The Classification of Animals

(Warning: This paper has some material that may be considered semi-technical. If you have any questions, please search for it on the web or at your local library. Thank you)

Introduction

The beginnings of animal classification are vague. Some attribute it to Aristotle, who listed animals into three different groups. These groups were; Viviparous, Oviparous and Vermiparous ("producing or breeding worms" per Websters). Obviously Vermiparous is not a scientific classification, and the other two are too broad in scope to be utilized as a refined grouping. Viviparous and oviparous are valid as diagnostics, but because they are not refined enough to separate animals that belong in different groups (viviparous would include mammals, some reptiles and fish), they should be placed under a higher classification level. Now they have been placed somewhere in the middle of most classification formulas. Another researcher, Ray, proposed another methodology in 1693. It was a broader classification than Aristotles', but was still plagued with invalid diagnostics within the classification levels.

Since the mid-1700's, animals have been grouped into some form of realistic classification scheme. The first to create a semi-scientific procedure was Carolus Linnaeus. The Linnaen system is still widely used even today, although it has been greatly modified. In the Linnaean system of classification, characteristics or traits of different animals are associated with different levels of classification. At the highest level, the broadest and most encompassing traits are used to form a group. As the hierarchy descends, more traits are utilized to refine the classification. At the bottom level, the organisms' classification is refined to its fullest extent. Although the design of this classification scheme is valid, it was thought to have issues with homologies (similarities of unrelated animals). These inferred problems with design similarity led later scientists to modify that system.

In the 1800's another prominent scientist, Sir Richard Owen, came up with a methodology (called Archetypes) that took into account the function each limb performs. Evolutionary theory considers this similarity of usage as evidence for common ancestry. Actually though, the concept of the similarity of design/usage of appendages by obviously different creatures can be associated with a common designer or creator as well. This is especially apparent when morphological variances are included in the formula (designers tend to use a good design in various structures).

Originally, classification was rather basic. Linnaeus' original 1740 arrangement of mammal classification was clearly in error in many points. Elephants, hippos, horses and pigs do not belong in the same Order as the present classification scheme. Also, primates, sloth's and anteaters are equally not related. By his 1766 classification scheme, some of these problems had been sorted out, but there were still problematic areas (i.e. elephants and xenarthrans are not in the same order). The scheme that he employed was started at the top with "Empire", was followed with "Kingdom", "Class", "Order", "Genus", "Species" and "Variety". "Empire", which would include everything in the universe, has been dropped as irrelevant because it is simply too broad a definition. The other levels have been maintained, although "Variety" has been changed to "Sub-species". Later, Simpson increased the levels by adding "Cohort", "Family" and "Tribe". In between the levels he added additional levels using a variety of prefix's (Sub-, Infra-, Super-). The total number of levels jumped from seven to sixteen. Presently, McKenna and Bell have increased that number to twenty seven levels. In their book "Classification of Mammals", they utilize twenty five of them. Additions to Simpson's classification include; the level "Legion" and the addition of the prefixes Magn-, Grand-, Mir- and Parv-.

From its origins, the classification of life has changed dramatically. As time passed, schemes matured through the introduction of new specimen's, new information and new perspectives. Authors, like Trouessart, Hay, Romer, Simpson, Carroll, McKenna and Bell, not to mention others, added greatly to the knowledge available in the field of taxonomy. In the original formulation, animals were broken down into various grades

with the most defined grade at the bottom. Presently, this methodology is still used predominantly for ease of literary example. In the scientific community it appears the primarily accepted method though is cladistics. This method attempts to formulate a huge branching tree (albeit a sideways tree) that will one day be able to take the most defined specimen back to its morphological roots. Some may even suggest back to the origins of life. That is a highly speculative claim though. In reality it is more reasonable to postulate a more varied form of origins for each branch of life on earth.

Traditional Classification Schemes

If we look at the structure of traditional classification schemes, it becomes obvious that they are based on elements or variations that the authors considered diagnostic, and which were applied to various levels. As previously mentioned, the schemes have matured through history. They also have created issues that are still unresolved. One of the most noted problems in recent taxonomy is determining certain classes in the vertebrates.

