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Md. Abdul Ahad

Department of Entomology,
Faculty of Agriculture, Hajee
Mohammad Danesh Science &
Technology University,
Dinajpur-5200, Bangladesh

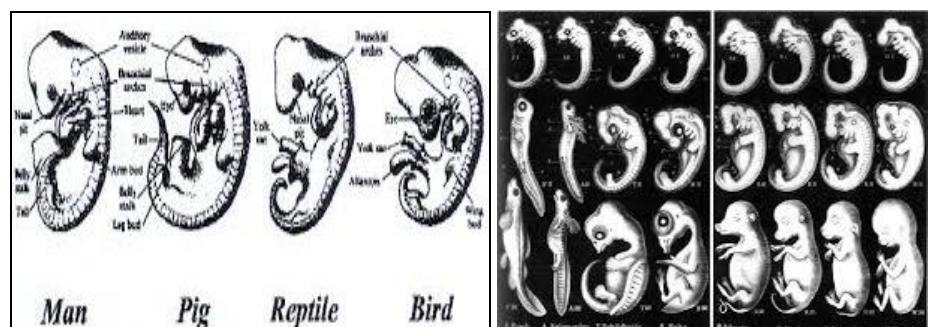
Embryological evidences opposite to Darwin's theory: Biogenetic law (Recapitulation theory) and Haeckel's evolutionary tree are valid or not

Md. Abdul AhadDOI: <https://doi.org/10.22271/j.ento.2018.v6.i5ac.4434>**Abstract**

The embryology of plants and echinoderm oppose the "Biogenetic Law (Recapitulation theory)". The present of gill slits in vertebrate's embryos are the evidence of "Biogenetic law". But except in fishes, other vertebrate's embryos have never gills. Both the early stage and the tail bud stages (later stages) of embryos are differing morphologically, instead of similarity. So, Haeckel manufactured the pictures about the similarities of various vertebrate embryos. Thus, Haeckel's "Biogenetic Law" is faked during Haeckel's as well as Darwin's lifetime. Again, the vertebrate's embryos are observable but this Law is based on three assumptions. So, many researches declared that invalid the "Biogenetic Law". Consequently, the publishers of biology started to remove the Haeckel's drawing from their biology books. Haeckel's evolutionary tree is based on the "Biogenetic law". So, Haeckel's evolutionary tree (Phylogenetic tree /Darwinian tree) is not valid. Darwin exploited the "Recapitulation theory" for the strong evidence of his theory. Hence, embryological evidences are opposite to Darwin's theory.

Keywords: Haeckel, vertebrate's embryo, similar, ontogeny, phylogeny**1. Introduction**

Haeckel's book entitled "*Natürliche Schöpfungs-geschichte*", was published in German in 1868 and in English it was published (in 1876) with the title "The History of Creation" [1]. In this book Haeckel advanced the "Biogenetic law", which is also known as recapitulation theory. This theory stated that "Ontogeny" (the development of the organisms/ embryo) recapitulated the "Phylogeny" (the evolutionary/past history). To illustrate this law, Haeckel (in 1891) provide drawings (Fig.1), which have been widely used in biology textbooks and ever since. His drawings were also subsequently used (in 1901) in a book entitled 'Darwin and After Darwin' [2, 3]. According to this theory, the human embryo might first resemble a one-celled amoeba, then a one-layered Volvox, then a two-layered coelenterate, and so on, right through fish and amphibian and every embryo repeats the entire history of its evolution [4]. The early stages of all vertebrate embryos are markedly similar (Fig.1) and it is not easy to differentiate a human embryo from the embryo of a pig, chick, frog or fish and indicates common ancestry [5]; the detailed study of embryology reveals that in a generalized way morphological stages characteristic of adults of distantly related ancestral groups occur in early embryonic stages of the mammal [6].

**Fig 1:** Similarity of Vertebrates Embryo (Google).

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Correspondence**Md. Abdul Ahad**

Department of Entomology,
Faculty of Agriculture, Hajee
Mohammad Danesh Science &
Technology University,
Dinajpur-5200, Bangladesh

However, Darwin exploited the Haeckel' idea. Its evidence is that Darwin acknowledged that "Professor Haeckel in his 'Generelle Morphologie' and in another works has recently brought his great knowledge and abilities to bear on what he calls phylogeny, or the lines of descent of all organic beings. In drawing up the several series, Haeckel trusts chiefly to embryological characters, but receives aid from homologous and rudimentary organs, as well as from the successive periods at which the various forms of life are believed to have first appeared in our geological formations. He has thus boldly made a great beginning, and shows us how classification will in the future be treated [7]".

