Wk 5:

**[Editors’ note:** Although this article by Dr Morris—often called ‘the father of modern young-earth creation’—is now about 30 years old, we are reposting mainly for historical reasons, largely to counteract anti-creationist revisionism. This article shows that leading creationists have long taught that the biblical ‘kind’ is much broader than a biological species. This refutes claims by some atheists and long-agers in the church that this is somehow a modern invention. Also, long ago, he pointed out that the post-Ararat environment with small, isolated populations would be good for rapid variation (cf. *allopatric speciation*), and differentiated between mere change and the uphill changes required for evolution (modern creationists have refined this with the *information*concept). He also rightly accepted natural selection. Some of Dr Morris’ ideas have naturally been overturned by modern creationists, e.g. the canopy theory and superior pre-Flood environment. He argued for six of each clean animal restarting the population, consistent with the common view that there were seven clean animals on the Ark, with three breeding pairs and one for sacrifice. CMI now leans towards seven pairs of clean animals. Dr Morris was a man ahead of his times and the modern creation movement is indebted to his remarkable contribution.]

**Looking at the original kinds**

**How much change could occur within the ‘kinds’ of creatures mentioned in Genesis?**

***by***[***Henry M. Morris***](https://creation.com/henry-m-morris)

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Ten times in the first chapter of Genesis we are told that the plants and animals created by God were to reproduce ‘after their kinds’. ([Genesis 1:11](https://biblia.com/bible/esv/Gen%201.11), [12a](https://biblia.com/bible/esv/Genesis%201.12a), [12b](https://biblia.com/bible/esv/Genesis%201.12b), [21a](https://biblia.com/bible/esv/Genesis%201.21a), [21b](https://biblia.com/bible/esv/Genesis%201.21b), [24a](https://biblia.com/bible/esv/Genesis%201.24a), [24b](https://biblia.com/bible/esv/Genesis%201.24b), [25a](https://biblia.com/bible/esv/Genesis%201.25a), [25b](https://biblia.com/bible/esv/Genesis%201.25b), [25c](https://biblia.com/bible/esv/Genesis%201.25c)) There could be an abundance of variation within each kind, but never could one kind bring forth a different kind. Thus, an unlimited evolution was prohibited and prevented by the Creator right from the start.

He designed and formed a highly complex reproductive program for each of the kinds implanting that ‘code’ in what is now known as DNA. This would permit a tremendous latitude of variation (for the twofold purpose of assuring that each individual would be unique and recognizable as an individual, and also of enabling characteristics of the kind to shift sufficiently to adapt to a wide range of possible future environments), but never so much as to become a basically different kind of organism.

The question is, exactly how much variation is possible? Evolutionists believe such variation is unlimited, especially if mutations are continually being added to the gene pool. However, all known and demonstrated true mutations seem to be harmful (or neutral, at best), so it is difficult to see how this factor would significantly increase the range of viable and useful variations.

… all known and demonstrated true mutations seem to be harmful (or neutral, at best) …

**Genesis ‘kinds’**

In an attempt to delineate the Genesis ‘kind’, Carolus Linnaeus, the ‘father of taxonomic classification’ defined a species as a stable, reproducing population, not interbreeding with other populations. His basic classification system (species, genus, family, order, class, phylum, kingdom) is still largely in use today. Linnaeus did recognize the key factor to be reproductive stability, as implied in Genesis.

On the other hand, geneticists have shown that new species, as defined in this way, can sometimes be developed which normally will not breed back with their parent populations, and they have cited such phenomena as experimental proof of trans-specific evolution.

Also, it has been found that what seem to be reproductively isolated species will, under some conditions, cross to produce hybrids (horse and donkey, lion and tiger, cabbage and radish, etc.) Some of these hybrids are sterile, but the very fact that they do breed and reproduce would seem to contradict God’s dictum that reproduction can occur only ‘after its kind’—unless, in fact, such unusual crosses do indeed represent two variations of an originally created kind.

An idea of the wide range of possible variation within a kind can clearly be seen among dogs. Tremendous variations in size, abilities, temperaments, climatological preferences, and other characteristics have been developed in dogs by selective breeding by man within a few thousand years. Not only domesticated dogs, but also wolves, coyotes, foxes, etc., are almost undoubtedly from the same ancestral ‘dog kind’. All of these characteristics must represent originally created characteristics which remained dormant or latent until selective breeding techniques brought them to the surface.

**Many changes since Babel**

There obviously also has been a tremendous range of human characteristics that have surfaced just since the dispersion at Babel—contrast the African pigmy, and the giant Watusi, the Australian aboriginal and the Scandinavian, the Chinese, and the Englishman.

It is possible that similar ranges exist in other kinds. It is also probable that the most rapid rate of variation (and possible speciation) took place soon after the great Flood. It is known that only a relatively few dominant characteristics are normally expressed outwardly in a large, inbreeding population. In a small, inbreeding population, on the other hand, many new varieties may appear rapidly. Recessive characteristics have much better opportunity to become visibly established in the population under such circumstances, especially if the environment is different from that to which the large parent population has become adapted.

Both situations applied with a vengeance during the first centuries after the Flood. The worldwide environment had been drastically changed and the animals radiating out from Ararat were continually entering other new and different local environments. The populations initially were minimal—six of each ‘clean’ kind and two of each of all the rest. Thus, conditions strongly favoured the rapid development of many new varieties within each kind. As each variety became adjusted to its appropriate ecological niche, it eventually became, in effect, ‘reproductively isolated’ from its cousins and, for practical purposes, might now be defined as Linnaean species, or perhaps even as a genus.

Were it not for the known historical connection, many breeds of dog might today be regarded as reproductively isolated from others (consider the barriers in the way of any natural mating of, say, a Great Dane and a Pekingese).

**Clues to original kinds**

It may well be that clues to the original kinds may be derived from hybridization studies. Those which can form hybrids may possibly be varieties of the same original kind, even though they may seem very different now.

Man’s attempt to classify plants and animals is sometimes arbitrary.

Man’s attempt to classify plants and animals is sometimes arbitrary. Therefore, the original kinds may have been in some cases what we now arbitrarily define as species; in others as genera. In many cases, in view of the high probability of rapid variation after the Flood it may well have been what we now call the ‘families’ (dogs, cats, horses, bears, etc.). This is an area for potentially important creationist research, through studies of hybridization, post-Flood paleontology, genetics, and molecular biology. In any case, we can be sure that such variation definitely was within the limits of the kind, whatever precisely that may have been.

Furthermore, such variation was ‘horizontal’, at the same level of complexity, rather than vertically upward toward higher levels, as ultimately required for true evolution. Any true vertical changes (e.g. mutations) must have been downward rather than upward, toward degeneracy and extinction, in accord with the entropy principle and the nature of known mutations.

In fact, even apart from the possible effect of mutations, natural selection would tend to favour smaller varieties than those which had thrived before the Flood, due to the smaller amounts of suitable food and more rigorous environmental conditions in general. The fossil record, of course, does show that many plants and animals deteriorated drastically in size during the post-Flood Ice Age. Furthermore, even though each kind had been equipped to adapt to a wide range of environments, the post-Flood environment and climate were so extremely different than before the Flood that many varieties, and even entire kinds (e.g. dinosaurs), finally found it impossible to survive at all and became extinct.

# What does min mean?

***by Pete J. Williams***

©istockphoto.com![Close-up of a book of the holy bible

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confidence](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RCGRXhpZgAATU0AKgAAAAgAA4dpAAQAAAABAAAIPpycAAEAAAAgAAAQXuocAAcAAAgMAAAAMgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAB6hwABwAACAwAAAhQAAAAABzqAAAACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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The Biblical use of the Hebrew word min (‘kind’) and also its usage in post-Biblical Hebrew suggest that the word min is most likely a word of biological origin. Words historically connected with min in other languages and the way min was translated in early Bible translations may also be used to understand its meaning.

The key question, however, that creationists need to consider is not just what min means, but whether when it is used the life-form that it follows is said to occur in one min or many. Whereas one would probably think from previous creationist research, such as that by Jones, that min is a word that denotes a constant taxonomic level, this view cannot yet be substantiated. Thus in using the term ‘baramin’ to represent the concept of ‘created kind’, baraminologists should not understand themselves to be making a statement about the meaning of the Hebrew word min.

## Introduction

The Hebrew word translated ‘kind’ in the phrase “after his kind” (for example, [Genesis 1:11 KJV](https://biblia.com/bible/kjv1900/Gen%201.11)) is min. This word is also the second component of the modern term baramin (‘created kind’). In investigating the criteria by which baramins are identified it is appropriate to begin with a Biblical and linguistic study of min, to see if such a study provides us with any information about the nature of baramins.

Previous investigation of the word min has been carried out by creationists1–3 and non-creationists,4 some of whom are writing within secular academia.5,6 Payne7 and Jones8 investigated the derivation and meaning of the word min in the Bible. Jones9 further sought to use the lists of clean and unclean animals in Leviticus and Deuteronomy to identify the min. A more recent approach by Seely10 has attempted to elucidate the term min by an anthropological survey of how ‘proto-scientific’ peoples categorise life-forms. This is considered by Seely to be the most likely indicator of what was meant by the original author of Genesis. He concludes that min could mean anything from phylum to species. His approach is new, and though critical of creationism, may contain anthropological insights into classification in non-western cultures which can be used by creationists. Beauchamp11 is particularly useful in discussing the usage of min in a linguistic way

Here a fresh analysis of min is made, considering its use in Old Testament and post-Old Testament Hebrew, its etymology, and the way it was translated by ancient versions of the Bible.

## Old Testament usage and syntax

There are 31 occurrences of the word min in the Old Testament. Seventeen are in Genesis: ten are in chapter 1, three are in [Genesis 6:20](https://biblia.com/bible/esv/Gen%206.20) where God instructs Noah to take animals into the Ark, and four are in [Genesis 7:14](https://biblia.com/bible/esv/Gen%207.14), which describes the animals that went into the Ark. Nine more occurrences are in the list of clean and unclean animals in [Leviticus 11](https://biblia.com/bible/esv/Lev%2011), and four in a generally shorter version of that list in [Deuteronomy 14](https://biblia.com/bible/esv/Deut%2014). Only one example is outside the Mosaic corpus, namely in [Ezekiel 47:10](https://biblia.com/bible/esv/Ezek%2047.10). In every Biblical occurrence min is a term of biological classification and appears in an expression of the form le-min-suffix. The first part le- is the preposition lamedh, here meaning ‘according to’, and the final part is a suffix meaning ‘his’, ‘her’, or ‘their’ depending on whether the life-form modified by the expression is masculine singular, feminine singular, or masculine plural in Hebrew. There are two forms of the masculine singular suffix, which seem to be used without any distinction in meaning.12 In all but one case ([Genesis 1:21a](https://biblia.com/bible/esv/Gen%201.21a)) min is in the singular. [Genesis 1:21a](https://biblia.com/bible/esv/Gen%201.21a) probably has a plural written defectively.13,14

### Number

This brings us to the most important linguistic aspect of min, namely its number. This is an issue which does not seem to have been clearly understood by creationists, though they are not alone in lacking a clear conception of this issue. The question concerns how many types of life are envisaged when le-min-suffix occurs. We need to consider the types of meaning min could have. Two concepts need to be introduced—collectivity and distributivity

### Collectivity

A noun which represents a number of individual entities is called a collective noun. A ‘flock’ of sheep, a ‘pride’ of lions and a ‘shoal’ of fish are all examples of collective nouns where the individual representatives of the categories are viewed without regard to any differences they have, min is a collective in that when min is used, a plurality of individuals at least must be denoted; however, according to Driver15 min is a collective in a different sense. It refers to a plurality of life-types not a plurality of individuals, that is, it is a collective of collectives. A related but not identical view is that of Zorell who holds that min is a noun meaning “a division of a thing into various forms or types”.16 In either case a min is not the lowest taxonomic level of created category, and in Zorell’s case a min is certainly not a created category. It is the ‘types’ loosely hidden behind the term which are the lowest level of created category. If this is the case, the created kind cannot be called a min.

### Distributivity

Others such as Beauchamp17 have analysed the expression le-min-suffix differently. It must be understood that just because the word min is singular, it does not mean that when it is used after a type of life, the type of life only constitutes one single min. We must account for the linguistic phenomenon of distributivity. This may be understood by considering the meaning of three English sentences:—

1. “The man wore a suit.”
2. “The men wore suits.”
3. “The men wore a suit.”

In all three cases it is clear to us (partly from our extratextual knowledge of social customs) that each person only wore one suit, that is, there was one suit per man. In case (c), however, even though there is a plural “men”, “suit” is still in the singular. “Suit” is here said to be a distributive singular since a plurality of individuals have suits, even though the noun is in the singular. Though (c) contains a singular noun its meaning is exactly the same as (b). However, consider alongside sentence (c) the following sentence:

1. “The men rowed a boat.”

Again, partly from extratextual knowledge, the native speaker of English usually infers that there was only one boat (not one boat per man), even though the grammatical form of sentence (d) is so similar to that of sentence (c). Hebrew too, like English, may under certain circumstances have a distributive singular construction. Thus, though Hebrew usually has the plural rather than the singular in distributive expressions following the preposition lamedh ‘according to’, there are good reasons to believe that in at least some of the Biblical occurrences of min a distributive singular has been used to express a plurality of mins constituting the life-category mentioned prior to the min expression. Two reasons for this are the following:

We must therefore be careful that we are not led by the singularity of the word min to believe that there was only one min.

