THE GENESIS KINDS IN THE MODERN WORLD

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In the first chapter of Genesis we read that the basic types of plants and animals appeared upon our earth through an act of special fiat creation. These basic types are described as not only being formed each after its specific morphological pattern, but in the case of the plants, also with a reproductive mechanism which caused each type to produce new individuals like itself.

The briefness of this Genesis account of origins gives opportunity for the development of at least two schools of interpretation with regard to the degree of fixity in nature indicated by this terse record. During the Middle Ages or medieval period of history, from about 400 A.D. to 1400 A. D., the opinion prevailed among scientists that the statements of Genesis declared that in reproduction the new individuals of a kind were as like as pennies from a mint. With regard to origins, the general premise was always the assertion of extreme fixity. In certain theological centers this idea resisted the changes of the Renaissance and the shift to the inductive method of reasoning, and was still taught as dogma to the students of theology at Cambridge when Charles Darwin was graduated from the department of theology in that university in 1831.

At Cambridge, Darwin was also taught that all modern forms of plants and animals had been created and set down in the very pattern of geographical distribution in which we find them today. Actually there is no Scriptural ground for this latter teaching. However, these two bits of dogma were presented to the students in theology at Cambridge as the only orthodox understanding of Christians on these points. Accoutered with these extreme views of special creation, Darwin went forth on his five-year circumnavigation of the globe as a sincere creationist naturalist.

During the progress of that voyage he carefully observed the abundant evidences that species varied considerably usually in proportion to the degree of isolation from their relatives. He became more and more troubled about the concept of fixity of the kinds which he had been told was the teaching of Genesis. We wish that Charles Darwin had studied Genesis for himself and seen the actual harmony between the Bible and nature. After pondering over the problem for years; he finally reached the tragic decision, to abandon the idea of the fiat creation of basic types of organisms.

This decision was reached in the year 1844. At that time, in a letter to his lifelong friend, the botanist Joseph Dalton Hooker, he said:

> I had read heaps of agricultural and horticultural books and have never ceased collecting facts. At last gleams of light have come, and I am almost convinced (quite contrary to the opinion I started with) that species are not (it is like confessing a murder) immutable.[1]

A second school of interpretation with regard to the degree of fixity within the kinds indicated by the statement of Genesis is based upon the opinion that the book of nature and the Written Word shed light upon each other. Correctly interpreted these two sources of truth *do* agree. They have the same Author. The Bible itself directs us to go to nature for confirmation of profound verities. In Job 12: 7-11 we read:

> But ask now the beasts, and they shall teach thee; and the fowls of the air, and they shall tell thee: or speak to the earth, and it shall teach them: and the fishes of the sea shall declare unto thee. Who knoweth not in all these that the hand of the Lord hath wrought this? In whose hand is the soul of every living thing, and the breath of all mankind.

Therefore, the members of this school of interpretation go first to the Scriptures and learn that the statements of Genesis neither exclude the possibilities of variation within the kinds, nor do they assert that plants and animals were created in their present details and set down in the areas where we find them today. Then turning to nature these students find that Darwin was entirely correct in his observation of migration over the earth accompanied with variation. What Darwin failed to observe was that variation is not without bounds, and is definitely limited in each case to the locus of its basic type or Genesis kind. All individuals of even abundantly variable forms, such as men and dogs, are unquestionably in every instance *bona fide* members of their respective basic types.

Because of his outstanding ability and because of his great contributions to the basic science of taxonomy, believers in special creation are always glad to recall that the Swedish botanist Carolus Linnaeus, 1707-1778, was a creationist. Interestingly it is not unusual even in our day to find people who are of the opinion that he was specially endowed by heaven in his ability to point out the created units or Genesis kinds among living forms. However, an endeavor to learn just what classification groups in nature were considered by Linnaeus to be the Genesis kinds is likely to end in some confusion because during his life he published at least two points of view on the loci of the basic created units. During the most active period of his life we find in the first eleven editions of his *Systema*

Naturae, beginning in 1735, the following assertion:

"We count as many species as have been created from the beginning; the individual creatures are reproduced from eggs, and each egg produces a progeny in all respects like the parents."

Linnaeus realized the difficulty of determining natural affinities and did, in my opinion, make mistakes in his endeavor to distinguish the created kinds in nature. Illustrations here would be his assignment of different species names to the American Bison and the European Bison, and to Spring Wheat and Winter Wheat.

