



Science and the Creator

“How the bones do grow in the womb . . .”

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THROUGHOUT history men and women have marvelled at the mystery of child-birth, the hidden nine-month process that takes place within the mother’s womb and culminates in the dramatic emergence of a new living being. So Solomon, in meditating upon the inscrutability of God’s ways, declares: “As thou knowest not what is the way of the spirit, nor how the bones do grow in the womb of her that is with child: even so thou knowest not the works of God Who maketh all” (Eccl. 11:5).

In the past, anatomists could only examine dead fetuses for clues to the successive phases of growth in the womb. Over recent decades, however, the development of remarkable new scanning techniques¹ and image-processing computer software has enabled scientists to view the process at virtually every stage, from the fusion of the egg and sperm to the emergence, some forty weeks later, of a miniature human being. Most mothers in the developed world are by now familiar with the ultrasound scans routinely performed during pregnancy, allowing them the thrill of viewing the unborn child, and medical staff the ability to check for any abnormalities. A new book on the subject is illustrated with striking colour pictures which have been produced using these techniques.² They reveal that, although it takes nine months to make a baby, the major organs, including heart, lungs and brain, are already in existence after the first three.

A complex process

In parallel with the advances in scanning technology, considerable strides have been made in understanding both the chemical signals that drive the development of the fetus and the genes that control these signals. Experimental work has allowed the identification of some of the genes and protein molecules involved in, for example,

the establishment of a head-to-tail growth axis and the budding of the limbs, the formation of a four-chambered heart, and the making of the trillions of neural connections³ in the nervous system. One biologist has commented that human development no longer seems impossibly complex, “It just seems marvellous”. But understanding just some of its components falls far short of understanding the production of the living entity in which every cell functions as an integrated part of the whole. As Job expressed it in pleading with God: “Your hands have made me and fashioned me, an intricate unity” (10:8, NKJV).

The principal stages in the development of that “intricate unity” have now been elucidated:

- **7 days.** The initial bundle of cells, the morula,⁴ develops two distinct layers, becoming a blastocyst which attaches itself to the uterus wall; one layer forms the embryo, the other the placenta. This remarkable temporary organ tricks the mother’s immune system into tolerating the embryo’s presence and controls the flow of nutrients into and waste products out of the growing embryo.
- **23 days.** The nervous system, the first to develop, begins as a depression that folds on itself to form a tube along the back of the embryo.

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1. For example, MRI (magnetic resonance imaging), primarily for soft tissue, and CT (computerised tomography) X-ray scans for bone.
 2. *From Conception to Birth: A Life Unfolds*, Alexander Tsiaras, Ebury Press, 2002, reviewed in “Inside the Womb”, J. Madeleine Nash, *Time*, 12 Nov. 2002.
 3. See “Science and the Creator: Making the connections”, *The Testimony*, Mar. 1998, p. 84.
 4. See “[Cells, genes and the Bible](#)”, Alan Fowler, *The Testimony*, Aug. 2002, p. 296.

- **32 days.** Though the embryo is still no larger than a ladybird, already a primitive heart, eyes and blood vessels have appeared, together with cells that will form the brain and the limb buds.
- **2 months.** The developing fetus, no larger than a grape, now has nostrils and pigmented eyes although it will not sense light until the optic nerves are laid down; all the major organs are in place and ready to grow, including brain, heart, stomach, umbilical cord, kidneys, lungs, vertebrae and liver.
- **3 months.** Still cocooned in the placenta, the fetus now has a tiny rib-cage, eyes and ears, and can even suck its thumb.
- **7 months.** Development is almost complete; toenails appear and the brain already controls body temperature, rhythmic breathing and intestinal contractions.
- **8 months.** The fetus acquires stored fat for energy and insulation; as it grows the restricted space causes it to adopt the classic fetal position; hormonal changes prepare the mother's body to give birth.

One of the features that emerges from this research is the evidence that a fetus is a viable human much earlier than generally thought, with the implications that this has for the widespread and distressing use of abortion up to twenty-eight weeks as a means of birth control for social reasons.

Divine choreography

In view of the huge number of steps in the process and the many opportunities for mistakes, it may seem miraculous that healthy babies are born at all. In fact the process does have inbuilt checks which can cause seriously flawed embryos to miscarry. But normally it proceeds according to a strict timetable that enables confident prediction of the expected date of birth with only a few days' margin of error.

The authors of the book compare the development of the living embryo to constructing "the world's tallest skyscraper, built in nine months and germinating from a single brick. As the brick divides it gives rise to every other type of material needed to construct and operate the finished tower—a million tons of steel, concrete, insulation, tile, wood, glass, electrical wiring, heating and cooling units, plumbing, computer networks and software".

The extraordinary thing is that the majority of scientists believe that this astonishing feat of

growth has evolved purely by chance by natural physical means. They are fortified in this by the discovery that the same basic molecular processes are used across the animal kingdom in the growth of embryos. But similarity of process is no more a proof of evolution from a common ancestor than it is of a shared design by the same designer.

In fact everything about this complex process speaks of an underlying blueprint produced by a Master Designer, ensuring that the whole operation proceeds to a strict plan. One neurobiologist has remarked: "Whenever you look from one embryo to another, what strikes you is the fidelity of the process". Another describes the sequence of changes taking place in the womb being as precisely choreographed as a ballet. Both the erection of a large skyscraper and the choreographing of a ballet demand detailed intelligent planning, in the one case by an experienced architect, in the other by a skilled choreographer. Both analogies point inescapably to the requirement for there to be an intelligent Designer behind the marvel of embryonic growth.

Fearfully and wonderfully made

The oft-quoted passage from Psalm 139, although it has overtones of the special position of the Lord Jesus Christ and of his resurrection, suitably expresses the wonder of Divine design and power seen in this amazing process by which each of us came into the world:

"For You have formed my inward parts; You have covered me in my mother's womb. I will praise You, for I am fearfully and wonderfully made; marvellous are Your works, and that my soul knows very well. My frame was not hidden from You when I was made in secret, and skilfully wrought in the lowest parts of the earth. Your eyes saw my substance, being yet unformed [Heb. *golem*, fetus]. And in Your book they all were written, the days fashioned for me, when as yet there were none of them" (vv. 13-16, NKJV).

Amongst all the wonders of the living world there is surely none greater than "how the bones do grow in the womb of her that is with child", speaking eloquently of the supreme wisdom and power of our God, the Creator of heaven and earth. No wonder that the Lord Jesus used child-birth as a fitting parable of the even more important *spiritual* process of conversion and baptism, the new birth in Christ Jesus, by which we are born again unto eternal life (Jno. 3:3-8).