1. Expressions with min grammatically in the singular are used referring to the largest-scale Biblical categories of life-forms, for example, “winged fowl” ([Genesis 1:21](https://biblia.com/bible/esv/Gen%201.21)), or “fish” ([Ezekiel 47:10](https://biblia.com/bible/esv/Ezek%2047.10)). It is unlikely that we are to equate these categories with a single min.
2. The presence of the word “all” or “every”18 in [Genesis 1:21](https://biblia.com/bible/esv/Gen%201.21) (two times), [Genesis 1:25](https://biblia.com/bible/esv/Gen%201.25), [Genesis 6:20](https://biblia.com/bible/esv/Gen%206.20) and [Genesis 7:14](https://biblia.com/bible/esv/Gen%207.14) (four times) demands a plurality of forms of that life-category. This is particularly interesting because we have the presence of “all” or “every” and the singular min in the phrase “every raven after its kind” in [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15) and [Deuteronomy 14:14](https://biblia.com/bible/esv/Deut%2014.14). These verses, if *min* is not a collective of collectives, seem to envisage more than one min of raven. (I do not intend by using the traditional translation “raven” to obscure the fact that the English word “raven” may not have the same connotations as the Hebrew word ‘oreb.) We must therefore be careful that we are not led by the singularity of the word min to believe that there was only one min. This is not a danger to someone reading Genesis, since most readers automatically recognise that there was more than one kind of each of the large-scale Biblical life-categories. The danger rather comes in reading Leviticus and Deuteronomy where Bible translations are liable to give different impressions to their readers.19

Assuming that min is not collective in the sense suggested by Driver, then if we are to relate the lists in [Leviticus 11](https://biblia.com/bible/esv/Lev%2011) and [Deuteronomy 14](https://biblia.com/bible/esv/Deut%2014) to a study of baramins we must ask three basic questions, which may entail yet further questions:—

1. Are the term min and the phrase le-min-suffix constant in their meaning throughout Scripture? An important aspect of this question is to ask whether the meaning and use of min is the same in Genesis as in Leviticus and Deuteronomy. If min does mean the same, then we may be able to use the lists in Leviticus and Deuteronomy to gain Scriptural clues concerning the identification of baramins. The question is whether the term min denotes a constant taxonomic level, or whether it is used more loosely. We cannot simply presuppose that some Biblical words mean the same in every occurrence, when others patently do not, nor can we rule out the possibility that the term min is very fixed in meaning. Reasons must be advanced for whichever position is adopted. As to the related question of whether le-min-suffix has a constant meaning in Scripture, it is possible that it is a distributive in some cases and a non-distributive in others. Just as in sentences (a) and (c) above, there is no reason to expect a formal mark distinguishing distributive from non-distributive constructions. Put more simply, the expression le-min-suffix could theoretically denote many mins in [Genesis 1](https://biblia.com/bible/esv/Gen%201), and only a single min in some occurrences in [Leviticus 11](https://biblia.com/bible/esv/Lev%2011).
2. Does the addition of the phrase le-min-suffix after the names of animals in [Leviticus 11](https://biblia.com/bible/esv/Lev%2011) and [Deuteronomy 14](https://biblia.com/bible/esv/Deut%2014) distinguish those animals from animals in those lists without that qualification? There are nine theoretically possible significances for the presence or absence of le-min-suffix after different creatures in the list:—
   1. names with le-min-suffix constitute a single min; those without le-min-suffix constitute a single min.
   2. names with le-min-suffix constitute a single min; those without le-min-suffix may have varied status as mins.
   3. names with le-min-suffix constitute a single min; those without le-min-suffix constitute a plurality of mins.
   4. names with le-min-suffix may have varied status as mins; those without le-min-suffix constitute a single min.
   5. names with le-min-suffix may have varied status as mins; those without le-min-suffix may have varied status as mins.
   6. names with le-min-suffix may have varied status as mins; those without le-min-suffix constitute a plurality of mins.
   7. names with le-min-suffix constitute a plurality of mins; those without le-min-suffix constitute a single min.
   8. names with le-min-suffix constitute a plurality of mins; those without le-min-suffix may have varied status as mins.
   9. names with le-min-suffix constitute a plurality of mins; those without le-min-suffix constitute a plurality of mins.

Obviously it seems much more likely that something can be known about the status as mins of those names with le-min-suffix. There is no exegetical way of knowing the status as mins of names without this marker, and any such information could only be supplied by scientific research. At an initial stage it is therefore more important to ask only whether le-min-suffix marks the preceding name as belonging to a single min, a plurality of mins, or either of these two options on different occasions.

1. Does the use of “all” or “every” before the name of an animal in those lists distinguish that animal from animals in the lists without this modifier? There are three forms of names in the lists in Leviticus and Deuteronomy:—
   1. a name,
   2. a name followed by le-min-suffix, and
   3. a name preceded by “all” or “every” and followed by le-min-suffix.

stockxpert.com![A picture containing person, rolling pin, indoor, paper

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This third category is only filled by the “raven” in [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15) and [Deuteronomy 14:14](https://biblia.com/bible/esv/Deut%2014.14). If le-min-suffix is always a distributive singular expression, then “all” makes little difference in meaning since, whether it is present or not, more than one min is envisaged. If le-min-suffix is generally a non-distributive singular expression, then the addition of “all” in one case may signal that in this particular case it is a distributive singular, that is? whereas in most cases only one min is involved, in this case more than one is. This question is closely related to the previous one. Since “every” in English marks a distributive singular expression, it is also likely that “every” in [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15) and [Deuteronomy 14:14](https://biblia.com/bible/esv/Deut%2014.14) does the same. The question then is whether [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15) means “every raven according to the different mins of raven that exist”, or “every raven according to the single min to which all ravens belong”.

We should also consider thematic issues in the Bible. Arguably a major theme in [Genesis 1](https://biblia.com/bible/esv/Gen%201) is separation. For instance, light and darkness are separated, as are the waters above and below. This theme of separation is prominent in the legislation of Leviticus (for example, [Leviticus 19:19](https://biblia.com/bible/esv/Lev%2019.19)) and is certainly emphasised in the summary of the reason for the food laws in [Leviticus 11:47](https://biblia.com/bible/esv/Lev%2011.47). If such a thematic unity is maintained, then it is more likely that some identity between the use of min in Genesis and in Leviticus and Deuteronomy can be maintained.

### Summary

Either the collective or distributive meaning is suggested for some examples of the expression le-min-suffix. We will examine extra-Biblical sources to consider other evidence on this problem.20

## Post-Old Testament usage

### Samaritan Pentateuch

The word min occurs in the Samaritan Pentateuch in the places where it occurs in the Masoretic Text, except in [Leviticus 11:16](https://biblia.com/bible/esv/Lev%2011.16) and [Deuteronomy 14:15](https://biblia.com/bible/esv/Deut%2014.15) where the Samaritan Pentateuch has le-min-suffix after the third bird in the verse, not the fourth. In [Genesis 6:20](https://biblia.com/bible/esv/Gen%206.20) in the third occurrence of le-min-suffix in the verse the Samaritan Pentateuch has min and its suffix in the plural. The additional occurrence of the plural in the Samaritan Pentateuch concurs with the observation that min in the plural is more widely attested in later texts. It also coincides with the use of “all” or “every” on the third occurrence in that verse. If the singular is distributive rather than collective, then there is little change of meaning with the introduction of a plural.21 Such a lack of semantic distinction may have facilitated the Samaritan Pentateuch’s substitution of a plural for the Masoretic Text’s singular. The plural may indicate that little semantic distinction was felt between singular and plural at the time of the development of the Samaritan text. This particular development probably took place in the last five centuries BC. If a plural could easily replace a singular, this argues for a distributive understanding and against a collective understanding as envisaged by Driver.

### Apocrypha

The earliest extra-Biblical occurrences of the word min occur in the Apocrypha in the book of Ecclesiasticus, sometimes called Ben-Sira or Sirach. This work, which dates from the early second century BC completely survives in Greek translation, but only two thirds of it survive in its Hebrew original. In the sections that survive in Hebrew we find four uses of min, three in chapter 13 and one in chapter 43.22 The former passage is interesting in that it seems to continue the theme of separation found in the Bible. [Ecclesiasticus 13:15-18](https://biblia.com/bible/esv/Sirach%2013.15-18) reads (following the Septuagint for the final two lines):—

“All flesh loves its kind [min], and every man the one who is like him. The kind [min] of all flesh is near him, and a man joins himself to his kind [min]. What does a wolf have in common with a lamb? No more has a sinner with the righteous. What peace is there between a hyena and a dog? And what peace between the rich and the poor?”

The occurrence in [Ecclesiasticus 43:25](https://biblia.com/bible/esv/Sirach%2043.25) runs as follows:

“In it [the sea] are amazing wonders of his work, kind [min] of every living thing, and great sea-monsters.”

We should notice that in Ecclesiasticus, as in the Old Testament, the word refers exclusively to biological categories, although chapter 13 suggests non-biological analogies to the min. However, in Ecclesiasticus we also find that all occurrences of min are without the prefixed lamedh (‘according to’) and the second and fourth without the suffix. It is highly likely that the word could appear without prefix or suffix in the Hebrew of the Biblical period, but simply does not occur in extant Hebrew because of the particular nature of the accounts in Genesis, Leviticus and Deuteronomy. In addition, each of the four occurrences in Ecclesiasticus is singular. Despite this we should notice that examples like [Ecclesiasticus 43:25](https://biblia.com/bible/esv/Sirach%2043.25) do not tolerate a singular meaning. When we read in the stilted translation above of “kind of every living thing” in the sea in [Ecclesiasticus 43:25](https://biblia.com/bible/esv/Sirach%2043.25) we must understand that min is either used as a collective ‘variety’, or as a distributive ‘a kind of every living thing’.

### Dead Sea Scrolls

There are also occurrences of min in the Dead Sea Scrolls (all of which are before ca. AD 68). Because of their fragmentary nature it is impossible to state categorically the maximum number of occurrences that may exist, but in extra-Biblical texts there are at least three.23 Two occur in the so-called Damascus Document, and one in the Rule of the Community, some manuscripts of which have been dated on the grounds of handwriting to the second century BC. The examples are given below.

1. Damascus Document, column 4, lines 14–18:  
   “Its meaning is the three nets of Belial about which Levi the son of Jacob spoke, in which he traps Israel and presents them in the guise of three kinds [mins] of righteousness. The first is lust, the second wealth and the third defiling the sanctuary”.24  
   In this case min is plural, and without a direct prefix, or suffix.
2. Damascus Document, column 12, lines 14–15:  
   “And all locusts in their kinds [mins] shall enter into fire or water while they are still alive, for that is the ordinance of their creation”.25  
   Here min is in the plural, has a plural suffix, and is preceded by the preposition beth, meaning ‘in’.
3. Rule of the Community, column 3, lines 13–14:  
   “It is for the Teacher to instruct and teach all the sons of light concerning the generations of all the sons of man, as regards all the kinds [mins] of their spirits with their signs for their works in their generations.”  
   Here yet again min is plural. It is also without suffix. It is connected with the preposition le- which is prefixed to the word “all” which precedes min.

When we consider the three occurrences we note that one is biological, while the other two represent the earliest surviving clear non-biological uses of the word. This may represent a semantic extension of min that occurred by the analogy of the biological and non-biological spheres. The use of the plural in all three cases indicates that in the Dead Sea Scrolls min is neither collective nor distributive. Further, locusts are considered as having a plurality of mins. The word for ‘locust’ here is chagab, a word also used in connection with the word min in [Leviticus 11:22](https://biblia.com/bible/esv/Lev%2011.22). Unless we suppose that this word is being used to represent all the ‘locust’ types of [Leviticus 11:22](https://biblia.com/bible/esv/Lev%2011.22), then we must admit that the Damascus Document testifies to a change of construction from the Biblical period. Linguistically, the transition from distributive singular to plural is considerably easier than the transition from collective to non-collective, and so this may be another pointer that the construction in the Biblical period was sometimes distributive, while in post-Biblical Hebrew this construction was replaced by a non-distributive usage.

### Mishnah

When the word min occurs in the Mishnah (the Jewish oral law, completed ca. AD 200) it bears a plurality of meanings. It has gained the meaning of ‘heretic’ or ‘divisive one’, but also retains its older biological meaning. We may see this in the way a rabbinic dispute might be held over how to define a min in Terumoth 2.6:—

“This is the general rule: if the two kinds of produce are Diverse Kinds [kil’ayim], Heave-offering may not be given from one instead of from the other, even from the better instead of from the worse; if they are not Diverse Kinds [kil’ayim], Heave-offering may be given from the better instead of from the worse … Cucumbers and muskmelons count as a single min. Rabbi Judah says: Two mins”.26

The interesting thing with this quotation is that it introduces the Hebrew word kil’ayim which, though not related to the word min, is used in [Leviticus 19:19](https://biblia.com/bible/esv/Lev%2019.19) (and comparably in [Deuteronomy 22:9](https://biblia.com/bible/esv/Deut%2022.9)) when the Israelites are told not to crossbreed their cattle, not to sow their fields with two types of seed, and not to wear a garment made of two materials. The rabbinic dispute links the concept of min clearly with this law, which seems to admit that certain types of mixing were able to, but ought not to occur. By the time of the Mishnah min is certainly not a collective of collectives, and its plural is well attested. Any distributive singular there once was is a thing of the past.

### Summary

The fact that even the earliest post-Old Testament occurrences are biological in meaning suggests that the simplest hypothesis is to suppose that the earliest meaning in Hebrew was related to biology.

It seems that increasingly with late date we find the plural form of min used. Further, the earliest definite occurrences of min used non-biologically are in the Dead Sea Scrolls, though the biological meaning is attested throughout. The non-biological meaning attested in the Rule of the Community 3:13‑14 seems to be something similar to ‘category’ or ‘type’. The non-biological meaning attested in the Mishnah is essentially related to dividing. This meaning could easily derive from an earlier exclusively biological meaning ‘division of life’, which then developed to mean ‘division’ generally or ‘type’ of anything.27 With so few occurrences of the word we cannot rule out the possibility that non-biological meanings existed for the word even in the Biblical period. However, the fact that even the earliest post-Old Testament occurrences are biological in meaning suggests that the simplest hypothesis is to suppose that the earliest meaning in Hebrew was related to biology. The balance of evidence suggests that min was at first able to be used in a distributive construction.

## Etymology

### Definition of etymology

A word’s etymology is its historical derivation. However, the term ‘etymology’ is used differently depending on the nature of the language being investigated. If one is studying Romance Languages such as Spanish or French, a statement of the etymology of a word may well be a reference to the Latin word from which the Spanish or French word derives. On the other hand, with Biblical Hebrew, since we are not in possession of records of a language from which Hebrew was derived, we are not studying directly the historical antecedents of a Hebrew word. In studying Hebrew etymology, we are studying words which seem to be related to that word in a linguistic genetic sense. These words are found either within Hebrew or in languages closely related to Hebrew. Etymology does not define meaning. For instance, the English word ‘nice’ comes from Latin nescius meaning ‘ignorant’. However, sometimes etymology can give clues to the meaning of a word. For many of the etymologically related words considered below, the meaning of the word is an indication of the potential meaning of a common ancestor of both it and the Hebrew word min. The possibility is not precluded that Hebrew min retains almost unchanged the meaning of its ancestor.

### Babel and linguistic families

Languages may be grouped into families according to consistent relationships that are found between them. Within this framework Hebrew is categorised as a northwest Semitic language along with languages such as Aramaic and Ugaritic, within the wider Semitic language family which includes Akkadian and Arabic. Semitic is usually considered to be part of an even larger family sometimes called Afroasiatic or Hamito-Semitic (an unfortunate label since the language group has nothing to do with Ham or Shem). However, the earliest Semitic documents are dated in conventional chronology several hundred years prior to a date which would be given for the confusion of languages at the Tower of Babel, if it were assumed that no or few generations have been left unmentioned in the genealogy of [Genesis 11](https://biblia.com/bible/esv/Gen%2011). The present etymological discussion accepts the standard model of linguistic relationships, though it does not presuppose the dates assigned to documents in the standard model. It is possible that the process of language confusion at Babel was an acceleration of natural language diversification. If this hypothesis is combined with a model which considers many archaeological dates before 1000 BC as too high, then it is possible to accept the standard model of linguistic relationships basically unchanged in a short-time-frame creationist etymological discussion. The problem, however, with accepting the standard model is that the antediluvians have names which are from the north-west Semitic language group, which ex hypothesi is a derivative and not original language group. The ‘acceleration’ model of Babel would explain these as translations into north-west Semitic of names originally in the language which may be called ‘Pre-Babelite’. In addition, there are Pre-Babel word-plays on names that work in Hebrew; for example, “Adam” in [Genesis 2:7](https://biblia.com/bible/esv/Gen%202.7), “man” and “woman” in [Genesis 2:23](https://biblia.com/bible/esv/Gen%202.23), “Eve” in [Genesis 3:20](https://biblia.com/bible/esv/Gen%203.20), and possibly “Noah” in [Genesis 5:29](https://biblia.com/bible/esv/Gen%205.29). There is no reason why word-plays should not be preserved during a translation process, just as the English words “man” and “woman” still preserve a word-play similar to that in the Hebrew of [Genesis 2:23](https://biblia.com/bible/esv/Gen%202.23). The word-play is especially likely to be preserved when translating from one language where names are active words with a meaning into another language where names are active words with a meaning. This need not mean that the names were translated from written sources. The confusion of languages at Babel would inevitably include the translation of the memories of the individuals alive at the time of the confusion from Pre-Babelite to their new languages. In remembering events or conversations from before the confusion each individual would think of them in their new Post-Babel language. If this had not been involved, it would have been possible for people to revert to Pre-Babelite as a common form of communication. Since the earliest written records from Mesopotamia show affinity of symbols to the Post-Babel language Sumerian, it seems that the Babel event should be placed stratigraphically before the earliest written documents. Until shortly after the Flood humans probably did not write, because personal rather than written communication was preferable. Writing as an invention may have been necessitated by decreasing longevity, dispersion of population, and the fact that humans no longer all spoke a common language.