In his later life, after a great deal of observation of the bordering of some species on one another, and particularly as a result of his own experiments in hybridization, he changed his opinion of the created unit. From his twelfth and last edition of *Systema Naturae,* 1768, he omitted the statement, "No new species arise." Then in his *Systema Vegetabilium*. published in 1774, four years before his death. we read the following interesting opinion regarding the original created units:

"Let us suppose that the Divine Being in the beginning progressed from the simpler to the complex; from few to many; similarly that He in the beginning of the plant kingdom created as many plants as there were natural orders. These plant orders He Himself, therefrom producing. mixed among themselves until from them originated those plants which today exist as genera.

"Nature then mixed up these plant genera among themselves through generations of double origin (hybrids) and multiplied them into existing species, as many as possible (whereby the flower structures were not changed) excluding from the number of species the almost sterile hybrids. which are produced by the same mode of origin"*.

* This translation of Linnaeus' Latin text was published by Clausen in 1951.[2]

Because Linnaeus used a purely artificial system of classification and recognized only the four taxonomic categories. Class, Order. Genus. and Species. it is not easy from the above statement to secure a clear picture of what was his mature conception of the created unit. It may be helpful, in an effort to understand his mature opinion here. to select his order *Gymnospermia* as an example. Today our taxonomists use the name *Gymnospermae* for a class of plants made up of cycads, gingko, and conifers. However. Linnaeus' *Gymnospermia* consisted largely of the mints and snapdragons.

Thus in Linneaus' opinion God spoke into being parent forms of such groups as the mints and snapdragons and then by His own controlled hybridization developed among these additional plant groups which we call biological species, groups which, to continue with our example, are illustrated by such plants as skull-cap, catnip, motherworth, sage, horsemint, mullein, toadflax, and painted cup. It is possible that not all special creationists of today would be willing to concede that plants as varied as mullein and foxglove had evolved naturally from a single created unit. However, we would stress the fact that we believe Linneaus was certainly on the right track when he judged that any *forms which would hybridize had sprung from a common ancestor.* This would be a limited form of change, but certainly not evolution of new basic types. Possibly it would be more accurate to designate such change as mere variation within the original basic units.

The expressions "after his kind," "after their kinds," appear ten times in Genesis 1. A survey of the thirty-two Bible commentaries in the James White Memorial Library of Andrews University regarding the significance of these expressions in Genesis I showed that six made no comment 011 them, four were evolutionist. and the remaining twenty-two were agreed that these expressions indicate that in the beginning God created the basic types of plants and animals at all levels of complexity. Some commentators in this group even state that the expressions mean that on the third. fifth. and sixth days by divine command not only all the basic units appeared but also subordinate groups within the kinds.

With regard to Gen. 1:12, ". . . plants yielding seed according to their own kinds" (RSV), sixteen of the twenty-two definitely went on to express the opinion that reference was here made to reproductive behavior, e.g., "received power to propagate and multiply their own kind" (Keil and Delitzsch) ; "the race should he perpetuated from generation to generation" (Cook) ; "the growth will always be the same kind as the seed' (Excell) : "Determinate propagation of plants" (Lange); and so on.

It is obvious from the wording in Genesis that the expression "after his kind," includes both morphological and physiological characteristics. That is to say, when the plants and animals appeared upon the earth the individuals of each basic type were distinctly different in the details of their form. structure. and internal chemistry from the individuals of al 1 other basic types. To express it mildly, in the light of Gen. 1:12 it is difficult to understand how a basic type could transmute into a new basic type or could give rise to a new basic type if its reproductive performance was such as to bring forth additional individuals of the same kind as their parents.

Today when we see so many varieties among our domesticated plants and animals we wonder how the schoolmen could insist upon believing that the creation described in Genesis demanded *no variation* within the created kinds. This was the extreme interpretation of Genesis which the theolog-

ians at Cambridge gave to Charles Darwin before his graduation.

