively says, "Further, as to what the soul is in itself, or where its place is in us, or what its origin, there is much disagreement."

Hebrew. The Bible.* To express the location of the human soul the Hebrews in the Old Testament used at least three expressions for they seem to locate it in the blood, the heart and the intestines. These expressions are somewhat wide in their use.

1. In the *blood*. (Other passages could be cited if space permitted.)

In forbidding the eating of blood, these statements are used:

Leviticus 17: 10, 11 "And whatsoever man there be of the house of Israel, or of the strangers that sojourn among you, that eateth any manner of blood; I will even set my face against that soul that eateth blood, and will cut him off from among his people. *For the life of the flesh (is) in the blood.*"

Genesis 9: 4. "But flesh with *the life thereof*, (which is) *the blood thereof*, shall ye not eat."

Deuteronomy 12: 23. "Only be sure that thou eat not the blood: *for the blood (is) the life*: and thou mayest not eat the life with the flesh."

2. In the *heart*. As the heart is in the center of the blood, the heart is represented as the seat of life, thought, will, the acting principle.

Note in the following texts:

Exodus 35: 22. "And they came, both man and women, as many as were *willing-hearted* (literally, *willing of heart*), and brought bracelets, and earrings, and rings and tablets, all jewels of gold: and every man that offered an offering of gold unto the LORD."

1 Samuel 14: 7. "And his armourbearer said unto him, Do all that (is) *in thine heart*: turn thee: behold, I (am) with thee according to *thy heart*."

* The author wishes to acknowledge his debt to his father, Dr. Charles C. Millar, for the references used in this particular section. They were taken directly from the Hebrew text.

Speaking of the Assyrian, it is said, in Isaiah 10: 7. "Neither *doth his heart think so.*"

3. In the *intestines*, though this may be for *inward parts* in a more general sense.

1 Kings 17: 21, 22. "And he stretched himself upon the child three times, and cried unto the LORD, and said, O LORD my God, I pray thee let this child's *soul come into him again.* (literally, *into his inward part.*) And the LORD heard the voice of Elijah; and the *soul* of the child *came into him again.* (Literally, into his inward part) and he revived."

Psalms 5: 9. "Their *inward part* is very wickedness."

Genesis 41: 21. "And when they had eaten them up, (Literally, they had gone into the *inward parts* of them), it could not be known that they had eaten them. (Literally, that they had gone into the *inward parts* of them.)

Exodus 29: 13. "And thou shalt take all the fat that covereth *the inwards . . .* and burn (them) upon the altar."

Psalms 49: 11. "Their *inward thought.*" (literally, "their *inward part.*") "Their inward thought (is), that their houses (shall continue) for ever, (and) their dwelling places to all generations; they call (their) lands after their own names."

Talmud. In addition to the opinions expressed in the Old Testament there are, of course, other views set forth by the Jews and in the Talmud there is no more interesting story than that incident to the bone Luz. There are at least two accounts of this marvelous vertebra, in "Der Midrasch Kohelet" and "Der Midrasch Wajikra Rabba," which furnish interesting and amusing reading. The word itself is derived from the Aramaic and means "almond." In these two references is an account of an alleged conversation between one, Joshua, the son of Chanin, and the Roman Emperor Hadrian (Circa 130 A.D.). The latter, so runs the narrative, once asked the Jew how God would resurrect man in the world which was to come. The reply was that it would be through LUZ, a bone in the spinal column. When asked how he knew this and how such a striking assertion could be proved, the Rabbi is said to have

produced the bone! This could not be destroyed with fire, nor was it soluble in water. Not even when placed on a blacksmith's anvil and lustily beaten with a sledge was there any sign of destruction and indeed the forge split after a few ringing strokes, leaving Luz absolutely uninjured. We might remark in passing that Joshua was a tailor and not an anatomist by profession.

Neo-christian. Tertullian, a prolific, belligerent and positive writer, who lived in the second century after Christ's birth and who wrote among many other things a "Treatise on the Soul," reviews the subject and cites the opinion of various "pagan" philosophers. Among those who have not been mentioned elsewhere in this paper are: Moschion, who declared that the soul floats about through the whole body; Zenophenes, who placed it in the crown of the head; Herophilus, who located it at the base of the brain (vide Plutarch); Strato who located it in the membranes of the brain; and another Strato, the physician, who placed it between the eyebrows.

