earth, subdue, and rule) intact though diminished by their fusion with the experiential knowledge of evil, such as increased pain in childbirth and increased effort in accomplishing labor (Gen. 1: 28; 3:5; 9:1–7). Likewise, humans still retain the initial tasks like cultivating the ground but now in a manner that subjects them to futility with thorns and thistles and much labor (Gen. 3:17–19, 23). Even the extreme measures of God utilizing the waters of chaos to attack the sin dominated condition of the earth provides the remnant as preserved in blessing and work (Gen. 9:1–7, 20). Animal futility fits within creation futility in a more modest form, since the passages mostly address human futility.

Third Conclusion: Specifics of this **futility for animals** (as well as humans) are fleshed out by further metaphors: **death, no permanence, perhaps a reigning death condition, pain, and having life summed up as vanity** (Gen. 2:17; 3:14, 19–20; 4:8, 23; 5:5, 8, 11, 14, 17, 27, 31; word study of vanity in Eccl. and applied to Eccl. 3:18–22; Rom. 5:12–21; 8:18–23; Eph. 2:2–3). While these conditions are especially developed as definitely applied to humans, I will probe these passages to conclude in a more tentative manner (thus somewhat conjectural with some evidence) to work out the same conditions for animals.

Finally, **Resolution**: Isaiah 11 and second Temple Judaism leaves creation with a **generic hope for animals to return to a paradise condition in Kingdom**, as humans are redeemed specifically for co-reigning in Kingdom with everlasting life. There is no specific promise for salvation of a specific animal, as there are for humans.

Editor: JWF

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C8. The Creation-Evolution Literature Database (CELD)

S.R. Mace & T.C. Wood
Bryan College

Expansion and growth of the creation model by scholarship depends on building on the foundation of the existing knowledge and conducting new research. Various databases, such as PubMed or GeoRef, offer access to conventional scientific periodical literature, but researchers interested in the creation/evolution issue must search a variety of publisher's websites looking for papers of interest. To remedy this difficulty, the Center for Origins Research (CORE) developed the Creation-Evolution Literature Database (CELD). CELD presently archives abstracts and citations from 56 publications, spanning the last 140 years. For items without an explicitly labeled abstract, CELD records the first paragraph (for longer items) or the first sentence (for short items). CELD includes all published items (articles, letters, commentaries, book reviews, etc.) from each periodical. CELD tracks major creationist publications (e.g., *CRSQ*, *Journal of Creation*, *Creation* magazine), as well as theistic evolution publications (e.g., *Science and Christian Belief*, *Perspectives on Science and the Christian Faith*), and publications on religion and science (e.g., *Zygon*). CELD currently contains more than 20,000 citations, approximately 40% of which also link directly to online content from the publishers' websites. Researchers can search CELD for authors, titles, abstract words, or keywords. The content of CELD reflects the content of the CORE library, with additional periodicals added as they become available. Early development of CELD emphasized archiving the scholarly literature rather than more popular publications. Consequently, CELD lacks a few significant titles, such as *Bible-Science News* and *Origins Research*, which will be added in the future. CELD can be accessed at the CORE website, www.bryancore.org/celd.

Editor: GP

C9. A Baraminological Analysis of the Landfowl (Aves: Galliformes)

M. McConnachie & T.R. Brophy
Liberty University

The landfowl (Aves: Galliformes) form a large (250 species, 70 genera) and cosmopolitan group of birds that have consistently been grouped together since the inception of avian taxonomy. We analyzed a published morphological (primarily osteological) dataset (Dyke et al., 2003) using baraminic distance and classical multidimensional scaling (MDS). The dataset consists of 102 characters from 60 extant landfowl and five extant waterfowl (Aves: Anseriformes) taxa. The landfowl taxa include three mound builder (Megapodiidae), five cracid (Cracidae), four guineafowl (Numididae), seven New World quail (Odontophoridae), two turkey (Meleagrididae), six grouse (Tetraonidae), and 32 phasianid (Phasianidae) genera (including Old World quails, peafowl, tragopans, pheasants, partridges, and allies). Both baraminic distance correlation analysis and multidimensional scaling suggest the possibility of four holobaramins within the landfowl order: Megapodiidae, Cracidae, Numididae, and the remaining Phasianoidea. Hybridization data (McCarthy, 2006), however, connects three of these provisional holobaramins (six of the currently recognized families). Considering both sets of evidence, we conclude that the landfowl are composed of two monobaramins: Megapodiidae and [Phasianoidea + Cracidae]. The five currently recognized families in the superfamily Phasianoidea have, until recently, been considered subfamilies in a more broadly conceived family Phasianidae, so it should not be surprising that they are members of the same monobaramin. Perhaps the most surprising result of this study then, is the inclusion of the Cracidae in the phasianoid monobaramin. A closer inspection of our data along with more recent phylogenetic analyses of the landfowl, however, suggest that that the Cracidae are more closely related to the Phasianoidea than once assumed. This study emphasizes the continued value of hybridization data

in baraminological research, illustrates the importance of using multiple lines of evidence when delimiting holobaramins, and is suggestive of the potential uses and limitations of statistical baraminology.