Because John Milton, 1608-1674, had been largely responsible for swinging the Christian in England from the Aristotelian philosophy of a derivative type of origins to acceptance of the literal account of Genesis, he is blamed by some evolutionists for the extreme view actually developed later by the university schoolmen. Thomas Huxley's statement that the new theory of evolution found itself in conflict with the Miltonic, rather than the Mosaic "cosmology" (it is actually a cosmogony) is an interesting one although inaccurate.[3] It is true that the natural facts of variation emphasized by Darwin were in conflict with the extreme "no variation" interpretation developed by the schoolmen after Milton pointed the way back to a literal Genesis, but it is not true that this new evolution was in harmony with the Mosaic cosmogony. This new evolution demanded extended periods of time for the assumed gradual development of more complex and specialized types from simpler types, while the Mosaic account clearly states that the multiplicity of basic types was spoken into existence from the raw materials within the limits of one solar week.

When a number of the self-styled "higher literary critics of the Bible" had been persuaded by scientists that living things had originated by a process of evolution, they went back to Genesis and pondered how to interpret the simple historical account of an origin by special creation of basic types, in such a way as to bring it into harmony with the doctrine of evolution. Finally considerable agreement was reached among them that Genesis should be understood to be not prose, but *poetry*, and that this poem set forth but one basic fact only, the fact that living things had come into being through the activity of a Creator. According to this new turn, the author's use of descriptions of days and of instantaneous appearances of plants and animals from the earth was merely an employment of poetic license to give body to the poem but to add nothing in the way of actual facts. However, that the creation account is prose *not* poetry is authoritatively attested by the body of translators of the recent and generally more accurate version of the Bible, the Revised Standard Version, who in this translation set the creation account before us as *prose* not poetry, a prose which at times indeed has the scope, majesty, and beauty of exalted poetry. Albeit, even if the Genesis account were in poetic form it still could state the literal truth, and possibly even state that truth more effectively than in prose.

What does the literal, inspired historical account of beginnings tell us about the origin of living things? Gen. 1:11-13, 20-28, 31 clearly portrays that on days Three, Five, and Six of Creation Week the Creator populated the earth with all the basic kinds of plants and animals. At His spoken command these organisms came into being from the raw materials of the earth. There was no blood relationship between the basic types, merely a pattern of unity within diversity resulting from one omniscient Creator with a master plan. The fact that the Creator did have an overall plan for plants and animals is indicated in the oft repeated expression, "after his (their) kind." Plants appeared in all their forms from the most lowly to the giants of the forest. Animals swarmed in the sea, creeped and walked upon dry ground, and flew through the air. The account makes it very clear that by the close of Creation Week the earth, at the word and voice of one Creator, had its full complement of basic kinds of plants and animals. That this creation of basic types was not to continue beyond Creation Week is made clear in Gen. 2:1,2 where we read that on the seventh day "God finished his work (declared His work on which He was engaged, finished)." This declaration is repeated in Commandment IV, "For in six days the Lord made heaven and earth, the sea, and all that in them is, and rested the seventh day." Ex. 20:11. What is written? "It is written" that all basic kinds of plants and animals miraculously appeared upon the earth within one literal, 24-hour-day week, at the command of the Creator.

The schoolmen were correct in their understanding of the origin of the living kinds. But they were incorrect in their teaching regarding the reproductive behavior of these kinds. They asserted that Genesis declared that the created kinds brought forth after their kinds, and that this increase in number was like the coinage of dimes, no variation. It is true that Gen. 1:12, RSV, describes "plants yielding seed according to their own kinds." This is a description of reproductive behavior, but no assertion in just so many words is made regarding the reproductive behavior of animals. Certainly there is no justification in Genesis for the extreme "no-variation-among-individuals-of-a-kind" interpretation of the schoolmen.

Nevertheless, Genesis, in its assertion that plants *and* animals were created in all their kinds. *does* teach a fixity in the living world. However, many scores of years of careful biological research has shown that this fixity is higher than the individual level, i.e. at the level of the basic kind, best illustrated by our own species (mankind). In all their wishful endeavors in scientific study, even evolutionists will admit that not one instance of basic type, like a cat, producing a new basic type, like a dog, is known. We have kinds of cats, but the fixity of Genesis is at the higher level of the cat kind and not at the lower level of kinds of cats. Variation does occur abundantly within kinds, but no coercive, compulsive evidence can be produced to show the production of even one new basic kind. The very most that Darwin could discover was that new varieties of tortoises had apparently developed on

the various islands of the Galapagos group [4,5] and apparently new varieties and even new "species" of finches [6,7], but he failed to recognize the tremendously important fact that the tortoises were still tortoises and the finches still finches, field evidence which helps us to understand the true fixity that exists in the world of living things. In his demonstration of variation within well-marked limits of the kind, Darwin, instead of disproving Genesis as he thought, actually witnessed to its veracity.