Tertullian continues the discussion and says it was quite an easy question to decide and without any difficulty placed it in the heart, and for proof he nimbly quoted from the Bible to this effect: "Create in me a clean heart, oh, Lord." (Psalms LI: 10.)

The anti-Nicene father, Lactantius, "On the Workmanship of God," quotes Varro, "The soul is air conceived in the mouth, warmed in the lungs, heated in the heart, diffused through the body."

Buddhism. Buddhism does not hold to the belief of a soul and indeed "anattam," the absence of self, is an abiding principle of the three parts of wisdom and perception. But diametrically opposite to this dogma stand the Gainas, one of its quite powerful sects, a subdivision said to have been founded by Mahavira who believed and taught that there were numerous souls embodied in animals, gods, plants, hell-beings and even in the four elements water, earth, wind and fire.

Brahmanism. Anyone who is in any way familiar with the Brahmanic religious literature will recall the hundreds of pages written on the various ideas of "self." In the main they are as hard to peruse as the philosophy of Emanuel Kant!

While in one place of the Vedanta-Sutras it is stated that, "It is nowhere the purpose of Scripture to make statements regarding the individual soul" (I Adhyâya 3, Pâda 7) and elsewhere (II Adhyâya 2, Pâda 17) we read that conjunction cannot take place between the atoms, the soul and the internal organs because they have no parts. In other portions there exist several citations which would place the soul in the heart (I Adhyâya 3, Pâda 14). The soul is called a part of Brahman, a metaphor as one commentator with child-like candor carefully indicates. Ideas on "Self" and the soul as "pure intelligence" and "non-active infinite" are discussed. There is a connection between the "intelligent self" and "vital air" which sustains the body and the individual soul as well as the "chief vital air" may be justly designated as the "Intelligent Self."

In Adhyâya 3, Pâda 19, the soul is stated to be of atomic size because of its ability to pass in and out of the body. To quote Paragraph 20,

Either from the eye or from the skull or from the other places of the body (the Self passes out). . . . He taking with him those elements of light descends into the heart. Paragraph 23. Just as a drop of sandal ointment although in contact with one spot of the body only, yet produces a refreshing sensation extending over the whole body: so the soul, although abiding in one point of the body only, may be the cause of a perception extending over the entire body. And as the soul is connected with the skin (which is the seat of feeling) the assumption that the soul's sensation should extend over the whole body is by no means contrary to reason. For the connexion of the soul and the skin abides in the entire skin, and the skin extends over the whole body. . . .

A reason which is used against this argument is the remark that the soul abides in

the heart. But though the soul is in the heart, by means of passages up to the hairs and up to the tip of the nails it is able to pervade the entire body by means of "intelligence."

In the "Bhagavadgîtâ" (Chap. v, 19) we learn that the self-restrained embodied (self) "lies at ease" within the city of nine portals (i.e., the eyes, nostrils, ears, mouth and two excretory orifices. Elsewhere in dealing with sacrifices it is stated:

For the heart is the self (soul), the mind; and the clotted ghee is the breath. (Satapatha—Brâhmana, III Kânda, 8 Adhyâya 3, Brahmana 10; 8.)

In the Anugîtâ (Chap. III, 7): "That soul entering all the limbs of the foetus, part by part, and dwelling in the seat of the life-wind, supports (them) with the mind. Then the foetus becoming possessed of consciousness moves about its limbs. . . ."

(Chap. II, 34) "The soul being without a fixed seat is shaken about by the wind . . . (the wind here being something exuding from a vitally wounded part).

Comparison is made here with those individuals who have eyes of knowledge which are able to see a soul departing from the body or entering the womb with those who have eyes that are able to see a glow-worm disappear here and there in the darkness. This paragraph recalls to twentieth century minds the "ectoplasm" experiments that have been conducted during the past few years.

Orphic Beliefs. Aristotle states that the Orphic poems maintain that the soul "is from the universe in the process of respiration being borne upon the winds."