However, there are numerous criticisms about the "Biogenetic Law", such as:

1. The enthusiasm of Haeckel, however, led to an erroneous and unfortunate exaggeration of the information, which embryology could provide [8].
2. The development of vertebrate embryo is based on the recapitulation of ancestral stages; but it is no longer seems convincing or even interesting to biologists at all [9].
3. Haeckel misstated the evolutionary principle. It is now firmly established that ontogeny does not recapitulate the phylogeny [10].
4. There is no evidence that entire stages of vertebrates embryos are recapitulated [11].
5. An organism cannot move from adulthood back through adolescence into childhood, or that a butterfly cannot move from its adult flying stage back through the pupa into its larval stage. Such ideas are quite absurd. But how Haeckel claimed that an organism has to pass through the stages of its evolutionary history during its development [12].
6. Haeckel was totally dishonest and dangerously naughty basis for the theory of embryonic recapitulation, and the fact that it has long since been discredited scientifically, it is a false idea that human beings retrace their evolutionary past in the womb [1].
7. A natural law can only be established as an induction from facts. Haeckel was of course unable to do this. Haeckel altered the illustrations of them to fit his theory. The 'Biogenetic law' as a proof of evolution is valueless [2].

Therefore, there is an uncertainty and contradiction about the "Biogenetic Law". So, it is necessary to remove this contradiction for the benefit of biological science. But reviews of literatures reveal that such type of work is scanty in the biological world. In addition, literature indicated that there are many works against the evidences of Darwin's theory such as: the direct evidences (paleontology/ fossils) of evolution opposite to Darwin's theory (Ahad) [13], the artificial selection/hybridization is opposite to Darwin's theory [14] and Darwinian classification of plant and animal (taxonomical evidences) opposite to Darwin's theory (Ahad) [15] and also against many theories of evolution such as invalid chromosomal speciation theory (Ahad) [16] and invalid Oparin-Haldane's theory (the soup theory) and other theories about the origin of life (Ahad) [17].

But the reviews and literatures indicated that there is no such type of work. Therefore, the objectives of this article are try to prove "Embryological evidences opposite to Darwin's theory: Invalid Biogenetic law (recapitulation theory) is true or not". Science searches which is the truth. Therefore, it is necessary to work on the above objectives for the benefit of modern biological sciences.

2. Embryology of plants and echinoderm oppose the "Biogenetic Law"

Embryology of plant opposes the "Biogenetic Law". Therefore, the "Biogenetic Law" has been heavily attacked by the plant embryologists, such as:

- a) The embryology of plants is generally simpler than that of animals. Hence, the recapitulation principle is not so exemplified in plants [18]. In addition, the rather simple embryonic development of most plants fails to reveal in many cases of the "Biogenetic Law" with exceptionally, the seedling of cacti have leave but adult plants have no leave; the leaves of seedling of *Acacia* and *Eucalyptus* are differ from the leaves of adult plants [19]. But exception is exception; it could not be an example or evidence of a theory of evolution, which is the heart of biology. Therefore, it is documented that embryology of plants oppose the "Biogenetic Law".
- b) The simple embryology of echinoderms played an important and beautiful role for the establishment of the "Biogenetic Law". But recent study of echinoderm embryology reveals extensive differences among the various groups of embryos of echinoderms and these differences are noticeable to the embryonic adaptations. So, it is doubt on the echinoderm-chordate relationship, as the hemichordate larva does not fit into the scheme of larval relationships [18]. Therefore, it is claimed that the clear evidence shows that Haeckel purposefully removed the limb buds of the echidna embryo from his source and it also is exploited in his book "*Anthropogenie*" (5th ed.) and in the later editions (such as the 12th) of "*Natürliche Schöpfungsgeschichte*" [20]. Therefore, it is documented that the embryology of echinoderm opposes the "Biogenetic Law."

