WHO ARE THE BIBLICAL ANGELS? – A CRITICAL PERSPECTIVE, ($^{\#}$12)

Clifton A. Emahiser's
Non-Universal Teaching Ministries
1012 N. Vine Street, Fostoria, Ohio 44830 / emahiser.christogenea.org

In paper #10 of this series, I demonstrated how the fallen angels of Gen. 6:1-4 had sexual relations with the daughters of Adam-man, producing giants [*i.e.,* Nephilim, meaning "fallen ones"]. In 1936, there was a giant born to Edomite-jewish parents in Tel Aviv who later immigrated to New York, and the news of this was a sensation in the late 1930s and early 40s in the United States. At that time many believed gigantism was due to a thyroid malfunction. However, it is a genetic condition caused by hybridization. For this I will cite the 1980 *Collier's Encyclopedia,* vol. 12, pp. 68-78 in part:

"HEREDITY, the tendency, recognized by common observation, for offspring to resemble their parents. This phenomenon is obvious at the species level: roses always beget roses and horses always beget horses. Although slightly less obvious, the same is also true within a species: thus, tall parents tend to have tall children. However, there are many exceptions to the simple statement that 'like begets like,' and the rules of inheritance were long a puzzle. Over the past hundred years *[from 1980]*, scientists have gradually unraveled many of the mysteries of inheritance, and the study of heredity, called genetics, is now a major branch of science.

"Early Concepts: Until the end of the 19th century, both popular opinion and scientists recognized two general principles of heredity, both of which are now known to have been incorrect. The first 'principle' was that of blending inheritance: each parent was supposed to contribute a certain quantity of some hereditary characteristic, and the offspring was supposed to be some sort of average between the two. Thus, a blend of coffee and cream would have been used as an example to describe the inheritance of skin color in man.

"The second 'principle' was that the offspring inherited the actual characteristics, or traits, of their parents. This view also implied the doctrine of the inheritance of acquired characteristics. For example, if some organ, such as muscle, was well developed in the parent due to exercise or proper food, it was believed that this would produce stronger muscles in the offspring. The English naturalist Charles Darwin, in attempting to explain this 'fact,' proposed that tiny particles, called pangenes, were produced by each organ and converged into the eggs and sperm, forming there a sort of precursor of each organ that was then passed on to the offspring. From this hypothesis, it followed that amputation of a body part would remove the source of such pangenes and cause the reduction or absence of that part in the offspring. Obviously, however, amputations are not inherited, and to account for cases of this kind special explanations were invented. Other cases of seemingly irregular inheritance were explained by atavism, a mysterious tendency to revert to some more or less distant ancestor, even though this explanation contradicted the idea of the inheritance of acquired characteristics.

Contributions of Mendel: The rules of inheritance were clarified, at least in principle, by the work of Gregor Mendel (1822-1884), a Silesian monk and later abbot of the monastery of St. Thomas in Brüm (now Brno in Czechoslovakia). Although he studied inheritance in garden peas, the laws of inheritance Mendel discovered later proved to be essentially the same in all living things.

“Mendel succeeded, where others before him had failed, mainly for two reasons. First, he chose to study simple, clear-cut characteristics that were either present or absent in parent and offspring. For example, two of his strains of peas differed greatly in height; all of the off-spring from crosses between these strains were always either tall or dwarf, never in between. Other biologists, including Charles Darwin, had attempted to study inheritance of complicated traits, such as color patterns in pigeons, which we now know depend on many genetic factors; as a result, these biologists were unable to discern any simple patterns of inheritance. Secondly, Mendel paid careful attention to the numbers of different kinds of offspring produced. He saw at once that they occurred in definite simple ratios, and he realized that these ratios were clues to what was happening. During Mendel’s time, this sort of insight was quite unusual, since most biologists made little use of mathematics, even simple algebra and arithmetic.

“Mendel published his results in 1865, but for various reasons, including prejudice, his work was largely ignored until 1900. In that year the Dutch botanist Hugo de Vries (1848-1935), the German botanist Karl Correns (1864-1933), and the Austrian plant breeder Erich von Tschermak (1871-1962) reported their own independent experiments and noted that Mendel had reached the same conclusions before them. In a short time Mendel’s results were confirmed by innumerable experiments, and since then the science of genetics has continued to progress rapidly.