Mohammedan. According to Hughes, the Mohammedan writers hold very conflicting views concerning the state of the soul after death. All agree that the Angel of Death, Malaku 'l-Maut, separates the human soul from the body at the time of death and performs this act with ease and kindness to the good and with "force and violence" towards the wicked. This idea is based on the verse in the Qur'ân Surah (xxix) where the Prophet swears by those

“who tear out violently and those who are gently released.” Apparently there is no one fixed central portion which is the abode of the soul. However, we know that the spirits of the faithful are divided into several classes. There are those who, at death, are admitted immediately into Paradise and the spirits of martyrs who rest in the crops of green birds which eat the fruits and drink of the waters of Paradise. Then there are those spirits of all the remaining believers who either remain near the grave for several days or until the time of the Resurrection or who may, indeed, be placed in the lowest heaven with Adam. The Prophet states that he saw them there during his trip to Heaven; and finally those departed spirits who live in the form and assume the shape of white birds and roost and perch under the throne of God. The bad go down into Hell, or Sijjin, where they are tortured and interminably tormented.

The soul itself appears to have a guardian for in the Chapter of the Evening Star one reads: “Verily every soul has a guardian over it.” In still another portion of the Qur’ân blessing is promised: “Prosperous is he who purifies it (i.e., the soul).”*

The philosopher and surgeon, Avicenna, a Persian Mohammedan of note (980–1037 A.D.) in his “Compendium of the Soul” arranges spiritual faculties in three groups: plant or vegetable power, animal power, and the speaking or rational power. The Persian joins the five senses of taste, touch, smell, seeing and hearing with the five inward senses, i.e., common sense, the imaginative, “vis cogitative,” memory and the “vis existimative.”

In Section Nine in “Which Proofs of the Essentiality of the Soul and of Its Independence of Body in its Structure are Set forth in pursuance of the Method of Logicians” the conception is that the soul is not a corporeal, organic power. Proof is adduced that if it were it would be within some organ of man which would “wither” when the organ itself started to disintegrate. This medical man would establish

* From the Chapter of the Sun of the Qur’ân, verse 9.

a “mental essence” quite distinct from bodies but which would stand towards the human soul in the way that light does with regard to sight. In passing it may be noted that the “sway” of the picturing representing common sense is located in the anterior “hollow” or ventricle of the brain; the control of the imaginative in the middle “hollow”; conjecturing through the entire brain. The “compartment” of the imagination is placed within the brain, and “in so far as these hollows suffer harm and hurt, so will the manifold working of these powers suffer also. . . .”

SOME EUROPEAN VIEWS DURING THE SIXTEENTH AND SEVENTEENTH CENTURY

Montaigne, (1533–1592), the scholarly Frenchman in his “honest book” of Essays, gives an excellent, concise sketch of the various beliefs held by the ancients. Among those not mentioned elsewhere in this monograph are Posidonius, Cleanthes, and Galien who thought the soul was the body heat or “hot complexion”; Hippocrates and Herophilus who antedated Avicenna in placing it in the ventricles of the brain (vide Plutarch), Epicurus in the stomach, the Stoics “about or within the heart,” and Chrysippus who also “argued it to be about the heart.”

Like Cicero, from whom this able essayist draws freely, the Bordeaux scholar has succeeded in summarizing a tremendous number of citations in a few paragraphs but adds no startling original conceptions of his own.

Van Helmont. In Europe during the sixteenth century were many erratically erudite individuals, one of the most prominent being Jean Baptiste van Helmont. Born in the Low Lands in 1577, he was educated at the Louvain and after much travel settled down to matrimony and a scientific career in a suburb of Brussels. Best recalled to the modern age for his work in pneumatic chemistry (he was the first man to use the word “gas”), this independent thinker refused to consider

fire and earth as elements and to his own mind's satisfaction successfully reduced matter to air and water. But in order to explain properly the mechanism of life this talented individual was forced to manufacture an elaborate and complicated system. Briefly there was a central *archeus* which controlled a number of lesser *archei*. Diseases were due to an injury of this *archeus*. In addition there was a "sensitive soul" which was the "husk" or covering of man's immortal soul. Why? Because a severe blow here would cause unconsciousness! To quote from his *Oriatrike* or *Physic Refined*:*

In Chapter XLII the worthy doctor holds to the argument that the stomach and the spleen run the body. "For of the Spleen and the Stomach I make only one Wedlock and one Marriage-bed. . . ."

Chapter xxxvii: For it was never the study or the office of the soul to wander or pass from place to place, that it may chase out a Bride-bed for itself . . . In the stomach is placed the desirable Inn of the Soul . . . (18). Therefore the radical Bride-bed of the Sensitive Soul is the vital Archeus of the stomach, and it stands and remains there for the whole life time not indeed, that the sensitive soul is entertained in the stomach, as it were in a Sack, Skin, Membrane, Pot, Prison, little Cell, or bark; neither is it comprehended in that feat in manner of Bodies enclosed within a purse, but after an irregular manner it is centrally in a point, and as it were in the very individual middle of one membranous thickness. And it is in a place nevertheless, not plainly locally. . . .