3. Haeckel entirely omitted in his drawing the earliest stages of vertebrate's embryo, as those stages of embryo are morphologically very dissimilar

Haeckel entirely omitted in his drawing the earliest stages of vertebrate's embryo; as those embryo are morphologically very dissimilar and the documents are placed here:

1. In 1894, the British zoologist Adam Sedgwick pointed out that a species is distinct and distinguishable from its allies from the very earliest stages of embryo and it true for all through their development; but Haeckel entirely omitted in his drawing this earliest stages [21].
2. In 1987, the Canadian embryologist Richard Ellison declared that Haeckel entirely omitted in his drawing the earliest stages of vertebrate's embryos in which the various classes of vertebrates embryo are morphologically very different [22].
3. Denton drew attention that it is obvious that neither the blastula itself, nor the sequence of events which lead to it's earliest stages of development. But those are morphologically very different. The differences become more striking in the next major phase in embryo's gastrulation [23].

So, it is proved that Haeckel entirely omitted the earliest stages of vertebrate's embryo in his drawing, as those stages of embryo are morphologically very dissimilar.

4. Except in fish other vertebrates have never gills slits

The term "Gill slits" (Fig. 2) is used to refer to the folds of skin in the pharyngeal region in embryos [24]. The gill slits or

gill pouches of mammalian embryos, seemed to provide strongly support the Haeckel's idea [4]. The present of gill slits in vertebrate's embryos indicated that vertebrate's embryos

pass through similar stages and also indicated their common ancestry as each embryo of vertebrate has gill slits and it the first assumption of "Biogenetic Law" [25].

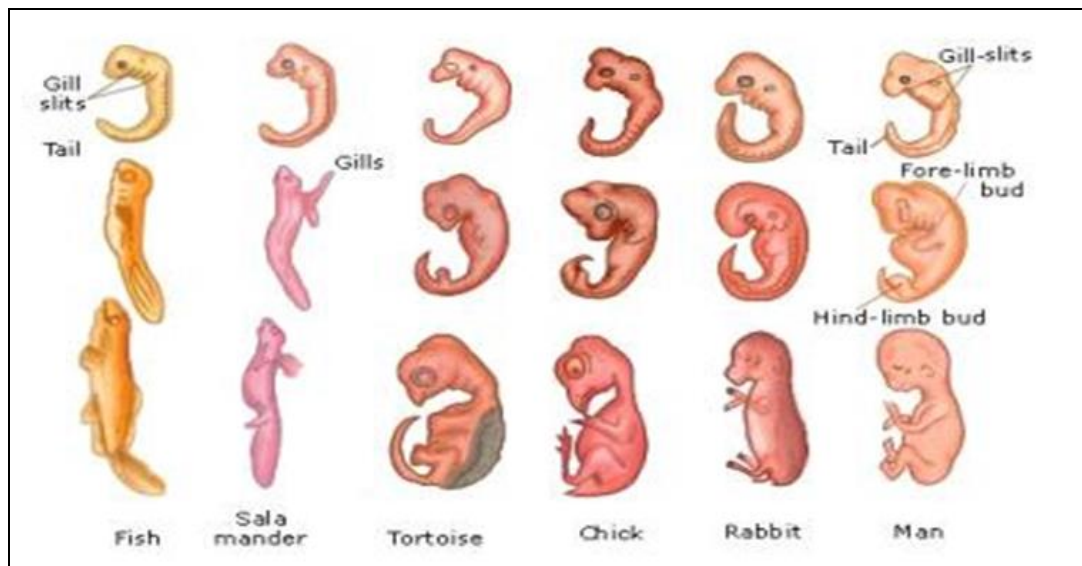


Fig 2: Gill slits (Adapted form Google)

In opposition, except in fish; other vertebrates such as reptiles, bird and mammals never have gills. Gill slit of human is actually the formation of the middle ear canal, jaw and parts of the head and neck. So, there is no way to support that gill slits can serve as the evidence for the "Biogenetic Law" as well as common ancestry. The literatures in this connection are placed here:

1. It is technically correct that humans and other terrestrial vertebrates do not posses the gill slit [26].
2. The human embryos do not have gill slits; those have pharyngeal pouches. However, in fish, those develop to gills, but in reptiles, mammals, and birds those develop into other structures and never develop to gills, even rudimentary gills [27, 28].
3. Haeckel opined that human, salamander and pig embryos looks same due to the gill slits at the same stage of development. But those don't so. These are fakes [29].
4. Reptiles, bird, and mammals have never gills; in humans, for example, the clefts disappear and transform into other parts of the body, including the jaw, the middle ear, and the larynx. "Gill slits" in amniotes basically of mammals, birds, and reptiles goes as follows:
 - a) Pharyngeal structures of amniote embryos never function as gills and therefore should not be referred to as "Gill slits".
 - b) Whatever resemblance to the gills of aquatic vertebrates the pharyngeal structures of amniotes has, it is superficial.
 - c) Observing the pharyngeal structures of amniote embryos as being gill-like and calling them gill slits, despite those not functioning as gills is reading evolution into development [30].