Editor: RWS

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C10. Lantana (Verbenaceae) as a Model to Study the Origin of Traits Exhibiting Natural Evil

R.W. Sanders
Bryan College

Many features of organisms related to protection, aggression, or nutrition inflict suffering or death on other species. They can be referred to as cases of "natural evil." In conventional biology, traits exhibiting natural evil are viewed as evidence of the lack of design, having arisen from previously adapted features co-opted for their present functions or by direct adaptation resulting from (further) natural selection. In contrast, creation biology views such features as evidence for design marred by the entrance of sin into God's perfect creation. Creation models proposed to explain them include: original design with transfer of function, fiat redesign, intrinsic degeneration (random loss genes), extrinsic degeneration (shift of habitat or co-symbiont), and mediated design (pre-programmed genetic elaboration) (Wood & Murray 2003, ch. 9-10). A research program is being developed to investigate the origin of such features. Because the author has extensive experience with the genus *Lantana* (shrub verbena in the family Verbenaceae), the present study evaluates whether this plant group has potential as a model system for use in a series of future studies. It has long been known that certain species of *Lantana* possess traits that can be classed as natural evil. These include prickles, triterpenes toxic to mammals, pungent surface oils toxic to insects, and aggressive weediness in areas where the natural species and/or hybrid strains are alien (Sanders 2001). It is significant that some species with these traits and others species that lack some or all of them can easily hybridize with each other. In fact, hybridization is extensive within taxonomic sections of *Lantana* (Sanders 2006). The author's original unpublished observations suggest that the prickles show incomplete dominance at one or multiple loci and are associated with variable proliferation of epidermal cells at the base of stiff surface hairs.

This information, plus the ease of culture and accessibility of *Lantana*, suggests that it is a good candidate with which to study the origin of traits exhibiting natural evil. The hybridization ability suggests both that *Lantana* is a monobaramin and that much of the underlying genetic basis of features can be determined. Further baraminological research is needed to determine the limits of the holobaramin to which *Lantana* belongs. However, morphological variation among similar genera suggests the holobaramin to be the family Verbenaceae or subfamily Verbenoideae, depending on the classification authority followed. Therefore, it is tentatively hypothesized that *Lantana* originated during a post-Flood period of rapid diversification of its baramin, precluding original design and fiat redesign in the origin of these features at the Fall. Aggressive weediness is clearly a case of ecological degeneration in modern history. It is not clear whether the prickles, triterpenes, and oils arose by genetic degeneration or pre-programmed mediated design. Variation and development of prickles make them amenable to genetic analysis and possible sequencing of the underlying genes. Review of the conventional literature on the biochemical pathways of the toxic triterpenes and oils in *Lantana* and related genera is needed, as well as identification and sequencing of the underlying genes. Assuming such data become available through the planned program or conventional publications, origin of these features during diversification by either random intrinsic degeneration or mediated design should become clear.

Editor: JWF

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C11. Baraminology and the Fossil Record of the Mammals

K.P. Wise
Southern Baptist Theological Seminary

Both the abundance of fossils and the severity of the Flood suggest that many non-terrestrial organisms were killed in the Flood. It is likely that not just terrestrial, but *all* baramins experienced a severe diversity bottleneck in the Flood. Thus whereas modern baramins have existed continuously since the Flood, most sub-baraminic groups originated *after* the Flood. This suggests a new baraminology criterion – called here "post-Flood fossil continuity criterion" (PFCC): high preservability baramins should have a continuous fossil record back at least to the Flood, and high preservability groups with a first-appearance in the fossil record substantially after the Flood are sub-baraminic.

The new criterion is here applied to the mammals. McKenna and Bell (1997) present known stratigraphic occurrences for all mammal taxa above the level of species (>1130 genera; >420 families; >220 super-family taxa) to the sub-system level in the Mesozoic and sub-series level in the Cenozoic.

Hybridization reports firmly establish that mammal baramins are more inclusive than genera, tribes, and even subfamilies. More complete baraminology studies usually place the mammal baramin at the level of the family or higher. Using the PFCC, the Flood/post-Flood boundary should post-date the first appearance of most families and pre-date the first appearance of most intra-family taxa. Among living taxa with a fossil record, and assigning sequential numbers to the sub-series, one standard deviation below the mean first-appearance are as follows: Upper Miocene for genera (n=648); Upper Oligocene for subtribes (n=130) and tribes (n=31); Lower Oligocene for subfamilies (n=162); Middle Eocene for families (n=140); and Upper