Originally, the classes Mammalia, Aves and Reptilia were easily defined. One of the most diagnostic characters utilized was their dermal covering. Mammals had hair, bird's had feathers and reptiles had sealed scales. We know from biological evidence that not all mammals maintain a covering of hair all their life. In many cases, the hair is localized rather than over the entire body. Recent paleontological evidence suggests that creatures that would have normally been classified in Reptilia (dinosaurs) may have had a hairy dermal covering. There is also evidence that certain pterosaurs had a hairy dermal covering. Although these animals were clearly not mammals, they may have had a trait normally associated with them. Another problematic diagnostic is that birds are the only class with feathers. Recent paleontological evidence suggests that many creatures formerly considered dinosaurs (hence Reptilian) had feathers. Some have transferred the variants to the class Aves and maintained the feathered diagnostic, while others have considered them to possibly belong in their own class. These issues will be addressed more fully later in this paper.

Cladistics

The most commonly accepted and used, when feasible, method of classification in the scientific community today is cladistics. Rather than the traditional tree that starts with the origin or trunk at the bottom and branches out at the top, cladistics is like a tree lying on its side. On the left, typically, is the least refined, broadest or source/origin of the branches, which are on the right. So it can be assumed that the organism designated on the right is a branch from the other branches on the left, thereby creating a non-designated group or branch. Some scientists incorporate traditional classification terms in their clades to try and show a more logical and scientific approach to the procedure. This also points to one the primary flaw with cladistics. The biggest problem is a lack of refined boundaries. It tends to flow wherever diagnostic evaluations appear to follow. This can be problematic when trying to properly define an organism. Defined, refined, diagnostic boundaries must be utilized to properly quantify something. That is a normal scientific procedure. So anything that is only broadly classified, or has a classification that is not well defined, causes confusion as to where the object actually belongs in the scheme of things. Obviously, when designations are used to quantify organisms or groups of them, cladistics becomes just a graphical way of presenting the traditional classification scheme. In that perspective, it can be said that cladistics is not necessary. If the broad connecting branches are maintained without proper definitions, it would not be difficult to have branches that connect all things to each other in some manner. That would clearly nullify any clear or diagnostic classification scheme. So in the end, cladistics is not the ultimate answer.

Problems With Classification

Since the beginning of classification, there have been numerous problems. At first, the primary issue was a lack of knowledge concerning the biology of certain kinds of animals. As time passed, knowledge was greatly expanded. The primary diagnostics that were used to determine classification, morphology and osteology, have now included a wide array of biological information. Also of note is the budding field of genetics, which stands to possibly revolutionize the field.

With all this information, one prominent issue has surfaced. Obviously at lower levels, to obtain the most specific definition, there is a tremendous number of diagnostics. At higher levels, the number of diagnostics should be reduced. Unfortunately, high level diagnostics have become nearly as complicated as lower level. In some cases, diagnostics attributed to one level should be placed at a lower level (i.e. single bone jaws which are typical of mammals dropped to at least the next level down since some mammal-like reptiles also have this feature). To resolve some of these issues, more levels were added so that those traits could appear to fit more adequately. Ironically, this has further complicated animal classification at all levels. It is of note that there are thousands of possible diagnostics that can be used in the entire classification scheme. So even if things were more abbreviated, it would still be a considerable amount of information to take in, thereby complicating the issue. This matter will be addressed further along in this paper.

In contrast to information overload, there are many cases where either too much information is assumed or there is not enough diagnostic data to properly classify the specimen. This is more common when interpreting the fossil record. A tooth can only tell so much, and teeth can easily be from a deformed or mutated specimen. It is of note that mammals can generally be identified by their teeth. An added fact is that if you ask any dentist, they will tell you that any individual specimen of a genus and species (i.e. “homo sapiens” / people) can also be identified by its teeth. So in some cases it would not be unreasonable to consider a broader range of variation for any particular group of specimen’s. Ironically, this can also result in over classification as species that would fall within a reasonable variable range are classified in another species, genera or even family. The primary failure here is a lack of adequately defining diagnostics.

A common practice that can actually be rather informative and interesting to examine is the usage of “trees”, “bushes” and other fauna. Obviously trees and bushes are flora, but the point is that many animal lineages are shown as “family trees”. In a “family tree”, a proposed lineage of an animals’ genetic history is shown. Earlier genetic variations are typically at the bottom of the tree and the most modern at the top. Although these are interesting and often offer delightful graphic images, unless they are done diagnostically so that the information can adequately support the implications, it would be quite easy to present facts that are much less than true. The common misconception that “just because something looks like something else means they are related” does not always prove to be a valid way of diagnostically evaluating specimens’. There are often many internal or even external factors to take in to consideration. When dealing with the fossil record, this can often be problematic due to a lack of physical evidence.