Stahl (1660-1734) and de Sauvage (1706-1767) were later proponents and elaborators of von Helmont's grandiose conceptions.

Descartes, one time soldier, physiologist, and always the eternal philosopher, believes the soul is essentially "thinking," the body is an "extended substance," and the two

are "desperate realities." He argues accordingly that there must be a place where these two can be coordinated and selects the pineal gland for the following reasons:

In the chapter "The Passions of the Soul" is Article xxxi which is entitled "That there is a small gland in the brain in which the soul exercises its function more particularly than in the other parts." We read,

It is necessary to know that although the soul is joined to the whole body, there is yet in that a certain part in which it exercises its functions more particularly than in all the others, and it is usually believed that this part is the brain, or possibly the heart; the brain because it is with it that the organs of sense are connected and the heart because it is apparently in it that we experience the passions. But, in examining the matter with care, it seems as though I clearly ascertain that the part of the body in which the soul exercises its function immediately is in no wise the heart, nor the whole of the brain, but merely the most inward of all its parts, to wit, a certain very small gland which is situated in the middle of its substance and so suspended above the duct whereby the animal spirits in its anterior cavities have communication with the posterior; that the slightest movements which take place in it may alter very greatly the course of these spirits, and reciprocally that the smallest changes which occur in the course of the spirits may do much to change the movements of this gland. . . .

Article xxxii, "How do we know that this gland is the main seat of the soul?" Here the Frenchman reasons that as there are two images from our two eyes there must be some spot where the "impressions can unite before arriving at the soul in order that they may not represent to it two objects instead of one." . . . He continues, "It is easy to apprehend how these images or impressions might unite in this gland by the intermission of the spirits which fill the cavities of the brain; but there is no other place in the body where they can thus be united unless they are so in this gland." Article xlxi is on "Memory" and here it is stated that the pineal

* The copy from which this account has been taken was published in 1662 and has been "faithfully rendered into English in tendency to a common good and increase of true science by J(ohn) C(handler) sometime M. H. of Oxon."

body rotates, thrusting and shunting the spirits off to the various parts of the brain!

Space will not permit elaboration of the idea of many other no less famous individuals who wrote on the subject, only a few being briefly mentioned. In passing it may be said that these gentlemen, together with practically everyone of their time, believed that the site of the soul and the seat of life were identical. With this in mind the modern reader can view their physiological and metaphysical struggles with much more sympathy and understanding.

Thomas Willis (1622-1675), the famous English anatomist, placed his "anima rationalis" in the cerebrum and the "anima vegetiva" in the cerebellum. He based his reasons on the fact that death followed when the vagi nerves were cut.

Tulp, the illustrious Dutchman, the "original" surgeon in Rembrandt's painting, also placed it in the cerebellum.

La Peyronie (1679-1748), better recalled today for his "disease," was one of the first who took issue with Descartes's idea that the pineal body was the seat of the soul as he declared that he had seen wounds of this organ in which immediate death had not ensued. About the same period others,* however, disagreed with the two Frenchmen because they argued that the pineal was larger in animals than in man, and as their souls were certainly no bigger, better or larger, it could be immediately seen that this spot certainly was not the exact location. La Peyronie wanted to put it in the corpus callosum and in this opinion he was later abetted by Chopart (1743-1795). Of course there was disagreement to this as Vieussens (1641-1715) had placed the soul in the "white brain"; Boerhaave (1668-1738) in the gyrus fornicatus; Mayow (1643-1679), Pacchioni (1665-1726) and Santorini (1681-1737) in the dura mater. Mayow, moreover, succeeded in making the situation more complicated

than ever for he introduced the chemical factor into the already perplexing question for the first time.

Opposed to these concepts was Meig (b. 1741) for he put the human soul in the spinal cord because he had seen several acephalic babies who had lived for a short time after birth. He reasoned that since these monstrosities had been born they must certainly have souls, and as they had lived without heads the soul could not be located in this nerve organ. Therefore, the "place" must be located in the only large remaining portion, the spinal cord!

La Mettrie (1709-1753), the founder of materialism in France, Haller, the Swiss physiologist (1708-1777), and Marat, the mad doctor of the French Revolution, are a few of the many men of the eighteenth century who found time to become interested in the question.