### Roots and Meaning

Semitic languages are largely made up of roots containing three consonants based around a semantic area. The most commonly given example of this is the root mlk, which is connected with the semantic area ‘reign’. Around these consonants vowels and other consonants are placed to create words connected with that notion — for example, melek ‘king’, malkah ‘queen’, himlik ‘he made king’ and mamlakah ‘kingdom’. The root itself never occurs alone, and is simply an abstraction from the forms found in the language. Hebrew min is composed of the three consonants myn. We here consider various words that have been connected with Hebrew min. These will be considered in the order of their linguistic proximity to Hebrew min.28

1. Hebrew temunah ‘image’ is held by most to be related to Hebrew min. Although the triconsonantal root of temunah is mwn, it is frequently found that Hebrew roots with ‘y’ as the middle consonant also occur in forms with ‘w’ as their middle consonant. This variation constitutes no material objection to a connection between the words. If min and temunah are related it is more difficult to discover the basic meaning of the root they share.29
2. Aramaic mina is a term used in Aramaic Bible translations30 to translate Hebrew min. It is certainly related to min, and shows that a biological meaning was present in Aramaic. This may either be explained as due to the influence of Hebrew on Aramaic, since they were sociologically and linguistically close in the post-exilic period, or it may be supposed that mina existed in Aramaic even before the exile. The two explanations may not be mutually exclusive, and it is possible that Aramaic had a word mina before major contact with Hebrew speakers was made, and that thereafter bilingualism amongst Hebrews influenced the occurrence and meaning of mina in Aramaic to be similar to that of min in Hebrew.
3. mina in Christian Palestinian Aramaic (also called Palestinian Syriac) has the meaning of ‘nation’. It is probable that this meaning developed by a zoological analogy between subdivisions among animals and subdivisions within humans.31
4. There is an occurrence of an Ugaritic term mn which, though uncertain, may bear a biological meaning referring to types of creatures.32 This form is exactly what one would expect if it were equivalent to Hebrew min, but since Ugaritic texts are very poorly understood and there are other words with the same form which have been suggested, this reference cannot be considered as certain. It does, however, seem to the author that a biological meaning is to be preferred. The reference would then be to types of creatures being carved onto a table. Ugaritic texts are assigned in conventional chronology to the third quarter of the second millennium BC. If this occurrence is correctly identified, then there is an attestation of a biological meaning for this root outside Hebrew long before any other extra-Biblical occurrence. The more linguistically widespread and early the attestations of any particular meaning are, the closer they are likely to be to the original meaning of a root.
5. The Arabic word mana meaning ‘split’ may plausibly be related to Hebrew min. The word mana exhibits some forms which attest that it comes from a root myn just like Hebrew min. The meaning ‘split’ could easily be connected with any term meaning ‘division’, and may thus testify to an element of meaning found in the early root. On the other hand, since Arabic texts are quite late, beginning only in the first millennium AD, we may suppose that mana, like the first millennium Mishnaic meaning of min as ‘schismatic’, was a later development from an original root meaning which applied exclusively to biological division. The Arabic and Mishnaic meanings would then be examples of convergent or parallel semantic development.
6. Occasionally Hebrew min is compared with the Coptic33 word mine, which can also mean ‘kind’ or ‘type’.34 Since Coptic is outside the immediate linguistic family of Hebrew, though it is in Afroasiatic, the connection can best be maintained if it is supposed that the word was either lent from Semitic to Coptic (or its Egyptian precursor), or was borrowed the other way.

### Summary

Etymology alone cannot decide the meaning of a word. All the etymological information can be explained on the assumption that a meaning of ‘biological division’ was an early prominent part of the root meaning. This need not have been, but could have been the earliest meaning of the root. This is consistent with the observation above that biological meaning predominates in attestations from the earlier stages of the Hebrew language.

## Translation

Further insight is given into the meaning of a word by considering the way it was interpreted by early translations of the Bible into languages other than Hebrew. The most important of these are the translations into Greek, Aramaic and Latin.

### Greek

The Septuagint is the Greek Old Testament, the Pentateuch of which was translated in the third century BC. The following features of the Septuagint’s translation of lemin-suffix may be noted. In the first two occurrences in the Bible ([Genesis 1:11](https://biblia.com/bible/esv/Gen%201.11) and [Genesis 1:12a](https://biblia.com/bible/esv/Gen%201.12a)) it uses a lengthy translation: kata genos kai kath ’homoioteta “according to kind and according to likeness”. The Septuagint does not represent the suffix ‘his’, and the word genos (though historically related via Latin to our word ‘genus’) is probably a collective, since it can mean both ‘family’ and ‘race’. Unfortunately we do not know whether it is collective in the sense that Driver maintained, that is, denotes a number of separate types of life, or is collective in the sense of denoting a number of different individual creatures which constitute only one type of life. Later occurrences in Genesis use the simpler phrase kata genos “according to kind”,35 except in [Genesis 1:25c](https://biblia.com/bible/esv/Gen%201.25c) and [Genesis 6:20c](https://biblia.com/bible/esv/Gen%206.20c) where we have kata genos auton “according to their kind”, and [Genesis 1:21a](https://biblia.com/bible/esv/Gen%201.21a) where we have kata gene auton “according to their kinds”. The word “their” is used in three of the four occurrences in Genesis where “all” or “every” precedes. Leviticus and Deuteronomy are different in their translation from Genesis. In almost every instance we have the phrase kai ta homoia auto(i) “and the things similar to it”.36 The translation in Leviticus and Deuteronomy recognises clearly a plurality of life-types existing when le-min-suffix is used. If taken literally, however, the types are only “similar to”, not “to be categorised with”, the name of the creature in the preceding phrase.

The extremely literal translation of the Masoretic Text made by Aquila in the first half of the second century AD, though not preserved for much of Scripture, translates min by genos in [Genesis 1:12](https://biblia.com/bible/esv/Gen%201.12).

### Aramaic

Aramaic is a unique language in having had so many Bible translations made into its various dialects by people competent in Hebrew. We will briefly consider just five. Targums37 Onkelos and Pseudo-Jonathan use the word zena, which is of Persian origin, to represent min. The Samaritan Targum (with considerable variation in manuscripts)38 uses the word mina as well as the word gensa, which is an Aramaised borrowing of Greekgenos. Targum Neophiti is the only Aramaic translation to use Aramaic mina consistently. In [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15) and [Deuteronomy 14:14](https://biblia.com/bible/esv/Deut%2014.14) Neophiti translates “and every kind of raven according to its kind”. This involves a repetition of the word for min not found in the original. The translation, however, makes it clear that in the translator’s opinion there was more than one min of raven. This favours a distributive understanding of min. The Syriac Peshitta generally uses gensa. It uses the plural in [Genesis 6:20c](https://biblia.com/bible/esv/Gen%206.20c), [7:14c](https://biblia.com/bible/esv/Genesis%207.14c); [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15), [11:16](https://biblia.com/bible/esv/Leviticus%2011.16), [11:19](https://biblia.com/bible/esv/Leviticus%2011.19); and [Deuteronomy 14:14](https://biblia.com/bible/esv/Deut%2014.14), [14:15](https://biblia.com/bible/esv/Deuteronomy%2014.15). The Syriac could also use the singular in these latter texts as in [Leviticus 11:22](https://biblia.com/bible/esv/Lev%2011.22) (two times). It may be that the Peshitta’s numerical variation between singular and plural betrays the awareness that the construction is distributive on occasion. The Aramaic evidence, then, supports the notion of distributivity.

### Latin

The two main translations into Latin are known as the Old Latin and the Vulgate. The Old Latin, which is the earlier of the two, is now extant in manuscripts displaying considerable differences, representing a rather complex translational and revisional history. It was made by Christians before the time of Jerome and based on the Septuagint. On the whole it uses the Latin word genus for min, though some manuscripts testify to the word species being used on occasions. The word genus is hardly surprising for a Latin translation as a representation of Greek genos, since the words are closely cognate. The Latin Vulgate, which took the Old Latin translation into account, continued the use of the word genus, but also used the word species in Genesis. Leviticus and Deuteronomy generally have genus. In [Genesis 1:21a](https://biblia.com/bible/esv/Gen%201.21a), [1:24b](https://biblia.com/bible/esv/Genesis%201.24b) and [1:25a](https://biblia.com/bible/esv/Genesis%201.25a) the Vulgate has species in the plural. We need to consider all these terms in their meaning of the Latin of the time, without considering the technical meaning now assigned to words like species and genus. It seems that part of the variation between the terms may be explained as stylistic variation. This likewise may explain the variation between the singular and plural of species. This interchangeability teaches us two things:—

1. species ‘form’ and genus ‘family’ were not used to refer to different taxonomic levels.
2. As with the Aramaic translations, variation between the use of singular and plural may display an awareness of the distributive use of min. The singular is used, because the translator realises that min is singular. The plural is used because the translator realises that there are several life-types being envisaged on each occasion.

There is a striking translation by the Vulgate in [Leviticus 11:15](https://biblia.com/bible/esv/Lev%2011.15) where it reads et omne corvini generis in similitudinem suam “and all of the raven kind according to its likeness”. The double translation of min by means of genus ‘kind’ and similitudo ‘likeness’ (compare Septuagint kath ‘homoioteta and also Hebrew temunah) reminds one of the translation by Targum Neophiti though, in contrast to Neophiti, the Vulgate may regard the raven as only constituting one min.

We must recognise that the meaning of the segment min in the word baramin may not correspond to the meaning of Hebrew min.

## Conclusions and recommendations

This paper may have raised more questions than it answers, but if creationists recognise the questions they must ask this will accelerate the discovery of solutions. The following observations are important:

1. Evidence has accumulated that, whether we understand min as a collective of collectives, or le-min-suffix as a distributive singular, several types of life may be denoted when le-min-suffix is used.
2. More evidence seems to point to the distributive use of the phrase rather than its use as a collective of collectives. It is possible, however, that the phrase is distributive sometimes, and non-distributive at other times.
3. min may well be a word of biological origin because its earliest occurrences have this meaning.
4. The basic meaning of ‘division’ which is suggested by etymology may support creationist views of biological taxonomy as involving major discontinuities.
5. Creationists need to work on several models. With our present lack of understanding of the Biblical material we may gain no easy clues from the pages of Scripture itself as to scientific criteria for the discovery of baramins. The task of classifying life-forms on purely scientific grounds must continue anyway. My study of verses about the ‘raven’ may suggest that there is more than one min of ‘raven’, and may thus warn against setting the taxonomic level of the min too high. On the other hand, baraminology now has its own terminology, which is helpful in developing a young-Earth taxonomic framework.39 We must recognise that the meaning of the segment min in the word baramin may not correspond to the meaning of Hebrew min.
6. A theoretical linguistic study of the phenomenon of distributivity in languages, and in particular one on the Hebrew language, would be extremely desirable in resolving the present issue about the number of min.
7. Thematic studies of the Bible, and in particular of the Pentateuch, may uncover the reason for the contents, wording and position of the lists in [Leviticus 11](https://biblia.com/bible/esv/Lev%2011) and [Deuteronomy 14](https://biblia.com/bible/esv/Deut%2014), and thereby give better insights into their relationship to Genesis.

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# Is your dog some kind of degenerate mutant?

***by L. Johannesen***

Next time you pat your dog on the head, look a bit closer. Is it a mutt or mutant?

Many breeds of dog are just that—mutant degenerate mutts—except we are so familiar with Pugs and Bassets we never really notice how deformed they are.

The word mutation means change. When we talk about a mutation in a dog, we mean a change in structure. It has a characteristic that its ancestors did not show. This change in the information it inherits is caused by a change either in the genes (those special factors in a cell which carry its body blueprint) or in the chromosomes (those parts of the cell which carry the genes in a specific order).

A degenerate mutation in a dog leaves the dog worse off than it used to be.

In this article we will consider some of the more obvious mutants in dogs to illustrate the nature and consequence of mutation.

Mutations can occur spontaneously (i.e. without our help) or some types can be made to occur (induced) by man adding radiation or chemicals such as colchicine. Regardless of how they occur, mutations do not appear to ‘naturally’ aim at achieving any specific improvement in the animal.

A mutation can be one of two types—somatic or gametic. The somatic mutation is one which occurs in any cell of a body except the sex cells associated with reproduction, i.e. sperm or eggs. It can only be passed on to the direct offspring of the cell involved, e.g. skin or hair or tumor, and is not passed on to the next generation. Of greater importance is the gametic or sex cell mutation. Since it occurs in the sex cells it does not produce an effect in the parents, but can be passed on to the next generation to produce a **mutant type**. However, because of the elaborate in built control processes involved in an organisms growth most of these types of mutations will be ‘overruled’ and will not show up.

In the examples which follow I have concentrated on mutations which are easily visible in dogs, and in particular, are very common in the dog family.

The pug face dog has been produced by man selecting for mutations and recombinations (juggled genes) which have resulted in its original head shape being changed. The long axis of the head has been vertically rotated so that the face points towards the ground. This has resulted in the snout and the eyes being moved up and back to point forward and the upper jaw shortened. The lower jaw, in order to be of any use is of course, upturned to match the top jaw.

Now while you may think this is a very clever thing to do to a dog, just think about it from the dog’s point of view. No great problems would occur from shortening the length of the upper jaw, except that to date we have not been able to get rid of the face skin its ancestor had. The extra skin the ancestor needed for his long nose must now fit a short nose. The result—more wrinkles and folds than the world’s most troubled woman, and, as a consequence, dermatitis and eczema.

Since his lower jaw must bend to fit the now shorter upper jaw, the front teeth now bend backwards and resultant stress often results in teeth abnormalities and malocclusions. This, of course, is why a bull dog hangs on when he bites—he has great difficulty letting go.