Diagnostic Classification

Classification schemes throughout history have been based on Diagnostic classification. This type of classification uses a group of characteristics (diagnostics), that are usually biological, to organize and group various organisms with similar traits. On rare occasions some scientists have used other characteristics, such as physical dynamics (Owens' Archetypes). Physical dynamics have long since been dropped from classification schemes and biological characteristics are now used as the determining diagnostics for every classification level. The use of biological characteristics varies from physical features both external (horns, hair, skin, etc.) and internal (organs, bones, fluids, etc.). Actually, without biological diagnostics it is virtually impossible to adequately refine any classification scheme. The reason for this is biological variations are what makes one thing different from another. Probably the most refined method of biological diagnostic analysis is genetics. Through this method, the true affinities of just about any organism may be ascertainable. Genetics will be touched upon later on this paper.

Baraminic Classification

A new field of classification is now beginning to form. It is based upon a Biblical perspective of animal life. I have been unable to find the original point that Baraminics was used, but it may have been when the book of Genesis was written. From a Creationist perspective it could be around 1491 B.C. (assuming that it was written when God gave Moses the Ten Commandments). That would make it considerably older than any other known classification scheme.

Baraminics is based on usage or "what it does". If you look at the actual passages in the book of Genesis 1 it is worded like this; "Let the waters swarm with the swarmers…and let the birds fly over the earth…great sea animals and all that creeps…according to its kind…according to its kind: cattle, and creepers and its beasts" (TIB). In the Hebrew terminology, the words, in some cases, have a broader meaning;

swarmers = "an active mass of animals" (Strongs)
birds = "to be covered with wings" (Strongs)
sea animals = "a marine or land monster" (Strongs)
Since this section of the chapter was dealing with marine and sky environments it obviously meant marine animals.
creeps = "to glide swiftly…crawl or move with short steps" (Strongs)
cattle = "any large quadruped or cattle" (Strongs)
creepers = "a reptile or any other rapidly moving animal…that creepeth" (Strongs)
beasts = "alive…wild beast … living creature" Strongs)

Note: The above definitions were referenced from Strongs Comprehensive Concordance of the Bible and The Interlinear Bible.

If we look at these definitions it becomes quickly apparent that there is little that is diagnostic about them. Any "swarming mass of animals" could apply to anything from fish to insects. In the same manner, "creepers" and "beasts", not to mention the rest, could cover such a broad range of land animals that if it were utilized as a diagnostic it would create more problems than resolve. So are Baraminics a worthless method of animal classification? Actually they are not. If we look deeper at what is being said, it becomes clear how Baraminics actually works. In the broad terms such as "sea animals", "cattle" or "beasts", little can be noted. But, in terms such as "swarmers" and "creepers" the real focus of Baraminics becomes apparent. It is about what the creature does or how it does it. Taking this even further, physical dynamics could be resurrected, as long as it was used in the proper diagnostic pattern. Obviously, "swarmers" or "creepers" are simply too broad a term to be of any value. But if those diagnostics were changed to; "creatures that nurse their young with milk from mammary glands" or "creatures that have an aquatic larval stage that morphs into a semi-aquatic or fully aquatic adult", the diagnostic becomes entirely valid. This can be taken even farther to include physical dynamics such as "Front foot is used for flying" and "Hind foot is used for perching". The benefit of such a classification is apparent when you consider that it bypasses all the individual physical mechanics and focuses on the actual usage. This alleviates a tremendous amount of information that may be irrelevant to actually creating a specific diagnostic for a classification level. The main benefit is obviously the simplification of the classification scheme to more relevant diagnostic dynamics.

Another item that actually is diagnostic that may be included with Baraminics (since it is a Biblical oriented perspective) is, "What type of 'flesh' is an animal?" To clarify this better concept lets look at the Scriptural references;

Genesis 7:15 "And they went in to Noah and to the ark, two and two of all flesh."

Genesis 7:21 "And all flesh that moved on the earth died: the fowl, the cattle, the beast and every swarming thing…"

Genesis 8:17 “Bring out from you every living thing that is with you, of all flesh, of fowl, of cattle and of every creeping thing…”

In the Hebrew terminology, flesh means;
Flesh = body, skin

Note: The above definitions were referenced from Strongs Comprehensive Concordance of the Bible and The Interlinear Bible.

In a broad sense, flesh can be considered strictly the body of the animal as in “what kind of body type”, but it can also mean the type of skin. So how an animals’ skin is designed could be considered a valid Baraminic.