“Modern Terms and Concepts: Although Mendel’s concepts of heredity were basically correct, very little was known at that time about the hereditary material. Today it is known that the hereditary material consists of numerous individual factors, called *genes.* In most higher organisms (and in all the cases known to Mendel) the genes occur in pairs. Such individuals are said to be *diploid.* If only one set of genes is present, as occur in bacteria and the males of some bees and wasps, the individuals are said to be *haploid,* or *monoploid.*

*“*Both members of a gene pair may be the same, or they may be slightly different. For example, in garden peas there is a gene that determines height. One form of this gene, designated as ***T,*** determines that the plant be tall. The other form, ***t,*** determines that the plant be short. The forms ***T*** and ***t*** of the gene are said to be *alleles,* or alternative forms, of each other.

“Since each individual cell of a pea plant has two copies of every gene with respect to the trait for tallness, there can actually be three kinds of plants. When both genes of a pair are alike, as ***TT*** and ***tt,*** the plants are said to be *homozygous.* It is also possible for a plant to have two different alleles of the gene, namely ***Tt.*** Such a plant is said to be *heterozygous.* When the two allelles of a gene are not the same in the individual, the effects they produce vary from case to case. In pea plants, ***tt*** plants are short and ***TT*** plants are tall. ***Tt*** plant however, is also tall, as tall as a ***TT*** plant. The reason is that ***T*** allele is said to be *dominant,* because it suppresses any effect of the ***t*** allele, which is therefore said to be *recessive.* The recessive ***t*** allele will produce its effect (short) only if the ***T*** allele is not present, that is, in ***tt*** individuals.

"***TT*** individuals cannot be distinguished from ***Tt*** individuals by inspection since both look alike, but they can be distinguished by the kind of offspring they produce. Thus, in one respect ***TT*** and ***Tt*** individuals are similar and in another respect they are different. To distinguish these respects, individuals that have the same external appearance, as the ***TT*** and ***Tt*** pea plants, are said to have the same *phenotype.* However, because their genetic constitution and progeny are different, they are said to have a different *genotype.*

"INHERITANCE OF A SINGLE TRAIT: For purposes of reproduction, certain cells in the body specialize to form sex cells, or *gametes.* In the male the gametes are sperm cells, and in the female the gametes are eggs. The fusion of an egg and a sperm, called fertilization, produces a single cell, the *zygote.* After proceeding to divide, the zygote eventually forms the new individual. (cf. E**MBRYOLOGY**, Human)

"Mendel stated, in present-day terminology, that when gametes are formed, each gamete receives only one gene of each pair. Thus, the result of a cross between two plants will depend on which type of gamete unites with another in fertilization. Although Mendel worked with peas, this can be illustrated more clearly by an example from man.

"The MN Blood Group: Although not as well known as the ABO or Rh blood groups, the MN blood group is of interest in genetic studies. In the mid-1920's, the Viennese physician Karl Landsteiner discovered that a gene, designated as ***L,*** determines the presence of a substance found on the surface of red blood cells. This gene occurs in two alternative forms, L^M and L^N. The first specifies the presence of a substance **M**, and the second specifies a slightly different substance, **N**. Since every individual has two copies of every gene with respect to the **MN** blood group, three types of individuals are possible: L^ML^M (blood group **M**); L^NL^N (blood group **N**); and L^ML^N (blood group **MN**).

"When gametes are formed, each egg or sperm receives, at random, only one gene of the pair. Therefore, individuals of blood group **M** can only produce gametes having the gene L^M, so that a mating between two such individuals, represented as L^M x L^M, always produces offspring with the blood type **M**. Similarly, if both parents are of blood group **N**, their offspring will also always be **N**. But if one parent is of blood group **MN**, he or she produces two types of gametes in equal numbers, that is, half of them are L^M and half are L^N. If the other parent is **M**, all of his or her gametes are L^M. Since it is a matter of chance which sperm unites with which egg, half the cases that result from the mating will be offspring with type **M** ***(LMLM),*** and the other half will be **MN** ***(LMLN).***

"In another example, both parents are heterozygous; that is, they are genotype L^ML^N. Each produces both types of gametes, L^M and L^N, and all three possible combinations can occur in the offspring. Such a mating can be conveniently represented by writing the genotype of the gametes in a chart with that of the progeny inside of brackets:

	(.................... Sperm ....)	
	L^M	L^N
Egg L^M	[$L^M L^M$]	[$L^M L^N$]
Egg L^N	[$L^N L^M$]	[$L^N L^N$]