Pretend you are a pug for one moment— [a thought experiment; you can’t actually do this] take one hand and push your lower jaw up at the front while you keep your head still, then take your other hand and push your lower jaw back. Now you’ve got that, push hard and try to breathe. See why your bull dog or pekinese puffs after a short run? The head structure which we have bred into the dog has produced a breathing difficulty due to partial obstruction of the throat region. So when you let your pug go in the wild, he cannot run far enough to escape, and if he does manage to run fast enough to catch anything he hasn’t got enough breath left to eat it.

## Hairy

The body of a hairy dog is covered with fairly long hair, so much so that the animals face may have disappeared from sight, and you have to wait for one end to wiggle before you know which end to pat. We may call it cute, but the extra hair is a real burden to the dog, that is, unless you want to spend a lot of extra time keeping it clean.

Clean—so that eye disease caused by the hair perpetually irritating the eyes, will be kept to a minimum. Even in the best cared for hairy dogs, blindness is a common end. Clean—so that parasites which hide in the hair, never worried by the dog’s mouth or scratching feet, do not massacre your dog.

## The floppy ear syndrome

The Fred Bassets of this world do look sort of silly because of a structural alteration to their ears. Their muscles cannot lift up their ears so they hang there, floppy before breakfast, and sloppy after it. Because the dog uses his ears to locate a source of sound, he needs ears which can receive sound and focus on it. Floppy ears can do neither of these things. This makes floppy eared dogs inferior to other breeds in detecting prey or predators by their sound. Parasites can also hide under those dark warm curtains it has for ears, and when the floppy eared dog tries to scratch them out, he only hurts himself. Deafness is a common result.

## Short leg

Want a dog that will not trouble your neighbors because it cannot jump fences: then a shortlegged mutant such as a Corgi or Dachshund is for you.

This mutation has been selected for in many breeds because of its usefulness in hunting animals that live in burrows, or for tracking animals by scent through dense undergrowth. After all, if you cannot go over it or through it, get a dog that can go under it.

But in the wild, such an animal is slowed by its short legs and is usually forced to go around obstacles rather than over them. Therefore it tires more quickly than a long legged dog. In order to catch anything, the short leg must utilize surprise and a short sprint. Consequently, short legged dogs cannot usually fend well for themselves.

## Short spine

In this mutant, the entire backbone of the dog is shortened, but the legs and skull are normal. Such mutations kill most dogs, with an interesting exception being the female Baboon dog. The male Baboon dog dies before reaching maturity, so it should be obvious that this breed has not got much going for it.

## Hairless dogs

Sick and tired of all those fleas or that hair on the carpet? Then this dog is for you. It doesn’t have any hair at all, except for a small patch between the ears. Their skin is hot to touch.

If you do have a passion to own one of these baldies, then don’t be put off when after you pat it all you usually get is a toothless grin. Its footprints are also different since its toe nails often fall out (especially if they get caught in the carpet). The gene for hairless is linked to the gene for toothless and toenailless. Since they also suffer from death if they possess two genes for hairless they cannot be pure bred. Without hair, they don’t like the cold either. All of this should explain why you haven’t seen too many hairless dogs around lately, and with the breed name Xololtzcuintli, it’s probably just as well.

## Other abnormalities

There are many other abnormalities which are less common or less spectacular, such as the out-turned eyelids of the bloodhound (remember its red soulful eyes) or the ingrown eyelashes of the Pekinese.

The only dog mutant which comes anywhere near qualifying as useful (from the dog’s point of view) is found in that big lovable St. Bernard.

It suffers from hyperthyroidism, which means that its overactive thyroid gland enables it to turn food into body heat at an incredible rate, not by choice, but by compulsion. His feet can sometimes be so hot they can melt the snow around him. This makes it easy for him to live in the snowy cold conditions and to play his part in rescuing and or inebriating lost mountaineers. But it has bad points too. He cannot tolerate the heat since he makes so much of his own. It is anything but kind to bring a St. Bernard to a tropical climate. Secondly, he must eat huge quantities of food to survive because he uses it so rapidly and this creates his dilemma. A St. Bernard is best suited to live in the snow and cold, but in such conditions he would normally find nothing to eat and would starve. If man did not artificially maintain the breed, it would soon die out.

## Conclusion

Dog breeders have used mutations to change the dog for hunting man’s way. They have made many grotesque forms and are still trying to make the ‘best’ domestic dog. But all results considered, man has still not made a dog into a non-dog or a more doggish dog (every postman can verify this).

Now this means, of course, that your Great Dane or your Dachshund and such like did not get off Noah’s ark, since they did not exist then. They are products of modern resourcefulness (?). All of which explains why the bloodhound and its friends are not found in the fossil record (you cannot become extinct when you’re not even existant). What son of a dog did Noah take on board the ark? Well, it had to be one which through the effect of degenerate mutation, or by having its genetic pattern juggled by recombination (lovingly selected by man), could produce all of the modern varieties of dog. Not that I wish to be parochial, but I suspect it was probably something like the good old Australian dingo. Of course it would take a government grant of several million dollars to turn a dingo into a daschund through breeding experiments.

In a more serious vein however, all the research results from dog breeding confirm the statement in Genesis that God commanded each type of organism, dogs included, to ‘reproduce after its kind’. Your dog may only be some kind of degenerate mutant, but the point to be made over and over is, that he is a degenerate mutant from some created **kind**.

**A baraminology tutorial with examples from the grasses (Poaceae)**

***by***[***Todd Charles Wood***](https://creation.com/todd-charles-wood)

Creationist biosystematics has existed since Frank Marsh coined the term *baramin* in 1941. Unfortunately, actual research into identifying baramins has been sparse. In the past decade, creation biologists have worked to develop a systematic methodology called baraminology. This paper presents a short tutorial on some of the techniques now in use to identify and study baramins. Readers are encouraged to use the information in this paper as a starting point for baraminology research of their own.

The biological discipline of systematics was developed to discover natural groupings of organisms, such as species. A new systematic method, baraminology, specifically pertains to creationists.1 Baraminology seeks not the species but the baramins, God’s ‘created kinds’. In the broadest sense, baraminology has its roots in the writings of Frank Marsh. In 1941, Marsh coined the term *baramin*.2 However, Marsh’s ideas have begun to flourish in creationist research only in the past two decades. The German creationist group Wort und Wissen has produced a book of systematics papers, *Typen des Lebens*, in which they apply Marsh’s ideas to groups of plants and animals.3 Fortunately for English-speaking creationists, Georg Huber is currently translating the book into English. Also during the 1990s, Kurt Wise applied baraminology to turtles,4 and Ashley Robinson and David Cavanaugh produced a series of papers on baraminology in turtles,5 primates6 and cats.7 I have been very active ‘behind the scenes’ in promoting baraminology to my fellow biologists. As part of the Baraminology Study Group (BSG), I helped organize two baraminology conferences at Liberty University and Cedarville University.8,9

Science in general and baraminology specifically require an appropriate philosophical basis in order to be successful in describing the world. At the baraminology conferences, so much emphasis has been placed on philosophy that researchers have not gained a practical understanding of the basic methodology and relevance of baraminology. Consequently, I find that many researchers do not know how to proceed. In this short work, I intend to demonstrate as clearly as possible how to undertake a baraminology study, using the grass family Poaceae as an example. It is my hope that once others see how straightforward it can be, they will be encouraged to try it themselves.

**What to look for**

Many creationists share the problematic desire to have a definition of *baramin* that makes it easy to recognize. Marsh’s heavy emphasis on hybridization as the defining feature of a baramin has certainly contributed to this bias.10 An unambiguous criterion makes research easy, but even the hybridization criterion has serious limitations (e.g. it is inapplicable to asexual or fossil organisms). Because of these problems, baraminologists of today focus on approximating the limits of the baramin using a suite of characteristics. To assist in the approximation, we employ three terms that are derived from Marsh’s *baramin*:11

1. The *monobaramin* is a group of organisms that share continuity, either genetic or phenetic.
2. The *apobaramin* is a group of organisms that is discontinuous with everything else. Creationists have long used bats as an example of animals that are unrelated to any other mammals.12,13 Since we don’t know how many kinds (baramins) of bats God created, baraminologists refer to the bats as an apobaramin.
3. The *holobaramin* is roughly what we call the ‘Genesis kind’. Technically, it simply combines the definitions of *monobaramin* and *apobaramin*. A holobaramin contains a complete set of organisms that share continuity among themselves but are discontinuous with all other organisms.

Because these definitions are not mutually exclusive, they form the basis of the baraminological method of successive approximation. If you divide groups of organisms into smaller and smaller apobaramins by subtractive evidence, you will eventually come to a point when you can legitimately divide the group no longer. Similarly, if you add more and more species to a monobaramin by additive evidence, you will eventually come to a point when you cannot legitimately add any more species. Hopefully, the point at which the apobaramin can no longer be divided and the point at which the monobaramin can no longer be expanded is the same point: the holobaramin. At this point, the ‘membership list’ of the monobaramin and the apobaramin are exactly the same; therefore, this group probably represents the holobaramin.

To do baraminology then, we evaluate two kinds of evidence: Additive and subtractive. Hybridization works well as additive evidence. The ability of members of two different species to produce offspring strongly indicates that they share basic genetic machinery and a common developmental path; however, failure to hybridize is not subtractive evidence. There are too many factors that can cause reproductive isolation that have nothing to do with baraminic status. Unfortunately, subtractive evidence proves difficult to identify in many cases. Sometimes the creation record in Genesis can provide the strongest subtractive evidence. For example, we know that whales share no ancestry with land mammals ([Gen. 1:20–21](https://biblia.com/bible/esv/Gen.%201.20%E2%80%9321)).

If subtractive evidence cannot be found, you should not consider your baraminology study a failure:

1. You might be looking at only part of the holobaramin; that is, your focus is too narrow. Prior studies have shown that the holobaramin is larger than most genera.
2. Baraminology constantly advances and refines its methodology. Discontinuity that is undetectable today may be detected tomorrow.
3. Practically speaking, establishing a monobaramin is useful information. For example, in a baraminology study of a group of species in the sunflower family, I found good evidence for continuity (hybridization) but no discontinuity with other species of the same family.14 At the very least, my results indicated that the holobaramin is broader than this group.

**The grasses: choosing a subject**

Biologists reading this article probably have a research subject in mind, but for those who do not, guidance on choosing a group may be in order: First, realize that you will likely choose a group that no creationist has studied before. Because precious little baraminological research has been published, you will probably not choose one of the few groups that have already been studied. Studying a group that has been the subject of previous baraminological analysis is also good. The essence of the baraminology method is approximation, so follow-up studies are always welcome.

Also consider how your baraminology study might relate to others already published. Will you study a group similar to one already studied, or will you choose something completely new? For example, since the dogs,15 bears16 and cats7 have all been the subjects of baraminology studies, another carnivore group, such as the weasels or raccoons, would complement the previous work well. On the other hand, studying a new group (e.g. invertebrates, microbes, or fungi) will blaze new trails in baraminology and expand our understanding of the general features of the baramin.

Practical issues involved in gathering appropriate data for your group of interest should be considered as well. Will there be enough published data to do a good baraminology study, or are you willing and able to gather your own data? Re-interpreting published data is less laborious than gathering new data, but published datasets can be sparse. For example, I was surprised to find almost no published, family-level cladistic (tabulations of shared / non-shared characters) datasets on dinosaurs. On the other hand, baraminologists need to begin generating our own data rather than simply re-interpreting what someone else has already published. If you are able, I would strongly encourage collecting your own data.

Most importantly, consider the biblical constraints that will inform the interpretation of your results. Even if the Bible does not specifically mention your organisms, the outline of early history in [Genesis 1–11](https://biblia.com/bible/esv/Gen%201%E2%80%9311) will impact all baraminology studies. At the minimum, try to determine on which day of Creation your group originated and how your group survived the Flood (if it did). These aspects will be important for understanding the historical development of the baramin.

To illustrate the baraminological method, I have chosen the grasses. The grass family Poaceae is one of the most important families on the planet. People associate the word ‘grass’ with the stuff in their lawns, but grasses also include important cereal crops such as rice, maize, oats, wheat, barley, rye, and sugarcane. Half of the world’s population subsists on members of the grass family. The family itself consists of approximately 10,000 species in 5–6 subfamilies and 46 tribes.17

In addition to its utilitarian importance, Poaceae makes an excellent baraminology subject for a number of other reasons. First, a number of grasses are mentioned in the Bible, including barley ([Ruth 2:23](https://biblia.com/bible/esv/Ruth%202.23), [Hosea 3:2](https://biblia.com/bible/esv/Hos%203.2)), millet ([Ezekiel 4:9](https://biblia.com/bible/esv/Ezek%204.9), [27:17](https://biblia.com/bible/esv/Ezekiel%2027.17)), wheat ([Genesis 41:22](https://biblia.com/bible/esv/Gen%2041.22), [Leviticus 23:14](https://biblia.com/bible/esv/Lev%2023.14)), and the comprehensive term *grass* ([Genesis 1:11–12](https://biblia.com/bible/esv/Gen%201.11%E2%80%9312)). Second, because of the importance of the grasses, many botanists actively research Poaceae systematics. Scientists have formed a collaborative group to study the phylogeny of the grasses, and several genomics projects are underway for the more important cereal crops, mainly rice18 and maize.19 A great deal of data from these research projects is publicly available. Third, a creationist study of the wheat tribe has been published in *Typen des Lebens*,20 allowing a comparison of results and conclusions. Finally, my own research work has focused on rice, so grass baraminology will help me understand other areas of my research interests.18,21

**The baraminology method**

There really is no single ‘baraminology method’ but rather a collection of methods used in successive approximation. In the following sections, I present a few techniques that can be used by nearly any biologist. I begin with Scriptural considerations, then move to additive and subtractive evidences, and conclude with an interpretation of my results. At each step, I present general methods that can be applied to any group and illustrate their application in my study of the grasses. This paper is necessarily short, so some methods in baraminology have been omitted. Consult the literature for discussions of phylogenetic discontinuity detection,4 the use of mitochondrial DNA,5 and Analysis of Pattern.14,22

**Biblical considerations**

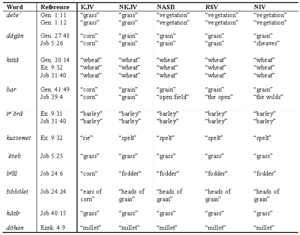
Because the Bible is the only source for infallible information, studying biblical passages greatly aids the identification and interpretation of baramins.

Because the Bible is the only source for infallible information, studying biblical passages greatly aids the identification and interpretation of baramins. The creation account can give clues about apobaraminic limits, and early references in Genesis and Job can illuminate the tempo and mode of post-Flood diversification (Job was originally written during the time of Abraham, approximately 500 years after the Flood). Unfortunately, many groups are not mentioned in the Bible, and others are mentioned in passages that are difficult to interpret. In these cases, little biblical evidence can be cited outside of the general outline of history in [Gen. 1–11](https://biblia.com/bible/esv/Gen.%201%E2%80%9311).

When a species or group of species is mentioned in the Bible, proper interpretation becomes very important for applying the passages to baraminology. Optimally, trained, careful Hebrew and Greek exegesis should be performed on the relevant texts by appropriate scholars. Since scholarly exegesis may be difficult to obtain, we can still benefit from our own preliminary study, with the recognition that we may be wrong. For the lay Bible student, variety of sources is the key to locating and understanding relevant biblical texts. Relying on one translation or commentary may lead to an enigmatic or peculiar understanding of a passage. Using a variety of translations and other resources will ensure that a balanced view of the passage is achieved. Although Scripture should not be interpreted by majority rule, alternative translations can alert the careful student to potentially valid alternative interpretations.