Unfortunately, Baraminics has its’ own issues. The primary problem is that it is typically not diagnostic enough at the lower levels of classification. If used in the present scientific classification scheme, it may have elements that would be valid at the family level. Once classification drops down to the genus and species levels the required diagnostics become too biologically specific. Baraminics appear to not be that specific. If biological diagnostics were included as part of a Baraminic Classification scheme (this would be an alteration of the basic Baraminic structure presented in the Bible), it would not invalidate the process but actually enhance it. Therefore, Diagnostic Baraminics would be the most scientific approach to a Biblically designed classification scheme.

Genetics

Probably the most promising method of classification lies on the horizon. Genetics are the building blocks of an organism. They designate exactly what something is at a refined level. It is possible that one day all present classification schemes will be replaced by a Diagnostic Genetic Classifcation (DGC) formula.

Genetics are very complicated pieces of information. For a classification scheme to actually work, it would need to take in to consideration a huge amount of Synonymic (Common) Structures. These structures, like any good architect would know, are widely used throughout the world. Synonymic Structures are genetic codes that are commonly found in a broad range of organisms in large quantities and do not reflect a refined diagnostic. To put it more simply, they are not required or needed in evaluating the classification of the organism. It may be that some Synonymic Structures are needed at higher levels of classification, but not at lower ones. All this has yet to be determined.

Although this may sound like the Holy Grail of classification, it stands to fall by the same problems plaguing present day classification schemes, “over classification”. With all the information available in genetic coding, it might be easy to get diagnostics placed in the wrong level of classification. In those cases, we would once again be plagued by “over classification” at higher levels or “vague (broad) classification” at lower ones. It may be quite diagnostic to use DGC at higher levels, but it most likely will only be admissible (usable) starting at the Family (Kind) level of classification on down. Unfortunately, that has yet to be determined. It is also of note that genetics would probably contribute little to the fossil record (which generally lacks viable genetic material). So at this time there is a lack of diagnostic information concerning the needed methodology, therefore the author has decided not to incorporate it into the Diagnostic Baraminic Classification (DBC) formula.

Combining the Two (Baraminics and Diagnostics)

As previously mentioned, the benefit of combining Baraminics and Diagnostics produces a more complete perspective to determine where an animal falls in the overall scheme of things. Actually, it even allows for a richer range of classification that can alleviate some of the issues that have plagued Diagnostic Classification for some time (this will be addressed in greater detail later). By expanding the range of diagnostics to include things that involve functionality and usage, it creates a much larger base of information incorporated into a specific term, which can clear the hurdles that "over classification" has created at higher levels.

When configuring a classification scheme, it is important to remember that it must be diagnostic. If it is not, then anything could be placed anywhere no matter where it should fit. This could create all kinds of problems depending on the analysts' perspective or opinions. Therefore, the primary place to start is to: "Determine the Diagnostics". A list must be made of those that are feasible. It should include morphological (external structures), biological (internal and external structures and functions), osteological (skeleton) and Baraminic (this would include mechanical or usage) diagnostics. If we make a brief evaluation of the vast knowledge available concerning these fields of study, it becomes obvious that although some things are different between various creatures, they are not always required for a diagnostic evaluation of variance. A good example is muscle structure. Although the types and configuration of the muscles in various groups of animals differs, it is usually not considered a required diagnostic in evaluating the classification of them. In the same way some variations, although accurate, do not need to be considered a valid classification diagnostic. An alternative method would be to; "Create a Framework' (certain classification levels) to begin with, and then incorporate the diagnostics at each level. Either method would work, but the second makes assumptions that an accurate number of levels has been obtained. On the other hand, the first could easily be lead astray into "over classification". DBC is an attempt to incorporate the best of both worlds.

When choosing a diagnostic, it is important how it is defined. Some definitions are very straight forward (i.e. How many chambers does the animals heart contain?). Others can easily be swayed to one way or another; "The manus is used for self-powered flight" or "The manus is used to allow the organism airborne sustainability." "Self-powered flight" requires the organism must manually produce the lift needed to keep it airborne, while "airborne sustainability" could include gliding as well. Obviously, the Baraminic diagnostics are more vulnerable to this problem than the others, which are oriented more towards objective physical structure. Therefore, greater care must be used when determining and utilizing them.

As mentioned earlier, Baraminics tend to be more viable at the higher levels of classification. It would appear that they can be utilized (based on the present classification schemes) from the Kingdom level thru the Family level. Once the Family level is exceeded, all the lower levels require a considerably higher level of refined diagnostics, which Baraminics may not be able to sustain. So, unless the definition of Baraminics is broadened, it would not be a viable methodology at lower levels. At these lower levels, the more objective physical-structure oriented types tend to shine. That is why it was necessary to incorporate all types of methodology into the DBC.

