

ability of the scientific process to correct its mistakes. But he also believes that if a competent scientist like Lowell could be taken in, much of what we do in modern science will someday join the canals of Mars as examples of human folly. He first applies this principle to the social sciences but then goes on to apply it to his own area. He asks whether the "big bang" theory should be placed in this category and then goes on to ask "what about quarks?"

It should be pointed out that there are a number of theories for which at one time there was thought to be ample observational evidence. What has happened to phlogiston? To ether? There was what was assumed to be ample observational evidence to support these

explanations, but today they are a part of the museum of discarded scientific theories.

Is it worth while applying these same questions to the theory of evolution? Can fifty million Frenchmen be wrong? The Lowell incident and others in the history of science clearly show that this is possible. The argument that evolution must be true because it is held by so many scientists and seems to be supported by so many observations is hardly an acceptable one. Lowell thought the evidence was there. He even had drawings and maps to support his explanation. Evolutionists too insist that there is ample evidence for their explanation, but they too can be wrong.

Contributed by John W. Klotz

THE POSTULATED EVIDENCE FOR MACROEVOLUTION AND DARWINISM: DARWINIAN ARGUMENTS AND THE DISINTEGRATING NEO-DARWINIAN SYNTHESIS (PART I)

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Abstract

The eight primary lines of evidence offered for macroevolution and Darwinian mechanisms are discussed. Evolutionist scientists and writers are quoted who suggest that (1) the paleontology argument "contributed . . . nothing to evolutionary biology"; (2) the phylogeny argument has produced only a "meaningless waffle" and has been "another miserable failure"; (3) the classification argument "has nothing to say about evolution" and "ignorance concerning these relationships is still great"; and (4) the "facts of comparative anatomy provide no evidence for evolution," while the "attempt to find homologous genes has been given up as hopeless." Similarly, (5) the embryological argument used to center on a biogenetic "law" that has "been demonstrated to be wrong by numerous subsequent scholars" and now stands on the problem that "[a]natomically homologous parts in different related organisms appear to have quite different origins"; (6) the comparative biochemistry argument offers a "serious . . . challenge to the whole evolutionary framework" rather than support by widespread anomalies that require "a robust rejection of a generalized molecular clock hypothesis of DNA evolution"; (7) the population genetics argument has made "no direct contribution to what Darwin obviously saw as the fundamental problem: the origin of species," and "is merely the blind leading the blind"; and (8) the artificial selection argument overlooks that "selective breeding is not analogous to the action of 'natural selection'." All scientists mentioned in this article are evolutionists.

Introduction

The major arguments for macroevolution are described by Stansfield (1977, p. 98) as follows:

Two of the major lines of evidence supporting the evolutionary theory, namely *paleontology* and *biogeography*, were presented in the last chapter. This chapter presents further supporting evidence drawn from the disciplines of *taxonomy*, *comparative embryology*, *comparative anatomy*, *comparative biochemistry*, and *physiology*. (emphasis added)

Those "evidences for evolution" are similarly summarized by Good (1974, p. 3) and Gould (1987, pp. 65, 68). The arguments for Darwinian evolution are discussed as follows: (a) the paleontology argument, (b) the phylogeny argument, (c) the classification (taxonomy) argument, (d) the comparative anatomy and physiolo-

gy argument, (e) the comparative embryology argument, (f) the comparative biochemistry argument, (g) the population genetics argument, and (h) the artificial selection argument.

These postulated evidences for macroevolution are viewed with great cynicism by Grassé (1977, p.6):

Through use and abuse of hidden postulates, of *bold, often ill-founded extrapolations*, a *pseudoscience* has been created. It is taking root in the very heart of biology and is *leading astray* many biochemists and biologists, who sincerely believe that the accuracy of fundamental concepts has been demonstrated, which is not the case. (emphasis added)

The same skepticism is held by Kerkut (1960, p. vii) and many other nondiscontinuitist scientists:

The attempt to explain all living forms in terms of an *evolution from a unique source*, though a brave and valid attempt, is one that is premature and *not satisfactorily supported* by present-day evidence. (emphasis added)

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In fact, classification, comparative anatomy, comparative embryology, population genetics, and artificial selection data can "be accounted for on some different hypothesis" besides evolution, although paleontology allegedly cannot, according to Good (1974, p. 4).

