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Lebensborn: Breeding Better Nazis by Darwinism

by Jerry Bergman, Ph.D.

In December of 1935 Heinrich Himmler established the infamous Lebensborn (meaning “well of life”) homes to help accomplish the Nazi goal of achieving a superior human race by deliberate racial selection (Thompson, 1971, p. 54; Hillel and Henry, 1976, p. 22; 45). The Lebensborn’s two main goals were numerical quantity and racial quality, two somewhat antagonistic ideals (Hillel and Henry, 1976, p. 35). Its “ultimate goal was to develop a racially superior stock, in accordance with Himmler’s pseudoscientific notions” (Dawidowicz, 1977, p. 43).

This superior breed, Himmler declared, would eventually provide superior men for leadership of a superior people, the Aryans. Aryan is not a precise category, but in colloquial modern English Aryan signifies the Nordic racial ideal promoted by the Nazis, which includes most people in

Scandinavia, Germany, Austria and people originally from these areas. Of course, the definition excluded all Jews, including all native German-speaking Jews.

Based on Darwinism

This program was the result of the Nazi conclusion, based on Darwinism, that “some human races are infinitely superior to other human races,” and that intermarriage works against this goal because “even if the bad stock is raised [in interbreeding] the good is lowered” (McGovern, 1941, p. 499).

Furthermore, the Nazis believed that inferior races breed more rapidly than the superior ones, causing a gradual increase of inferior humans. This belief was not marginal to Nazism, but rather was “central to national socialist racial theory and practice” (Heineman, 2002, p. 22).

Establishment of the Lebensborn was no small project. In the nine years it was in existence, about 12,000 children, close to half illegitimate, were born in its 15 homes (Dawidowicz, 1977, p. 43). Thompson (1971, p. 55) wrote that

Racial purity was an obsession with Himmler, consistently emphasized in his speeches and writings, even while he was engaged on many fronts in extending the power and influence of himself and the SS. He believed that not only physical attributes but character traits, such as loyalty, determination, courage, and a sense of honor, could be biologically transmitted. Since, in his estimation, the “Aryan race” possessed these and other virtues in abundance, Himmler demanded proof of such ancestry

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The Meridian Sandbar and the Flood

by Carl R. Froede Jr., B.S., P.G.

The Flood of Genesis was a unique event in Earth history. Its geological signature is global and easily documented. Oftentimes the evidence is obvious; one wonders why secular geoscientists fail to apprehend it.

The Meridian Sand Member is an example of phenomena supporting the Genesis Flood. It is the lowest stratigraphic unit in the Tallahatta Formation. It outcrops from southwestern Alabama to east-central Mississippi (Figure 1). Secular geologists interpret it as an inner continental shelf sandbar (Wermund, 1965; Wermund and Moiola, 1966). What was the provenance of its sediments, and what does its size and shape say about the conditions in which it developed?

Meridian Sand Member

The Meridian Sand Member outcrops along an arcuate northwesterly strike from south-

western Alabama to east-central Mississippi, a distance of approximately 80 miles. It

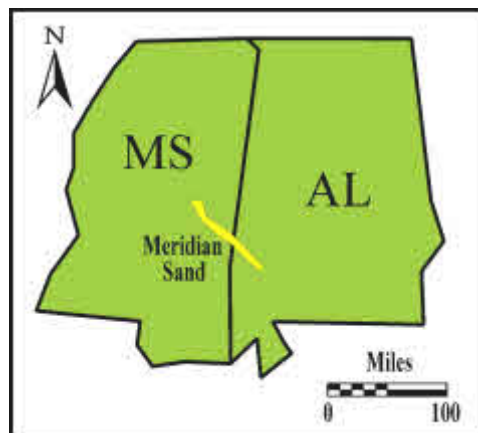


Figure 1. The Meridian Sand extends across Alabama and Mississippi. Secular geologists define this feature as a sandbar formed and shaped by water. Diluvial geologists would agree.

is approximately 12 miles wide and up to 100 ft thick (Wermund, 1965). Lithologically, it is white to light gray, consolidated but not indurated, cross-bedded in places and also bioturbated, coarse- to fine-grained, sparsely glauconitic, slightly-to-moderately micaceous, quartzose sand (Wermund, 1965).

Early investigation of the Meridian Sand suggested it began in a littoral setting and shifted over time to more open water (Grim, 1936). Subsequent studies identified planktonic foraminifera in the sand that suggest it was deposited in open water (Wermund, 1965). Wermund and Moiola (1966) concluded that the Meridian Sand is a large-scale, continuous, neritic bar deposit. Based on cross-bedding of the sands, Wermund (1965) believed that storm wave energy was necessary to form the sandbar.

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from his men and their wives or prospective brides. Marriages consummated on this basis would biologically ensure a future SS elite, and they would also establish the SS as the racial nucleus from which Germany could replenish an Aryan inheritance now dangerously diluted through generations of race-mixing.

In this goal “the scientists and Hitler found common ground. German eugenicists, long frustrated in their dreams of selective breeding, looked with hope to the Nazi Party” (Victor, 1998, p. 173). Professor Fritz Lenz, a leading German biologist, called Nazism “applied biology,” concluding that around a third of the German population were genetically inferior and for this reason should be sterilized — especially the racially inferior such as Jews and Slavic peoples — and that “genetic purification was the nation’s first priority” (Victor, 1998, p. 173). It was not just the biologists that supported Nazism, but “Nazism was actively and enthusiastically espoused and promoted by ... the medical profession” as well (Cornwell, 2003, p. 174).

Germany was for centuries a set of city-states such as Bavaria, and was unified as a single nation only in 1871. One major goal of the German nationalist movement was to produce a great nation of Teutonic people, referring to those persons whose native language was German (Rose, 2001).

The belief that Teutonic people were racially superior to all other races was bolstered by their belief that “Darwin’s theory of the survival of the fittest” applies to humans. Towards this end the German nationalists “did not hesitate to maintain that the ‘struggle of the creative Teutonic-Aryan race’ boiled down to the ‘struggle against the parasitic semitic race’” (Hillel and Henry, 1976, p. 23).