So, it evident that except in fish, the embryos of reptiles, birds, and human have never possess gill slits or gills; does not resemble those of fish and frogs. Therefore, there is no evolutionary relationship among those. Therefore, "Though it is claimed that gill slits are the evidence of the "Biogenetic Law" and also the Darwinian Theory [31]"; but it is never valid. Thus, the most famous evidence of the "Biogenetic Law" and the Darwinian Theory is not valid.

5. Haeckel manufactured the pictures about the similarities of various vertebrate embryos

In 1868, Haeckel advanced the "Biogenetic law". In 1891, He provided the drawings about the similarity of vertebrate embryos (Fig. 1), which is the evidence of "Biogenetic Law" and convince easily of all kind of scientists and general people also. But it is astonished that Haeckel manufactured those pictures and its documents are placed here:

1. Haeckel manufactured the photo about the similarity of vertebrate embryo [1].
2. Rutimeyer declared that Haeckel's work are considerable manufacturing of scientific evidence committed [32].
3. In 1897, Franz Keibel (professor of anatomy, University of Strasbourg, France) tried to restore Haeckel's drawings from his own specimens and concluded that Haeckel had overstated about the similarity among the various kind of vertebrate's embryos in his drawings. Consequently, Keibel rejected the Haeckel's drawings. However, Keibel published his conclusion in the first volume of "Normentafeln zur Entwicklungsgeschichte der Wirbelthiere" [33].
4. Haeckel was unable to give his sources about the photo of embryological similarities of vertebrate embryos, which support that Haeckel manufactured the photo about the similarity of vertebrate's embryo [11]. Its document is that "Haeckel charged with fraud and convicted by the university court at Jena" [34].
5. Richardson and his team compared to the embryos of 50 vertebrates with Haeckel's drawings. The team found that there are no similar appearances of vertebrate's embryos but dissimilar [35].

So, it is proved that Haeckel manufactured the pictures about the similarities of various vertebrate embryos.

6. Haeckel's Biogenetic Law is faked during Haeckel's times, even in Darwin's lifetime

Haeckel's "Biogenetic Law" is faked during Haeckel's times, even in Darwin's lifetime and a few documents are place here:

1. Haeckel's theory was faked during Haeckel's times [36].
2. The scientific community during Darwin's time was

critical of Haeckel's theory such as Emil Du Bois-Reymond, Rudolf Virchow, and Louis Agassiz, for instance—accused him of dishonesty Haeckel's drawing of embryological similarities of vertebrate embryos [37, 38].

3. Haeckel's 'Biogenetic Law' was discredited by the embryologists in Darwin's lifetime [39].
4. In 1868, the fraud of Haeckel drawing was exposed only months following the publication of these engravings by L. Rüttimeyer (Rutimeyer was a well-known German scientist living at that time), corroborated by other contemporaries such as the anatomist Wilhelm His Sr. (1831–1904), who published their own comparisons showing significant differences. For example, the dog embryo and the human embryo, shown on page 240 of Haeckel's book, are completely identical. But not true at all. So, Haeckel did not faithfully copy the dog embryo from Bischoff's (4th week) work. Rutimeyer then reprinted the original drawing made by Bischoff of the dog embryo at 4 weeks, and the original of human embryo at 4 weeks made by Haeckel. Rutimeyer regularly had articles in each yearly volume of "Archiv für Anthropologie", yet his book review was never translated into English or published in Britain or in America [40].

Above various literatures indicated that Haeckel's "Biogenetic Law" is faked during Haeckel's lifetime, even in Darwin's lifetime.

