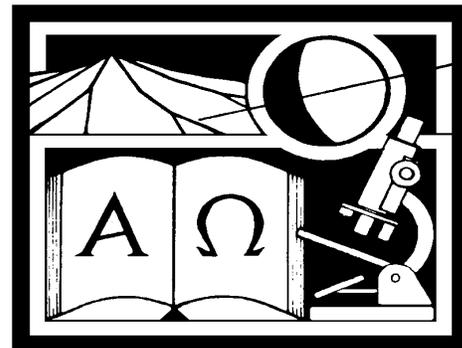


Origins Insights

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CREATION SCIENCE FELLOWSHIP



September 1999

Ernst Haeckel's Sleight of Hand Revealed by Bob Harsh

In 1891 the biologist Ernst Haeckel proposed one of the most influential arms of evolution. His "biogenetic law" has endured as evidence for evolution until very recent times. The idea continues to be perpetuated among those who learned Haeckel's "law" as **fact** during their formal education.

It is only because of my interest in finding out the truth about origins science that I have learned of the deceptive and unscientific nature of Haeckel's important theory. I have had the good fortune to have been exposed to several articles in pro-creationist literature that informed me of the inaccuracy of the "law of biogenesis". This has had positive results in that I have been able to point out to my biology students the unscientific nature of Haeckel's law and that his hypothesis is **not good evidence for evolution**. I was very pleased to read an excellent article in the May 1999 issue of *The American Biology Teacher*, a widely read journal for secondary and college biol-

ogy teachers, by Jonathan Wells who is a post-doctoral biologist in the Department of Molecular and Cell Biology at the Univer-

sity of California at Berkeley. This was a very valuable article because it exposed Haeckel's hypothesis as an invalid support

MEETING INFORMATION

SEPTEMBER ANNOUNCEMENT

HOST: Stephen E. Rodabaugh, PhD
TOPIC: Abstract for Job's Park

The idea that people and dinosaurs were contemporaneous strikes people in our evolution-dominated society as completely incredible; and in fact, this incredibility is the catalyst for the popular movie "Jurassic Park".

We in this talk claim that indeed man and the great saurians were contemporaneous, and that objective evidence from the book of Job so indicates. If so, then the Near East in ancient times could be called "Job's Park".

Our discussion centers around two questions:

Question for Creationists. If we assume:

- the earth and the biosphere are "young" as creationists allege,
- the Scriptures are true as understood by the normative hermeneutic or the grammatico-historical method (which states that the customary usage of a word or phrase or grammatical usage rules unless the context of the passage or the context of a parallel passage overrules), and
- man and dinosaurs were both created on the Sixth Day as creationists allege, then where do the Scriptures describe the great saurians?

Answer to Question for Creationists. Job 40:15

(Continued on page 6)

DATE: Tuesday, September 21, 1999

TIME: 7:30 PM

PLACE: Mars Christian and Missionary Alliance Church,
997 Route 228, Mars, PA, 16046. Church Phone: (724) 776-9400

for evolutionary theories. This report was even more valuable because it was published in a reputable pro-evolution journal and should provide the opportunity for many biology teachers to alter their lessons on evolution.

Haeckel's famous set of illustrations depicting ontogeny recapitulating phylogeny does not appear in the 1999 edition of *Biology* by Campbell, which is one of the most popular college and high school Advanced Placement Biology textbooks. This is what a leading college biology book is teaching today:

Inspired by the Darwinian principle of descent with modification, many embryologists of the nineteenth century proposed the extreme view that "ontogeny recapitulates phylogeny." This notion holds that ontogeny, the development of an individual organism is a replay of the evolutionary history of the species, phylogeny. The theory of recapitulation is an overstatement. [Biology, 1999, p.425]

I am happy this modern textbook is not teaching Haeckel's misleading hypothesis, but there are thousands of biology teachers who are teaching out of textbooks that present the "law of recapitulation" as scientific evidence for evolution. Many still also teach that vestigial organs are good evidence of evolution.

Many biology teachers still are under the impression that the following statement from the 1953 *World Book Encyclo-*

pedia is true.