One basic kind is unlike all other basic kinds because of its own peculiar internal chemistry, the DNA of its genes. If different kinds are present we know these different chemistries are present also and effectively isolate one kind from another by bridgeless chemical abysses.

Such is the letter of the written record. The creationist of today believes that the Bible and nature are complemental, each helping to explain the other. Therefore, we turn to nature to discover the degree of fixity indicated by Genesis. In speaking of this situation in nature, Theodosius Dobzansky, Professor of Zoology, Columbia University, says:

> Organic diversity is an observational fact more or less familiar to everyone . . .
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> "If we assemble as many individuals living at a given time as we can, we notice at once that the observed variation does not form any kind of continuous distribution. Instead, a multitude of separate, discrete distributions are found. The living world is not a single array of individuals in which any two variants are connected by unbroken series of intergrades, but an array of more or less distinctly separate arrays, intermediates between which are absent or at least rare." [8]

This discontinuity is one of the most familiar characteristics of the living world as we recognize men. horses, cows, dogs, and cats, roses, petunias, marigolds, zinnias, and water-lilies. This same discontinuity is also one of the most striking features of the fossil world.

This very real existence of gaps between the basic types of organisms is one of the great problems of the evolutionist. If all modern forms have evolved from one or a few primeval protoplasmic blobs why should both the fossils and the living world present us with this striking discontinuity just as if the different kinds had originated as Genesis declares they did?

This problem was one of the topics in a series of letter discussions which I had with one of the old guard of neo-Darwinian evolution a few years ago. This zoologist is today one of the leading American disciples of the theory of evolution. In our discussion I pressed him to give me just one instance in our living world where evolution of a new basic type is *known* to have occurred. His reply was as follows:

> "When one says that evolution is established beyond reasonable doubt one obviously does not mean that one can see evolution happen and reproduce it in a test tube, but this is the evidence which you escape by your device of saying that it is all change within a 'kind.' What you are after is evidently evidence for the thing which is called by this rather unfortunate term 'macro-evolution.' Now, this is a process taking place in geological time, hence it, as any other historical process (human or natural), can be proven or disproved only by inference from the available evidence."

This authority's admission of the impossibility to demonstrate the evolution of new basic types among living forms is typical of the testimony of all evolutionists who are really conversant with the pertinent facts. After having admitted that evolution of new basic types cannot be demonstrated among living forms, this zoologist passed the burden of demonstration over to the paleontologists who, in his opinion, could demonstrate that evolution of new basic types had occurred during geological time. He referred me to the then new work of George Gaylord Simpson, widely known paleontologist of the American Museum of Natural History, and Professor of Paleontology, Columbia University, which book had just come from the mess.[9] Of this book my correspondent remarked, "To me at least this is a most lucid explanation of paleontological evidence."

I secured a copy of Simpson's book and among much interesting material found the following assertions:

> "On still higher levels, those of what is here called 'mega evolution,' the inferences might still apply, but caution is enjoined, because here essentially continuous transitional sequences are not merely rare, but are virtually absent. These large discontinuities are less numerous, so that paleontological examples of their origin should also be less numerous; but their absence is so nearly universal that it cannot, offhand, be imputed entirely to chance and does require some attempt at special explanation, as has been felt by most paleontologists."[10]
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> "The facts are that many species and genera, indeed the majority, do appear suddenly in the record, differing sharply and in many ways from any earlier group, and that this appearance of discontinuity becomes more common the higher the level, until it is virtually universal as regards order and all higher steps in the taxonomic hierarchy.
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> "The face of the record thus does really suggest normal discontinuity at all levels, most particularly at high levels, and some paleontologists (e.g., Spath and Schindewolf) insist on taking the record at this face value. Others (e.g., Matthew

and Osborn) discount this evidence completely and maintain that the breaks neither prove nor suggest that there is any normal mode of evolution other than that seen in continuously evolving and abundantly recorded groups. This essentially paleontological problem is also of crucial interest for all other biologists, and, since there is such a conflict of opinion, non-paleontologists may choose either to believe the authority who agrees with their prejudices or to discard the evidence as worthless."[11]

Naturally after reading such assertions as these by so high a paleontological authority as Simpson, I could not refrain from again writing my friend and asking him, in the face of these declarations that the same discontinuity which occurred among living forms and made a demonstration of evolution among them impossible also existed among the fossils, how he could say that Simpson had made a lucid presentation of the origin of new basic types during geological time. A number of years have gone by since I put that question, and several letters have passed between us, but for some reason reference to the topic of paleontological evidence for evolution has been omitted.