"This way of writing a cross shows at once all the possible outcomes. Furthermore, it shows the relative numbers of the different kinds of offspring to be expected. The frequency of the offspring in each of the brackets of this illustration is determined by multiplying the frequencies of the two gametes that intersect at that bracket. In this case, the frequency of each type of gamete is one half, so the frequency in each bracket is one quarter ($^1/_2$ times $^1/_2 = {^1/_4}$). Therefore, one quarter of the progeny will be $L^M L^M$ (blood group **M**), and one quarter will be $L^N L^N$ (blood group **N**). The remaining two examples have the same combination of genes, $L^M L^N$ (blood group **MN**), so that the frequency of this genotype is therefore one half ($^1/_4$ plus $^1/_4 = {^1/_2}$). The frequencies of the offspring can be summed up as

"$L^M L^N \times L^M L^N \rightarrow {^1/_4}\, L^M L^M + {^1/_2}\, L^M L^N + {^1/_4}\, L^N L^N$

"Or, in generalized form:

"$Aa \times Aa \rightarrow 2\, AA + 1\, aa$

"In other words, if both parents are heterozygous for two alleles of a gene, one quarter of the offspring will be homozygous for one allele and one quarter for the other. The remaining half will be heterozygous, having both alleles.

"Dominant and Recessive Traits: The nature of inheritance in the above case is especially clear because the phenotypes of the progeny are the same as the genotypes; that is, **M** and **N** are not dominant over each other and the heterozygote **MN** can be distinguished from the homozygotes **MM** and **NN**. Mendel happened to study genes that showed dominance, and the interpretation of his experiments was therefore slightly less straightforward.

"In most plants, each individual plant produces both egg cells, or ovules, and pollen, the structures that give rise to the male gametes. This makes it possible not only to cross different individuals, but also to self-pollinate, or fertilize ovules with pollen from the same plant. Mendel grew two strains of peas, tall and short. Each of these strains, when self-pollinated, always produced plants like the parent; they were therefore pure breeding. In retrospect (although this was not initially known to Mendel), the pure-breeding tall strain would now be described as having both alleles of the gene ***T*,** producing tallness (***TT***), and the dwarf strain as having both alleles of the alternative form of the gene ***t*,** producing short plants (***tt***). On crossing these two strains of parents, called the **P** generation, one would expect the following types of offspring, called the first filial, or $\mathbf{F_1}$, generation:

	(……………. Sperm ……………)	
	T	***T***
Egg ***t***	[***tT***]	[***tT***]
Egg ***t***	[***tT***]	[***tT***]

“Mendel indeed observed that all the F_1 plants were as tall as the tall parent and that the characteristic ‘short’ seemed to have vanished. However, Mendel decided to continue the experiment, self-pollinating his F_l plants to produce a second filial, or F_2, generation. In a bracket the cross would be:

	(…………... Sperm …………..)	
	T	***t***
Egg ***T***	[***TT***]	[***tT***]
Egg ***t***	[***tT***]	[***tt***]

“Thus Mendel observed that one quarter of the $\mathbf{F_2}$ plants were short and the remaining three quarters were tall, a ratio of 1 short to 3 tall. The character ‘short’ had reappeared. Mendel continued to self-pollinate the $\mathbf{F_2}$ plants and discovered that these short plants always bred true, that is, they contained only the genetic factor for short and were of genotype ***tt***. But on self-pollinating the tall plants, he found that although the plants looked alike, their genotypes were of two different types. One third of the tall plants bred true, or were of genotype ***TT;*** the others produced both tall and short offspring in the ratio 1 short to 3 tall and were therefore of the genotype ***Tt***.

“All the characteristics Mendel studied in peas happened to show dominance, and for a while it was thought that this was generally true. However, as the case of the **MN** blood group shows, dominance in heredity is not universal. Sometimes there is an intermediate situation, or partial dominance. In the four o’clock plant, for example, there is a gene for red flower color, ***R,*** and its allele, ***r***, which produces white flowers. ***RR*** plants have red flowers, and ***rr*** plants white, but the heterozygote ***Rr*** plants have flowers that are an intermediate pink in color.

“Multiple Alleles: In the previous cases the genes had only two variants, or alleles, but often there are more. For example, in the human ABO blood group system there are three alleles: I^A, I^B and I^O. (Sometimes I^O is written as ***i***). The alleles I^A, and I^B specify the production of blood group substances **A** and **B**, and these alleles are not dominant with respect to each other. Thus, an individual of genotype I^AI^B is of blood group **AB**. But the allele I^O is a ‘blank,’ specifying nothing, and therefore it is recessive with respect to both I^A and I^B. An individual of blood group **A** may therefore be of genotype I^AI^A or I^AI^O, and similarly an individual of blood group **B** may be of genotype I^BI^B or I^BI^O; but an individual of blood group **O** can have only one genotype: I^OI^O. Although there are three alleles in the population, no individual can carry more than two. Such series of multiple alleles are common, and for some traits there are many members. In rodents, for example, some genes for coat color have ten alleles and even larger numbers are known.