It is supposed that each individual organism, during its development from egg to adult, repeats in an abbreviated manner the various stages in the de-

"This notion holds that ontogeny, the development of an individual organism is a replay of the evolutionary history of the species, phylogeny."

velopment of its species. ... In scientific language, this is summarized by the phrase 'ontogeny recapitulates phylogeny.' [World Book, 1953]

Haeckel [1834-1919] was well educated in botany, medicine and zoology and in 1865 became professor of zoology at the University of Jena. He became most interested in Charles Darwin's theory of evolution, which was proposed in 1859, and will always be remembered as one of Darwin's most ardent supporters. "He was the first scientist to draw up a 'family tree' of animal life." [World Book, 1953]

Haeckel was inspired by Darwin's words. Darwin wrote that all vertebrates "are the modified descendants of some ancient progenitor" and that "the embryonic or larval stages show us, more or less completely, the condition of the pro-

genitor of the whole group in its adult state" [Darwin, 1859, *the Origin of Species* as found in Wells. J. 1999. Haeckel's Embryos & Evolution. *American Biology Teacher*.61:5, May].

Wells forcefully stated that, "Haeckel's drawings misrepresent the embryos they purport to show and Haeckel entirely omitted the earliest stages of development in which the various classes of vertebrates are morphologically very different. **Biology teachers should be aware that Haeckel's drawings do not fit the facts** [Wells, 1999]." Wells was not the first to criticize the accuracy of Haeckel's proposal. Michael Richardson, et al. produced an article in the journal, *Anatomy and Physiology* that brought the truth about Haeckel's hypothesis into the light. I loved the two contrasting statements they placed at the very beginning of their article. "There is no stage of development in which the unaided eye would fail to distinguish between them [vertebrate embryos].... a blind man could distinguish between them" [Sedgewick A. 1894. On the law of development commonly known as von Baer's law: and on the significance of ancestral rudiments in embryonic development. Q. J. Microsc. Sci. 36] So that's a sample of 1894. Let's see what more modern embryologists see through their 'evolutionary naturalist rose-colored glasses.' 'Embryos of different species [of vertebrates] pass through identical embryonic stages to-

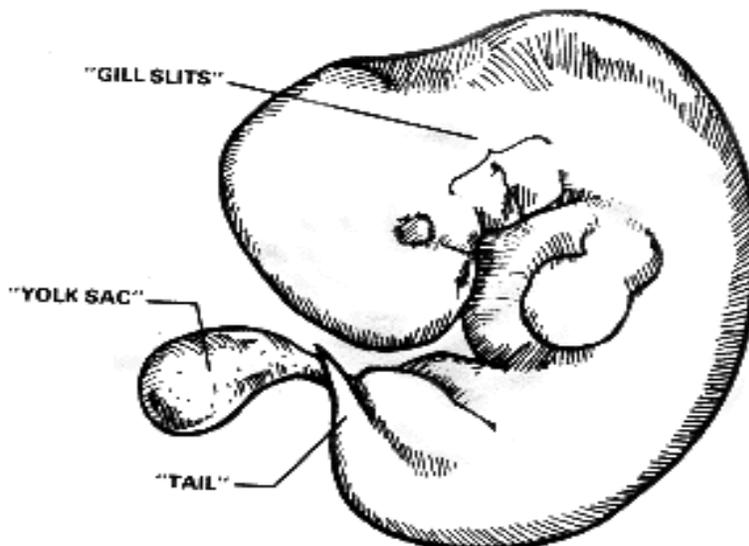
fore acquiring their specific features” [Butler H. Juurlink. BHJ. 1987. An atlas for staging mammalian and chick embryos. CRC Press, Boca Raton, Florida]. Two conclusions from the same **empirical evidence!** How can this be? Butler and Juurlink were evidently examining those embryos through their rose-colored evolution glasses. Sedgewick recognized the variations among embryos at all stages of development... without the benefit of the extra 93 years of embryological research. In 1951, G. de Beer wrote: “There are no grounds for the view that an organism as it develops, passes through systematic categories of differing values, or differing degrees of estrangement from organisms of other groups” [de Beer, 1951. Embryos and ancestors as quoted in Richardson, 1997]. Richardson’s studies have shown that Haeckel’s hypothesis, which was taught as dogma for over one hundred years should have been challenged long ago.