As a result, German “doctors, psychologists, biologists ... scholars, scientists” concluded that the pure Germans were “the good, the true and the beautiful, while the bad, the false and the ugly” were the “work of inferior, meaning non-German” people (Hillel and Henry, 1976, p. 23). In this view the “master race” will exterminate the “weak for the benefit of the strong” because nature has given the strong “the right to exterminate whole races and peoples.” These views (Hillel and Henry, 1976, p. 23) were the

Nazi ideas that were accepted by the Germans when Adolf Hitler attained power in 1933. ... Thus the leaders of the Third Reich ... used the pretext of purifying the German race to initiate a process of planned reproduction on the one hand and extermination [on the other hand].

Selection of parents

To achieve this goal, German girls were told it was the “duty of every German woman to bear children for the Führer” (Hillel and Henry, 1976, p. 43). To help achieve this goal the Lebensborn homes were established. The criteria (Hillel and Henry, 1976,

p. 31) used to select parents for breeding the Nazi’s so-called super race included over twenty

... characteristics, including the applicant’s height, standing and seated; the shape of the skull, face and forehead; colour and location of the eyes and distance between them; length, breadth and curvature of the nose; length of arms, legs and body; colour, growth and quality of body hair; skin colour; back of the head, cheek-bones, lips, chin, eyelids; thorax (male applicants), pelvis (female applicants). In addition to all this, the SS man’s bride had to be able to provide evidence that neither she nor her parents suffered from any physical or mental disease. Also she had to submit to an examination by SS doctors to make sure she was not sterile. Finally, provided she overcame all these hurdles, she had to produce a family tree showing there had been no Slavonic, let alone Jewish, blood in her family since 1750.

The candidate parent for breeding also had to submit full-length photographs, usually nude or in a bathing suit, for evaluation. Lastly, “the ‘race experts’ subjected the question of [the candidate’s] ... future harmony to microscopic examination. The final decision rested with the Reichsführer” (Hillel and Henry, 1976, p. 31). The problem was that few Germans fit this ideal — most were too dark, too short, too thin, too fat, or in other ways too non-Nordic (Hillel and Henry, 1976, p. 27).

The “aim of these institutions was the

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breeding of a Nordic super-race with the aid of men and women carefully selected in accordance with the racial principles of the Third Reich” (Hillel and Henry, 1976, p. 11). The women did not need to be married and a father could have a wife and still father at least one a child with a Lebensborn woman. Himmler evidently followed his own advice and in the 1940s fathered two children by one of his several mistresses (Weikart, 2009, p. 133).

Highly educated persons were given a disproportionate responsibility for breeding better Germans. For example, the chief medical officer of the Lebensborn organization, Dr. Gregor Ebner, had “personally ordered the sterilization of many children and supervised the selection and Germanization of thousands of kidnapped children in the occupied territories” (Hillel and Henry, 1976, p. 18). When interviewed as an old man, Dr. Ebner stated that he had no regrets about what he had done and still felt that applying science to breed a better race of humans was morally proper.

All of the racial breeding was “supervised by doctors who were experts in ‘racial science’” (Hillel and Henry, 1976, p. 25). The “race examiners” believed that it was “possible to eliminate all traces of impure blood within a few generations, a century at most” (Hillel and Henry, 1976, p. 25). To do this, Himmler envisaged importing Norwegian girls to Bavaria for the purpose of “rapidly transforming the Dinaric into a pure Nordic race by means of selective breeding” (Hillel and Henry, 1976, p. 25). Dinaric people were tall, mostly of mesomorphic bodily build (neither thin nor fat but of medium build), had relatively long legs, medium arm span, and a short trunk. This imprecise classification, which today is regarded as close to worthless, was most closely associated with the writings of German biologist Dr. Hans F. K. Günther and Harvard professor Dr. Carleton S. Coon.

Kidnapping children

Furthermore, to achieve this goal more rapidly, throughout Europe the “Germans had kidnapped thousands of ‘racially valuable’ children, [and] taken them from their families to Germanize them. That was one of the ways of helping the super-race to” multiply more rapidly (Hillel and Henry, 1976, p. 12). An estimated 250,000 children were forcibly taken away from their parents, most never to return (Dawidowicz, 1977, p. 43).

The Nazis often tried to persuade the children that they were abandoned by their parents. Although some of the children were adopted by SS families, many ended up in Nazi concentration camps, where a large number died (Grabowski, 2004, p. 28). Only about 25,000 of the children were returned to their parents after the war. As German zoologist and geneticist Ludwig Plate wrote, “progress in evolution goes forward over millions of dead bodies” of ‘inferior’ humans (quoted in Hutton, 2005, p. 212).

To justify this cruel policy Himmler wrote (Dawidowicz, 1977, p. 43) in a speech

The belief that Teutonic people were racially superior to all other races was bolstered by their belief that “Darwin’s theory of the survival of the fittest” applies to humans.

delivered on October 14, 1943, that in all foreign nations, even Poland, there are inevitably

...some racially good types. In these cases ... it is our duty to take their children, to remove them from their present environment, if need be even by stealing them. ... Either we bring this good blood home here, use it and integrate it into our people or — gentlemen, you may call this cruel, but nature is cruel — we destroy it.

Dawidowicz (1977, p. 43) concluded that, tragically,

Tens of thousands of these children — no one will ever know how many — were murdered, perhaps because it turned out that they had “bad blood,” that is, characteristics that did not fit the stereotype of the “Aryan” — blond hair, blue eyes, and an obedient nature.

Indoctrination of the public

After Hitler took over, the racial propaganda machine was active in indoctrinating the general population into the ideal created by the university “race experts” in order to return Germany to the Teutonic ideal, “warning the population against the dangers involved in mixing true Aryan blood with that of inferior races” (Hillel and Henry, 1976, p. 28). To help achieve this goal the Nuremberg laws were passed on September 15, 1935, “to preserve German blood from

all [race] contamination and protect the German race to the end of time” (Hillel and Henry, 1976, p. 28).

A major means used to achieve this goal was to “outlaw marriage and sexual relations between Jews and citizens of German blood” (Hillel and Henry, 1976, p. 28). The reason for this law was that the Nazi leaders believed (Hillel and Henry, 1976, p. 28) that the “progressive deterioration of the German race” was due to the “inability of twentieth-century man to produce pure-blooded and racially valuable children” for the reason that

...inferior races, the Jews in particular, had been permitted to mix with the superior races. Every effort was therefore to be made to reverse this “degeneration of the species,” which was discernible right up to the highest levels of the State. By Himmler’s orders, the RuSHA [Rasse- und Siedlungshauptamt-SS]¹ laid down a series of principles: insistence on racial hygiene, improving the racial stock by means of selection, supervision of the marriages of individuals of pure blood, and the bringing up of children in State institutions.

