

Module # 1: The truth about Haeckel's embryos

HAECKEL'S DRAWINGS OF EMBRYOS HAVE BECOME A SIGNIFICANT ISSUE IN CONTEMPORARY AMERICAN EDUCATION—THE REASON BEING THAT BIOLOGY TEXTBOOKS COMMONLY USE HAECKEL'S DRAWINGS OF EMBRYOS AS SUPPOSED PROOF FOR EVOLUTION EVEN THOUGH EMBRYOLOGISTS KNOW THE DRAWINGS TO BE FAKES.

HAECKEL'S EMBRYOS AS APPEARING IN WIKIPEDIA



ERNST HAECKEL SAID THAT HIS DRAWING OF EMBRYOS—WITH A FISH EMBRYO ON THE UPPER FAR LEFT DEVELOPING INTO A FISH IN THE LOWER LEFT AND A HUMAN EMBRYO IN THE UPPER RIGHT DEVELOPING INTO A BABY ON THE LOWER FAR RIGHT—ILLUSTRATE HOW ALL VERTEBRATE EMBRYOS AT THE EMBRYONIC STAGE OF DEVELOPMENT ARE ESSENTIALLY THE SAME AND THEN EVOLVE INTO DIFFERENT ORGANISMS DURING THEIR GESTATION. HAECKEL AND OTHER EVOLUTIONISTS CALLED THIS PROCESS “RECAPITULATION”—THE THEORY THAT ORGANISMS RETRACE THEIR EVOLUTIONARY HISTORY DURING THEIR PRE-NATAL DEVELOPMENT.

Is this view legitimate? First of all, it is well-known in the field of embryology that the drawings are inaccurate. Haeckel fudged the drawings to make the embryos look similar when they actually are not. Noted British embryologist Michael Richardson, after his extensive study of the embryos in 1977, said: “These famous images are inaccurate

and give a misleading view of embryonic development.” Richardson also said: “It looks like [Haeckel’s embryos are] turning out to be one of the most important fakes in biology.” [These quotations, along with scholarly and extended analysis, are included in chapter 5 of *Icons of Evolution: Science or Myth*, by Jonathan Wells, (Washington D.C.: Regnery Publishing, 2000), ISBN 0-89526-200-2.] (See Chapter five of *Icons of Evolution*.)

BIOLOGY TEXTBOOK AUTHORS KEN MILLER AND JOE LEVINE DESCRIBED SOME OF THE HISTORY OF HAECKEL’S EMBRYOS AS FOLLOWS:

British embryologist Michael Richardson and his colleagues published an important paper in the August 1997 issue of *Anatomy & Embryology* showing that Haeckel had fudged his drawings to make the early stages of embryos appear more alike than they actually are! As it turns out, Haeckel's contemporaries had spotted the fraud during his lifetime, and got him to admit it. However, his drawings nonetheless became the source material for diagrams of comparative embryology in nearly every biology textbook, including ours! [Emphasis added. See excerpt from textbook, *Biology*, by Ken Miller and Joe Levine: <http://www.millerandlevine.com/km/evol/embryos/Haeckel.html>.]

Haeckel’s drawings are known to have been falsified in several ways: (a) To a substantial degree Haeckel based his sketches, not on what the embryos actually looked like, but rather on what he wanted them to look like to substantiate his theory of essential similarity of the embryos. This is circular reasoning, not science. (b) The actual embryos vary substantially in size and component parts. Haeckel adjusted the drawings to all appear to be similar in size and being, therefore, capable of containing similar component parts. (c) Haeckel chose his embryos from varying points in embryonic development, that being whatever point they looked the most similar, thereby making the drawings an “apples to oranges” comparison. (d) To prove his point, Haeckel should have been utilizing the earliest stages of embryonic development rather than later stages. He commonly used later stages when those stages suited his purpose.

THE MODERN SCIENCE OF GENETICS HAS ADDITIONALLY DEMONSTRATED THAT THE THEORY OF RECAPITULATION IS FALSE—A FISH EMBRYO HAS THE GENETIC MAKEUP OF A FISH AND NOTHING BEYOND THAT. MODERN GENETICS DEMONSTRATES THAT ORGANISMS DO NOT RETRACE THEIR EVOLUTION AS THEY DEVELOP. THE NATURE OF THE ORGANISM IS DETERMINED AT CONCEPTION BY THE GENETIC MATERIAL IN THE FERTILIZED OVUM. THE GENETIC INSTRUCTIONS CONTAINED THEREIN ACTUALLY VARY WIDELY FROM ORGANISM TO ORGANISM. FOR RECAPITULATION TO BE ACCURATE, THE GENETIC MAKEUP OF A HUMAN AT THE TIME OF CONCEPTION WOULD NECESSARILY BE ESSENTIALLY THE SAME AS THAT OF THE OTHER VERTEBRATES AT CONCEPTION. THIS IS OBVIOUSLY NOT THE CASE. THE GENETIC INFORMATION OF ALL ORGANISMS DOES NOT CHANGE FROM THE MOMENT OF CONCEPTION ONWARD.