7. Tail bud or Later stages of embryo are also differing morphologically

Observation by the recent research indicated that Haeckel's "Biogenetic Law" is fraud and its evidences are placed here:

Richardson and his team collected embryos of 39 various vertebrates from various part of the world (such as marsupials from Australia, tree-frogs from Puerto Rico, snakes from France, and an alligator embryo from England etc.) and the team observed that vertebrate's embryos are not similar at all. Richardson and his team observed that there are many important differences among the various vertebrate's embryos, such as:

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 pattern of growth of different fields (allometry);
 5. Changes in the timing of development of different fields (heterochrony). These modifications of embryonic development are difficult to reconcile with the idea that most or all vertebrate clades pass through an embryonic stage that is highly resistant to evolutionary change [35].
- Moreover, Curtis confirmed that "Haeckel was wrong; embryos do not resemble any mature organism—they resemble, as we have seen so far, other embryos. To prove it, Curtis showed that the entire stages of a chick embryos and a human embryo are greatly differ morphologically from Haeckel's drawing's" [4]. Therefore, the "Biogenetic Law" has demonstrated to be wrong by numerous subsequent scholars [41] by the experiments of Harrison [42] and Wilkins [43]. Besides, Stephen J. Gould's in his many articles rejected the Haeckel's "Biogenetic law" [44-47].

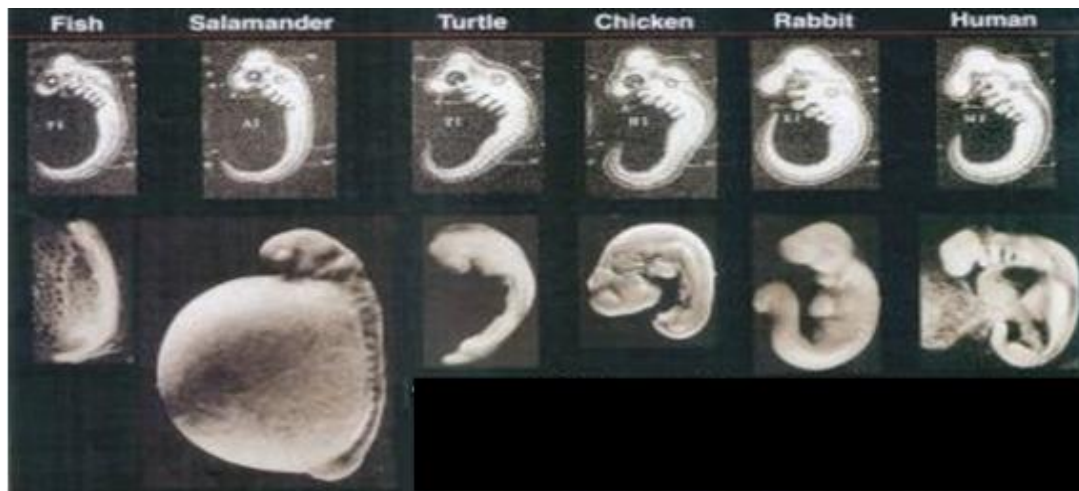


Fig 3: Top row: Haeckel's drawings of several different embryos, showing incredible similarity in their early 'Tailbud' stage. Bottom Row: Richardson's photographs of how the embryos really look dissimilar at the same stage (From left: Salmon, Hellbender, European pond terrapin Tortoise, Chicken, Rabbit, Human [35]).

As a result, the similarity among the embryos of different vertebrate species is one of the worst cases of scientific fraud. It's shocking to find that somebody one thought was a great scientist was deliberately misleading [29].

Thus, it is proved that recent research commented Haeckel's "Biogenetic Law" fraud.

8. The conceptual foundation on which the "Recapitulation Law" is base, which never valid

The second assumption of the "Biogenetic Law" is that phylogenesis must occur by the addition of new characters to the end of the normal developmental process [33]. But new

types are not known to evolve by addition of extra stages to ancestral adults according to Haeckel. Instead, new evolution occurs for the most part through developmental divergence; a new path embryonic or larval development branches away from some point along a preexisting ancestral path of development. The best example is evolution by larval neoteny; the common process by which numerous new groups are believed to have arisen from the larvae of ancestral groups. An ancestral larva here does not metamorphose into the customary adult, but instead develops sex organs precociously and becomes established in this larval form as a new type of adult animal. Tunicates (a subphylum of