Many German race theorists proposed various means (Hillel and Henry, 1976, pp. 28-29)

...to “purify the German race, but the race experts of the RuSHA relied most heavily on the works of the Bavarian Dr. Wilhelm Schallmayer, who had won a prize in 1900 ... for the best book on the superiority of the German race. One of the subjects with which Dr. Schallmayer dealt was “Racial hygiene and its control in the national interest,” and the title of his book was *Inheritance and Selection in the Life of Nations*.

The writings and leadership of race expert Dr. Schallmayer, Hillel and Henry (1976, pp. 29-30) concluded, “was responsible for not only the Lebensborns but the concentration camps by his stressing that science has proved ‘an essential part of any breeding policy was to insure that the most unsuitable heritable variations were not reproduced.’” These ideas were all taught in the school biology textbooks to reinforce these ideals. For example, in one biology book it was stated (Hillel and Henry, 1976,

¹ The Rasse- und Siedlungshauptamt-SS (RuSHA), is the Nazi institution which was responsible for protecting the racial ‘purity’ of the SS.

p. 30) that it is “the SS man’s duty to choose a biologically flawless wife and, moreover, [the Nazi party] has constantly reminded him of his obligation as a member of an elite formation to have a large number of children.”

It was no easy task to persuade German men to select Nordic ideal women for brides. In fact, Himmler was puzzled “by the problem of why men fell for the non-Nordic, more sexy type of girl, and right up to the collapse of Nazi Germany the problem of recruiting the right type of future mother was one of his major preoccupations” (Hillel and Henry, 1976, p. 48).

Himmler felt that the Lebensborn system could solve this problem. Consequently, on July 3, 1944 Himmler issued the following order: “no more applications to marry women who do not comply in every respect with the racial criteria in force.” Himmler actively tried to sell his idea to his military officers by preaching Darwinism (quoted in Weikart, 2009, p. 175):

Nature teaches us...that the principle of selection rules over it, that the stronger remains victor and the weaker succumbs. It teaches us that what often appears to an individual as brutality, because he himself is affected or because through his education he has turned away from the laws of nature, is nonetheless fundamentally necessary, in order to bring about a higher evolution of living organisms.

In the end the experiment failed and no evidence exists that superior people resulted from the experiment. Furthermore, “after the war, the Race and Settlement Main Office, including its spin-off *Lebensborn*, was brought to trial before Nuremberg Military Tribunal in 1947–48” (Case No. 8, Green Series).

Compared to the crime of genocide against the Jews, the Lebensborn did not appear to reach the level of evil that resulted in the holocaust. Dawidowicz (1977, p. 44) concluded that when

...assessing the accomplishments of *Lebensborn* and the SS’s related racial eugenics programs, it is clear that “positive” racial eugenics in Hitler’s Germany failed to attain its goals. In dramatic contrast, Germany’s “negative” racial eugenics — the murder of the crippled, the sick, the insane, the gypsies, and the Jews — succeeded beyond belief. The Germans found it easy to organize and carry out mass murder, to take life. They never discovered how to organize mass procreation, to make life.

Summary and conclusion

The Nazis established institutions called Lebensborn to produce racially superior children more rapidly than could be achieved in an open society. Women judged to be racially superior were selected to produce babies fathered by select Nazi officers judged by the Nazis to be racially superior. Furthermore around 250,000 children were kidnapped from occupied nations and sent to Germany to be “Germanized” in the Lebensborn. The Lebensborn, although supported by many if not most of the leading biologists in Germany and other nations, produced an enormous tragedy that caused much suffering. In the final analysis, for reasons that we understand today, the experiment failed. These reasons include the realization that hereditary diseases and conditions are far more complex than the scientists infatuated with Darwinism dreamed possible (Bard, 2001).

Both the environment and epigenetics are recognized as critically important as well

as the fact that genes form an enormously complex system whose interrelations still elude scientific researchers. In the end it was called “one of the most horrifying programs instituted by the Nazis” (Grabowski, 2004, p. 28). The few informal attempts to follow up on the children born from the program indicate that they are as a whole in most every way close to average. Unfortunately, no comprehensive study has been completed.

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What Are Creationists Thinking about ...?

As new scientific discoveries make the headlines, have you ever wondered how your fellow creationists are reacting? Have you ever thought of a “crazy” new idea about origins and wanted to bounce it off another creationist?

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For more information, send an e-mail message to Glen Wolfrom at contact@creationresearch.org.
Participation is limited to CRS members in good standing.

Editor's note: You may submit your question to Dr. Jean Lightner at jean@creationresearch.org. It will not be possible to provide an answer for each question, but she will choose those which have a broad appeal and lend themselves to relatively short answers.

Q Why do babies grow hair before they are born which they later lose? Doesn't this prove we have a common ancestor with apes?

A This is the gist of an argument presented by Jerry Coyne. He mentions that hair keeps mammals warm, which is true. He points out that human babies have hair in the womb where they are not exposed to the cold, suggesting that this hair serves no purpose in humans. He then insists that the only way to understand this phenomenon is to believe that humans evolved from other mammals, implying the hair is an evolutionary leftover. However, if we look closely at what this hair is, the timing of its appearance, and other related factors, this argument by Coyne is seen to be quite presumptuous.

A developmental biology textbook explains:

The first hairs in the human embryo are of a thin, closely spaced type called **lanugo**. This type of hair is usually shed before birth and is replaced (at least in part, by new follicles) by the short and silky **vellus**. Vellus remains on many parts of the human body usually considered hairless, such as the forehead and eyelids. In other areas of the body, vellus gives way to "terminal" hair. (Gilbert, 2000; emphasis in original)

The lanugo hairs begin to develop between 9 and 12 weeks of gestation, which is just prior to the development of the sebaceous glands (13–15 weeks). The oily secretion from these glands combines with sloughed epithelial cells to form the vernix caseosa, a white cheese-like layer that protects the baby's skin from constant exposure to the amniotic fluid. The closely spaced lanugo hairs help hold the vernix on the skin. Late in gestation, these fetal hairs are shed and the sebaceous glands shrink in size (Irmak, Oztas, and Vural, 2004). After this is shed into the amniotic fluid, some is ingested by the baby, and becomes part of the meconium, the baby's first stool (Kaneshiro, 2009).