All of these studies were serious, but of course there had to be ribald wits and amusing satirists who viewed the problem with a sardonic and with more amusing and refreshing views. Chief of these was Alexander Pope. This Englishman aided by Arbuthnot, the originator of John Bull, in "Martinus Scriblerus" gives us a look which is far from the pedantic and scholastic ideas we have so far reviewed. A few portions of this work are well worth quoting:

Martinus Scriblerus

(Chap. XI)

How Martinus Endeavoured to Find Out the Seat of the Soul, and of His Correspondence with the Free-Thinkers.

In this Design of Martin to investigate the Diseases of the Mind, he thought nothing so necessary as an Enquiry after the Seat of the Soul; in which at first he laboured under great uncertainties. Sometimes he was of opinion that it lodged in the Brain, sometimes in the Stomach, and sometimes in the Heart. Afterwards he thought it absurd to confine that sovereign Lady to one apartment, which made him infer that she shifted it according to the several functions of life: "The Brain was her

* The interested reader is referred to Révész's excellent work on the Soul in which this portion has been treated in great detail.

Study, the Heart her State-room, and the Stomach her Kitchen." But as he saw several Offices of life went on at the same time, he was forced to give up this Hypothesis also. He now conjectured it was more for the dignity of the Soul to perform several operations by her little Ministers, the Animal Spirits, from whence it was natural to conclude, that she resides in different parts according to different Inclinations, Sexes, Ages, and Professions. Thus in Epicures he seated her in the mouth of the Stomach, Philosophers have her in the Brain, Soldiers in their Heart, Women in their Tongues, Fiddlers in their Fingers, and Rope-dancers in their Toes. At length he grew fond of the Glandula Pinealis, dissecting many subjects to find out the different Figure of this Gland, from whence he might discover the cause of the different Tempers of mankind. He supposed that in factious and restless-spirited people he should find it sharp and pointed, allowing no room for the Soul to repose herself; that in quiet Tempers it was flat, smooth, and soft, affording to the Soul as it were an easy cushion. He was confirmed in this by observing that Calves and Philosophers, Tigers and Statesmen, Foxes and Sharpers, Peacocks and Fops, Cock-Sparrows and Coquets, Monkeys and Players, Courtiers and Spaniels, Moles and Misers, exactly resemble one another in the conformation of the Pineal Gland. He did not doubt likewise to find the same resemblance in Highwaymen and Conquerors: In order to satisfy himself in which, it was, that he purchased the body of one of the first Species (as hath been before related) by Tyburn, hoping in time to have the happiness of one of the latter too, under his Anatomical knife. . . .

And as where there is but one Member of Generation, there is but one Body, so there can be but one Soul; because the said Organ of Generation is the seat of the Soul; and consequently where there is but one such Organ, there can be but one Soul. Let me hear say, without injury to truth, that no Philosopher, either of the past or present age, hath taken more pains to discover where the Soul keeps her residence, than the Plaintiff, the learned Martinus Scriblerus; and after his most diligent enquiries and experiments, he hath been very persuaded, that the Organ of Generation is the true and only Seat of the Soul. That this part is seated in the middle, and near the centre of the whole Body, is obvious. From thence, like

the sun in the centre of the world, the Soul dispenses her warmth and vital influence. Let the brain glory in the Wisdom of the aged, the Science of the learned, the Policy of the statesman, and the Invention of the witty; the accidental Amusements and Emanations of the Soul, and mortal as the Possessors of them! It is to the Organs of Generation that we owe Man himself; there the Soul is employed in works suitable to the dignity of her nature, and (as we may say) sits brooding over ages yet unborn. . . .

Primitive Races. A great mass of data has been collected by anthropologists during the last few years regarding the views of the primitive tribes throughout the world. The contributions of Hastings and Frazier have been particularly valuable along these lines and it is from their books that most of the following information has been gathered.

Multiplicity of Souls. The Dyaks of Malaysia and Borneo believe that every man possessed seven souls, the Alpoors in the Celebes and the Battas believe that he has but three. The Abougmes in Laos maintain that fully thirty spirits reign in the hands, the eyes, the lips and the other parts of the body. In the Occident the West Indian Carib thought that there was one soul for the heart, another for the head and that one even existed in a pulsating artery. Washington Mathews in his account of the Hidatsa Indians in Northwest America, declared that this tribe explained gradual death by presupposing that man possessed four souls and that after death these slipped consecutively from the body. Demise was complete only when all had left the corpse.