In 1953 Simpson again, in the following words, asserted that discontinuity is a fact among the fossils:

"In spite of these examples. it remains true, as every paleontologist knows, that *most* new species, genera, and families, and that nearly all new categories above the level of families, appear in the record suddenly and are not led up to by known, gradual, completely continuous transitional sequences." [12]

On this same point of gaps between the various types of fossil forms, D. Dwight Davis, Curator Division of Vertebrate Anatomy, Chicago Natural History Museum, remarks:

"The sudden emergence of major adaptive types, as seen in the abrupt appearance in the fossil record of families and orders, continued to give trouble. The phenomenon lay in the genetical no man's land beyond the limits of experimentation. A few paleontologists even today cling to the idea that these gaps will be closed by further collecting, i.e., that they are accidents of sampling; but most regard the observed discontinuity as real and have sought an explanation for them."[13]

"But the facts of paleontology conform equally well with other interpretations that have been discredited by neobiological work, e.g., divine creation, etc., and paleontology by itself can neither prove nor refute such ideas." [14]

With regard to the persistence of these gaps in the fossil record in spite of the great amount of work being done in the exploration of this record, Norman D. Newell, Curator of Historical Geology and Fossil Invertebrates, American Museum of Natural History, and Professor of Geology. Columbia University, has recently written:

"From time to time discoveries are made of connecting links that provide clues to the relationships*, as between fishes and amphibians. amphibians and reptiles, and reptiles and mammals. These isolated discoveries, of course, stimulate hope that more complete records will be found and other gaps closed. These finds are, however, rare; and experience shows that the gaps which separate the highest categories may never be bridged in the fossil record. Many of the discontinuities tend to be more and more emphasized with increased collecting."[15]

*These discoveries "provide clues" only provided the student already believes in organic evolution. To the creationist they merely illustrate further the complexity of creation, and in some instances. the degree of variation which had occurred before the organisms were buried.

We will agree with Davis, second quotation above. that it is correct that divine creation of basic types cannot be demonstrated by the fossil record, but we cannot refrain from saying that the distinctness of the basic types in the fossil record with absence of inter-grading forms is completely in harmony with the creation of plants and animals after their kinds as portrayed in Genesis. The fossil record constitutes the only natural record we have of what occurred before the dawn of secular history. In the light of the fossil record, the theory of evolution which asserts that all modern types have evolved gradually from one or more simple blobs of protoplasm requires more faith for its acceptance than does the theory of special creation which asserts that God created the basic types instantaneously in all their characteristic morphological differences. We hear every now and then of "the missing link." Actually among both fossil and living forms great chains of links are everywhere absent between the basic types.

A study of the fossil record reveals to us that groups of organisms have maintained their individuality all the way down to our time. Austin H. Clark, who was with the United States National Museum many years, referred to this fact in the following words:

"Since all the fossils are determinable as members of their respective groups by the application of definitions of those groups drawn up from and based entirely on living types. and since none of these definitions of the phyla or major groups of animals need he in any way altered or expanded to include the fossils, it naturally follows that throughout the fossil record these major groups have remained essentially unchanged. This means that the inter-relationships between them likewise have remained unchanged.