Paleontology Argument and Difficulties

The paleontology argument for macroevolution is based on the fossil record; paleontology is "the study of fossils," Stansfield (1977, p. 67). "Direct study of macroevolutionary patterns is only possible in the fossil record," Valentine (1982, p. 517) and this fossil record "forms our most direct evidence . . . of the course of biological evolution," Dobzhansky *et al.* (1977, p. 314) conclude. Also see Good (1974, p. 4). Yet the fossil record is characterized by systematic abrupt appearances of groups of organisms and systematic gaps between groups, rather than by a generally progressive emergence of one group from another (Bird, 1987, pp. 46-64).

Consequently, even though the fossil record is the "most direct evidence" of macroevolution, Ridley (1981, p. 831) states that "no real evolutionist, whether gradualist or punctuationalist, uses the fossil record as evidence in favour of the theory of evolution as opposed to special creation." Thus far, according to Hoffman, paleontology has added nothing to evolutionary biology:

All the recent paleobiological debates have, in my opinion, contributed much to the conceptualization of paleobiological research itself, but nothing to evolutionary biology. I contend only that they have not done so . . . (1983, p. 241).

Patterson (1981b, p. 218) concludes that the concept that fossils are the best evidence for evolution is a myth:

I conclude that *instances of fossils overturning theories of relationship based on recent organisms are very rare, and may be nonexistent*. It follows that the *widespread belief that fossils are the only or best means of determining evolutionary relationships is a myth*. Tracing how this myth came to be an article of faith among biologists. . . should be an interesting study in the sociology of science; it seems to have followed, as an unquestioned corollary, from acceptance of evolution. (emphasis added)

(1) *Abrupt Appearance and Gaps*. The overwhelming problem that the fossil record poses for macroevolution thus is that the record is characterized by abrupt appearances and systematic gaps, as Gould acknowledges:

Increasing diversity and multiple transitions seem to reflect a determined and inexorable progression toward higher things. But the *paleontological record supports no such interpretation*. There has been *no steady progress* in the higher development of organic design. We have had, instead, vast stretches of *little or no change* and one evolutionary *burst* that created the entire system. (1976, p. 37, emphasis added)

New species almost always appeared suddenly in the fossil record with *no intermediate links* to

ancestors in older rocks of the same region. (1977, p. 12, emphasis added)

Gould (1977, p. 14) also states:

The *extreme rarity of transitional forms* in the fossil record persists as the *trade secret of paleontology*. The evolutionary trees that adorn our textbooks have *data only at the tips* and nodes of their branches; the rest is inference, however reasonable, not the evidence of fossils. (emphasis added)

That trade secret is being let out by more and more scientists, such as Grassé (1977, p. 31) and Boyden (1973, p. 27) for the origin of phyla, George (1960, p. 1) and Simpson (1953, p. 360) for the origin of genera and families, and many others quoted in Bird (1987, pp. 46-64).

The alleged evolutionary trees are not just mostly "inference" rather than "data," but are "highly conjectural" and either do not support or actually "deny" macroevolution. Patterson (1981, p. 216). Also see Rosen *et al.* (1981, p. 178). The alleged transitional forms are such that now "we have even fewer examples of evolutionary transition than we had in Darwin's time," and "there is not one such fossil for which one could make a watertight case," according to Raup (1979, p. 25). Also see, Valentine (1982, p. 516) and Patterson (1979, p.1). These few alleged transitional forms are not statistically significant enough to lend support to macroevolution or Darwinian mechanisms, as Denton (1985, p. 117) points out:

Even if a number of species were known to biology which were indeed perfectly intermediate, possessing organ systems that were unarguably transitional in the sense required by evolution, *this would certainly not be sufficient to validate the evolutionary model of nature*. To refute typology and securely validate evolutionary claims *would necessitate hundreds or even thousands of different species, all unambiguously intermediate* in terms of their overall biology and in the physiology and anatomy of all their organ systems.