To begin a biblical study, list words that refer to your group and which might be found in English translations. For the grasses, this list includes most of the cereal crops: wheat, barley, etc. Next, use a concordance such as *Strong’s Exhaustive Concordance* or *Young’s Analytical Concordance* to locate specific verses that contain these words. Alternatively, the *Bible Gateway* (bible.gospelcom .net/bible) offers word searching in many different translations in fifteen languages, including the King James Version and the Latin Vulgate. I found that the Bible refers to members of the grass family frequently. I will focus my discussion on two types of passages: the creation of grasses and early post-Flood references.

The English translation of relevant passages should be verified by comparing translations and consulting lexicons and commentaries. I found eleven Hebrew words in *Strong’s* that are used in various passages to refer to the grasses. Using the *Bible Gateway*, I constructed a chart of the translations of these words from sixteen verses in five different translations (KJV, NKJV, NASB, RSV, NIV). On *Bible Gateway* web pages, different translations of the same verse can be viewed with the click of a mouse, greatly simplifying this analysis. Based on my chart (Table 1), I infer two important points. (1) The Hebrew word *deše’* in [Gen. 1:11–12](https://biblia.com/bible/esv/Gen.%201.11%E2%80%9312) is translated ‘grass’ in the KJV and NKJV but is translated ‘vegetation’ in the NASB, RSV, and NIV. The variation in translation alerts me to possible scholarly disagreement over the meaning of the verses that record the creation of grass. (2) I also note on the chart that eight of the eleven words listed are found in Job. Two of these words, *`ēśeb* and *hāsîr*, are translated ‘grass’ in all five translations. The remaining six are agricultural words. Some (*hittâh* and *śe`ōrāh*) refer to crop species, while others refer to aspects of crops related to farming (e.g. sheaves, heads of grain, fodder, etc.).

[](https://dl0.creation.com/articles/p053/c05383/5383table1_lge.gif)**Table 1**. A summary of grass references and their English translations.  
Click [here](https://dl0.creation.com/articles/p053/c05383/5383table1_lge.gif) for larger view

I turned to additional resources to verify my understanding of these translation differences. First, I consulted the *New International Dictionary of Old Testament Theology and Exegesis* (*NIDOTTE*), edited by W.A. VanGemeren. This five-volume dictionary of Hebrew words has a helpful index in volume five that relates the words in the dictionary to the numbering system in *Strong’s*. NIDOTTE should be available in seminary libraries, or it can be purchased for around US$100. The dictionary entries on the words in Table 1 confirmed my interpretation from comparing translations.

Commentaries disagree over the interpretation of *deše’* in [Genesis 1:11–12](https://biblia.com/bible/esv/Gen%201.11%E2%80%9312). Some scholars believe that *deše’* is a general descriptor for all vegetation, of which ‘herbs’ and ‘trees’ are the two main classes. Others maintain that there are three classes of plants, ‘grass’, ‘herbs’ and ‘trees’. The majority favour the first view.23-25

From this brief biblical survey, we may draw a few preliminary conclusions. First, the creation account in [Genesis 1:11–12](https://biblia.com/bible/esv/Gen%201.11%E2%80%9312) does not directly address the origin of the Poaceae. In fact, the term *deše’* is most frequently used for the green growth that sprouts in response to rain.26 An apobaraminic division between herbaceous plants and woody trees is also not required. God most likely created many individual plants to cover the newly formed land, including many members of the same baramin. If baramins were created with original diversity, woody and herbaceous plants could be members of the same baramin. Because modern plant baramins contain both woody and herbaceous members (e.g. Flaveriinae14 ), it is best to refrain from asserting one interpretation over another. I conclude that the creation account gives very little information about the baraminic limits of the grasses with respect to other plants.

The numerous agricultural words found in the book of Job form the basis of my second conclusion. The various farming terms indicate that an advanced agriculture already existed at the time of Job. Job speaks of barley (*śe`ōrāh*) and wheat (*hittâh*) using Hebrew words that refer unequivocally to these species.27,28 Since barley and wheat interbreed29 (placing them in the same monobaramin), their early cultivation indicates either a rapid post-Flood diversification of the baramin or a pre-Flood diversification preserved via seeds through the Flood. Since we know that Noah preserved food on the Ark ([Gen. 6:21](https://biblia.com/bible/esv/Gen.%206.21)), pre-Flood domestication of wheat and barley could be a valid interpretation.

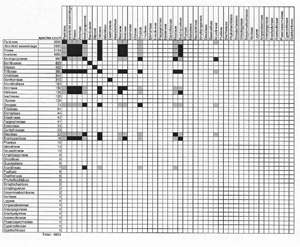
**Additive evidence: hybridization**

Due to its popularity, I will present hybridization as the first scientific method. If you are working with a group that is not amenable to hybridization experiments, you might want to skip to the next section on Robinson and Cavanaugh’s baraminic distance method, which can be used on any group.6 Space does not permit a full discussion of the theory of the hybridization criterion, so I recommend consulting other references1,30 for more information.

Unfortunately, good compilations of hybridization records are difficult to obtain. The Center for Origins Research and Education at Bryan College is developing a computerized database of hybrids to assist in baraminology studies.31 Though the HybriDatabase (HDB) (www.bryancore.org/hdb) currently contains 2,711 hybrid records, I have gained valuable experience during the development of the HDB. I formulated an effective method of locating hybrid records.

First, consult the HDB. Although incomplete, it contains valuable information. For each hybrid, a complete literature citation is available at the click of a mouse. Second, try computerized search engines. PubMed (www.ncbi.nlm.nih.gov) offers free searching of mostly biomedical and molecular biology journals. Ovid (www.ovid.com) and Biosis (www.biosis.org) offer database searching of a wider array of biology literature for a subscription fee. Many public university libraries provide Ovid or Biosis searching to their patrons. Third, consult published hybrid compilations. Excellent sources include Gray’s *Bird Hybrids*32 and *Mammalian Hybrids*,33 the periodicals *Plant Breeding Abstracts* and *Animal Breeding Abstracts*, and numerous specialty compilations (e.g. *Orchid Hybrids*34). You may consult online university library catalogues or Bookfinder (www.bookfinder.com) to locate hybridization compilations. I recommend the two *Breeding Abstract* periodicals as comprehensive sources of papers on hybrids. Creationists often recommend Gray’s books,30 but some of the hybrids listed are not accepted as valid.35 In all cases, try to locate the original paper to confirm the hybrid success. Finally, if you find a research article on a hybrid of interest, scan the references for other hybrid records.

I found a plethora of grass hybridization information in Knobloch’s *A Check List of Crosses in the Gramineae*,29 *Омдаленная Гибридиза Растений (Omdalennaya Gibridiza Rasteniĭ, The Remote Hybridization of Plants*, a Russian book on distant plant hybridization),36 Watson and Dallwitz’s *Grass Genera of the World*17 and several papers in *Plant Breeding Abstracts*. I also used the AltaVista search engine (www.altavista.com) to locate other records of newer hybrids.37-40

[](https://dl0.creation.com/articles/p053/c05383/5383fig1_lge.gif)**Figure 1**. Inter-tribal hybridizations in the grass family. Black squares indicate reports of inter-tribal hybrids. Grey squares indicate two tribes known to hybridize to the same third tribe. Open squares indicate no reported hybrids.  
Click [here](https://dl0.creation.com/articles/p053/c05383/5383fig1_lge.gif) for larger view

To display hybridization information, baraminologists frequently use a graphical tool called a *hybridogram*. To create a hybridogram, begin with graph paper or a computer spreadsheet. Next, list your species down the left side and across the top, forming a square matrix where each cell represents a potential interspecific hybrid (Figure 1). Record successful hybridizations by filling in the appropriate cells. The *Wort und Wissen*creationist group uses the hybridogram extensively in their book *Typen des Lebens*.3

The 10,000 grass species make a challenging subject for a hybridogram. Because I cannot put all species on one hybridogram, I made several approximations for the hybridogram in Figure 1. I listed only the 46 grass tribes recognized by Watson and Dallwitz.17 Next, I filled in cells indicating successful intergeneric hybridization within and between tribes. I also used Scherer’s secondary membership criterion, ‘Two individuals belong to the same basic type if they have hybridized with the same third organism.’30 By extension, I shaded cells grey where two tribes are known to cross with members of the same third tribe.

In Figure 1, inter-tribal grass hybrids join only twelve of 46 tribes. At first glance, 12 out of 46 seems like poor baraminic evidence, but the 12 hybridizing tribes comprise approximately 7,220 species. Consequently, I can assign 72% of the Poaceae to one hybridization-defined monobaramin. The remaining tribes that are not connected to the rest by hybridization are mostly small (half of the grass tribes contain less than 20 species). In his analysis of the duck baramin, Scherer noted the same pattern. Of the 13 tribes of the duck family Anatidae, hybridization connects eight. The remaining five represent tribes of 1–3 species each. Despite a lack of hybridization to connect the five small tribes with the remaining eight, Scherer still concludes that all Anatids (ducks, swans and geese) form a single basic type (or monobaramin; see below).41

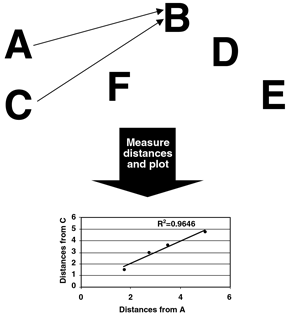
Even though most of the non-hybridizing grass tribes are small, two tribes—Bambuseae (the bamboos) and Stipeae (including ricegrasses)—are quite large. This illustrates a limitation of hybridization: Lack of recorded hybridization is ambiguous baraminic evidence. Although I could find no hybrids between bamboos or ricegrasses and other grass tribes, my search for grass hybrids was cursory. A more comprehensive search may reveal hybrids that join all grass tribes. At this stage, I would advance the conservative hypothesis that 72% of grass species in 12 tribes form a monobaramin.

**Additive and subtractive evidence: baraminic distance**

Since hybridization is only additive evidence, I need more data to determine the apobaraminic status of Poaceae. Fortunately, Robinson and Cavanaugh developed statistical methods for examining baraminic relationships without hybridization data.6 They base their methods on the *baraminic distance*, a metric that summarizes systematic data. The information in systematic data sets is organized in columns where each column represents a particular characteristic, such as tooth shape or head size. The rows represent the taxa and the particular *character states* of those taxa. For example, oat flowers (character) are bisexual (character state 1) while maize flowers are unisexual (character state 2). For convenience, character states are almost always coded numerically (1=bisexual, 2=unisexual).

Systematic data sets can be challenging to locate. Systematists are aware of this limitation and have begun to archive their datasets in internet databases. You can use two different databases to search for datasets for your group of interest, TreeBASE (www.herbaria.harvard.edu/treebase/index.html) and Cladestore (palaeo.gly.bris.ac.uk/cladestore/default.html). Since the databases are relatively new, they only have a few datasets. You may need to dig further to find a useful dataset for your group. Specialty journals like *Cladistics*, *Systematic Biology*, and organism-themed publications (like *Herpetologica* or *Journal of Mammalogy*) often publish data sets to accompany articles on systematics. Although many published data sets exist, they are not always baraminologically useful. They may exclude taxa deemed baraminologically significant, or they may simply have too few taxa or characters to give reliable baraminic information. As mentioned previously, we creationists should strive to generate our own datasets by direct observations of living or preserved specimens. Only in this way can we obtain the precise data needed. In the meantime, published datasets can offer useful information in many cases.

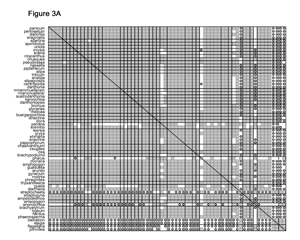
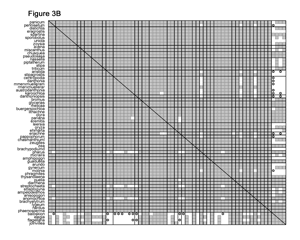
Because of the importance of the grass family, the Grass Phylogeny Working Group (GPWG) placed a large data set online so that anyone with Internet access can analyze it (www.virtualherbarium.org/grass/gpwg/). The GPWG dataset contains 7,025 characters scored for 62 grass genera and four outgroup genera. The 62 grass genera represent 36 tribes. Most importantly, the large tribes excluded from the hybridization-defined monobaramin are present in this dataset; therefore, their baraminic status should be clearer. For more information about the GPWG dataset, consult their website.

[](https://dl0.creation.com/articles/p053/c05383/5383fig2_lge.gif)**Figure 2**. Baraminic distance correlation test. The R2 statistic is the square of the correlation. In this example, the correlation coefficient (R) would be the square root of 0.9646, or 0.982 (A and C are probably closely related).  
Click [here](https://dl0.creation.com/articles/p053/c05383/5383fig2_lge.gif) for larger view

Space prohibits a detailed explanation of the baraminic distance method, but a short description of the metric is in order. The baraminic distance between two species is the percentage of characters in which the two species differ in their character states. The simplicity of this metric is very important, because most evolutionary phylogenetic methods make assumptions of common ancestry to calculate similarities and distances. With a percentage, no prior assumptions are made, so identifying both significant similarity between species (implying baraminic relationship) and significant differences between other species (implying discontinuity) should be straightforward. For a detailed discussion of the baraminic distance method, consult Robinson and Cavanaugh’s original paper.6

I developed the computer program BDIST to perform the baraminic distance calculations on the large GPWG dataset. BDIST is available at the BSG website (www.bryancore.org/bsg), where you will also find detailed documentation on how to use the software. Because BDIST is written in Perl, it will run under any operating system. BDIST first sorts through the characters and calculates character *relevance*. Relevance is the percentage of taxa for which a character state is known, and BDIST includes relevance figures for each character in its output file. Robinson and Cavanaugh recommend that character with relevance less than 95% should be eliminated from baraminic distance calculations.6 After calculating relevances for every character, BDIST eliminates characters that have less than 95% relevance. Finally BDIST calculates baraminic distances from the remaining characters and outputs the distance matrix to a plain text file, which can be cut-and-pasted into a spreadsheet or other mathematical software for further analysis. BDIST eliminated 4,906 characters from the GPWG dataset because of low relevance. The remaining 2,119 characters were used for the baraminic distance calculations. Baraminic distances can be analyzed in a variety of ways. I will illustrate the correlation test, one application of baraminic distances.

Robinson and Cavanaugh recommend calculating the Pearson product-moment correlation between all possible pairs of taxa.6 If the distance between taxa A and B is similar to the distance between taxa C and B, and if this similarity of distances holds for taxa D, E, and F, then A and C are probably closely-related (Figure 2). By calculating the correlation of baraminic distances for taxa A and C, we can test whether the distances are similar enough to be statistically significant. Robinson and Cavanaugh suggest that significant positive correlation indicates that the two species are members of the same monobaramin and significant negative correlation indicates that the two species are discontinuous (members of different apobaramins). You should consult their paper for more information on baraminic distance correlation tests.6 I did not implement a correlation test in BDIST because these tests are more efficiently done by any number of statistical software packages. You can even use a simple spreadsheet, like Excel or QuattroPro. I use the S+ package, available from Insightful Corporation (www.insightful .com).