Looking at the present methodology of classification, another weakness becomes apparent. There are no perfectly defined boundaries or absolutes. That is why classification is a continually changing process. A classic example of this is the mammalian order originally termed "Edentata". At first, aardvarks, pangolins, sloths, armadillos and anteaters were all grouped together. Then it was decided that aardvarks and pangolins belong in their own orders; Tubulidentata and Pholidota. The term "Edentata" was deemed as inaccurate and changed to "Xenarthra". Presently under McKenna and Bell, the classification has made Xenarthra a Magnorder and put armadillos in Cingulata, then anteaters and sloths in Pilosa. It is of note that Nowak has maintained the order Xenarthra. Although all of these methodologies may very well be flawed (see the revelations section based on the DBC), it shows the broad ranging opinions utilized in determining classification. In order to create a more refined and determinate methodology, a priority system has been utilized in the DBC. This method is of the most benefit when dealing with paleontological specimens, which often lack many osteological diagnostics and practically all biological. In a prioritized formula, diagnostics are broken down into groups. Each group contains a number of various diagnostics. The most determinate or over-riding diagnostic is placed at the highest

position and the least at the bottom. Then they are each assigned a priority (numbered) in a manner that reflects that perspective. The diagnostic that has the highest priority maintains precedence over the lower diagnostics. So if a specimen would have both diagnostics, they would be classified with the group that was named in the higher priority diagnostic. Obviously there are cases where more than one variation may belong in a named classification. Should that be the case, there are several ways the classification scheme may be modified to accommodate the variation. One is that the entire diagnostic group be termed “Set Diagnostic”. This is when all the diagnostics that fit the description of one organism must be met by any others to allow inclusion. Another is to consider all the variations in a diagnostic to be permissible but defaulting back to the one with the highest priority as the descriptive factor. In this type of scheme it is necessary to break diagnostics down into prioritized sets as well (otherwise it might be possible to create confusion through multiple tangents or synonymies). Obviously the primary diagnostic is the one that has the highest descriptive precedence. It therefore overrides any of the other diagnostics when determining classification. Another type of diagnostic is the “Define” (i.e. Define 1, Define 2, etc.) diagnostic. In a define group, the diagnostics are used purely for refinement and not for diagnostic classification. It is like saying, these traits are common in this class level, but are not necessarily needed to determine the specimens’ classification. These methodologies are used in the DBC.

The final concept taken into consideration here is the usage of prefixes. Originally, prefixes were not used to separate classification levels. Obviously, when you only have a few levels it is not necessary to find more words to define alternative ones. Although prefixes have added to the classification scheme we presently have, they tend to be just examples of “over classification” and not absolutely necessary. If anything, they have greatly added to the complexity and confusion associated with the present system. So they have been dropped from the DBC.

If you look at the final result, if each level were placed on a tree with the highest level on top, the result would be a broad root system (as opposed to a tree). Obviously, it could be inverted to create a tree, but typically the highest level is always cited at the top. Many literary trees show a presumed lineage of “ancestral” hierarchy in which the first “originators” of the kind are at the bottom. The most modern or present day relatives are shown at the top.

Another way of looking at it, based upon what has been coined the “orchard” view, is if the trunk of the tree were the Kind/Genesis level (see the General Diagnostics Utilized table), and the lower levels were branches (if inverted). Obviously anything above the Kind/Genesis level would be considered the root levels (if inverted). In this perspective, the root system is rather linear and branches quite numerous.

Formulation of the Diagnostic Baraminic Classification System

So how was this new system formulated? Where did the diagnostics come from and how were they determined? Like any scientifically oriented analytical method, it was necessary to start from an objective perspective. Obviously, Baraminics posed the greatest hurdle to maintaining an objective mindset. It is possible to interpret things in many ways, provided the right wording is utilized. So, the wording has been simplified as much as seemed reasonable to hopefully prevent any confusion.

So where to begin? Obviously, it was necessary to determine how to formulate the largest groups that could be assembled of living organisms. Present classification scenarios use "Kingdom" as the top level. Although the "Kingdom" level has recently become over-saturated with other diagnostics and clearly is at risk of over classification. At this level, everything is broken down by how it produces energy and whether it is capable of motion thru independent thought. This was definitely a logical place to start. Both of these diagnostics are valid, although textual sources may word the definitions differently. So both diagnostics were utilized in the "Category" level of the DBC. Motion or the ability to move has always been a priority in determining whether something is animate or not. So that was considered the highest priority, while keeping the energy producing issues at lower levels.