A prevalent idea in developmental evolution is that intermediate embryonic stages are resistant to evolutionary change, and that differences among species arise through divergence at later stages of development. As a consequence, **all vertebrates are often said to pass through a common stage when they look virtually**

identical. The conserved stage is called the *phylotypic* stage because it is thought to be the point in development when there is maximum resemblance among members of a phylum or

It is almost as though the phylotypic stage is regarded as a biological concept for which no proof is needed.

comparable higher taxon. One puzzling feature of the debate in this field is that while many authors have written of a conserved embryonic stage, *no one has cited any comparative data in support of the idea. It is almost as though the phylotypic stage is regarded as a biological concept for which no proof is needed.* [Richardson et al. 1997]



An early stage in human development
(As Ernst Haeckel saw it)

No doubt Richardson and his colleagues were surprised and disturbed that Haeckel’s hypothesis had been taught as dogma that did not need to be supported by empirical observation. I only wish that other honest evolutionary naturalists would be able to see the trees in other forests of evolutionary philosophy that are taught as dogma which does not need to be supported by facts.

There are two areas that stand out most in my mind where this hypocrisy is prevalent. First, in any debate between creationists and evolutionists the creationists attempt to challenge the beliefs of their opponents with scientific reasoning and the evolutionists spend most of their efforts in attempting to discredit the reasoning skills and the intellectual capacity of creationists. They rarely stay with trying to present honest scientific rebuttal of the creationists’ arguments. Second, it is almost impossible for openly creationist researchers to get their studies that offer alternative, anti-evolutionist explanations of nature published in major scientific journals.

In this case of the dogmatic teaching of Haeckel’s evolutionary ideas, the field of Embryology has been made prone to misinformation for over a century **precisely because of the insistence of the biological establishment that evo-**

lution be the central unifying dogma of all biology. What a waste!

Another pattern found throughout the early history of evolutionary theory was the continuing trail of deliberate deception. Piltdown man, a deliberate fraud, heavily influenced the discipline of Anthropology for over half a century! He was even important evidence used by the ACLU in the Scopes trial.

Haeckel's deception was at least two fold. First, he purported to have discovered a general trend in comparative vertebrate embryology. Haeckel *conveniently* left out two of the seven classes of vertebrates. They were available for him to study and *ironically* they don't fit his scheme. Even in the vertebrate classes he illustrated, he chose examples that best fit his scheme. With amphibians, for example, he illustrated salamanders that show a better fit, rather than frogs that contradict the pattern he claimed to be illustrating. [See Richardson, 1997] Secondly, and more important, Ernst Haeckel committed an ethical violation that should produce severe consequences. He fudged his data. "Haeckel's drawings distort the embryos he selected" [Wells, 1999]. Richardson and his colleagues studied the same embryos and their illustrations **do not show any consistent pattern.** They did not use any recently developed technology that was unavailable to Haeckel. R. B. Goldschmidt

also observed Haeckel's questionable technique as long ago as 1956.

The present generation cannot imagine the role he played in his time, far beyond his ac-

***...both the
Richardson article
and the
Wells report
delivered
devastating blows
to the historic
evolutionary
naturalism model.***

tual performance ... Haeckel's easy hand at drawing made him improve on nature and put more into the illustrations than he saw... one had the impression that he first made a sketch from nature and then drew an ideal picture as he saw it in his mind. [Goldschmidt. 1953. The golden age of zoology. University of Washington Press. Seattle as reported in Richardson, 1997]

It seems like evolutionary dogma dies hard. In 1953 Goldschmidt pointed out inaccuracy in the very basis of a major evolutionary dogma and it looks like the problem has been ignored for forty-three more years!

Hold on to your hats! Just when we get a toehold in conquering the evolutionary naturalism mountain the inertia of orthodoxy raises its ugly head!

In my mind both the Richardson article and the Wells report delivered devastating blows to the historic evolutionary naturalism model. But that was not an outcome in either report, and that reinforces my belief in the importance of paradigms. Paradigms really do govern the way scientists draw their conclusions.

Let's first look at Richardson's conclusion:

In summary, evolution [my emphasis] has produced a number of changes in the embryonic stages of vertebrates including:

1. Differences in body size.
2. Differences in body plan [for example, the presence or absence of paired limb buds]
3. Changes in the number of units in repeating series such as the somites and pharyngeal arches.
4. Changes in the growth of different fields [allometry]
5. Changes in the timing of development of different fields [heterochrony]... Embryonic stages may be key targets for macroevolutionary change. [Richardson et al., 1997]

The empirical observation was: there are many differences between embryos at their various stages of embryonic development. The necessary inference was that all of these differences were due to natural selection driven evolutionary change. It is important to segregate the direct observation part

of Richardson's very informative paper from his irresistible urge to give all of the credit for the way nature is to the natural forces of blind undirected evolution.