That statistical insignificance is evident in view of the 250,000 fossil species that have been catalogued (Raup, 1979, p. 22) which represent thousands of orders, families, and genera; and the 1,071,500 animal species and 368,715 plant species alive today, Dobzhansky (1970, p. 24); Mayr (1969, pp. 11, 12). Moreover, many of the unbridged gaps are such that one cannot even "invent a reasonable sequence of intermediate forms," Gould (1977, p. 24) concedes. Also see Frazetta (1970, p. 55). The few alleged transitional fossils are discussed elsewhere Bird (1987, pp. 209-34).

These abrupt appearances and systematic gaps pose critical if not fatal problems for macroevolution. "[I]t should be possible to find some 'connecting links'," because "higher categories become distinct entities through extinction of intermediate related groups." Stansfield (1977, p. 511). Also see Huxley. (1967, p. 13) and Wald (1967, p. 19). Darwin (1859, p. 302) saw the "fatal" significance of abrupt appearances:

On the *sudden appearance* of whole groups of Allied Species . . . If numerous species, belonging

to the same genera or families, have really started into life all at once, the fact would be *fatal* to the theory of descent with slow modification through natural selection. (emphasis added)

Darwin (1859, p. 280) also recognized the fatal significance of the problem posed by systematic gaps:

Why then is not every geological formation and every stratum full of such *intermediate links*? Geology assuredly does not reveal any such finely graduated organic chain; and this, perhaps, is the *most obvious and gravest objection which can be urged against my theory*. The explanation lies, as I believe, in the extreme imperfection of the geological record. (emphasis added)

T. H. Huxley, probably his chief advocate, conceded that "if it could be shown that this fact had always existed, the fact would be fatal to the doctrine of evolution." (1882, p. 619). Biological macroevolutionists have proposed two major solutions.

(2) *Adequacy of the Fossil Record*. One defense raised by Darwin and many macroevolutionists is an "extreme imperfection of the geological record." (1859, p. 280). In fact, Darwin staked his case on imperfection being an accurate portrayal of the record: "He who rejects these views on the nature of the geological record, will rightly reject my whole theory." (1859, p. 342).

However, now that 200 million fossil specimens have been catalogued of over 250,000 fossil species (Raup, 1979, p. 22) the fossil record cannot really be called inadequate, Stanley (1979, p. 1) argues:

In part, the role of paleontology in evolutionary research has been defined narrowly because of a false belief, tracing back to Darwin and his early followers, that the fossil record is woefully incomplete. Actually, the record is of *sufficiently high quality* to allow us to undertake certain kinds of analysis meaningfully at the level of the species. (emphasis added)

The fossil "data for genera and families are numerous enough to allow for meaningful analysis," Raup and Stanley (1978, p. 303) state, and for mammals the "geological history is comparatively well documented." (Russell, 1962, p. 130). The only sense in which the fossil record is inadequate may be that it does not contain the numerous "intermediate links" expected by Darwin:

As an aside, one is led to ask *to what degree the "imperfect" geological record was viewed as such by Darwin simply because there were no observed transitional links*. There can be no doubt that Darwin had empirical reason to believe in an imperfect record, but was his emphasis based partly on his biological expectations? In any case, there is no question that Darwin expected those finely graded transitions. He firmly believed that transitions must have existed and struggled to rationalize their absence . . .

Darwin's expectations and theorizations were clearly at variance with his observations of nature . . . (Raup, 1979, p. 14, emphasis added)

(3) *Insufficiency of Assumed "Ancestral Groups."* Another defensive approach taken by many macroevo-

lutionists is to identify purported common "ancestral groups," a fall-back position resulting from the absence of actual fossils of common ancestors or transitional forms. However, postulations about "such groups are inconsistent with evolutionary theory," according to Patterson (1981b, p. 207). There are several problems.

