A Strange World of Medicine

an unpublished book by Gary J. Lockhart (1942–2001)

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INTRODUCTION

"When wiser men teach me, let me be humble to learn; for the mind of man is so puny, and the art of healing is so vast. But when fools are ready to advise me or to find fault with me, let me not listen to their folly. Let me be intent upon one thing, O Father of Mercy, to be always merciful to Thy suffering children.

May there never rise in me the notion that I know enough, but give me strength and leisure and zeal to enlarge my knowledge. Our work is great and the mind of man presses forward forever. Thou hast chosen me in Thy grace to watch over the life and death of Thy creature. I am about to fulfill my duties. Guide me in this immerse work so that it may be of avail."

Prayer of a Physician Before Visiting a Sick Man Maimonides

A Strange World of Medicine is the story of some anomalies and ideas found in the pages of medical literature. The ideas begin with the story of birth and end with death. They encompass religion —for the saints and prophets have been the subject of much speculation. The famous men of history have been subjected to careful medical analysis in hopes of finding the key to their genius and their human mortality.

When we are born the doctor is present. When we die the doctor is likely to be looking on or doing emergency work. This was not true in an earlier era: a midwife was likely to have delivered us, and our relatives took care of us at the point of death. During times of sickness the village herbalist was likely to have given help and comfort. In the last 300 years the doctor has assumed a larger and larger portion of life and of our money.

We have a love-hate relationship with doctors and medicine, which continues through time. Doctors may charge large fees to people in the lowest economic brackets and often ignore simple methods of cure. They can appear all-knowing, and look on their patients as the ignorant ones. Lobkowiz wrote to Jan van Helmont about his doctor: "The sick never languished long under his care, being always killed or cured in two or three days."

The struggle to understand health and sickness is one of the most interesting aspects of history. I've always felt that medical historians had done a poor job. We read in medical history that so-and-so discovered this operation, antibiotic or bacteria. But often the little things that are essential for understanding are ignored.

The field of medicine is as endless as the world of religion, and medicine is a sort of religion. In our time the guardians of orthodoxy have made it difficult or impossible to get unapproved cancer treatments. In past centuries everything went, yet there was no attempt to sort the useful from the useless.

Medicine is more than taking pills and doing surgery. It looks into the mind and examines the motives of people. On the one hand Sigmund Freud involves us in our subconscious nature, while brain surgeons try to cut out the bad parts on the other side. The medical involvement of emotions and feelings may be more medically important in the long run, than the surgeon who removes the tumor. The roots of the tumor may have originated in the deeper self.

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1. ANCIENT EMBRYOLOGY

"Nature places in the bodies of animals the soul, the composer of the body, i.e. the soul of the mother, which first composes in the womb, the shape of man and in due time awakens the soul. This shall be the inhabitant thereof, but it first remains asleep and under the tutelage of the soul of the mother, which through the umbilical vein nourishes and vivifies it."

Desideratum John Wesley

"Behold, like milk didst Thou pour me out, and like cheese didst Thou curdle me. With skin and flesh didst Thou cloth me, and with bone and sinews didst Thou cover me. Life and kindness didst Thou grant me, and Thy providence watched over my spirit."

Bible Job 10:10

The first speculations on embryology began 5,000 years ago in upper Egypt. There is a temple on Elephantine Island at the northern end of the first cataract of the Nile. In ancient legend the Nile began here and brought the gift of life to lower Egypt though the annual flood. The Egyptians believed the Nile poured from the mountain caves and brought the waters of life to farmers. Nobody took the difficult journey thousands of miles to the south to seek the source of the Nile, until British explorers did it in the nineteenth century.

The ram-headed god Khnum was the divine controller of the Nile floods. During the reign of King Zoser there was a seven-year failure of the annual floods. The Pharaoh sent Imhotop to approach Khnum about the disaster. Pharaoh Zoser came to the temple at Elephantine Island and was received by Khnum. He was told that the Nile failed to flood because his worship had been neglected. Zoser reinstated the ritual worship and the Nile began its yearly flood.

In Egyptian legend Khnum crated man from the clay of the Nile using a potter's wheel. He created four races; the Egyptians, the Nebesu of southern Africa, the eastern Aamu of the Sinai and the Hemu of Libya to the west. The Hebrews knew the Egyptian story and it might have been the basis for the creation of Adam and Eve from clay.