> "Strange as it may seem, the animals of the very earliest fauna of which our knowledge is sufficient to enable us to speak with confidence, the fauna of the Cambrian period, were singularly similar to the animals of the present day. In the Cambrian crustaceans were crustaceans, echinoderms were echinoderms, arrow worms were arrow worms, and mollusks were mollusks just as unmistakably as they are now." [16]

Here is the sort of fixity referred to in Genesis, and behold nature shows us that the fixity is that of group characters and not a fixity of all individual characters. Each individual bears the distinguishing marks of his kind but is not necessarily identical with other individuals of his kind. Clark referred to this fact in the following statement:

> "In the details of their structure these fossils are not necessarily like the crustaceans. starfishes, brachiopods, annelids, or other creatures living in the present seas. Nevertheless, if they are sufficiently well-preserved we have no difficulty in recognizing at once the group to which each and every fossil animal belongs." [17]

The testimony of *living* nature with regard to the extent of fixity indicated in Genesis is all about us in most intriguing forms. The processes of variation furnish us with many interesting breeds of plants and animals. Individuals often vary considerably within some groups. We have over 500 varieties of the sweetly scented sweet pea, and over two hundred breeds of dogs. One author has divided human beings into as many as 160 breeds.[18] Evolutionists love to call our attention to all this variation that is going on, and to insist that here is evolution before our very eyes. We all observe that variation *does* occur, but evolutionists fail to perceive that after all the processes of variation can accomplish has been accomplished we unquestionably still have sweet peas, dogs, and men. The sort of change that the theory of evolution requires is the natural development of *new basic types.* But every additional case of variation that is studied, be it among the fossils or living forms. merely brings additional evidence that there is a law in nature which declares that every organism can produce only individuals which are unquestionably of the same basic type as the parents.

The evolutionist makes a creator out of Father Time by affirming that if we will only assume enough duration then processes of variation will produce new basic types. The plea that time will do it is no more reasonable here than it would be should we invoke it in trying to lift ourselves. If we see a lad trying to lift himself by his bootstraps, we would be incorrect if we were to say to him. "Just keep trying long enough, sonny, and finally you will be able to do it!" Such a feat can *never* be accomplished because there is a law in nature which says that just as hard as you pull up that hard you push down. In the same way, time cannot accomplish the appearance of new basic types because there are no mechanisms in existence which can accomplish changes of sufficient magnitude to produce one new basic type. Every additional case of variation studied adds one more bit of evidence further to clarify this principle.

Interestingly there is an international quarterly journal, now in its eighteenth volume, whose pages contain data which purport to demonstrate that organic evolution is a fact. I was privileged to be a charter member of the Society for the Study of Evolution of which this journal is the official organ, and each number delights me, a creationist. because every case of change in organisms presented is further substantiation of the natural fact that all processes of change can do no more than accomplish mere variation within already established basic types.

Not infrequency the creationistic biologist is asked, "In our present system of classification of plants and animals is there any category which is an equivalent of the Genesis kind or created unit?" Depending upon one's point of view, the answer to this question can be "no." At the time of creation the kinds or basic types were each created after a distinguishing pattern in form and structure, and we are told specifically that the plants were able to produce other individuals like themselves, The descriptions of kinds in Genesis 1 give us ground for hypothesizing that the individuals of any particular Genesis kind would have chemistries sufficiently alike to make them fertile *inter se,* but sufficiently different to make them incompatible with individuals of every other kind. If this hypothesis is valid then ability to cross would demonstrate membership in the same basic type.

With this hypothesis in mind. as we look into nature today we find that man. *Homo sapiens,* can cross with no other animal. So in his case the species could be the created unit. In other instances we find that the dog, *Canis familiaritis,* will cross with the gray wolf, *Canis nubilis,* and the horse, *Equus caballus.* will cross with the ass, *Equus asinus.* Here the genus could be the created unit. Again the common goat, genus *Capra,* will cross with the common sheep, genus *Ovis.* to the extent of at least producing fetuses which will live until just before the time for birth. A more successful generic hybrid is the case of the Indian Gayal, genus *Bibos,* which will cross with the Brahma Cow, genus *Bos.* possibly here making the family the created unit [19], [20], [21]. Yet again the domestic hen. family *Phasianidae,* has been crossed with the turkey, familv *Meleagrididae,* and also with the guineafowl, family *Numididae* [22]. In these cases the order could be the created unit.

In the modern classification of plants we find the same lack of harmony with the Genesis kind. Very commonly species of the same genus will cross. as the Bur Oak with the Swamp White Oak. Genera

not infrequently cross, for example, rye with wheat, and field corn with Teosinte and gama grass. One of the most interesting crosses in plants probably is that of radish with cabbage, both representing genera of the Mustard family. To my knowledge, among plants, members of two different families have not been crossed.