IN SPITE OF THE FACT THAT THE WORLD OF SCIENCE KNOWS THE DRAWINGS TO BE FAKES AND KNOWS RECAPITULATION TO BE FALSE, HAECKEL'S EMBRYOS ARE NONETHELESS PRESENTED IN BIOLOGY TEXTBOOKS AS PROOF OF EVOLUTION. JOHN AND STEPHEN WYNNE, IN THEIR SURVEY OF THE CONTENT OF U.S. BIOLOGY TEXTBOOKS, FOUND THAT 10 OF 13 COMMONLY USED BIOLOGY TEXTBOOKS INCLUDE HAECKEL'S EMBRYOS, OR SOME FORM OF THEM, AS SUPPOSED PROOF FOR EVOLUTION.¹

THE IMPORTANCE OF THIS OBSERVATION CANNOT BE MINIMIZED. IN THIS CASE AT LEAST, TEXTBOOK WRITERS HAVE BEEN WILLING TO PRESENT KNOWN FALSEHOODS AS FACT IN ORDER TO ADVOCATE AN IMPORTANT PHILOSOPHY OF THE EDUCATION ESTABLISHMENT.

(FOR MORE INFORMATION ON HAECKEL'S EMBRYOS AND ON OTHER MAJOR PROBLEMS WITH DARWINISM, SEE BEN STEIN'S DVD *EXPULSED: NO INTELLIGENCE ALLOWED*.)

¹ John Wynne and Stephen A. Wynne, *Repairing the breach: Explaining the Systematic Deception Behind the War of Worldviews, and How Christendom Can Turn the Tide*, Dallas Texas: P3 Printing, 2008, p. 32.

Sample Lesson Plan

Grade levels: 9-12, college—graduate level (COLLEGE AND GRADUATE LEVEL STUDENTS SHOULD ALSO READ CHAPTER FIVE IN *ICONS OF EVOLUTION: SCIENCE OR MYTH*, BY JONATHAN WELLS, *OP .CIT.*)

Objectives:

Students will:

1. Learn the factual information relating to Haeckel's famous drawings of embryos.
2. Understand that Haeckel's drawings are fakes and provide no evidence for evolution.
3. Begin to understand the basic mechanisms of human genetics.
4. Begin to recognize the significance of the science of genetics to the Darwinian worldview.

Materials:

1. Overhead projector and slides or power-point technology.
2. Student access to the internet.

3. Printed resources.

Procedures:

1. Teachers may wish to lecture on this information or may assign students to the information and resources included on the CMods webpage.
2. Students may be asked the following questions:
 - a) How many of you are familiar with the drawings known as “Haeckel’s embryos”?
 - b) What Did Haeckel and his followers indicate that the drawings demonstrated?
 - c) Define the term “recapitulation.”
 - d) Does the scientific community know the drawings are falsified?
 - e) Did Haeckel and his contemporaries realize the drawings were falsified?
 - f) List the ways the drawings are inaccurate.
 - g) Compare Haeckel’s drawings to actual photographs of the embryos.
 - h) Based on actual photographs of the embryos in question, how similar are they?
 - i) How does modern genetic knowledge disprove the recapitulation hypothesis?

Vocabulary:

Darwinian evolution: The worldview formulated by Charles Darwin which holds that all life has developed from a single living cell in the distant past as a result of nature plus time plus chance. Darwinian evolution has no answer for the origin of life itself and does not allow for any kind of purposeful design or force outside of nature. For that reason it is also referred to as “naturalism” (the world consists of nature alone) and “materialism” (the world consists of material alone).

Ernst Haeckel : (February 16, 1834 — August 9, 1919) was a German biologist, naturalist, philosopher, physician, and artist who was a contemporary of, and apologist for, Charles Darwin. He is best known today for his drawings of embryos and his theory of recapitulation.

Recapitulation: The discredited theory of Ernst Haeckel that organisms retrace their evolutionary process during prenatal development. The term is short for “ontogeny recapitulates phylogeny” (the view that an individual organism's biological development, or ontogeny, parallels and summarizes its species' entire evolutionary development, or phylogeny).

Genetic material: The biological substance which stores and transmits genetic information. It is known to consist of chromosomes, genes, DNA, RNA and nucleotides.

Embryo: From Greek: *ἔμβρυον*, "that which grows." In humans it refers to the organism from the moment of implantation until the end of the 8th week. Before this point the organism is called a zygote and then a blastocyst; after this it is called a fetus.