On the sacred island of Philae is a portrait in stone of Khnum working a potter's wheel with his foot. He forms man with his left hand, and holds the clay steady with the right. Thoth sat behind Khnum with a notched palm branch known as the reed of life. Thoth was the god of science and the eight creative powers.

At the temples of Amenophis II at Luxor and Hatshepsut at Deir al Bahair, the Pharaoh is shown marrying his queen. A child is begotten between them by Khnum's potter's wheel. When upper and lower Egypt are united Khnum was blended with Re becoming Khnum-Re.

The Koran borrowed from the Egyptian legend in chapter 15:22. "We created man of dried clay; of black mud formed into shape." The Arab writer Al-Masudi wrote: "He took black, red and white earth; for this reason the sons of Adam are of differing colors."

Aristotle drew on the ancient legend of the potter in his writings by referring to the baking process. "The sinews and bones are formed by the internal heat as the moisture dried. Hence the bones are insoluble by fire like pottery. It is similar to the heat of an oven in the process of development by baking them."

The biblical book of Job refers to the making of people as pouring them out like milk and curdling them like cheese. In ancient times cheese was made by breaking off the branch of a fig tree and stirring milk. The white sap of the fig contains an enzyme that coagulates milk into a plastic lump.

The word Talmud means learning or teaching. The *Talmud* of Jerusalem was compiled around +400 and the larger *Talmud of Babylon* was compiled around +500. The sages of the *Talmud* joined the ideas of Hippocrates and Aristotle. Men and women produced seed and the man's seed curdled the menstrual blood.

The *Talmud* remarks: "There are three associates in the creation of man: the Lord, the father and the mother. The father provides the white seed from which are formed bones and nerves, the nails, the brain and the white of the eyes. The mother provides the red seed from which are formed the skin and the flesh, the hair and the black of the eyes. The Lord gives spirit and soul, facial expression, faculties of vision and hearing, power of speaking, movement, comprehension and intelligence."

The Hebrew name for the embryo was the "peri habbeten" i.e. "fruit of the body." In early development the fetus is the "shefir merukkam" i.e. "embroidered membrane." After six weeks it becomes an "ubbar," when one can recognize the fingers, toes, hair and nails. The time of normal gestation as given in the Talmud is 271 days or 9 months of 30 days plus one. The numerical value of the Hebrew word for pregnancy [Herayon] is 271.

The rabbis were concerned with good and evil and purity and impurity. They speculated about a mother's impurity after childbirth. How long would she remain defiled according to Mosaic law after childbirth? Rabbi Ismael and his scholars believed that boys were complete by the 40th day but it took 80 days for girls. They used the story of Cleopatra, the Queen of Alexandria. She used a group of maids condemned to death. Autopsies showed that males were complete in 41 days while it took females 81 days to become complete.

The book of Bhagwat Skandh was said to have been written 6,200 years ago. A passage reads: "God noticed that unless atma [he] and Shakti [she] united they were unable to produce. So he united with she and he entered into her principles. After his entry he brought together all the 23 principles by his own creative energy, to stimulate her creative energy. Thus stimulated by his energy, the 23 principals got activated; they conjugated with his 23 principles and the combined created energy—those 23 principals—produced the person."

This statement is astonishing because the male sperm carries 23 chromosomes into the egg. The chromosomes unite with a like number, making 23 pairs. After fertilization the cells begin to divide and form a new body. They are quite difficult to count and until 1962 medical textbooks mentioned 24 pairs of chromosomes. With the use of better stains and microscopes they found 23 pairs of chromosomes.

The *Bhagwat Skandh* notes that the mouth is formed first, then the nostrils are formed, then the eyes and the ears. This is correct in modern embryology. As the head develops, the "stomodium" or primitive mouth develops. In the fifth week a thickened patch of ectoderm appears and this becomes the nose. When the embryo reaches 12 mm. long it shows the mouth and nostrils clearly and when it reaches 14 mm. the eyes are visible.

Bhagwat notes that the penis develops in males before the anus. When the embryo is 21 mm. the genitals are visible, but not the anus. When the embryo reaches 45 mm. it shows both the anus and the genitals.

Bhagwat has a curious discussion of the reason why the birth process begins. The final completion of the body is when the "Paramatma" enters into the body through an opening in the head, known as the vidruit. We call it the anterior fontanel. The body is "jeeva," a living mass of cells. It needs the atma, or soul, the collective energy, to complete it. The time of the entrance of the soul begins the process of labor.