chordate) tadpole larvae that develop into sessile adults. It is now considered most probable that vertebrates represent neotenus tunicate tadpoles. Numerous other instances of evolution by neoteny are known. In all these cases the new developmental path branches away sooner or later along the course of the old path. The sooner two such paths do diverge, the more dissimilar will be the two types of resulting adult. So, most of Haeckel's views are now largely discredited. It could be attributed to the lingering influence of Haeckel, not to Darwin, this erroneous idea of an evolutionary "ladder" or "scale," proceeding from "simple amoeba" to "complex human being," with more and more rungs added on top of the ladder as time proceeds. All such notions are invalid; because Haeckel's basic thesis is invalid. Indeed, Haeckel's arguments were shown unsound even in his own day. For example, it was already well known in Haeckel's time that, apart from exceptional forms, the radiate animals do not really have two-layered bodies but distinctly three-layered ones, with a mesoderm often highly developed (as in sea anemones, for example). Two-layered animals in effect do not exist, and a distinction between diploblastic and triploblastic types cannot be justified. Thus, the conceptual foundation on which the "Recapitulation Law" was based was never valid [48]. In addition, Lovtrup noted that the Haeckelian form of recapitulation theory is considered invalid/defunct [49]. It was once thought that an organism was assumed to pass through the stages of its evolutionary history during its development as an embryo (i.e. phylogeny repeats ontogeny). But this concept has been thoroughly rejected by the scientists today. The "Biogenetic law" is broken by the turn of the century; scientists had discovered many cases that defied Haeckel's so-called law. His followers tried to cast them as exceptions that proved the rule [50].

9. Numerous biologists rejected the "Biogenetics law" by using various languages

Numerous biologists rejected the "Biogenetics law" by various languages and few literatures placed here:

1. Pennisi [3] published an article in "Science" journal entitled "Haeckel's Embryos: Fraud Rediscovered".
2. Hawkes [29] designated as Haeckel "An Embryonic Liar".
3. The "Biogenetic Law" had become scientifically untenable [51].
4. To support recapitulation theory, Haeckel began to fake evidence [34].
5. the "Biogenetic Law" is a mental strait-jacket, which has had lamentable effects on biological progress [52].
6. It is now firmly established that ontogeny does not repeat the phylogeny [10].
7. The so-called "Biogenetics law" is totally wrong [53].
8. The basis of the "Biogenetic Law" is demonstrably unsound [54].
9. Haeckel's ideas about the recapitulation theory have been discredited by any biologists [25].
10. Haeckel's theory is the most infamous examples of scientific fraud [28].

So, it is documented that numerous biologists rejected the "Biogenetics law" by using various languages.

10. Vertebrate's embryos are observable but "Biogenetic Law" is based on three assumptions/believes

Haeckel's "Biogenetic Law" depends on three assumptions [25].

But it is proved in the entire article that Haeckel's three

assumptions about the "Biogenetic Law" are not valid. Therefore, in 1909, Sedgwick mentioned that the "Biogenetic law" of Haeckel was not based on empirical observation and that did not fit the evidence [55]; the crude interpretation of embryological sequences will not stand close examination [56]. Again, "assumption is one kind believe but "Believe is not science as believe in God is not science [15, 17]. Thus, Haeckel's biogenetic law is not a science i.e. it is invalid.

11. Biology textbooks publisher begun to remove Haeckel's drawing and re-write the text

Biology textbooks publisher begun to remove Haeckel's drawing and re-write the text and its related literature are paced here:

Biology textbooks would to reproduced Haeckel's drawings about the embryos of vertebrates are highly morphological similar, reflecting their common ancestry [57].

However, biology textbooks publishers begun to remove the photos those were drawing by Haeckel and start to use the real photo those are found by various researches and also re-write the text. For example, Levine and Miller have revised the drawings and use the real picture of vertebrate embryos in their biology books, instead of Haeckel's drawings. They also have rewritten the text again [58]. In addition, modern biology rejects the literal and universal form of Haeckel's drawings [59]. So, Haeckel's drawing finally exorcized from biology text books in the fifties and was extinct in the twenties century [2]. Thus, it is verified that biology textbooks publishers begun to remove the photos those were drawing by Haeckel and start to use the real photo those are found by various researches and also re-write the text.

12. Invalid Haeckel's evolutionary tree (Phylogenetic tree/Darwinian tree)

a) Embryological evidence indicated invalid Haeckel's phylogenetic tree:

At first evolutionary tree (Phylogenetic tree/Darwinian tree) was drawn by Haeckel—based on similarity of vertebrates embryo/recapitulation theory [60]. He proposed that each organism as it grows from the one-celled egg to the multicelled individual passes through all the evolutionary stages that preceded it—that is, "ontogeny [development] recapitulates phylogeny," or, to put it more simply, "each animal climbs up its family tree" [4]. Haeckel proposed the "Biogenetic law" so that researchers could use the stages of embryological development to help construct evolutionary/phylogenetic trees [33]. Furthermore, the resemblance of early vertebrate embryos is readily explained without resort to mysterious forces compelling each individual to re-climb its phylogenetic tree [61].