It has been hypothesized that the purpose of lanugo extends beyond this. The

appearance of lanugo and vernix correlates with an increased rate of fetal growth in mid-gestation. As these disappear prior to birth, growth rate slows. In a detailed discussion involving a number of currently known facts, Bystrova (2009) gives reasons for believing that lanugo and vernix allow for sensory stimulation *in utero* that affects the growth rate of the baby. Additionally, this prenatal sensory stimulation is considered somewhat analogous to postnatal sensory input, as in a mother touching her baby, which is considered important for healthy development.

While the hypothesis proposing a connection between lanugo and growth rate has yet to be clearly demonstrated, it does illustrate a point. Productive scientists, whether they claim to be evolutionists or creationists, look at known details in living things and tend to assume that the structures and processes they observe have a function. This leads to improved understanding and medical advances. The argument by Coyne is not scientific and can be traced back to a philosophy, one intended to deny that there is a Creator.

Vestigial arguments

In promoting evolution, Darwin and others who followed him often viewed living things as clumsily produced since they were considered to be the result of naturalistic processes. It was proposed that as evolution progressed it would leave behind structures which had lost their usefulness and were mere vestiges of what they had once been. The problem for evolutionists has been that the organs they proposed as being vestigial were later found to have important, often essential, functions. While the creation model allows for some loss of function due to the curse, it does not predict the "trail of decaying structures" in the sense that evolutionists had proposed (Hunter, 2010). This argument seems less common today, having becoming rather vestigial itself as scientific discoveries continue to uncover amazing complexity at every level in living things.

Q Why does the human embryo have a yolk sac if it doesn't do anything? Isn't this proof of evolution and egg on the face of creationists?

A Again, this is a vestigial argument that shows the assumptions and ignorance of the person making it. Similarity of

structures can be from a common designer or common descent, but the leading questions imply common descent is most likely because the yolk sac is assumed to be non-functional.

However, there is now ample evidence that the human yolk sac serves in at least three vital functions: hematopoiesis and blood vessel formation, nutrient and gas transfer, and biosynthesis (Freyer and Renfree, 2009).

Hematopoiesis, the formation of blood cells, is accomplished solely by the yolk sac initially. Only after week 6 does the fetal liver begin to take over this function. Additionally, some cell types in the yolk sac appear to have an absorptive function. This allows for uptake of uterine secretions prior to the full establishment of the placenta, at 12 weeks. Finally, there is evidence that the yolk sac is involved in important protein synthesis. Collectively this "strongly supports the idea that the human yolk sac functions as a site of placental exchange in the early human conceptus." (Freyer and Renfree, 2009)

When structures form as they are needed, and function in important ways, it seems that their presence is far more easily attributable to a Designer than some mindless evolutionary process.

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However, Reynolds (1992) in a subsequent investigation interpreted the depositional setting as a nearshore beach to barrier beach setting based on trace fossil ichnofacies. More recent work suggests that Reynolds' (1992) interpretation may have been incorrect because the trace fossils originated in the overlying clay which suggests the Meridian Sand was deposited in deeper water (Froede, 2011).

Where is the source of the Meridian Sand Member?

A useful geologic tool of diluvial stratigraphy within the context of a biblical geologic timescale (Figure 2) comes from provenance studies (Reed and Froede, 2009). Provenance is the origin of the sediments of a rock based on their properties, such as its constituent minerals (Neuendorf et al., 2005). Grim (1936) interpreted the provenance of the Meridian Sand Member as having been derived from the southern Appalachians based on its heavy mineral content. Muscovite in the sand reinforced this

conclusion (Wermund et al., 1966). Reynolds (1992) determined that kyanite and staurolite were derived from a young metamorphic terrain, while zircon, rutile, and tourmaline likely originated from a felsic plutonic body. Geologists believe that the Meridian Sand was derived from both metamorphic and crystalline provinces within the southern Appalachians, and transported to its present location by rivers — a distance of approximately 250 miles (Figure 3).

Discussion/Conclusions

Based on actualism, secular geologists think the modern Gulf Coastal Plain/Gulf of Mexico continental shelf is a model for the Meridian sandbar. The delivery of the sand to the former shoreline would have been via paleorivers flowing out of the southern Appalachians (Reynolds, 1992). However, no former river has been identified that would satisfy this theory. While sand deposited in a delta at the mouth of the river could have been carried under storm conditions out onto a muddy offshore setting, no such delta has been identified. Key elements of the Meridian Sand paleosetting remain theoretical, with no empirical support.

A similar problem (though on a larger

scale) was identified when provenance studies convinced geologists that the Navajo and possibly the Coconino Sand found in the western United States were derived from the southern Appalachians and transported by former paleorivers into Utah and Arizona (Patchett et al., 1999; Dickinson and Gehrels, 2003; Rahl et al., 2003; Dickinson and Gehrels, 2009). Diluvial geologists agree with the source, but have suggested that transport was by strong Flood currents (Froede, 2004; Snelling, 2008; Oard, 2009). An optimum time for this would have been during the Lower/Middle Division of the Flood when Floodwater probably flowed unimpeded across the entire North American continent (Figure 2).

The Meridian sandbar would have formed during the Lower Division of the Flood Event Timeframe. Sand carried away from the rising Appalachians was transported and deposited onto the submerged continental shelf. A combination of water movement and large waves likely formed the sand into the massive sandbar during the Middle Division of the Flood Event when water currents were established across the North American continent (i.e., epeiric sea; Froede, 1995a) following uplift of the



Math Matters

by
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Visualizing Large Numbers

Analogies can help us visualize large numbers in nature, and three such numbers will be mentioned here. First, consider the total number of observed stars, about 10^{22} or ten billion trillion stars. This vast number is a good approximation to the sand grains on all the seashores of the earth (DeYoung, 2000, p. 118).