Ayurvedic embryologists believed that a male child was born when the seed from man was greater, and a girl would be for when the woman's seed was greater. If the seed was weak and scanty, there will be a miscarriage.

The *Yasjnavalkya Smrti* is a treatise of Hindu law dating to before the time of Christ. The world was crated out of ether, wind, light, water and earth. The sun is energized by sacrificial fire, which causes rain. This produces plants, and the plant food energizes mankind and they unite to produce children. It is jelly in the first month, flesh in the second month, and it differentiates into limbs in the third month.

The *Garbha Upanishad* is primarily a religious book, but it speaks of embryology. "For the pairing in season, there originates after one night a nodule, after seven nights a bubble, after two weeks a lump and after two months the head." This treatise notes that consciousness comes in the ninth month when the unborn infant remembers his earlier births and karma. After remembering its lives, the exposure to the external wind revives the baby, and it loses all memory of the past.

In modern times the first real embryologist was the Italian doctor Velcher Coiter. In +1555 he went to Pisa, Italy, and studied under Gabriello Fallopio. He took two brooding hens and placed 23 eggs under them. He opened one each day to try and determine the time of formation of the organs. On the first day he noticed that the yolk acquired a white circle. Every day the eggs changed. By the fifth day the membrane surrounding the egg was perfused with veins. On the seventh day the head could be distinguished. Others took his scien-

tific method and applied it to animals and humans.

The discovery of James Watson and Francis Crick of DNA was the final step in a new embryological understanding. The DNA code has four letters, but the multitude of combinations furnished the code for life as we know it. We are now unraveling the full mystery of DNA. I still wonder how did Bhagwat unravel the mystery of embryology thousands of years before modern scientists got to it?

2. VIRGIN BIRTH

"If anyone does not properly and truly confess with the holy fathers that the holy and ever virgin and immaculate Mary was the mother of God, in a special and true sense, in the fullness of time, without seed, and of the Holy Spirit, she conceived; she gave birth incorruptibly to God the Word Himself, to the One who was born of God the Father before all ages; after she gave birth, she then preserved this virginity, indissolubly and permanently . . . let such a one be excluded from the community of faith."

Pope Martin I +649

The idea of virgin birth captured the attention of early Christian theologians. They believed that Adam, the first man created by God, passed his sinful nature to his descendants by sex. Long lists of genealogies were published in the Bible dating back to Adam. Everyone was a "sinner" by theological definition, but Jesus was exempt because Mary was a virgin. Theologians pointed to Isaiah 7:14 "The virgin shall be with child, and bear a son, and shall call him Immanuel."

Early Christianity laid great stress on virginity. When the Italian and North African bishops got together in +649 they laid stress on Mary, the mother of Jesus, as being a virgin. The doctrine grew through the centuries. Pope Pius IX argued for it in the twelfth century and the "Immaculate Conception" of Mary became Church doctrine in 1854. Although the Bible speaks of one of the brothers of Jesus, the church decided that this was metaphorical.

Physicians have recorded cases where deformities make normal sexual intercourse impossible. These cases are really not virginity, but normal sex is not present. In +1607 French doctors were called to cut a fibrous band blocking the hymen. The woman was pregnant five months at the time of the operation. This would not constitute true virgin birth as such.

Virgin birth was no surprise in the ancient world. The gods, heroes and Buddha were not normal. Their mothers were virgins; they came from God. The relationship of the father to the children was a mystery. In 1854 the sperm was seen entering the egg. In 1875 Oscar Hertwig answered the question: "What is the relationship of a father

to his child?" He found that both the sperm and the egg contributed genetic material and combined to make the genetic makeup of the child.

Medical history records one case of true virgin birth. On May 12, 1863 the soldiers of General Ulysses S. Grant and Robert E. Lee were slugging it out. At the rear of the confederate forces was a mansion in which a woman and her daughters were helping the wounded.

Doctor Capers was a hospital surgeon for the Confederate army. One of the soldiers he dealt with had a compound fracture in which the bullet ricocheted form the left hip and carried away the left testicle. A few minutes after he patched up the soldier's wounds, he received an urgent call to come to the mansion. A 17-year-old girl in the mansion had a ragged wound from a mini ball penetrating the abdomen. It didn't look as if she would survive, and she was hastily bandaged before the retreat of the Confederate forces. Doctor Capers returned to the area six months later and found that she had a swollen abdomen.