The next level that was created was the "Distinction" level. At this level, it was determined that the largest groupings would be "Chordata", which are creatures that have a support structure that runs the length of the organism during part of its life, and those that do not. This level is comparable to the "Phylum" level of popular classification. The alternative to Chordata is Invertebrata. Since this would not maintain the uniformity of nomenclature, it was changed to "Inchordata" (= Invertebrata). It is of note that the classification scenario constructed here is limited to the higher vertebrates, simply because that has been the focus of this site. So only the Category Animalia and the Distinction Chordata were analyzed.

One of the most pivotal levels was created next. This level is called the "Group" level. It would be comparable to the "Class" level of popular classification. At this level, the number of diagnostics and diagnostic groups begins to expand. The "Class" level has been problematic for many scientists due to the influx of conflicting data. In the DBC, some of these problems are addressed, but are not necessarily resolved. The primary group of diagnostics here is focused on lifestyle. What are the primary features that affect an animals' lifestyle? Traditional scenarios have always given the five major groups as Mammalia, Aves, Reptilia, Amphibia. That does not include fish. The diagnostics that have always been considered primary are not necessarily valid any more. Things like; only mammals have hair or only reptiles have scales. Even so, these groups of creatures are clearly different; the problem was in determining a methodology to classify them. So a more thorough investigation was in order. Since the original basis was on dermatological variance, and since the Baraminic version of skin is valid, it was determined to have the primary diagnostic be the composition of the animals epidermal layer. All animals have a dermal and epidermal layer. The epidermal layer varies between the various groups though. So this became a valid point to start the Group level. Since mammals have the most complex epidermal layer, they were placed first, with birds, reptiles, amphibians and fish following in order of traditionally considered simpler forms. Birds, which are the only other warm-blooded vertebrates, seemed to only have problematic diagnostics. Feathers have been found on "dino-birds", thereby taking away the common diagnostic used for classification. Romer's statement; "Feathers are in reality almost the only distinctive feature of the class, for almost every other character can be matched in some archosaurian group", seemed insurmountable. The problem was that he was looking at it from an osteological view. From a biological view, there are many characteristics that separate them from reptiles. Obviously, the skin of birds is similar to reptiles but it is not the same. Actually, it is normally thinner than reptile skin and lacks epidermal scales that cover most of the body surface. So that was the diagnostic that was chosen. Although the so-called "dino-birds" may one day be considered avian, the present DBC will not support it until more concrete proof can validate that determination. In order to maintain a more complete comparison of the possible groupings, three different views are compared in the tables. The traditional theme is how they would be classified under the former methodology. Inferred theme is the present DBC method and the Projected theme is if feathers prove to be a

valid diagnostic for aves. Unfortunately, the only way it seems to put that to rest would be to have actual biological material that could prove the “Avisauria” (dino-birds) were warm-blooded and had the other biological diagnostics that are included at this level. In contrast to birds, which only have scales on their legs and sometimes face, reptiles have scales over their entire body. So the diagnostic “Body covered with sealed scales…” becomes valid. Amphibia was another Group that maintained the universal standard, because its lifestyle starts as aquatic and then morphs into a semi-aquatic/fully-aquatic adult. Rather than have fish broken down into two groups at this level (bony and cartilaginous) they have been grouped together. That osteological difference seemed irrelevant at this level and was utilized at a lower one.

The secondary diagnostic group has to do with glandular configuration. Scientists now know that different groups of animals have different glandular configurations. There is often more than one type of gland in any given organism. The fact that glandular types tend to fall along Group boundaries made it a good choice for a secondary diagnostic group. Obviously, mammalian glands are at the top of the list. The reason for this is that mammals are considered the most advanced type of Animalia, and the diagnostics that are unique to them clearly carry priority over other Groups. All of the following diagnostic groups, in the Group level, are formulated in that manner. Their order, Body Heat Regulation, Heart Configuration, etc., are based on diagnostic groups that are considered to be required in order to validate the classification. Any Group can have more than one of the diagnostics in a diagnostic group, at this level. The reason for this is that this classification level is still very broad. Additional diagnostics were added at the end (Define 1 and Define 2)for the sake of inclusion. It is of note that some of these diagnostics overlap with other groups, and the entire definition needs to be maintained as a whole to get the refined cumulative definition.