Next consider Avogadro's number (A), well known in the chemistry world as

$$A = 6.022 \times 10^{23}$$

This is the number of molecules in one mole of material; for example, 2 grams of hydrogen gas (H_2), 16 grams of oxygen gas (O_2), or 18 grams of water, H_2O (about one swallow). Several analogies for Avogadro's number follow (Poskozim, 1986).

1. An Avogadro's number of marbles, spread over the entire surface of the earth, would produce a layer 50 miles (83 km) thick.
2. It would take nearly 3 million

years for the world's entire population of 7 billion people, counting at the rate of one object per second, to collectively reach Avogadro's number.

3. If 18 grams of water could somehow be evenly spread over the earth's surface, there would be 100,000 molecules of water covering each square centimeter.
4. An Avogadro's number of dollars could not be spent at the rate of a billion dollars a day over a trillion years.
5. An Avogadro's number of sheets of paper placed in a stack would reach a height of 3.6×10^{16} miles, or 6400 light-years.

Our third large number, the light-year, is a basic distance measurement in astronomy. It measures nearly 6 trillion miles or 10 trillion kilometers.

1. This distance equals 12 million round trips between the earth and

moon.

2. Suppose that planet earth could be reduced to the size of a baseball. Then an equivalently-reduced light year would still extend 50,000 miles outward.

These number analogies reveal the profound truth of Psalm 8:1, "O Lord, our Lord, how majestic is your name in all the earth!"

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Appalachians (Froede, 2006; 2009). The sandbar likely migrated along the same bathymetric contour, being transported and shaped by moving Floodwater. The morphology of the bar suggests it was moving northwest, although that direction has not been confirmed. With the loss of water energy, the sandbar was locked in place and buried by mud and clay. There is no modern analog for such a scenario, and similarly, there is none for the Meridian sandbar because it was formed during the Flood.

While it is theoretically possible that a sandbar like the Meridian Sand could form on the inner shelf of the Gulf of Mexico, nothing of its size and scale has been reported. That is because conditions necessary to form and shape the Meridian sandbar were unique to the Flood. The primary method of secular geology, that observed causes are sufficient to explain the rock record, is falsified by this example. The proposed river and delta do not exist. However, Flood geologists recognize that non-actualistic processes likely deposited unique features like the Meridian sandbar. The Meridian Sand provides physical evidence in the rock record from which to begin our understanding of Flood geology across the Gulf Coastal Plain.

Acknowledgments

I thank Jerry Akridge and John Reed for their review and helpful comments. Any errors that may remain are my own. Glory to God in the highest! Proverbs 3:5-6.

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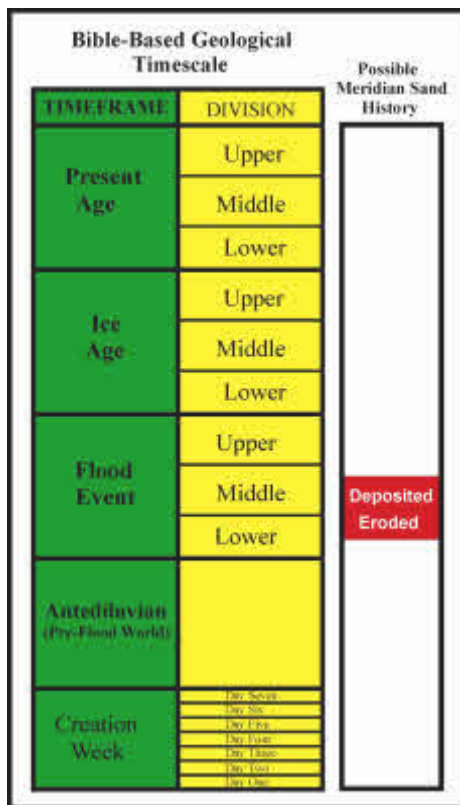


Figure 2. This Bible-based geological timescale can be used to define the rock record consistent with scripture (Froede, 1995b, 2007). The geological Timeframe/Divisions do not correspond to the uniformitarian geological timescale. The quartzose sand that eventually formed the Meridian sandbar was eroded from the rising southern Appalachian Mountains by Floodwater. Water currents in operation during this time transported and concentrated the sand into the massive feature. It was then buried and preserved by additional Flood deposits on the Gulf Coastal Plain. Based on its stratigraphic position on the coast today, the sandbar probably formed during the Middle Division of the Flood Event Timeframe.

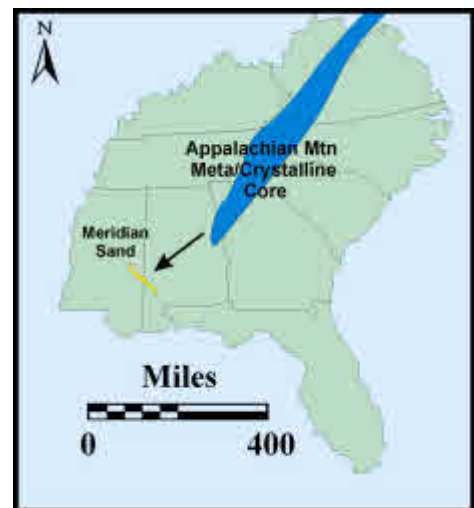


Figure 3. The approximate distance from the edge of the southern Appalachian metamorphic/crystalline core rocks to the center point along the Meridian Sand is 250 miles. Secular geologists would use the modern Gulf Coastal Plain and Gulf of Mexico continental shelf to explain the formation and development of the massive sandbar. However, none of the expected components (e.g., rivers, sandy delta, and coastline) necessary to define the history of this feature have been identified. It is simply a massive sandbar stretching across portions of Mississippi and Alabama. The Flood simplifies the understanding of the creation of this large feature. Still to be worked out is how the sand was eroded from the Appalachians and transported and buried where we find it. However, this stratigraphic feature presents an excellent example of the power of the Flood across the Gulf Coastal Plain.

Speaking of Science

Editor's note: Unless otherwise noted, S.O.S. (Speaking of Science) items in this issue are kindly provided by David Coppedge. Opinions expressed herein are his own. Additional commentaries and reviews of news items by David, complete with hyperlinks to cited references, can be seen at: www.creationsafaris.com/crevnews.htm. Unless otherwise noted, emphasis is added in all quotes.