First, talk about ancestral groups is highly conjectural, and may be imagining a relationship between what may be totally unrelated groups, as Rosen *et al.* (1981, p. 178) note:

The search for fossils has produced *superficially acceptable sequences*, as it was bound to, for *few transformations, however fantastic, are forbidden by the Darwinian or neo-Darwinian picture of the evolutionary process*. Yet the sequences consist of nothing more than abstractions from paraphyletic groups such as rhipidistians, osteolepiforms, and labyrinthodonts. (emphasis added)

Those conjectures are no different from the pre-Darwinian conjectures about archetypes, Brady (1983, p. 265) adds:

Patterson (1982) reviews the Owen version of an archetype and notes that the real problem is the notion of general homology, by which "an idealization" is homologized with actual features through "abstract transformations." He then argues that the same strategy can be found in the contemporary practice of homologizing dissimilar organs on the basis of the homology of each with the primitive version of the organ in a hypothesized progenitor. Due to the use of such a strategy in contemporary works, Patterson concludes that "*archetypes are by no means extinct, but live on in the form of speculative progenitors*." These modern versions are Darwinian, of course, but however far they appear to be from Owen's idealistic schema, they result in the *same difficulties*. (emphasis added)

Such "speculations" are not persuasive even if the postulated sequence is somewhat similar, Denton (1985, pp. 194-5) points out:

It is possible to allude to a number of species and groups such as *Archeopteryx*, or the rhipidistian fish, which appear to be to some extent intermediate. But even if such were intermediate to some degree, there is no evidence that they are any more intermediate than groups such as the living lungfish or monotremes which, as we have seen, are not only tremendously isolated from their nearest cousins, but which have individual organ systems that are not strictly transitional at all. As evidence for the existence of natural links between the great divisions of nature, *they are only convincing to someone already convinced of the reality of organic evolution*. (emphasis added)

For example, some rocks resemble each other and can be lined up in an evolutionary sequence, but that does not prove that one evolved into the others, Hull (1983, pp. 333-5). Also see Patterson (1981b, p. 218). "Fossils may tell us many things, but one thing they can never disclose is whether they were ancestors of anything else," as Patterson (1978, p. 133), Oldroyd (1986, p. 154)

and Good (1974, p. 383) emphasize. Second, Brady attacks the concept of "the hypothetical ancestor":

A similar problem arises with regard to the hypothetical ancestor, for *this invention is equally without empirical foundation*, and occupies a space in our reflections that should be reserved for actual observation. If we can invent one ancestral form, *we can invent many*, and lacking the evidence for which they substitute, there is no way to determine which form, if any, is correct.

We must remember, while reviewing these problems, that the mediating form was hypothesized because the data was inconclusive without it. It becomes, therefore, an interpretive tool by which the data can be given definition. The known forms are now interpreted by the hypothesized ancestor (or intermediate), and what the existent organisms do or do not possess will now depend upon what the hypothesized ancestor (or intermediate) says they possess. *If the empirical forms must submit to interpretation by the hypothesis, they cannot be used to test that hypothesis.* For these reasons Patterson calls general homology "vacuous," and I must concur. *Speculative construction of general forms and the paths of transformation that they suggest may hold a certain fascination for the imagination, but the practice is merely guesswork and can tell us nothing about the actual paths of transformation.* 'General homology' is not actual homology. (1983, p. 266, emphasis added.)

Third, statistically there should be a large number of actual fossils of common ancestors or intermediate forms, given the quarter billion catalogued fossils of a quarter million fossil species, as discussed above. Darwin and Huxley conceded that must be the case if macroevolution were true, and that should be the case even if macroevolution occurs in punctuated bursts (Bird, 1987, pp. 172-3).