[](https://dl0.creation.com/articles/p053/c05383/5383fig3a_lge.gif)Click [here](https://dl0.creation.com/articles/p053/c05383/5383fig3a_lge.gif) for larger view[](https://dl0.creation.com/articles/p053/c05383/5383fig3b_lge.gif)**Figure 3**. Summary of baraminic distance correlation tests for (A) molecular and morphological data and (B) morphological data only. Filled squares indicate significant positive correlation. Circles indicate significant negative correlation. Black horizontal and vertical lines separate tribes. Labels for columns are same as for rows.  
Click [here](https://dl0.creation.com/articles/p053/c05383/5383fig3b_lge.gif) for larger view

In the GPWG dataset, the 62 grass genera yield 1,891 unique species pairs for which baraminic distances and correlations can be calculated. Using the baraminic distances from BDIST, I found that 98% of the species pairs had significant positive correlation. Curiously, I also found that 53% of the 248 species pairs between the grasses and outgroup species also displayed significant positive correlation, and only 6% had significant negative correlation (Figure 3A). Based on Robinson and Cavanaugh’s original discussion of the distance correlation test, I did not expect a high frequency of significant positive correlation between the grass and outgroup species. These results suggest that the non-Poaceae genera included in the dataset might also be members of a monobaramin together with the grasses. If correct, this result would be very surprising, since grasses are widely acknowledged to form a well-defined group.

To re-evaluate these results, I removed molecular characters from the GPWG dataset and re-calculated the baraminic distances. Systematic data derived from DNA sequence comparisons may not be very useful for baraminology because so many DNA/DNA comparisons are done on genes that are very similar between many species. Consequently, species appear much more similar than they would if you examined their morphology, thus the use of DNA sequence information biases the systematic results towards similarity that is purely genetic.

Of the 7,025 characters in the GPWG dataset, only 53 are morphological. The remaining 6,972 characters come from DNA analyses. After eliminating the DNA characters, the baraminic distance calculations were very different. With the morphology-only dataset, 21 characters were eliminated due to low relevance, and 32 characters were used to calculate baraminic distance. From the Pearson correlation analysis, I found that nearly every one of the grasses shares significant positive correlation with all the other grasses but significant negative correlation with the outgroup genera. Two notable exceptions are the grass genera *Streptochaeta* and *Anomochloa* (possibly *Pharus* as well), both of which have significant negative correlation with most other grasses but significant positive correlation with the four outgroup genera and with each other (Figure 3B).

From the morphological analysis, I draw several conclusions. First, the Poaceae (excluding tribes Streptochaeteae and Anomochloeae) form a coherent monobaramin and apobaramin, suggesting that the majority of grass species are members of a single holobaramin. Second, negative baraminic distance correlation indicates that tribes Anomochloeae (1 sp.) and Streptochaeteae (2 spp.) are not members of the grass holobaramin. The position of *Pharus* and the Phareae (14 spp.) is presently unclear. Third and perhaps most important for the advancement of baraminology methods, heavy reliance on molecular sequence data biases baraminic analysis towards too much similarity. I strongly suggest that researchers do not rely too heavily on sequence similarity for determining baraminic relationships.

**Conclusions**

The final step of any baraminology paper is interpreting the analyses and presenting your conclusions. The considerations that went into selecting the group to study should now come back into play. You might consider the geographical distribution of the modern members of your baramin and how it relates to their Flood survival mode. You might also discuss possible diversification theories for an exceptionally large baramin. Relate your group back to the biblical references you already discovered and discuss their impact on both distribution and diversification. Finally, compare your results with the results of other creationist researchers. If you are dealing with a completely new group, discuss the general characteristics of your baramin, such as the number of species, the fossil record or how it compares with conventional taxonomic catagories (such as family, order or tribe).

Interpreting the grass holobaramin is a monumental task, so I will limit my comments to a few points. Junker previously assigned basic type status to the tribe Triticeae.20 Because basic type biology considers only hybridization and lacks a method of identifying discontinuities, a basic type is a monobaramin. Junker found no records of hybridization between species in the Triticeae and other tribes of the grasses. Since I found several intertribal hybridization records involving the Triticeae using the journal *Plant Breeding Abstracts*, I would broaden Junker’s basic type to include all the grasses except Anomochloeae and Streptochaeteae. In a report on the grass species Ring Muhly, the authors speculate that the boundaries of the ‘created kind’ lie within the genus *Muhlenbergia*.42 My results demonstrate that the holobaraminic boundaries of the grasses (including Ring Muhly) are much broader than any single genus.

Lastly, I want to address the question of the diversification of the grass holobaramin, the largest holobaramin identified to date. With 10,000 species, the grass holobaramin easily outnumbers even the biggest mammalian baramins. For example, a recent study places 150 fossil horse species into a single monobaramin.22 The great number of grass species is unlikely to be caused by excessive ‘splitting’ by over-zealous systematists. Instead, the large number of tribes indicates that the diversity is real. The fact that grasses are plants gives a possible clue to the origin of the extreme diversity. Unlike terrestrial animal baramins, many plant baramins survived the Flood with more than two individuals per baramin via debris rafting or preservation as food on the Ark. It is therefore possible that some of the grass diversity dates from before the Flood, possibly even from created diversity on Day 3 of the Creation Week.

Pre-Flood grass diversification would help to make sense of the early grass references in the Bible, particularly the advanced agriculture of Job. The species mentioned could have been preserved as food on the Ark. Some cereal grains might have arisen after the Flood. Archaeological evidence of a post-Flood domestication of barley (*Hordeum vulgare*) could be interpreted as merely diversification within the *Hordeum* genus.43 To clarify the issue of grass diversification, we will need to evaluate the post-Flood fossil record of the grasses.

With the Internet and the BDIST software, nearly any student or professional in biology can do a baraminological analysis of their favorite creatures. As we accumulate more baraminological studies, we will get a clearer picture of what baramins look like and how to identify them better. I pray that this article will help researchers become more familiar with baraminology and that biologists reading this article will seriously consider joining this exciting work.

# Pigs!

***by***[***Jeffrey Dykes***](https://creation.com/jeffrey-dykes)

Pigs. Who would be interested in pigs? Aren’t they just lazy, dirty animals, rolling about in the mud all day?

stock.xchng

Actually, most of the preconceptions we have about these animals are incorrect. It is true that they tend to lie around in the mud (when mud is at hand), particularly when it is hot and sunny. But this is because pigs do not have sweat glands, so cool mud helps to keep their body temperature down, and it also protects them from sunburn.1 Since they have to lie in the cooling mud for long periods sometimes, it is easy for them to be perceived as ‘lazy’.

Pigs are among the most intelligent animals.2 To give an example of their intelligence, in 1984 at Lake Somerville in Texas an 11-year-old boy fell into the lake and almost drowned, but his pet pig ‘Priscilla’ jumped in to save him! Although the boy weighed four times as much as the pig, it successfully managed to pull him out and save him, creating a stir in the newspaper headlines of the area.3

Pigs have a tremendous sense of smell, which is why they are world-renowned for their ability to sniff out truffles—an edible fungus found underground. Perhaps on account of their sensitive noses, pigs are very fastidious when it comes to cleanliness. They always make sure that they make their bedding and perform their elimination needs in separate areas.4

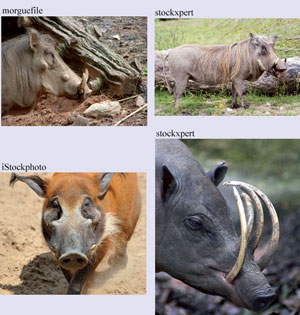
## Lots and lots of pigs!

Photo by David CatchpooleThis little piggy went to market … In Tana Toraja, Indonesia, where the local population is predominantly Christian, pork makes up a significant part of people’s diet. In most other areas in Indonesia, where a majority are Muslims, such a sight as in the above photo would be rare—Islam prohibits the eating of pork.

There is great diversity among pigs, comprising 11 species within the genus Sus (family Suidae). The common domesticated pig is Sus scrofa. Other pig species in the genus Sus include the bearded pig (S. barbatus), the Philippine warty pig (S. philippensis), and the pygmy hog (S. salvanius). Similar animals within the same family include the warthog (Phacochoerus africanus), the bushpig (Potamochoerus larvatus), the red-river hog (Potamochoerus porcus), and the babirusa (Babirousa babyrussa). (Pictured [below](https://creation.com/pigs#below))

The differences within the Sus genus are certainly due to variation and possibly even speciation within a biblical ‘kind’, much like the two dogs/wolves taken on Noah’s Ark have produced descendants as different as the great Dane is from the boxer and poodle. This is not evolution, as we are not seeing a new animal kind being created.5 Dogs are still dogs, pigs are still pigs. It seems highly likely that all of the pig types (i.e. including the genera Sus, Phacochoerus, Potamochoerus, Babirousa) within the Suidae family descended from an original pig kind. (The original created ‘pig kind’ probably looked something like today’s ‘wild boar’.)

Recently, Copenhagen Zoo officials discovered five hybrid piglets in the den of a babirusa, the apparent result of it having mated with a domestic pig ‘who kept it company in its cage’6—indicating that these animals are indeed the same biblical ‘kind’ ([Genesis 1:24–25](https://biblia.com/bible/esv/Gen%201.24%E2%80%9325)).7 So, it seems that Noah did not need to take two babirusa, two bearded pigs, two warthogs, etc., aboard the Ark—he only needed two pigs.

[](https://dl0.creation.com/articles/p056/c05627/5627family_lge.jpg)‘All in the family’: There’s more than the genus Sus in the family Suidae.  
**Top left and right**: warthog (Phacochoerus africanus).  
**Bottom left**: red-river hog (Potamochoerus porcus).  
**Bottom right**: babirusa (Babirousa babyrussa).

Interestingly, when one looks at the distribution of pigs throughout the world today, it fits with them having multiplied and spread out from the Ark’s landing site ‘in the mountains of Ararat’—likely located in modern-day Turkey. Even evolutionists, who don’t believe what the Bible says about a global Flood around 4,500 years ago, say that the indications are that pigs originated in ‘Eurasia’ (the land mass combining Europe and Asia).8 What country sits astride Europe and Asia? Turkey!

Recent genetic analysis of wild and cultivated pigs has led researchers to conclude that pigs have been domesticated at least seven times, across multiple ‘centers of domestication’ across Eurasia.9,10 Note, though, that the evolutionary mindset is that from the time animals evolved, they’ve always been ‘wild’ until man developed a more ‘advanced’ brain and could domesticate them. In contrast, the biblical view is very different. The fact that man can, and has, ‘tamed all kinds of animals’ ([James 3:7](https://biblia.com/bible/esv/James%203.7)), including pigs, reflects the original stewardship responsibility/authority of God’s original created order ([Genesis 1:28](https://biblia.com/bible/esv/Gen%201.28)).

And the fact that today’s domestic pigs can readily colonize ‘wild’ areas (i.e. becoming ‘feral’, e.g. as they have done since European settlement of Australia) shows us how simple it was for animals to have moved out into the ‘wild’ after the Flood. It also shows that our domestic animals, though having been bred11 for thousands of years, are not that different from wild animals. Wild pigs and domestic pigs are the same kind.

## Are we related to apes or pigs? (Neither!)

Evolutionary teaching has claimed for decades that the apes are our closest living relatives. But it is interesting to note that when humans are in need of an organ transplant and there is a shortage, sometimes an animal is considered to fill the role (xenotransplantation), and, from an evolutionary standpoint, one would think that the ape would be the first animal to turn to. However, it is the pig that has proven to be the most successful animal for this purpose.12 Note, too, that the similarities in digestive tracts of humans and pigs renders us vulnerable to many of the same parasites (incidentally, the Levitical prohibition on swine ([Lev. 11:7](https://biblia.com/bible/esv/Lev.%2011.7)) makes practical sense, in that light). If evolutionary theory said that pigs were close evolutionary relatives of humans, then evolutionists might well be loudly proclaiming the similarity of parasites and digestive systems as evidence of evolution! But it doesn’t, so they don’t.

## Evolution’s long-and-lanky pig tale

The absence of evidence (e.g. undisputed transitional fossils) for pig evolution does not deter evolutionists from proclaiming evolution.

Evolutionists state that pigs are an offshoot of the Artiodactyla—animals with an even number of toes, which supposedly evolved around 40 million years ago. The artiodactyls allegedly evolved from the condylarths, painted by evolutionists as the first herbivorous mammals. And to show the absurdity of the evolutionary ‘system’, it is alleged that one of the most closely related animals to the pig is the whale!13

The absence of evidence (e.g. undisputed transitional fossils) for pig evolution does not deter evolutionists from proclaiming evolution. Typically, there is a grand amount of authoritative-sounding, ‘just-so’ story-telling with no substance to back it up. Is there evidence of speciation among the Suidae family? Yes. But speciation is not evolution.14

Pigs have always been pigs, ever since the first pigs were created on Day 6 of Creation Week alongside man. The variety evident in pigs lies within the limits of the created kind,15 thus preventing a pig from becoming anything other than a pig. This observable fact testifies to the truth of the Creation account in the Bible—for those who are sufficiently ‘open-minded’ to see it.

## Pigs and ‘ape-men’

A picture containing outdoor, mammal, sketch, black and white

Description automatically generated

One of the most embarrassing retractions that evolutionists have ever had to make centred around a pig. In 1922 geologist Harold J. Cook contacted Dr Henry F. Osborn of the American Museum of Natural History in New York, informing him that he had discovered a Pliocene tooth in Nebraska. Dr Osborn believed it represented the first ape-man found in North America.1,2

A new species name was created (dedicated to its discoverer)—Hesperopithecus haroldcookii. Imaginative artists, as in the example above, portrayed the new ‘hominid’ with simian ears, nose, hair, and using primitive tools while stooping in ‘ape-man’ fashion. For several years this tooth was touted as ‘proof’ of evolution until 1927, when it was reluctantly decided that the tooth belonged to an extinct peccary (or pig)!3,4

### References

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2. Taylor, I., [‘Nebraska Man’ revisited](https://creation.com/nebraska-man-revisited), Creation **13**(4):13, 1991; <creation.com/nebraska>.
3. Gregory, W., Hesperopithecus apparently not an ape nor a man, Science **66**(1720):579–581, 1927.
4. Gish, D., Evolution: The Fossils Still Say No! Institute for Creation Research, California, p. 328, 1995.

**Editor’s note:** As *Creation* magazine has been continuously published since 1978, we are publishing some of the articles from the archives for historical interest, such as this. For teaching and sharing purposes, readers are advised to supplement these historic articles with more up-to-date ones suggested in the Related Articles and Further Reading below.

**Tuatara—confined to its kind!**

wikimedia.org

It looks like a lizard, but it croaks like a frog. It can go for an hour without taking a breath. And it is commonly said to live up to 300 years.1

There are many unusual features about this reptile called a tuatara, which is now found only on a few rocky offshore islands in New Zealand. It can withstand temperatures as low as 7 deg. C (45 deg. F)—which is the lowest temperature recorded by any reptile. In these cold conditions its movements become so slow it has been known to fall asleep in the middle of munching a mouthful of insects.