According to Groot, certain ancient Chinese philosophers attributed two souls to man, the "shen" or immortal, the "kiver" or material portion which will stay in the grave of the buried man. Other oriental sages believed in a multiplicity of souls, the number depending on the individual, his age and the condition of the character of his various organs. The heart was considered the seat of vital spirits, to

others the five viscera of the body acted as "depots" for various attributes; the lungs "billeted" righteousness, the liver, benevolence, the kidneys, knowledge, the heart, ceremony, and the spleen, trustworthiness. Dreams are the peregrinations of the soul.

The Soul of the Afterbirth. The Australian aborigines of Queensland and the Battas of Sumatra considered the umbilical cord and the placenta as a living external soul.* The ancient Islander declared that a child's guardian spirit, or part of his soul, had its site in the chorion, called by them the "fylgia," and that this part of the afterbirth should never be thrown away lest the demons get it. Neither should it be burned for the newborn baby would then have no spirit. The parents were accustomed to bury it under the doorway and over this spot the mother would step. In this way it could be guarded and watched. Furthermore, if the chorion was created in the afterlife its guardian spirit would or could assume the figure of a bear, a wolf, or some such animal.

Hair. A tribe in one of the Dutch East Indies on an island west of Sumatra, have a curious legend. In their folklore stories they tell of a chief who once upon a time was captured by his enemies. His captors tried repeatedly to kill the unfortunate man but without success for everything, even fire and water, would not destroy him. At last they prevailed upon his wife to reveal the secret of the captive's charmed life and Delilah-like she did. It seemed that on her husband's head was a hair which was as hard as copper wire, and it was in this and with this that his life was bound. At once this was plucked by his foes, and immediately the poor victim expired!

Intestines. The Khasis of Assam have a variation of this story: There was once a King named Kyllong of Mada who was so strong that no one could "permanently"

kill him. However, his rival managed to capture him and would repeatedly chip him to bits, but the next day always found the sturdy individual completely reconstructed and very much alive. This continued for some time until finally the chief was "framed" by a beautiful slave wife who was given to him and who continually coaxed him to tell her his secret. He refused to do this for some time for he undoubtedly suspected a ruse but finally the poor man succumbed to her pleadings. The monarch informed his beautiful mate that he was compelled to bathe every day and at the same time to "wash his entrails." After this self administered enema he could and would only take food, and no one could overcome him unless they "secured" his intestines. Of course, as soon as his mistress obtained this information she informed her true friends and the poor king's gastrointestinal tract was soon cut to pieces in short order. Then and then only did his soul leave him and he ceased to live.

Spinal Cord. The natives of New Zealand believed that the soul was located in the spinal "marrow" (Goome).

Modern Beliefs. Time will not permit an elaboration of the European and American views of the nineteenth and twentieth centuries of the Christian Era. The reader is referred to Norman Pearson, Ernest Haeckel, Vogt, and others for detailed discussions on the subject. Briefly, the attempt has been made to restore the soul to a function of the cell, although there are those who deny (Edison) that there is any soul whatsoever. Haeckel would have it that every living cell has its own psychic properties and that a "tissue-soul" develops with progressive cellular changes. Stahl and Hudson presupposed the soul to be diffused throughout the entire body while Lotze theorized that it was only in contact with the brain at highly differentiated parts. There are numerous other philosophers who believe that as the body is evolved the soul has progressed hand in hand, so to speak, with it and would not confine it to any mono-

* The early Christian Church here encountered technical difficulties and there was at least one church council that tried to settle the baffling problem as to whether or not human afterbirth was immortal.

cellular activities. From the physiochemical aspect we find in the last decade one man, Mathews, who ascribed a soul to the atom which may enter and leave hydrogen. We quote, "(A soul) is a minute portion of luminiferous ether, of time and space, of eternity and infinity."

In concluding there is perhaps no more fitting quotation with which the entire subject regarding the site of the human soul may be summarized than the following taken from "The Religio Medici" of Sir Thomas Browne: "In our study of Anatomy there is a mass of mysterious Philosophy and as such reduce the very Heathens to Divinity yet amongst all those rare discoveries and curious pieces I find in the Fabrick of man . . . no Organ or Instrument for the rational Soul. . . ."

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