Fourth, even if the search for actual ancestors or intermediates is abandoned for a search for roughly ancestral groups, there is the problem that not even rough ancestral groups exist for most major categories. There are no such ancestral groups for any of the 25 phyla of the animal kingdom, because there are "no extinct fossil groups known that are the common ancestors of two or more living phyla" and there are absences of intermediate forms between "all" 25 phyla, according to Ayala and Valentine (1979, p. 258). The same is true for many other higher categories and for every taxon where an abrupt appearance occurs (Bird, 1987, pp. 46-56). Transformed cladists, such as Patterson (1980, p. 217) criticize "the textbook stories [that] are replete with phantoms—extinct, uncharacterizable groups giving rise one to another." It is not enough for a small handful of rough ancestral groups to be found, as Denton (1985, p. 177) stresses:

To demonstrate that the great divisions of nature were really bridged by transitional forms in the past, *it is not sufficient to find in the fossil record one or two types of organisms of doubtful affinity which might be placed on skeletal grounds in a relatively intermediate position between other groups* . . . (emphasis added)

A number of rejoinders by defenders of the "ancestral group" approach are addressed by Patterson (1981b, p. 207):

Evolutionary paleontologists have offered three responses to criticisms of ancestral groups. First, the grouping by phenetic similarity (as in forming paraphyletic groups) reflects genotypic similarity, and is therefore a valid reflection of evolutionary relationships. This argument has been refuted above. Second, that ancestral groups are approximations, "with the admission that evidence available at present is insufficient to make a more specific statement" . . . ; the rank assigned to such groups "symbolizes the degree of confidence which one has in a hypothesis about phylogeny" . . . This response seems to reflect only the inductivist view so long prevalent among paleontologists—"we need more fossils before we shall know the answer." Third, paraphyletic groups are "adaptively unified" . . . While this may be true of some such groups (as some may be "phenetically" unified), it cannot serve as a general justification. No one can argue that Invertebrata (a paraphyletic group) are adaptively unified.

For ancestral groups as for adaptations, "a plausible story is not necessarily a true one." Gould (1977, p. 28).

Thus, the paleontology argument for biological macroevolution and Darwinism is weak if not subversive, in the view of many Darwinians as well as nonevolutionist scientists. That is why Ridley (1981, p. 831) states that "no real evolutionist, whether gradualist or punctuationalist, uses the fossil record as evidence in favour of the theory of evolution as opposed to special creation."

Phylogeny Argument and Difficulties

The phylogeny argument for macroevolution is based on "phylogenetic trees" of assumed evolutionary descent. Raup and Stanley (1978, pp. 131-2). This phylogeny field of systematics "is the very cornerstone of evolutionary analysis." (Cracraft, 1983, p. 177). Yet it is a weak cornerstone, according to a number of evolutionists as well as discontinuist biologists.

One problem with the phylogeny argument is that reconstruction of phylogenies is *impossible* in the professional opinion of many nondiscontinuists such as Hull (1983, pp. 333-5):

The chief question with respect to phylogenetic reconstruction has always been its feasibility. Throughout the history of "Systematic Zoology," a *series of objections* have been raised to it, starting with Blackwelder, Bigelow, Boyden, and Borgmeier, continuing with the pheneticists, and culminating with at least some cladists. (emphasis added)

For example, the cladist objection to phylogenies begins with the point that "common ancestral species are necessarily hypothetical, and . . . will forever remain unknown and unknowable in a directly empirical sense," (Nelson, 1972, p. 368). Consequently, rough ancestral groups must be used instead, and they are "flawed artefacts" with questionable assumptions, Patterson (1982, p. 306) contends:

Because of all these problems, it is *rare to find palaeontologists offering ancestral species*, or doing so with any conviction. Instead, they usually propose “ancestral groups,” as approximations to the truth, with the claim that the true ancestor, if found, would fall within the group . . . Yet these *flawed artefacts* play a *central role in phylogenies* — accounts of the evolutionary descent of lineages. This raises yet another problem, for *groups cannot evolve* — species are the largest units capable of change. Thus *cladistics calls into question much of conventional evolutionary history*. (emphasis added)

Also see Ball (1983, p. 446). The rejection of phylogenies—and of macroevolution itself—by many pheneticists and cladists is discussed elsewhere (Bird, 1987, pp. 152, 190-3).