We Are Filled with Viruses

Viruses have a bad connotation. We immediately think of the ones that cause disease: "I've got a virus," you say when feeling under the weather. Actually, you have trillions of them all the time, even in the best of health. A single gram of stool sample can have 10 billion of them! What does that mean? Scientists are only beginning to find out.

One thing it means is that they can't be all bad. Elizabeth Pennisi reported in *Science* about work at the University of British Columbia and Washington University to explore the human virome.¹ She began her report,

In the past decade, scientists have come to **appreciate the vast bacterial world inside the human body**. They have **learned** that it **plays a role in regulating** the energy we take in from food, **primes** the immune system, and **performs a variety of other functions** that help **maintain our health**. Now, researchers are **gaining similar respect for the viruses we carry around**.

Bacteria have been easier to count than the tiny viruses. Many of our internal viruses are bacteriophages that invade and kill bacteria. This suggests they play a role in keeping the brakes on bacterial infections. "For every bacterium in our body, there's probably 100 phages," Pennisi wrote. The number of virus species identified in stool samples of healthy adults varied from 52 to 2773. "The viromes varied significantly from one individual to the next; they were even more diverse than the bacterial communities within the same individuals," Pennisi reported. "But each person's viral community remained stable over the course of the year." That is, unless they go on a different diet or eating regimen; then the viromes change. But people who eat the same foods tend to converge on virus profiles. Researchers also found that infants with fevers had more viruses than healthy infants.

We are full of viruses, in other words, but we don't know what they all do. This is "a true frontier" of research, with much to learn. "Ultimately, those **viruses are incredibly important** in driving what's going on" one scientist from the University of British Columbia said. It's not enough to know your bacteria; you have to know the viruses that interact with them.

1. Pennisi, E. 2011. Microbiology. Going Viral: exploring the role of viruses in our bodies. *Science* 331(6024):1513.

Busted! Planet-Making Theories Don't Fit Extrasolar Planets

Famed planet-hunter Geoff Marcy is giving theorists headaches. The leading theories of planet formation won't stand up to observations of hundreds of planets we know. In *National Geographic News*¹ reporter Richard Lovett lamented, "**The more**

new planets we find, the less we seem to know about how planetary systems are born, according to a leading planet hunter." We cannot apply theories that fit our solar system to other systems: "**In theory**, other stars with planets should have gotten similar starts. But according to Marcy, theory has **implications not born out in reality**."

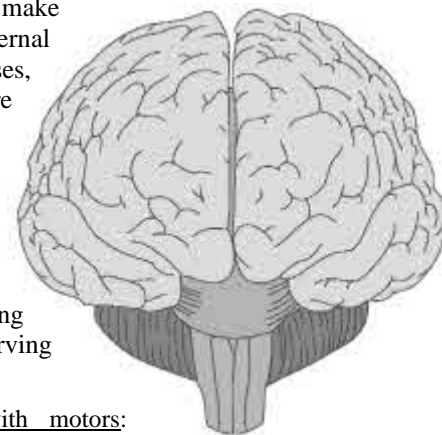
Specifically, planetary orbits should be circular, but many extrasolar planets have elliptical orbits. Everything should orbit in the same plane and direction, but many have highly inclined or even retrograde orbits. "**Orbital inclinations are all over the map**," Marcy said. And Neptune-sized planets should be rare, since models of our water giants require highly unusual starting conditions; there are too many out there, Marcy noted. "**Theory has struck out**," he told the American Astronomical Society last month.

His critics complained that modeling is complicated and difficult. Hal Levison said that simplifying them leads to "**crappy models**." Marcy thought that without taking into account planetary interactions, future discoveries, as they multiply, "**will give the theoreticians yet more reasons to tear out their hair**."

1. Lovett, R.A. (2011, February 22). Three theories of planet formation busted, expert says. *National Geographic News*. Retrieved March 31, 2011, from <http://news.nationalgeographic.com/news/2011/02/110222-planets-formation-theory-busted-earth-science-space/>

Sensing the World Requires Intelligent Design

How do our bodies make sense of the external world? Through our senses, of course; at least they are the entry points of data into the mind. Behind those senses are remarkable mechanisms that we use but do not actively operate. The design in their automatic operations is slowly being revealed with better observing techniques.



1. Sensing sound with motors: "From grinding heavy metal to soothing ocean waves, the **sounds we hear are all perceptible thanks to the vibrations felt by tiny molecular motors** in the hair cells of the inner ear," began an article on *PhysOrg*.¹

A single mutation — one amino acid change — in a molecular motor protein called myo1c is enough to disrupt the function of the myosin motor in the hair cell and cause hearing loss. The mutation causes a reduced sensitivity, perhaps due to making it spend less time attached to actin filaments. The amino acid is "highly conserved" (unevolved) throughout the superfamily of myosin motors, the article said.

2. Sensing light with circuits: A novel microscope tech-

nique has allowed scientists at Max Planck Institute to decode the eye's complex circuitry, *ScienceDaily* reported.² "The **properties** of optical **stimuli** need to be **conveyed** from the eye to the brain," the article began. "To do this **efficiently**, the relevant **information** is **extracted** by **pre-processing** in the eye."

One example of pre-processing accomplished by ganglion cells is responding to light moving in a particular direction. "This **direction selectivity** is **generated** by **inhibitory interneurons** that influence the activity of the ganglion cells through their synapses."

Just as with man-made network protocols, the scientists "discovered that the **distribution** of the synapses between ganglion cells and interneurons **follows highly specific rules**." These ganglion cells intercept and process the visual information before it is received by the brain. The article described various rules the network of cells follow in activating or inhibiting visual information.

3. Sensing time with clocks: All living things follow "circadian rhythms," biological responses to changes in time of day, month, and year. As in other mammals, the human master clock is located in the brain — specifically, in the suprachiasmatic nucleus (SCN), a group of nerve cells in the hypothalamus near the visual cortex. In response to its data inputs, the SCN can direct the brain to produce more or less melatonin, a hormone that induces sleep.

*LiveScience*³ described how the SCN works. There are internal inputs, like genes and proteins produced in the body, and external inputs from the senses. "**Biological clocks aren't made of cogs and wheels**, but rather **groups of interacting molecules in cells throughout the body**," the article said. One of the proteins is aptly named CLOCK — "an **essential component in directing circadian rhythms in humans, fruit flies, mice, fungi and other organisms**." Another is SIRT1, which senses energy use in cells. The balance of these factors affects how the SCN directs the body to respond to light and darkness and other factors.