It thus becomes obvious that if our hypothesis is correct and crossability among the members is a characteristic of any given Genesis kind, then there is no single category in modern taxonomy which is in all cases equivalent to the created kind. Because many new modern "biological species" appear through time as products of variation, neither can this presently popular category always qualify as to taxomic equivalent of the created unit.

It is not to be expected that any harmony could exist between Genesis kinds and our present-day classification lists. The reasonableness of this opinion becomes apparent as we recall that plants and animals have been assigned to classification categories in part by natural criteria and in other cases by purely arbitrary criteria; some are the work of lumper taxonomists and some that of splitters.

Another difficulty the creationist encounters here is the fact of the undependability of many of our lists of plant crosses and animal crosses. To illustrate, S. G. Morton, in a perfectly sober paper read before the Academy of Natural Sciences of Philadelphia in 1846 reported a cross between a bull and a sheep.[23] In modern times a less spectacular but equally unverified report is that by Annie P. Gray in England of a cross between a domestic hen and a domestic duck. However, she warns us on page x of her book that "the listing of a particular cross does not necessarily mean that it has occurred."[24] The difficulty of preparation of a list of *bona fide* hybrids can be realized only by the one who has tried to draw up such a list. Not infrequently the Muscovy Duck gets into the newspapers as a valid duck x turkey hybrid. The reporter is always sure of the parentage because the red caruncles on the face of this duck look much like those of the turkey. Nevertheless the Muscovy Duck is pure duck, and just about 99% of newspaper reports of hybrids is pure imagination. In all the confused picture of course it must be borne in mind that sexual cohabitation is *not* hybridization.

A prominent evolutionist once said to me, "If you insist that all basic types were created in the same beginning, and that no changes have occurred since then which were sufficient to produce new kinds, then you should today point out to us these Genesis kinds, or keep still about them!" I thought his statement was entirely reasonable, in fact, I was already prepared to suggest a test which I believed would do the very thing he demanded. As early as 1941,[25] I had suggested a fertility test which might be used to trace out the modern loci of the original kinds. In 1944 (revised in 1947) ,[26] because of, as pointed out above, the apparent inability of any modern taxonomic category to qualify as equivalent to the Genesis kind, I suggested that the new word *baramin* (plural *baramins).* built from the Hebrew words *bara,* "created," and *rein,* "kind," be used to designate the created types (page 174). This name would have the advantage, in the biologists mind, of separating the Genesis kind from all taxonomic categories now being used. In 1950 the baramin hypothesis was further illucidated.[27]

In 1957 this fertility hypothesis for discovery of the created kinds was sharpened still more by the suggestion that only in cases of *true fertilization* would membership in the same Genesis kind be indicated.[28] In true fertilization both reduced parental sets of chromosomes join and participate in the first division of the fertilized egg or zygote. This would rule out membership in the same baramin of those individuals whose sperm would enter the egg and instigate embryonic development but whole male chromosomes would later be cast out and take no part in the heredity of the new individual. Loeb once reported that all marine teleost fishes would hybridize.[29] However, it was later found that this was a situation where the sperms instigated embryonic development but were later thrown out of the early embryo, thus having no part in inheritance. These foreign sperms actually acted only in an artificially parthenogenetic manner.

My reasonably-demanding evolutionist friend at first was loathe to accept such an hypothesis because he affirmed it was not sufficiently concrete to be practical. It was only after I showed him that the fertility test was just as concrete as practical for the baramin as it was for the biological species which he and several of his evolutionist colleagues were pushing at that time, that he grudgingly admitted that it could constitute a valid test.

Deductively, of course the idea of the baramin springs from Gen. 1:12, where we are told that the plants not only were made after their kinds, but also brought forth after their kinds. The animals likewise were created after their kinds (Gen. 1:21, 24, 25), and the genetical physiologist knows that in animals as well as in plants the different chemistries which cause different form and structure also make crossing of kinds impossible. Because the Creator was careful enough to create all the different basic kinds, it is reasonable to suppose He furnished them with physiological mechanisms which would enable the different basic types to continue to exist through successive generations. Why form all the minutae of different types if only immediately to lose them in the confusion of hybridization ?

Inductively, in every known instance in living nature where true fertilization can occur, the parents are sufficiently similar morphologically to be con-

sidered members of a single kind, such as the man kind, the dog kind, the cow kind, the oak kind, the corn kind, the apple kind, and so on.