Another serious difficulty, related to the first, is that phylogenies are almost *totally speculative*. Bonner (1961, p. 242) says that those in textbooks “are, as a rule, a festering mass of unsupported assertions.” Ghiselin (1972, p. 131) concludes that many “read like imaginative literature” and “fill gaps in the data with speculations.” Boyden (1973, p. 117) observes that “phylogenies grew up like weeds” for “even organisms with no fossils available,” and Good (1974, p. 8) notes that such “studies in plant evolution are generally no more than the raw materials of phylogenetic speculation.” Charig (1982b, pp. 411-2) calls some phylogenies as “meaningless waffle.” Turrill (1963, p. 213) calls most “extremely doubtful approximations,” and Sokal and Sneath (1963, p. 104) call many “utter rubbish.” Also see Rosen and Schuh (1975, p. 505). The gross subjectivity of postulated phylogenies is evident in the treatment of the fossil record as inadequate when the fossils do not fit the phylogenetic hypotheses, but as adequate when the fossils can be interpreted to support the phylogenetic hypotheses:

But *when a new fossil is found and is inconsistent with the phylogeny (like Ichthyostega), the stratopheneticist's answer is that this test has shown that the fossil record was insufficiently dense and continuous for the method to work. And when a new fossil is consistent with the phylogeny, the record was sufficiently dense and continuous. Plainly, the method is hard to fault, for the fossil record, rather than the phylogeny, is under test* . . . Patterson (1980, p. 216, emphasis added).

Forey (1982, p. 143) concurs in that objection and Kitts (1974, p. 467) provides part of the reason in noting that “paleontological phylogeny construction has not been provided with a solid theoretical foundation.”

A further problem, closely related to the preceding ones, is that phylogenies are used to support macroevolution through *circular reasoning*, as Thomson (1982, pp. 529-30) notes:

Any reasonably graded series of forms can be thought to have legitimacy. In fact, there is *circularity* in the approach that first assumes some sort of evolutionary relatedness and then assembles a pattern of relations from which to argue that relatedness must be true. This interplay of data and interpretation is the *Achilles' heel* of the second meaning of evolution.

Forey (1982, p. 124), Cartmill (1981, p. 90) and Kitts (1974, p. 467) reaffirm the presence of circular reasoning.

A crowning problem is that the quest for phylogenies has “*failed*” utterly, according to Saiff and Macbeth (1982, p. 12):

A. *The Commitment in Theory*. Darwinian theory asserts that physical descent with modification has been universal, which means that every modern species is the latest link in a phylogeny. There must therefore have been hundreds of thousands of phylogenies, and it was Darwin's expectation that these would be found. His followers, sharing his expectations, felt a duty to seek and find the phylogenies . . .

B. *Another Miserable Failure*. The expectations were vain. The zeal came to naught. In the 125 years since the *Origin* was published, nothing has been accomplished. *No phylogenies have been established* and the pursuit of them has fallen into disrepute. (emphasis added)

Also see Patterson (1981b, p. 213) and Macbeth (1976, p. 495). Mayr (1982, p. 218) finds the “futile attempts” to be “depressing”:

The *futile attempts* to establish the relationship of the major phyla of animals induced at least one competent zoologist at the turn of the century to deny common descent. Fleischmann (1901) called the theory a beautiful myth not substantiated by any factual foundation. Kerkut, fifty years later, does not draw such an extreme conclusion but he is almost equally pessimistic about ever achieving an understanding of the relationship of the higher animal taxa. Honesty compels as to admit that our ignorance concerning these relationships is still great, not to say overwhelming . . . (emphasis added)