The above statements confirmed that Haeckel's phylogenetic tree/Haeckel's evolutionary tree is constructed based on the "Biogenetic law".

But it is proved in this article that invalid Haeckel's "Biogenetic law". So, it could be easily declared that Haeckel's evolutionary tree is not valid. In supporting, Stephen J. Gould declared that the embryo morphologically recapitulated the evolutionary history of *its phylum only* [44 & 47]. So, the evolutionary history can repeat of its phylum level only.

b) The fossils evidences also indicated that "Invalid Haeckel's evolutionary tree":

Haeckel's evolutionary tree are also constructed based on the fossil records. Therefore, it is acknowledged that the actual

evolutionary history of the primates and man are largely known from the fossil record [62]. During the recent years much emphasis has been placed on the science of phylogeny, which tries by a study of fossil history [19]. The ancestry of living organism may be known from the fossil only [18].

So, the above literatures confirmed that phylogenetic is also constructed based on fossil records [63]. But the following literature proved that due to lack of fossil evidence, the Haeckel's evolutionary tree can show relationship only at the level of phyla and its documents are given below:

It is noted that conclusion about common ancestries are not always valid, because lack of fossil information about their fossil history [64]. Absent of fossil of angiosperm, the origin of angiosperm as looked upon as an abominable mystery by Darwin and even today poses a knotty problem to modern student of evolution [65]. Furthermore, the fossil record contains a tiny fraction of the species that must have lived in the past [63] and offer very little evidences about origins of major groups of organisms [66]. Thus, fossil gives a limited insight in history of many groups [67]. Consequently, it is proved that "The direct evidences (paleontology/fossils) of evolution opposite to Darwin's theory [13]". Consequently, the fossil record shows just the opposite Haeckel's evolutionary tree. As can be seen from the diagram, different groups of living things emerged suddenly with their different structures. Some 100 phyla suddenly emerged in the Cambrian Age. Subsequently, the number of these fell rather than rose (because some phyla became extinct) [68].

The above literature confirmed that "Due to lack of fossil evidence evolutionary tree can show relationship only at the level of phyla [63]". So, in evolutionary tree the "Twigs, branches and limbs" (higher taxa i.e. order, family and genera) are not real but false [69]. Hence, fossil rejected Haeckel's evolutionary tree [68].

Thus, both the embryological evidences and the fossils evidences indicated that invalid Haeckel's evolutionary tree.

13. Embryological evidences opposite to Darwin's theory

The following statements proved that embryological evidences are opposite to Darwin's theory:

Aware of the problems with the fossil record, Darwin thought that the best evidence for his theory would come from the embryology. He believed that early vertebrates embryos are closely similar, but become, when fully developed, widely dissimilar. Therefore, Darwin concluded that this was not just evidence for common ancestry. It was by far the strongest single class of facts in favor of his theory [28, 37, 70, 71]. Thus, Darwin exploited Haeckel's recapitulation theory as the best evidence for his theory. But it is seen from the entire article that Haeckel's recapitulation theory is not valid. Consequently, embryological evidences about the common ancestry are not valid and opposite to Darwin's theory.

14. Conclusions

Darwin's theory advocates that all organisms evolve from a few organisms (that created by the creator). So, those have a common ancestry. Haeckel's "Recapitulation theory / Biogenetic law" also advocates common ancestry. But it is only based on the embryology. This theory stated that "Ontogeny" (the development of the organisms/ embryo) recapitulated the "Phylogeny" (the past evolutionary history). However, diverse literatures indicated that embryo never recapitulated the phylogeny. Even many biologists confirm

that invalid "Biogenetic law/Recapitulation theory". Darwin used the "Recapitulation theory" as the best and strong evidence for his theory. So, embryological evidences are opposite to Darwin's theory. Again, both the embryology and the fossil records rejected the "Haeckel's evolutionary tree/phylogenetic tree/Darwinian tree"

Ahad [17], Castro and Hubner [72], Starr and Taggart [69], and, Weisz and Keogh [48] noted that a theory/law can be invalidated by new evidence(s). As a result, based on entire literature of this article; it could be concluded that "Embryological evidences opposite to Darwin's theory: Invalid Biogenetic law (Recapitulation theory)" and Invalid Haeckel's phylogenetic tree/Darwinian tree/evolutionary tree".

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