It is sometimes objected that the baramin concept is weak in that many of the crosses obtained have occurred in captivity and probably would not take place in undisturbed nature. Actually animal psychology does not enter into the baramin concept. Rather it is a physiological, that is, chemical, test. and still applies whether occurring naturally in the aisles of the forest, on the paths of the prairie, or artificially in vitro in the laboratory. The essential assumption is that the chemistry of the D.N.A. molecules of the Genesis kind is identical enough to cause them to produce germ cells which will be compatible and capable of union in true fertilization. Artificial pollination and artificial insemination would be the best tools for the discovery of the limits of the baramin.

We realize that the processes of variation, principally mutation, recombination, and chromosomal aberration, have been working in these basic kinds since Creation, and have produced physiological incompatibilities within the Genesis kinds, so we may assume that ability to interbreed with complete fertility may not now exist among all members of the baramin. In such instances morphological characters will have to be used to determine membership. An illustration here would be the two groups of the fruit fly, *Drosophila pseudo-obscura,* which were formerly called Race A and Race B of this insect. Because hybrid males resulting from a cross between these races were completely sterile, Dobzhansky and Epling assigned to Race B the new species name, *D. persimilis.* [30] The individuals of *D. pseudoobscura* and *D. persimilis* appear identical in external characters but may be completely sterile when mated. In such cases the morphological similarity of adults is sufficient to show that they belong to the same baramin.

Sometimes the question is asked, "Is the modern widely accepted biological species identical with the Genesis kind?" I would answer that such may occasionally be the case. An example would be the biological species *man* which is also a Genesis kind. To be true members of the same biological species the individuals must be fertile *interse.* If within a biological species a group arises whose members are sterile when mated with others of the group, a new biological species would have arisen. The fruit fly mentioned above probably illustrates such a case. *D. persimilis* would be a new biological species arising within the older biological species *D. pseudoobscura.* Thus obviously all modern biological species are not originally created units. The growing popularity of the biological species concept among evolutionists is evidenced by the fact that. except for one, all eight contributors to a recent symposium on the species problem accept the biological species and are rather enthusiastic about it.[31] Mayr's new book, *Animal Species and Evolution,*[32] might be described as a testimonial to the advantages of the biological species concept. In recognizing the biological species as a natural unit, biologists are becoming less artificial in their classification, and are making progress in the discovery of the Genesis kinds in nature.

Of course there are many forms in nature where the fertility test cannot be applied to determine either the biological species or the baramin. This situation would exist where new individuals are produced by such asexual processes as simple fission, budding, formation of spores, and even by the sexual process of hermaphroditism. The fertilization of their own eggs is quite common in higher plants and in a few animals. However, in these forms it is clearly evident that each is following closely the law of Genesis which says that basic types bring forth after their kinds.

As to the practicability of the baramin concept as a classification unit, interestingly the following recent comment by Mayr on the biological species, in my opinion very accurately describes the situation with regard to the Genesis kind if it is assumed generally to be determinable by the possibility or impossibility of true fertilization:

> "Is the biological species concept invalidated by the difficulties in its application that have been listed ?
>
> "One can confidently answer this question: 'No!' Almost any concept is occasionally difficult to apply, without thereby being invalidated. The advantages of the biological species are far greater than its shortcomings. Difficulties are rather infrequent in most groups of animals and are well circumscribed when they do occur. Such difficulties are least frequent in nondimentional situations where (except in paleontology) most species studies are done. Indeed the biological species concept, even where it has to be based on inference, nearly always permits the delimitation of a sounder taxonornic species than does the morphological concepts." [33]

The scientist reads in Genesis of the fiat creation and instantaneous appearance in the beginning, of basic types of plants and animals which were made and which reproduced according to a certain fixity. The book of nature, through its fossil record and in the world of living things, reveals that an actual fixity has ever existed and still does exist among these forms. The fixity is not one which produced identical individuals, but rather is one which produces physiologically isolated groups which enjoy considerable variation within their boundaries. These original groups demonstrate that they have no power to produce any new basic types. In this complete verification in nature of the assertions of Genesis, the Christian man of science receives added assurance that the Bible is indeed a book breathed by the God of Truth.

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