Exactly 278 days after the battle, Dr. Capers delivered an eight-pound boy from the woman. She insisted that she was a virgin —a statement that everyone viewed with great disbelief. Three weeks later the child's grandmother called him to examine the baby. Capers found an enlarged scrotum and extracted parts of a smashed bullet from the child.

He thought about this odd fact for several days. Then he marched off to see the young soldier who had been wounded ten months before. He told the surprised soldier about the situation and introduced him to the lady. They were married four months later, in what could be described as a "shotgun wedding." They had two more children, but the first child most closely resembled the young soldier.

Turkey farmers lose money when large numbers of the eggs don't hatch. In 1952 scientists showed that unfertilized eggs could start embryological development. Turkey parthenogenesis begins with the doubling of the chromosomes before the sperm penetrates the egg. When this happens, the egg rejects the male sperm and continues to develop. A tiny fraction of the unfertilized eggs will survive and hatch.

In normal turkey fertility a sperm enters the egg and tiny protrusions known as microvilli cover the sperm. The egg changes with a wave of sodium ions followed twenty seconds later by a wave of calcium ions. It takes about 20 minutes for the sperm to enter the center of the egg and fuse with the nuclei of the egg. A minute later, the chromosomes began to synthesize DNA.

A full study was done at the Beltsville Agricultural Station in 1956. During the course of a year 128 virgin turkey hens produced 6,000 eggs. They had been separated from males at an early age, so there was little chance of normal fertility. The eggs were incubated and some development began in 1,800 eggs and produced 247 embryos. There were seven births, but only two live turkeys were around on the second day. In turkeys the virgin offspring are males.

Sex is important to the natural world, because it introduces genetic diversity and the survival of the fittest. In theory, virgin birth would be counterproductive to the species. Some lizards and insects do this regularly. When virgin birth among guppies was studied, it was found that in 92 offspring, there was one male and one intersex birth but the rest were females.

By 1955 some 23 species had been found that had virgin birth. It happens in water fleas, green flies, *Drosophila* flies and guppies. Some lizard populations are only females.

Cloning is a form of virgin birth. When we clone a plant the genes are identical to the parent. There is less diversity, which means that there will be less resistance to the many factors which could adversely affect the plant. If the plant is genetically superior, cloning is economically important.

In humans, a virgin offspring can only be female. In our species only the male provides the XY chromosome which makes the man. The mother has only XX chromosomes and the offspring can only be XX, which is female. Early Christian theologians had the angels flying sperm from Joseph secretly to Mary. This really isn't virgin birth as such, but it does mean that sexual contact is absent. It is theoretically possible for sperm to seep through clothing or to be transferred in a swimming pool, but it is most unlikely. This really isn't scientific virgin birth, because a male is involved indirectly.

It has been jokingly suggested that a scientific test of the Christian doctrine of the inheritance of sin should be made. If we could find some skin cells or blood from the shroud of Turin, we could clone them and study the behavior of the children. If the virgin children are little angels and walk on water, we will know that they are without sin.

Christianity is not alone in the virgin birth. The birth of Buddha was miraculous. Because of this he was able to see Maya [illusion] for what it was and lead his followers to reality.

Krishna, the savior of India, was also reputed to have a virgin birth. His life ended when his enemies tied him to a tree and shot arrows into him. Both the legendary birth and cruel death of several ancient saviors is similar to the Christian story. There is no proof of any of the legendary virgin births, and the fact that the religious figures are all men is strong proof that they cannot be virgin births.

Scientists have known for many years that the eggs of sea urchins can be made to develop by pricking them with a pin. The stimulus gives the signal for the chromosomes to divide and multiply. Could such a stimulus provide virgin birth in higher creatures?

In 1956 a Sunday newspaper in England asked the question to their readers. They received replies from 19 women and their daughters. Eleven pairs were eliminated after a preliminary interview. These women had the impression that an intact hymen after conception was a virgin birth. Another eight pairs were eliminated because of slight differences between the mother and the daughter. On one instance a mother had blue eyes and the daughter had brown eyes.

One very similar mother and daughter was selected for special tests. The final test was skin grafting. If the cells were alike, the skin grafts would not be rejected. The graft from the mother to the daughter remained healthy six weeks later. The graft from the daughter to the mother was shed in four weeks. The mother's claim must be taken seriously, but the technology was not available in 1956 to prove this. We now have the technology to prove or disprove the concept of virgin birth in humans.

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