"INHERITANCE OF TWO TRAITS: Mendel also studied the inheritance of two different traits simultaneously – seed color and seed shape in peas. From earlier experiments, he already knew that yellow seed color (gene ***Y***) is dominant over green seed color (***y***) and that a round shape (gene ***R***) is dominant over a wrinkled shape (***r***). When he self-pollinated pea plants that were heterozygous for round yellow seeds, he discovered the following: When gametes are formed, a gamete having a ***Y*** gene may receive either the allele ***R*** or ***r*** with equal probability; the same is true of the gamete having the allele ***y***. Thus, four types of gametes are produced in equal numbers, and the cross can be represented by the chart below:

	(……………........................ Sperm ……………..............................)			
	Y + R	***Y + r***	***y + R***	***y + r***
Egg ***Y+R***	[***YY+RR***]	[***YY+Rr***]	[***Yy+RR***]	[***Yy+Rr***]
Egg ***Y+r***	[***YY+rR***]	[***YY-rr***]	[***Yy+rR***]	[***Yy+rr***]
Egg ***y+R***	[***yY+RR***]	[***yY+Rr***]	[***yy+RR***]	[***yy+Rr***]
Egg ***y+r***	[***yY+rR***]	[***yY+rr***]	[***yy+rR***]	[***yy+rr***]

"The frequency of each kind of gamete is now not one half but one quarter, and each bracket of the chart represents one sixteenth of the progeny. Since ***Y*** is dominant over ***y*** and ***R*** is dominant over ***r***, the proportion of plants with yellow round seeds is determined by adding the bracket having at least one **Y** and one **R** allele. The other types of offspring are determined in a similar manner. The phenotype ratios then are: $^{9}/_{16}$ yellow round seeds; $^{3}/_{16}$ yellow wrinkled seeds; $^{3}/_{16}$ green round seeds; and $^{1}/_{16}$ green wrinkled seeds. This is the well-known genetic ratio of 9:3:3:1, which occur, when both parents are heterozygous for two genes and one allele in each gene pair is dominant.

"If there are three gene pairs being studied, eight different kinds of gametes are formed and the cross can be represented by an 8 x 8 chart, and so on for higher numbers. Mendel's experiments stopped with studies of three pairs of independently segregating genes.

"MENDEL'S LAWS: Mendel's principles of heredity can be summarized as three rules, which are often called Mendel's laws. Although these laws have slight exceptions that are encountered in more advanced studies, they do come very close to being generally true.

"The first law is called the law of segregation. According to this law each individual has two pairs of every gene, and these are separated, or segregated, into different gametes before the gametes are transmitted from parent to offspring.

"The second principle is known as the law of the purity of the gametes. In a heterozygote, or hybrid, one allele does not modify or change another. For example, the allele L^N remains the same whether it is in an $L^M L^N$ or $L^N L^N$ individual. This law applies only to the nature of the genes, not to the way in which they manifest themselves. Thus, ***T*** is dominant over ***t***, but the nature of ***t*** is not changed by its proximity to ***T***.

"The third law is the law of random fertilization. According to this law, the probability of fertilization does not depend on the genotype of the egg or sperm. For example, a sperm with the gene L^N shows no preference for an egg with the same gene. This accounts for the simple ratios obtained in breeding experiments.

"GENES, CHROMOSOMES, AND REPRODUCTION: In Mendel's time genes were purely hypothetical entities postulated to account for the results of breeding experiments. The first step toward making genes more concrete was to locate them in the cell. It is now known that genes are located in *chromosomes.* Through many advances in such fields as biochemistry and biophysics, a great deal more is now known about the way genes and chromosomes behave.

"The chromosomes are long threadlike bodies found in the nuclei of all cells. Because they are very thin, they are generally invisible under the microscope, but during cell division they coil into thicker bodies and can then be seen easily, especially after staining. The genes, the actual units of heredity, are arranged in linear order **on** *[not **in**]* the chromosomes, somewhat like beads on a string." *[Underlining and brackets mine]*

Don't worry if at first you don't understand all of this! However, it is easy to grasp that there are many pitfalls in mixing the genetics both in plants and among the various races! I still believe a nigger is a fallen angel in an ape body! This angel discussion will be continued in part #13, using *Collier's Encyclopedia* as evidence.