The tuatara can reach a length of 60 cm (two feet), and often shares its burrow with a bird—the petrel. When the female tuatara lays her eggs, they receive no attention from the parents, and can take 15 months to hatch. This is the longest incubation period known for a reptile. Growth rate is also slow; the tuatara doesn’t reach maturity until it is 20 years old, and it continues to grow until it is 50.

Apart from the fact that these reptiles seem to have become smaller in size, they appear to be virtually the same today as they always have been.

But the tuatara is best known to scientists for an even more amazing reason. It definitely has not evolved! Fossils of a creature virtually identical to the tuatara have been found in rocks which evolutionary geologists date at 200 million years old.2

Apart from the fact that these reptiles seem to have become smaller in size, they appear to be virtually the same today as they always have been.

While evolutionists believe mutations and natural selection have occurred to the degree required to bring about all the living things we see today from a first microscopic form of life, the tuatara is excellent evidence against this. It is good evidence for creation, for the tuatara has simply reproduced ‘after its kind’—just as Genesis says all creatures would.

Fish, swim! Birds, fly!—Day 5

***by***[***Russell Grigg***](https://creation.com/russell-m-griggs-biography)

Published in [*Creation* **28**(4):44–47](https://creation.com/creation-magazine-table-of-contents-284), 2006

Then God said, “Let the waters teem with swarms of living creatures, and let birds fly above the earth in the open expanse of the heavens.” And God created the great sea monsters, and every living creature that moves, with which the waters swarmed after their kind, and every winged bird after its kind; and God saw that it was good. And God blessed them, saying, “Be fruitful and multiply, and fill the waters in the seas, and let birds multiply on the earth.” And there was evening and there was morning, a fifth day’ [**Genesis 1:20–23**](https://biblia.com/bible/esv/Gen%201.20%E2%80%9323)**.**

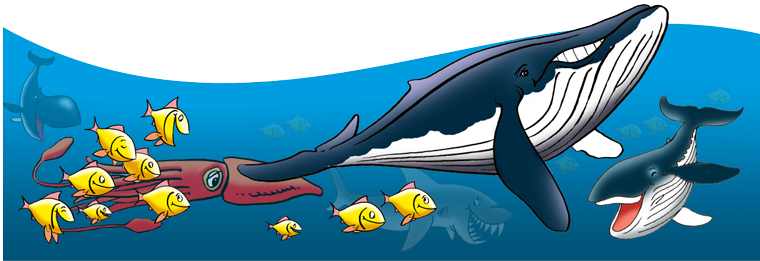
On the fifth day of Creation Week, the earth was ready to support animal life. God had made water, soil, air, and plants and fruits for food. He had also created the sun to give light and warmth. Now God created Earth’s first inhabitants—the animals that live in the sea and those that fly in the air. Once again He simply commanded them all to come into being, and they did!

All the sea creatures

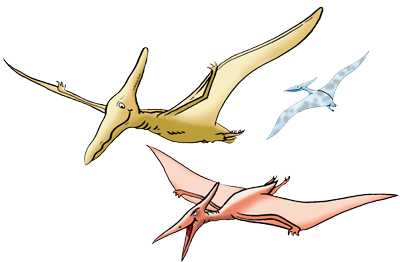
When God spoke, the sea was suddenly teeming with every kind of creature that lives there—tiny ones called krill, small fish like sardines, medium-sized fish like salmon, bigger fish such as marlin and swordfish, and much larger creatures like whales and plesiosaurs. God also made jellyfish and eels, corals and crabs, octopuses and porpoises, and all the others too.

Some people say that whales evolved from an animal like a cow or from some other land animal that decided it wanted to start living in the sea and eating seaweed or other sea creatures instead of grass. But why would it do that? There is no convincing evidence to support this idea. And God tells us that He did not make the land animals until Day 6.

Did you know that the vast majority of fish don’t eat each other, but eat underwater plant material like seaweed, algae (like green rock slime), and drifting tiny plants called plankton (really phytoplankton).



All the flying creatures

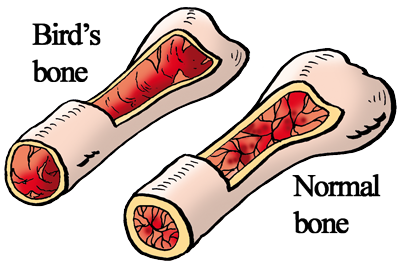


Suddenly, too, at God’s command, there were all sorts of flying creatures—birds like parrots, pigeons and poultry; flying insects like butterflies, bees and bugs; as well as bats (which are mammals); and the flying reptiles we call pterosaurs. What a marvellous sight it must have been! What a marvellous sound there must have been when the birds began to sing!

God made these creatures with four different types of wings. Birds’ wings are made of feathers; insects’ wings are made of membranes or thin scales; bats’ wings are made of skin stretched over long arm and hand bones; while for pterosaurs’ wings the skin was stretched over a long fourth finger bone.

Flight feathers are remarkable features. When a bird raises its wing, the feathers move apart to let the air through and reduce resistance. But on the downstroke the feathers close completely, thus greatly improving lift. Also, a bird can vary the shape of its wings for more efficient take-off, flapping, gliding and landing.

People who don’t believe in a Creator have no explanation for the remarkable design features of feathers. Most of them claim that a reptile’s scales changed into feathers. But no fossil showing a transition from scale to feather has ever been found.

God designed bird and human bones for their special functions. Bird bones are much lighter.

God cares for all

God was pleased when he looked at what He had made on Day 5. Not only did He say it was good, He also blessed the fish and the birds, and commanded them to reproduce—each to make baby animals just like itself. Although God does not love animals in the same way that He loves people, He still notices when a sparrow falls to the ground ([Matthew 10:29](https://biblia.com/bible/esv/Matt%2010.29)), and He cares for them. How much more God cares for you and me!

‘After its kind’

The Bible tells us that God made each one of these animals ‘after its kind’. Those people who do not believe that God created say instead that one kind of animal evolved into another kind all by itself.

Dinosour did *not* evolve into birds. God created dinosaurs and birds separately

But there is no evidence that one kind of animal ever changed into a different kind. In the beginning, there was no evolutionary struggle for existence, with death and disease over millions of years.

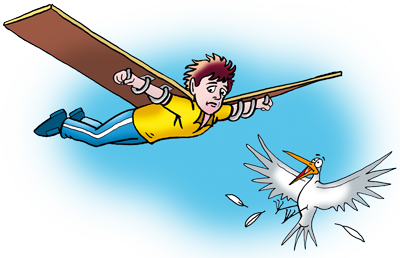
Fish did not arise or come into being from a worm in an ancient pond, and birds did not come from dinosaurs. The Bible says God created *all* of the birds *before* He created *any* of the land animals. If animals made themselves from other animals over long periods of time, we should find millions and millions of fossils of ‘half-way’ animals, but we don’t!

The theory of evolution says that sea life came first, then land plants, then land animals, then birds. But God says that He made plants first, then sea life and birds together. God did not use evolution to create over millions of years.

God’s unlimited knowledge, wisdom and power are seen much more clearly in His creating everything in a short time than if He had used a long-drawn-out, cruel, evolutionary process. Until Adam sinned by disobeying God, no animal died and no human died.

On Day 5, God simply gave the order that there should be living creatures in the sea and in the air, and they came into being. God’s powerful Word was fulfilled exactly the way He said.

Why can birds fly and we can’t?

People’ bodies have heavy bones and were designed to live on land, not in the air.

God designed birds to fly, but He designed us differently. Birds have light bones which are mostly hollow, with cross-members to give strength. Our bones are heavy and solid because they have to support us when we walk, run and jump. Even a bird’s beak is designed to save weight. It is made of lightweight material called keratin (which is in our hair and in a rhino’s horn); our jaws are made of heavy bone.

Birds have strong chest muscles to flap their wings; we don’t. Birds have special lungs with tiny one-way tubes; our lungs don’t. Our lungs get all the oxygen we need for us to run around on the ground, while birds’ lungs are designed to get the extra oxygen that birds use for flight. In the air, birds’ bodies are streamlined to cut wind resistance; our bodies are not shaped for flight. This hasn’t stopped men from trying to fly by jumping off bridges and flapping boards attached to their arms. But it was only last century that men learned how to make and fly airplanes, by observing the birds that God made.

Activity

**Light and heavy bones; flight or flop**

|  |  |  |  |
| --- | --- | --- | --- |
| [Man based their designs for flight on birds](https://dl0.creation.com/articles/p048/c04894/4894bones_activity.jpg)Click image to enlarge | |  | | --- | | [Quiz answers](https://creation.com/fish-swim-birds-fly-day-5#answersfooter) | | [Click here for answers](https://creation.com/fish-swim-birds-fly-day-5#answersfooter) | |

Which animals in the above picture would have light bones?

Why are these animals bones light?

God created Adam and Eve and land animals on Day 6.

Adam and the animals—Day 6

***by***[***Russell Grigg***](https://creation.com/russell-grigg)

Published in [*Creation* **29**(1):40–43](https://creation.com/creation-magazine-291-contents), 2006

‘Then God said, “Let the earth bring forth living creatures after their kind: cattle and creeping things and beasts of the earth after their kind”; and it was so. And God made the beasts of the earth after their kind, and the cattle after their kind, and everything that creeps on the ground after its kind; and God saw that it was good. Then God said, “Let Us make man in Our image, according to Our likeness; and let them rule over the fish of the sea and over the birds of the sky and over the cattle and over all the earth, and over every creeping thing that creeps on the earth.” And God created man in His own image, in [the image of God](https://creation.com/store_redirect.php?sku=30-9-012) He created him; male and female He created them. And God blessed them; and God said to them, “Be fruitful and multiply, and fill the earth, and subdue it; and rule over the fish of the sea and over the birds of the sky, and over every living thing that moves on the earth.” Then God said, “Behold, I have given you every plant yielding seed that is on the surface of all the earth, and every tree which has fruit yielding seed; it shall be food for you; and to every beast of the earth and to every bird of the sky and to every thing that moves on the earth which has life, I have given every green plant for food”; and it was so. And God saw all that He had made, and behold, it was very good. And there was evening and there was morning, the sixth day.

‘And the man gave names to all the cattle, and to the birds of the sky, and to every beast of the field, but for Adam there was not found a helper suitable for him. So the LORD God caused a deep sleep to fall upon the man, and he slept; then He took one of his ribs, and closed up the flesh at that place. And the LORD God fashioned into a woman the rib which He had taken from the man, and brought her to the man.



‘Now the man called his wife’s name Eve, because she was the mother of all the living’ ([Genesis 1:24–31](https://biblia.com/bible/esv/Gen%201.24%E2%80%9331); [2:20–22](https://biblia.com/bible/esv/Genesis%202.20%E2%80%9322); [3:20](https://biblia.com/bible/esv/Genesis%203.20)).

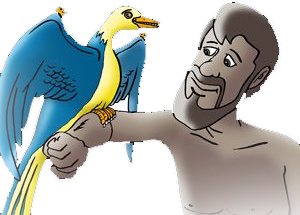
The bible says that on the sixth day of Creation Week, God made all the animals that live on the land. He did this by commanding the earth to ‘bring forth’ the land animals, and it did so.

God made animals of special use to us, like cows, sheep and horses. He made small animals like squirrels and spiders, rabbits and mice, frogs and lizards. And beasts, like apes and elephants, and lots more. On this day, God also made all the different kinds of dinosaurs. All appeared immed­iately at God’s command, and all lived peacefully together. What a sight it must have been!

How do we know God made the dinosaurs when the Bible does not mention ‘dinosaurs’? The Bible does not mention giraffes, elephants or kangaroos either, yet we know God made these land animals on Day 6. We know God made dinosaurs on Day 6 because dinosaurs are land animals too.

Did these animals struggle and evolve over millions of years? No! The Bible tells us that God made each animal ‘after its kind’. This means that God gave each animal the power to make baby animals just like itself. But one kind could not change into a different kind, either then or now. Rabbits have baby rabbits, not baby kangaroos! And the same is true for every other animal. When dinosaurs laid their eggs, baby dinosaurs hatched out, not baby birds!

The first man—Adam



The earth was now ready to be the home for God’s greatest creation, the first human beings—Adam and Eve. But before this, God had a little chat. He said, ‘Let us make man in our image.’ Who could He have been talking to? Not to the angels, as we are not made in their image. And not to any of the animals, like the apes, because we are not made in their image, either.

It must have been a conversation among the three Persons of the Trinity: Our heavenly Father, the Lord Jesus, and the Holy Spirit. (The Hebrew word for ‘God’ in [Genesis 1](https://biblia.com/bible/esv/Gen%201) indicates more than one Person.) Why? Possibly to show how special man is, and that he is absolutely different from all the animals, because in him there is something of the nature of God.

Man is special

We are like God in many ways, and unlike the animals in many ways.

1. ‘God is spirit’ ([John 4:24](https://biblia.com/bible/esv/John%204.24)), so, unlike the animals, you have an eternal, immortal spirit. You can be filled with God’s Holy Spirit. And you can pray to God directly.
2. ‘God is love’ ([1 John 4:8](https://biblia.com/bible/esv/1%20John%204.8)), so you can love and worship God, love other people, and know His love for you. Animals cannot do this.
3. ‘God is good’ ([Psalm 34:8](https://biblia.com/bible/esv/Ps%2034.8); [1 Peter 2:3](https://biblia.com/bible/esv/1%20Pet%202.3)). God is holy and perfect—this means He never does anything that is wrong—and He commands us to be holy and perfect too ([Leviticus 11:44–45](https://biblia.com/bible/esv/Lev%2011.44%E2%80%9345); [Matthew 5:48](https://biblia.com/bible/esv/Matt%205.48)). Unlike the animals, people have a conscience which tells us what is right and what is wrong.



We are different from the animals in many other ways, too.

1. We can talk with other people (as well as with God). Animals signal warnings, aggression or friendship to each other by the sounds they make, by the way they stand or move, by facial expressions, and by odour. However, animals can’t speak (or write!) a true language. (It is not an animal who wrote this or is reading it!)
2. We can choose what we want to do. Animals do things by instinct (Jude v. 10).
3. We can comfort others in their sorrows and laugh with others in their joys. One animal may help another, but they do not run first-aid clinics or hospitals.
4. We can cook our meals, using fire (or electricity). Animals are scared of fire.
5. We can cultivate the fields, planting and reaping crops.
6. We can invent complex things like computer games, musical instruments, paintings, mathematics and aircraft, and use clocks to measure time. Animals may make nests or burrows, but this is the limit of their creativity.

God knew that the time would come when God the Son would become a man and live on the earth in the person of Jesus Christ. He gave the first man, Adam, the sort of body in which the Lord Jesus Christ would one day appear.

The first woman—Eve

To make the first woman, God did something very special. He caused Adam to fall into a deep sleep. Then He took one of Adam’s ribs and, with great wisdom and skill, from this He built the lovely lady who was to be Adam’s helper and wife. When God gave her to Adam, it was love at first sight! Adam named her ‘Eve’, which means ‘life’, because she would become the mother of the whole human race. Everybody who has ever lived since then has descended from her.