Let's consider Well's conclusions in *The American Biology Teacher*:

If evolution is central to understanding biology, as many writers have argued, then it is important that we give our students reliable information about it. **Clearly Haeckel's drawings are not reliable.**

Students who are taught that teachers constitute evidence for evolution, and later learn that teachers misrepresent the facts, may feel betrayed by their former biology teachers and develop a distrust of science in general.

Yet Haeckel's drawings are still featured prominently in some biology textbooks. **Of course it would be illogical to conclude that Haeckel's distortions invalidate Darwin's theory.** Although Darwin considered the embryological evidence 'second to none in importance' [Darwin, 1859, p.346],



he did not base his theory on that evidence alone. Given the complexities of early vertebrate development, it might be better to look elsewhere for evidence of evolution, **at least in an introductory course.** ... 'Further

...two contradictory opinions cannot both be accurate.

study of the nature and modifiability of cellular and embryonic processes will help complete the explanation offered by Darwin for evolution as a process of descent with modification' [Gerhart & Kirchner.1997, p. 614].

The field of evolutionary developmental biology may provide us with many new insights. But these will surely come from facing the facts of nature, not from bending them to prop up old misconceptions. [Wells, 1999, *highlighting and emphasis mine*]

Wells made a very valid observation in that students tend to trust their teachers to deliver truth to them. They may, in fact, feel betrayed when they find out that they have been taught error. His observation serves to reinforce the problems our young people have when they are confronted with the need to choose between the "truth" about origins that is taught by their evolutionary naturalist teachers, whom they trust, and their various biblical naturalist teachers who taught a

"different truth" during their youth as they grew up. Most people finally reach a point that they realize that two **contradictory** opinions **cannot both be accurate.** They are either both wrong or only one of them is right.

I was puzzled with the advice "to look elsewhere for evidence of evolution, at least in an introductory course". Of what use is false information in any advanced course level?

The faith-like allegiance comes through loud and clear. Darwinian evolution **must be supported** at all costs!

As a biblical naturalist, I see the Creator's hand in providing for the orderly, intricate development of living things from zygote through adult. I do not know all that is known about developmental biology and a lot is not yet known by any scientist but I am fascinated by what I do know. The developmental processes provided by our Creator are truly sources of wonder. Our God really is an awesome God and worthy of our sense of awe!

Thanks to Hank

Hank Jackson has worn many hats through the years with CSF. I would like to publicly thank Hank for his service of formatting the newsletter for several years. Hank is stepping aside and Jim Hawk will be getting the Origins Insights ready for printing. Thanks Hank and Jim for volunteering your services.

Bob Harsh

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Email Address: csf@trfn.clpgh.org

CSF Page: <http://trfn.clpgh.org/csf>

Editors Address: Robert Harsh
439 Little Creek Road, Harmony,
Pennsylvania, USA 16037
Email: naturbob@juno.com

(Continued from Page 1)

Question for Evolutionists. If we assume:

- (a) ancient man was separated 70 million years in time from the great dinosaurs,
- (b) ancient men were not paleontologists and knew nothing of the great saurian fossils;
- (c) Job is an ancient document, and
- (d) Job, understood the way the ancient writer intended and the way ancient readers would have read it (i.e. in according with the normative hermeneutic), describes the great saurians with great precision, then is not ancient man of Job's time contemporaneous with the great saurians?

Answer to Question for Evolutionists: Yes.

The great irony of the second question (and its obvious answer) is that even if one does not believe that Job is inspired or true, the mere fact that the normative hermeneutic generates this specific, phenotypical information about the great saurians from the text of Job confirms simultaneously the following statements:

- (1) Job is true;
- (2) the normative hermeneutic is the only valid way to interpret Job and all Scriptures; and
- (3) ancient man and dinosaur were in fact contemporaneous, with the resulting collapse of the geological time column .

CREATION SCIENCE FELLOWSHIP, INC.

P.O. Box 99303
Pittsburgh PA USA 15233-4303
Phone: (412) 341-4908

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