Disruption of the biological clock can lead to a host of problems. Jet lag is a common example. Fortunately, clock repair is available for that: "Eventually **your body is able to adjust** its circadian rhythms to the new environment" by a kind of clock reset. Other dysfunctions, though, can lead to more serious problems, like "obesity, depression and seasonal affective disorder." That's because "**hormone production, hunger, cell regeneration and body temperature**" are some of the processes that rely on accurate circadian rhythms.

All sensory inputs must be processed by the brain. Fortunately, the brain, like good computer systems, has redundancy mechanisms that give it "plasticity" — the ability to change as we learn, or as parts become damaged. *ScienceDaily*⁴ described how researchers at the University of Michigan Medical School are testing mice to see how "the **plasticity of the brain** allowed mice to **restore critical functions** related to **learning** and **memory** after the scientists suppressed the animals' ability to make certain new brain cells."

Fault-tolerant artificial networks, like the power grid and the internet, provide for alternate routes when hubs become unavailable. Similarly, we have "**mechanisms** by which the brain **compensates** for disruptions and **reroutes neural functioning**," the article said. Part of this is recovering from loss of the ability to make new brain cells by giving existing cells more activity and longer life spans.

"It's **amazing** how the **brain is capable of reorganizing itself** in this manner," Geoffrey Murphy, an associate professor of molecular and integrative physiology at the medical school said. "Right now, we're still **figuring out exactly how the brain accomplishes all this** at the **molecular level**, but it's sort of **comforting to know** that **our brains are keeping track of all of this for us**."

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Evolution Everyone Can Agree On

The controversy over Darwinian evolution concerns one core question: Can an unplanned, un-directed process generate new functions and complex organs of irreducible complexity without design? No one really doubts that organisms vary in horizontal or downward ways — either by modifications of existing genetic information, or by deleterious mutations that somehow allow animals to continue to survive. Here are some recent examples that show how broadly the word evolution can be used.



1. Churkey lurkey: The Transylvanian naked neck chicken is an ungainly bird with a long red neck (see picture in a *BBC News*¹ article). "The 'churkey' owes its distinctive look to a complex genetic mutation, according to scientists." A vitamin A derived substance apparently gives the strong red color to the neck. Fortuitously, the lack of feathers on the neck helps the bird withstand heat — an advantage in hot regions. This is an example of loss of function that inadvertently helps these birds survive in specific environments.

2. Plant doubling: "Evolution in the act" was announced by an article on *ScienceDaily*.² The story concerned a hybrid plant introduced to America that underwent a spontaneous doubling of its genes. Before, the hybrid experienced relaxed gene expression, but after the doubling, expression was regained, the plants became vigorous again, and started to spread.

"No one had extended this to **natural populations** and the **rapidity** at which this can occur, and that's **pretty astonishing**," a researcher from Iowa State University remarked. Another considered this like nature hitting a "**reset button**" after gene expression had been disturbed by hybridization. This is an example of down-and-back-up evolution; even so, the hybrid was introduced on purpose by breeders and does not represent a natural state.

3. Human evolution: The *BBC News*³ published a story about cleaner fish that pick the parasites out of sharks'

mouths, without the sharks taking advantage of the free food. Divers interested in watching the phenomenon have flocked to an observing site at a seamount off the Philippines, where the sharks come in gently for their dental treatment. The article quipped, “A **huge dive tourism site has evolved** around them.”

1. Anonymous (2011, March 15). Experts unravel ‘churkey’ appearance mystery. *BBC News*. Retrieved March 31, 2011, from www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-12745163
2. University of Florida (2011, March 18). Flowering plant study ‘catches evolution in the act.’ *ScienceDaily*. Retrieved March 31, 2011, from www.sciencedaily.com/releases/2011/03/110317131034.htm
3. Gill, V. (2011, March 18). Hygienic sharks go to cleaner stations. *BBC News*. Retrieved March 31, 2011, from http://news.bbc.co.uk/earth/hi/earth_news/newsid_9427000/9427886.stm

Mummified Trees in the Arctic: Are They Millions of Years Old?

Arctic wood in a “polar desert” has been discovered that is “so well preserved that the wood can still burn, and even the most delicate tree structures, such as leaves, are present” reported *PhysOrg*.¹ Joel Barker (Ohio State) remarked, “The dead trees look just like the dried-out dead wood lying outside now.” How old are they?

“The Hazen Plateau on Ellesmere Island, a **polar desert** where winter temperatures can currently dip down to **50 below zero**, is currently **too cold and dry to support forests**; the only living trees that now dot the park’s desolate landscape are dwarf willows,” the article explained, adding the following interpretation: “**Therefore, the pieces of wood must have come from trees that lived millions of years ago**, when the Arctic was still warm enough to support forests.”

Barker tried to bracket the age from sediment cores to at least 2 million years, and from pollen, no older than 12 million years. From tree rings, Barker and his team determined that the forests were barely hanging on at the northern extent of their range during a period of warmer climate.

Barker believes the trees were buried rapidly in a landslide. In future work, he plans to see if any remain buried in an upright position. “In addition, he plans to compare specific tree components, such as leaf cuticles, from mummified material with the

same components from contemporary trees of the same species,” the article said. “Differences between the mummified and contemporary components of the same tree species **may provide clues about the evolution of those species.**” But since the same species in the fossils are identifiable from living counterparts, only slight variation has occurred, if any — not the origin of species.

1. National Science Foundation (2011, March 17). Back to the future with mummified trees. *PhysOrg*. Retrieved March 31, 2011, from www.physorg.com/news/2011-03-future-mummified-trees.html

Habitable Zones Constrained by Tides

The idea of a circumstellar habitable zone — a radial range around a star where an earth-like planet could support life — may be too simplistic. *ScienceDaily*¹ reported that “Tides can render the so-called ‘habitable zone’ around low-mass stars uninhabitable.” Astronomers at the Astrophysical Institute Potsdam studied the effects of tides on planets around low-mass stars (the most numerous stars in the galaxy) and found that the lack of seasons, the increased heat (and volcanism) and synchronous rotation make them uncomfortable at best, and perhaps uninhabitable.