Don’t worry about Adam. God knew what He was doing in removing a rib—this is the only bone in our body that will grow back if it is removed. And their children were not affected—so men and women today have the same number of ribs.

God blessed Adam and Eve and told them to have many children and fill the earth. So it was God who designed marriage of a man and a woman, and the family unit, way back in Genesis.

God also told Adam and Eve to look after the earth. God wanted people, who had been made in His image, to care for the earth and everything in it on His behalf. We were meant to find out all about the earth and to use this knowledge for the benefit of people and animals, in a way that was pleasing to God.

Lots of things to eat—Yum!

Adam and Eve lived in a lovely garden in a place called Eden. And what did they eat? God told Adam they were free to eat from any tree in the garden, except the tree of the knowledge of good and evil. This supply would never run out, as God had programmed the plants and trees (when He made them on the third day of Creation Week) to keep on reproducing through their seeds.

The animals, too, were to obtain their food from ‘every green plant’. So God said in the beginning that neither man nor animals should eat meat. It was only after the Flood, in Noah’s time, that God told man he could eat meat ([Genesis 9:3](https://biblia.com/bible/esv/Gen%209.3)).

Everything on Day 6 was beautiful and perfect for God’s purpose. Nothing God had made was bad or evil. There was no struggle for existence, no disease, no suffering, no sin, and, above all, **no death of people or animals!**

During Creation Week, God looked at what He had made and called it ‘good’ six times. Now, on the sixth day, with everything finished, God looked again and joyfully said, ‘Very good!’



Dinosaur

The word ‘dinosaur’ is not in the Bible because the word was not invented until about 165 years ago. However, a dinosaur-like animal called behemoth is described in [Job 40:15–19](https://biblia.com/bible/esv/Job%2040.15%E2%80%9319), and another called leviathan in [Job 41](https://biblia.com/bible/esv/Job%2041). The Hebrew words commonly translated ‘dragon’ appear in the Old Testament (King James Version) over 30 times. Modern versions like the NIV often use ‘monster’ ([Psalm 74:13](https://biblia.com/bible/esv/Ps%2074.13); [Isaiah 51:9](https://biblia.com/bible/esv/Isa%2051.9)). From the Bible we can see that man and dinosaurs once lived together.

ActivitiesCreation for Kids Activity

Click [](https://dl0.creation.com/articles/p051/c05161/5161game.pdf) to print the Adam and Eve puzzle

# A new weed species—does it prove Creation wrong?

***by***[***Philip Bell***](https://creation.com/philip-bell)***, AiG–UK***

3 March 2003  
subsequently revised to appear in Creation [**25**(3):27](https://creation.com/creation-magazine-table-of-contents-253)

Two British scientists have just reported their findings of a new species of a type of weed known as a groundsel. The title of their paper[1](https://creation.com/a-new-weed-species-does-it-prove-creation-wrong#r1) seems innocuous enough, merely stating that this new weed—Senecio eboracensis—is a hybrid between two other groundsel species. Yet a commentary in The Times of London proudly proclaimed this as a demonstration of ‘evolution in action’. Furthermore, in a not-too-subtle stab at believers in Biblical Creation, the author stated that the weed’s discovery confirms that ‘Darwin was right and the creationists are wrong’![2](https://creation.com/a-new-weed-species-does-it-prove-creation-wrong#r2)

Picture of S. vulgaris, the common groundsel:



Source:  
http://www.biology4all.com

But does the formation of a new species (i.e. ‘speciation’) really conflict with Scripture? Not at all, as we have repeatedly shown. Rapid diversification within the Genesis kinds—including speciation—is a specific prediction of the Creation model (see [What are the evolution and creation models?](https://creation.com/article/3256#what), the [*The Creation Answers Book*](https://creation.com/store_redirect.php?sku=10-2-505), and other articles in [Q&A: Speciation](https://creation.com/speciation-questions-and-answers)).

Following the global Flood at the time of Noah, plants, animals and people spread out into the new world, and adaptation to new habitats and niches would be expected. God’s created capacity for genetic variability, coupled with the stresses and challenges of new and changeable environments in the post-Flood world, is likely to have resulted in many new varieties of creatures—but this is not evolution of the ‘big-picture’ sort that is required to turn fish into frogs or badgers into biologists.

Interestingly, the Times article stated:

‘The creation of new species can takes [sic] thousands of years, making it too slow for science to detect.’

However, this evolutionary belief does not fit with documented cases of speciation events occurring well within a human life-time (see also [Speedy species surprise](https://creation.com/speedy-species-surprise) and [Brisk Biters](https://creation.com/brisk-biters-creation-magazine)).

In this particular case, the hybrid weed, dubbed the York Groundsel,[3](https://creation.com/a-new-weed-species-does-it-prove-creation-wrong#r3) is apparently unable to breed back to either of its parent species, the Common Groundsel and the Oxford Ragwort.[4](https://creation.com/a-new-weed-species-does-it-prove-creation-wrong#r4) This reproductive isolation is not evolution of the sort which would be capable of eventually turning microbes into magnolias and microbiologists. That sort of change requires the generation of new genetic information in the DNA. Rather, a hybrid—or cross between two species—results from the recombination of existing information from both parent species; no new information has been generated (see also [Ligers and wholphins? What next?](https://creation.com/ligers-and-wholphins-what-next)). What the Times article also fails to mention is that Dr Richard Abbott (who co-authored the paper about the York Groundsel) has previously reported that the Oxford Ragwort parent species is actually itself a hybrid and ‘not a true species’.[5](https://creation.com/a-new-weed-species-does-it-prove-creation-wrong#r5)

Darwin was correct to point out that natural selection may produce new varieties of organisms, which might then sometimes even go so far as to generate new species. However, he mistakenly extended his biological observations as part of his grand theory to explain the origin of the major kinds/types of plants and animals. To promote this ‘scruffy little weed’ as answering the ‘Creation or evolution?’ question, shows a very superficial understanding of what creationists actually believe, and more importantly, what the Bible actually says, ([Genesis 1:11](https://biblia.com/bible/esv/Gen%201.11)):

‘And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after its kind, whose seed is in itself, upon the earth: and it was so.’

In the last analysis, groundsels breeding groundsels is not evolution—that’s groundless!

**Editor’s note:** As *Creation* magazine has been continuously published since 1978, we are publishing some of the articles from the archives for historical interest, such as this. For teaching and sharing purposes, readers are advised to supplement these historic articles with more up-to-date ones suggested in the Related Articles and Further Reading below.

**Bats: sophistication in miniature**

***by***[***Paula Weston***](https://creation.com/paula-weston)

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When it comes to hunting and catching prey, few creatures use a system as complex and highly specialized as that of the insect-eating bats.

These small bats (of the sub-order Microchiroptera) rely on echolocation, or ‘bat sonar’ as it is commonly called, for hunting in the dark.

The bat sends out a high-pitched sound, then listens for the echoes reflected from nearby surfaces and objects. By detecting its own reflected sounds, often among other distracting noises, the small mammal is able to avoid obstacles, and obtain the information necessary for tracking and catching an insect. This amazing system can accurately discriminate between an individual insect and any others close by.1

To achieve this, the bat has a number of very special features. These include a specialized larynx (an organ in the throat) which allows it to produce intense, high-frequency sounds (ultrasound). High frequencies (i.e., short wavelengths) are essential so the bat can determine the fine details of the objects which reflect the sounds.1

From the echoes of the ultrasonic sound pulses, the bat determines not only the distance and direction of its prey, but also its speed, size, shape and surface texture—all while in full flight.

From the echoes of these ultrasonic sound pulses, the bat determines not only the distance and direction of its prey, but also its speed, size, shape and surface texture, all while in full flight.2

The bat’s large external ears act as efficient collectors and resonators of the high-pitched sounds.1 Its internal ear mechanisms are highly sensitive. The process also requires a sophisticated integration of the vocal and auditory centres of the brain.3 Not only must the nervous system of the bat analyze, in a few thousandths of a second, the reflected sound of its own pulse, it must separate this echo from those sent out by other bats, and from others of its own pulses4 This is an astonishing technological feat.



**Bats have always been bats**

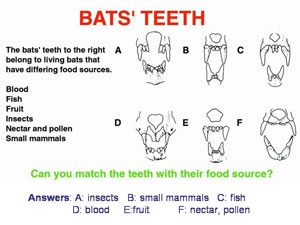
The ‘earliest’ bat fossils (i.e. those buried lowest in the geologic record) come from the Eocene layers. According to evolutionary reasoning, these are roughly 50 million years old. Yet they are 100% bats (there is no trace of any partway development of the wing, for instance). They show evidence of having had fully functioning echolocation.

The species usually given in textbooks as the ‘earliest bat’ is *Icaronycteris index*from North American Eocene. However, more recently, specimens from the (likewise Eocene) Messel oil shale pit in Germany have shown many more interesting features. Shown here from the Messel shales is *Palaeochiropteryx tupaiodon*, featured in German creationist Dr Joachim Scheven’s *Lebendige Vorwelt*museum. Note that this ‘oldest bat’ is as specialized and ‘evolved’ as any of today’s bats.

For echolocation to work successfully, both emitting and receiving organs within the bat’s skull must co-operate. This fact makes life difficult for evolutionists attempting to explain how the bat developed its sonar, or, more importantly, how the species survived as a hunter while this supposed evolution was taking place.

Things are even tougher for the evolutionist with the knowledge that the ‘oldest known’ complete fossils of bats (actually, all this means is that they are the lowest found so far in the geologic record), of so-called Eocene age, show indications of a fully-developed echolocation system. According to the evolutionary time scale, these bats (which, by the way, look essentially the same as modern bats) lived around 50 million years ago!5

[Dr Duane Gish](https://creation.com/duane-gish), in his book [*Evolution: The Fossils Still Say NO!*](https://creation.com/store_redirect.php?sku=10-2-019), explains how evolutionists believe the development of flight in mammals took millions of years, from a number of rare ‘good’ mutations produced randomly among an ocean of bad mutations.

after A.H. Mueller, *Lehrbuch der Palaeozoologie*, 1959, p. 41[](https://dl0.creation.com/articles/p002/c00205/205bat_teeth_large.jpg)Click [here](https://dl0.creation.com/articles/p002/c00205/205bat_teeth_large.jpg) for larger view

**Match the bat’s teeth**

We are often led to believe that such and such a fossil animal must have eaten a certain type of diet because ‘we know from the shape of its jaws and teeth’. However, the examples here suggest that it is not possible to be dogmatic about this. It is obviously relevant to discussion of what various animals were eating before the Fall, and how this may have altered afterwards, as the [‘dracula’](https://creation.com/the-dracula-connection-to-a-young-earth-creation-magazine) article explores for vampire bats.

The Bible indicates that animals were not fighting and eating each other before the sin of Adam. We see here that teeth are, of themselves, no reason to insist that an animal may not be (or once have been) a plant eater. For a fuller discussion, see The *Creation Answers Book*.

This process supposedly converted the forelimbs of the land-dwelling ancestor of the bat into wings, as four fingers of each hand gradually reduced in length. The wing membrane also had to be generated by a series of ‘good’ mutations which also produced, step by step, flight muscles, and the numerous unique arrangements of tendons, nerves and blood vessels required for the specialized features of the bat.6

If this were true, Gish argues, the fossil record would produce a series of transitional forms documenting intermediate stages, revealing, for example, the gradual conversion of forelimbs to wings as the fingers became longer and longer.

However, no such evidence linking bats to ground-dwelling mammals exists. Evolutionists simply describe bats as being ‘already highly evolved when they first appeared in the fossil record.’7 As mentioned above, the ‘earliest’ bat skeletons, supposedly 50 million years ‘old,’ are virtually indistinguishable from living bats, with fully formed wings.

Bats belong to the mammalian order Chiroptera, which comprises two sub-orders, the Microchiroptera (as described earlier), and the Megachiroptera (megabats), comprising larger bats including flying foxes, or fruit bats. Unlike the Microchiroptera, the Megachiroptera, though they also usually fly at night, mostly locate their food by sight, except for one genus, which echolocates like the smaller insectivorous bats.

These two groups pose an interesting problem for evolutionists. They have so many features in common that it was naturally assumed that they must have inherited these features from the same (common) ancestor. However, the brains of megabats have very specialized visual pathways which are very much like those of primates, the order into which apes, monkeys and humans are classified.8 So evolutionists cannot explain *both*these lots of similarities by saying they came from a common ancestor. Either the megabats had a common ancestor with primates (in which case their similarities to the other bats is *not* due to common ancestry) or they had a common ancestor with each other. In which case, the similarities to primates didn’t come from having the same ancestor. In each case, the only alternative to common ancestry would be to invoke what is called ‘parallel’ evolution, the belief that the same features just happened to evolve twice, responding in the same way to the same environmental circumstances, by ‘luck of the draw’ genetic mistakes (mutations).

Such ‘parallel evolution,’ i.e. evolution repeating itself, causes huge difficulties for thoughtful evolutionists. Harvard University’s Stephen J. Gould writes:

‘… the pageant of evolution [is] a staggeringly improbable series of events … utterly unpredictable and quite unrepeatable … the chance becomes vanishingly small that anything like [for example] human intelligence would grace the replay [of this pageant].’9

However, the biblical account of creation can reconcile all this data. The book of Genesis recounts how each beast was created ‘after its kind.’ The various families of bats were created as separate ‘kinds.’ The similarities between the megabats and other bats are due to common design, not common ancestry. The similarities between the visual pathways of megabats and primates are also because they came from the same designer, not because they have a common ancestor.

Belief that bats were created just as Genesis recounts is not a blind faith, but one which is consistent with the evidence.

wikipedia,org

**Interesting facts from the bat-file**

* Contrary to mythology, bats do not get entangled in human hair, and are not blind.
* With more than one thousand species, bats make up almost a quarter of all known mammal species.
* Many bat species are in alarming decline and/or threatened with extinction.
* Many plants are dependent on bats for pollination; other plants benefit from seed dispersal by bats.10
* The smallest mammal in the world is Thailand’s bumblebee bat; it weighs less than a 1c coin.11
* The giant flying fox of Indonesia can have a wingspan of nearly 1.8 metres (six feet).
* The echolocation of fishing bats is able to detect a minnow’s fin, as fine as a human hair, extending only 2 mm above the water surface. This is because bats can distinguish ultrasound echoes very close together. Man-made sonar can distinguish echoes 12 millionths of a second apart, although with ‘a lot of work this can be cut to 6 millionths to 8 millionths of a second.’12 But bats ‘relatively easily’ distinguish ultrasound echoes only 2 to 3 millionths of a second apart according to researcher James Simmons of Brown University.12 This means they can distinguish objects ‘just 3/10ths of a millimetre apart—about the width of a pen line on paper.’12
* The free-tailed bats of Mexico can be seen hunting at two miles (more than three kilometres) in altitude. They can ride tailwinds to fly at more than 100 km/h (60 mph).
* One small brown bat can catch 600 mosquitoes in an hour. The 20 million bats in the Bracken Cave of Texas eat 250 tons of insects each night. As bat numbers diminish, the use of chemical insecticides increases.