At the Allocation level, the primary diagnostic group is Baraminic, but the rest are osteological. This diagnostic group fits well within the previous classification level. The typical terms (referred to as traits) used for certain types of pre-birth maturation, have been maintained. The way they are grouped is considerably different than traditional scenarios. Placentalia has traditionally been considered the more advanced method and therefore has been placed at the highest priority. Marsupialia follows. After that, things change from traditional methodology. In order to maintain the live-birth priorities of the previous diagnostics, viviparous was elevated above ovoviviparous. Monotremata has been removed, and the animals that fell into that definition have been transitioned to ovoviviparous. The next diagnostic group deals with the skull configuration. It is well known that the location of the temporal fenestra (s) on an animals’ skull is a valid diagnostic. The old methodology was rather limited in scope, but it has been expanded more recently to include “Modified” versions of the traditional standard. This paper has also added another version termed “Modified A Synapsid”. All of the modified utilize a letter of designation. That letter is relative to the type of animals that it is found predominantly upon, with the exception of “Modified A Synapsid”, because M had already been used. The remaining diagnostic groups are self explanatory.

One of the most problematic levels in classification is at the “Order” level. In the DBC, a similar level is termed the “Association” level. At this level, the diagnostic groups are both Baraminic, with two “Define” groups that are osteological. By choosing this method, some interesting perspectives appear in the classification scenario, which will be shown in the “Revelations” section. The primary diagnostic group is based upon the usage of the hands and feet. The reason it was chosen is that the primary usage of these extremities seem to define a realistic classification range. Typically, the front foot/hand has priority since that is usually the one that gets the most unique use in many of the higher animal forms. There are exceptions (i.e. hopping). An additional asset to determining classification is the secondary diagnostic group that deals with the “Food oriented usage of mouth/beak/tongue elements”. The utilization of both of these diagnostics seem to compensate for some of the “over classification” that has taken place at the Order level. Although the Define levels might be considered valid diagnostic groups, presently they have not been elevated to a Level determinate group.

The next group was created more because it appeared there was a need rather than any other reason. Some of the diagnostics did not appear to fit in the Association level or the Kind/Genesis level. So a separate level of classification was needed to separate them into different but discernable groups. That is why dental patterning and the animals’ stance were included. The type of teeth an animal has says a lot about it. In present diagnostic classification scenarios, the tooth pattern and design is used as a valid diagnostic at various levels. This level is

rounded out with how the animals stand on their feet. Once again this is a Baraminic diagnostic that has been utilized as a determining factor in traditional classification.

Now, perhaps the core of the DBC is unveiled. This stage is termed the Genesis/Kind level. It is similar to the Family level of traditional scenarios. Once again, the actual usage of an appendage is taken into consideration at the primary diagnostic group. The difference is that at this level the definitions are much more refined. They not only include Baraminic diagnostics, but mix Morphological diagnostics as well. Since fish often have more fins than the stereotypical front and hind feet of most other vertebrates, fins have been included as an appendage (excluding tail fins). External or morphological tail type is the secondary diagnostic group, which following the primary that determines locomotion, it was only logical to have the tail as the secondary, since in some kinds it is the only means of propulsion. This was followed by a more in depth look at the morphology of the snout. The shape of most animals' nose/snout/beak is stereotypical to certain kind. This methodology continues to the last diagnostic, and they cover a wide range of morphological, biological, Baraminic and osteological diagnostics. In some cases the order in which they were incorporated is of little relevance and based more on random choice. At other times, some diagnostic groups definitely are at a higher priority level than lower groups.

The remaining levels of classification were not included in the tables. Due to the amount of information that would be involved, it was deemed not necessary at this time to assemble such a plan. Instead, an overview of what the diagnostic groups and their order might be is included on the "General Diagnostics Utilized for Each Level" table.

Purpose of the Diagnostic Baraminic Classification System

Classification systems have always been pivotal and controversial throughout history. Many of the most noted scientists have listed concerns or made comments that are thought provoking. Here are a few;

1) “Many of the diagnostic features of mammals lie in their soft anatomy and hence cannot be used in paleontology.” (1947, 1966 Romer)

2) “Feathers are in reality almost the only distinctive feature of the class, for almost every other character can be matched in some archosaurian group.” (1947, 1966 Romer in reference to birds)

3) “One sees branches of branches in two or even three dimensions and we can imagine them in four.” (1997 McKenna & Bell concerning cladistics)

4) “phylogeny is better expressed in a diagram than in a formal classification” (1980 Gingerich in 1997 McKenna & Bell concerning cladistics)