“I think that the **chances for life** existing on exoplanets in the **traditional habitable zone** around low-mass stars are **pretty bleak**, when considering tidal effects,” lead researcher Rene Heller remarked. “**If you want to find a second Earth, it seems that you need to look for a second Sun.**”

1. Astrophysikalisches Institut Potsdam (2011, March 2). New conditions for life on other planets: Tidal effects change ‘habitable zone’ concept. *ScienceDaily*. Retrieved March 31, 2011, from www.sciencedaily.com/releases/2011/02/110224091735.htm



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It amazes me how some people can look at a living cell in all of its complexity and somehow fail to see God's creative handiwork. Some functional components of the cell are so obscure, are themselves so complicated, and yet are so essential for cell function that it seems ludicrous to believe that they came to be by random, unguided, mindless activity. Synthetases provide a good illustration of this. They comprise a group of enzymes which implement genetic code mapping.

A synthetase bonds a particular kind of amino acid to the appropriate kind of transfer RNA (tRNA) molecule. This requires there to be at least one species of synthetase for each kind of amino acid used in a living cell. These bonded amino acid-tRNA combinations are then used by ribosomes to translate the genetic information of messenger RNA into the strings of amino acids making up proteins.

From a design standpoint, separating the amino acid-identification function from tRNA makes sense. The ribosome requires all of the various tRNA molecules to have a specified structural size and shape (Voet et al., 2006):

The anticodon and acceptor sites are at opposite ends of the molecules, some 76 Angstroms apart. The narrow 20–25-angstrom width of tRNA is essential to its biological function: During protein synthesis three tRNA molecules must simultaneously bind at close proximity at adjacent codons on mRNA.

These stringent requirements allow proper alignment between the tRNA anticodons with messenger RNA at one end of the tRNA, and between the bonded amino acid with the emerging protein at the other.

Yet, amino acids vary greatly in shape, size, and other essential characteristics such as electrical charge. This in return requires greatly varying sizes, shapes, and electrical charge characteristics in the amino acid identification mechanism.

Thus, there is a fundamental incompatibility for a tRNA molecule to make reliable amino acid identification and also conform to its functionally necessary predefined size and shape. Synthetases get around this incompatibility; they have the freedom to use whatever shape and structure is required to

properly identify and bond a given amino acid to an appropriate tRNA molecule. Then, once bonded together, all of the various amino acid-tRNA combinations can have similar size and shape, suitable for use by a ribosome.

As shown in the illustration, the only contact between the tRNA molecule and its associated amino acid is a single bond at the end of the acceptor stem. All of the various tRNA species and their associated amino acids bond together in exactly the same manner. This characteristic is extremely useful for efficient processing at the ribosome.

Since the various tRNA species do not distinguish between amino acid species, there are no inherent physical characteristics of tRNA that favor or require it to associate with one particular kind of amino acid over another. Thus, the assignment of a specific kind of amino acid to a specific kind of tRNA is completely arbitrary. Indeed, if a designer wants to modify how the genetic code maps between codons and amino acids, all he needs to do is to modify the synthetases. By nature, complicated arbitrary assignments do not provide the differentiation in selection advantage required for natural selection to function. Natural selection cannot account for genetic code mapping.

The arbitrariness of the mapping assignment of the genetic code leads naturally to an important conclusion: all of the synthetase species used in a system must appear simultaneously in a single step.

An example of current thinking on the origin and evolution of the genetic code is provided in article by Yarus et al. (2009). These researchers did an extensive survey of the results of various experiments showing how RNA strings can naturally associate with particular amino acids. Furthermore, the associations bear a statistically significant relationship to the current genetic code mapping.

They then proposed (see his Fig. 7) that an RNA string could serve as a Direct RNA Template for assembling an amino acid string, thus functioning as a crude ribosome. Further, they proposed that, in time, this direct process evolved into the fully functioning ribosome with its indirect coding (i.e., usage of tRNAs, synthetases etc.).

However, there is a fundamental weakness in the approach proposed by Yarus et al. They assume that one can start with a simple code and gradually, step-by-step, modify it into a new one. However, codes in general do not change from one mapping to another in such a smooth manner. Once a code has been established, the products of that particular mapping will be ubiquitous, appearing at many locations and used for many unrelated purposes.

Therefore, even if an accidental mapping change (mutation) produced an incidental, isolated advantage, on the whole its adoption would result in a large number of system-wide errors. The deleterious impact of the sheer number of such errors would tend to overwhelm any incidental advantage the modification might otherwise produce. Natural selection would thus select away from modification of an established code.

The same principles apply to a ribosome system. Even if a Direct RNA Template system such as that proposed by Yarus et al. ever did exist, there could be no smooth, step-by-step progressive path to upgrade it to a functioning ribosome-based system. Steps leading toward the upgrade would be incompatible with the existing system and, consequently, selected against.

The ribosome-based, genetic code-translation system used in all living cells needs to be functionally complete at its first appearance — complete with structural protein and ribosomal RNA subunits, tRNA, mRNA, synthetases, and the information required for them to function as a unit. This exquisitely designed system points to creation by a living God, not to a gradual, step-wise appearance from purely random events.

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All by Design

by Jonathan C. O'Quinn, D.P.M., M.S.

Warm Eyes Are Better

Throughout the natural world, we see countless examples of animals that are perfectly suited to their environments. The Book of Genesis teaches that every kind of living thing was deliberately created by God.

Here is a wonder among wonders. Neither the brain nor the eye of a vertebrate functions very well in very cold temperatures. Swordfishes take exception to this rule. These large ocean predators have no problem hunting in cold water up to 300 meters deep. Swordfishes have a highly specialized heating system, called a "heater organ," located within one of the extra-ocular muscles behind each of their eyes.

This organ has arteries that carry warm blood directly to both the retina and the brain, warming each up to 10–15°C above ambient water temperature and maintaining a consistent temperature of between 19–28°C. Studies have shown that this elevated



temperature allows for temporal resolution 7–12 times higher than eyes at ambient temperature, allowing for the detection and pursuit of fast-moving prey such as squids.

Please explain, if you can, how such an ingenious design could have arisen by chance.

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