5) “We do not think that things can be defined…but…we have not found a way to communicate fully our phylogenetic hypotheses using words alone, practically and with stability.” (1997 McKenna & Bell)

If someone is attempting to evaluate the present classification scheme or design a new one, all of these items may create an insurmountable obstacle. In reality, a lot of it has to do with perspective. McKenna and Bell were clearly looking outside the box when they wrote the third comment. It was made in reference to using a cladistics system versus the traditional grading scheme (diagnostically refined levels). Unfortunately, if you look outside the box and see infinity on all sides, where are your defining boundaries? This is further exemplified by the response given in the fifth comment. Gingerichs’ comment was also concerning cladistics. It also goes to show the broad all encompassing perspective that cladistics tries to wrap itself around. Boxes are needed because they help us define things. If something can’t be defined, there is no way to describe it or allocate it to a classification scheme. So the box is needed, and if the box does not fit it needs to be made larger or smaller. The problem is determining what diagnostics, levels and patterning is required to refine the information to an acceptable level. So unfortunately cladistics does not appear to be the answer, but is yet another fallen tree.

This brings us once again to the DBC. The general outlay and many of the diagnostics can be seen at the link below and its following links.

Although the DBC (this diagnostic methodology) may never be scientifically implemented, it brings to light some of the problems with the present state of Animal classification. The improper use of diagnostics at the wrong level has caused a considerable amount of confusion. This, along with other “over classification” issues, has caused even the most notable scientists to consider that a diagnostic classification scenario is not feasible. Fortunately that is not the end. As was shown in this paper, perspective is the key. How something is classified is determined by the characters that are considered diagnostic at specific levels and their over-riding priority over other diagnostics.

As with all things, classification is needed so that whatever the object, concept or action, we can communicate its properties accurately to each other. Otherwise communication is irrelevant and we are relegated to mere basic thoughts and principles. The advanced knowledge we have attained and acquired is of

little use if we can not put it into words. Because once we reach that point, we have forgotten our position in the scheme of things as caretakers of the earth.

Revelations Using the Diagnostic Baraminic Classification System

Follow the link to the Revelations section.

Appendix I: Rules of Use For The DBC

1) The classification of life is broken down into various levels that start at the most general definition at the top with the most refined or descriptive at the bottom.

2) Classification Levels are broken down into various Diagnostic Groups (when applicable) that contain a list of any diagnostic variation.

3) A diagnostic variation is one that clearly differentiates an organism from other organisms at that Classification Level and Diagnostic Group.

4) Diagnostic variations are listed as traits.

5) Diagnostic variations are prioritized from the highest to the least, with the one(s) that take precedence at the highest (lowest numerically) position.

6) Diagnostic Groups are also prioritized from the highest (primary) to the lowest.

7) The diagnostic variation that has priority, takes precedence even if the organism has multiple diagnostic variations.

8) If the Diagnostic Group is labeled as a Diagnostic Set, then all of the diagnostic variations that apply to an organism, or group of organisms, must be met for inclusion.

9) A Diagnostic Group can be considered invalid if it can be proven that it is not required at any level of classification for a diagnostic evaluation of any form of specimen.

10) If the Diagnostic Group is labeled as a Vari-Set Diagnostic, then any combination of the valid diagnostics for that group can be utilized. Those that are not are discarded on a per organism basis.

11) Diagnostics that are not required to define an organism are termed “Define Diagnostics”.

12) Define Diagnostics do not need to be included when making/using a diagnostic table. They are simply added because the examiner considered them as possibly having diagnostic merit of some type.

13) Define Diagnostics can be raised to a valid Diagnostic, if the variations included are proven as necessary to determining the classification of organisms at that level.

14) The order of Diagnostic Groups and Define Groups can be altered if it can be shown that the lower group merits a higher priority than the higher group, when considering each by their whole set of diagnostics.

Appendix II: Suffix Endings for Each Class Level

Category Level – "…tia" with the exception of Animalia which is retained due to universal usage
- Distinction Level – "…ata"
- Group Level – "…ia"
- Allocation Level – "…id"
- Association Level – "…formes"
- Division Level – "…eria"
- Genesis/Kind Level – "…idae"
- Type Level – None
- Variety Level – None
- Variation Level – None

Final Notes And Comments

It is important to remember that this is a new method of classification and has not been fully refined. If it does continue be refined, there will undoubtedly be various alterations, additions and amendments before a purely definitive form is arrived at. Just as the first classification scenarios presented took numerous years to develop and refine, it will probably be the same case here, if it is pursued.

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