Some will question whether phylogeny construction has failed in light of the horse phylogeny or other phylogenies. Raup (1972, p. 25) responds that the number of arguably correct phylogenies is shrinking:

The record of evolution is still surprisingly jerky and, *ironically, we have even fewer examples of evolutionary transition than we had in Darwin's time*. By this I mean that some of the classic cases of Darwinian change in the fossil record, such as the evolution of the *horse* in North America, have had to be discarded or modified as a result of more detailed information—what appeared to be a nice simple progression when relatively few data were available now appears to be much more complex and much less gradualistic. (emphasis added)

Denton (1985, p. 185) agrees:

Considering that the total number of known fossil species is nearly one hundred thousand, the fact that the only relatively convincing morphological sequences are a *handful of cases like the horse*, which do not involve a great deal of change, and which in many cases like the elephant may not even represent phylogenetic sequences at all, serves to emphasize the *remarkable lack of any direct*

evidence for major evolutionary transformations in the fossil record . . .

It is possible to view such series in a very different light and read the fossil evidence directly as it stands; and infer that what is exceptional about such sequences is not their preservation but rather the fact that they occurred. *They may be exceptions which prove a very different rule: that in general, nature cannot be arranged in terms of sequences and that where sequence does exist it is exceptional or relatively trivial.* (emphasis added)

The various specific phylogenies are discussed elsewhere (Bird, 1987, pp. 209-34).

Thus, the phylogeny argument for biological macroevolution is viewed by many nondiscontinuitists scientists as impossible (according to transformed cladists and others), totally speculative (compared to everything from "weeds" (Boyden, 1973, p. 117) to "rubbish" (Sokal and Sneath, 1963, p. 104), "circular" (Thomson, 1982, pp. 529-30) and a "failure" (Saiff and Macbeth, 1982, p. 12). In this important area, the biological theories of macroevolution and Darwinism are not compellingly established.

Classification Argument and Difficulties

The classification argument for macroevolution is based on the hierarchical structure in nature; classification is "the theory and practice of naming, describing, and classifying organisms." Stansfield (1977, p. 98). Also see Kluge (1977, p. 10). There are "three prevailing systems of classification, known as phenetic, cladistic, and evolutionary." Dobzhansky *et al.* (1977, p. 262). Also see Luria *et al.* (1981, p. 684).

The most basic problem with the classification argument is that half of one school (transformed cladists, [Mayr (1982, pp. 226-7); Hennig (1966)]) and much of another school (pheneticists, [Mayr (1982, pp. 221-3); Sokal and Sneath (1973)]) deny that classification supports or is even relevant to evolution. "In 'transformed cladistics,' . . . evolution is deliberately ignored, being considered unproven and possibly unprovable," as one of its critics, Charig (1982a, p. 121) protests. Also see Platnick (1979, p. 537). Patterson (1981a, p. 92) agrees:

As I understand it, cladistics is *theoretically neutral* so far as evolution is concerned. It *has nothing to say about evolution*. You don't even need to know about evolution, *or believe in it*, to do cladistic analysis. (emphasis added)

Also see Beatty (1982, p. 31). Patterson (1982, p. 304) suggests that the branching diagrams produced by cladists "can be seen not as evolutionary trees" and as not supporting "common ancestry."

Critics of transformed cladistics lambast its "non-evolutionary" or anti-evolutionary thinking, such as Oldroyd (1986, p. 154):

Indeed, as is well known, *much modern taxonomy has abandoned its Darwinian, historicist or genealogical approach*, and has adopted a positivistic methodology based simply on an examination of observable morphological similarities and differences, and excluding attempted reconstructions of

genealogies. This so-called cladistics is *fundamentally a non-evolutionary classification*. As such, it generates something *very like the nineteenth-century typologies* of authors such as Henri Milne-Edwards. *Cladistics*, which is, of course, an *anathema to neo-Darwinians*, is favoured by those who prefer not to transcend the observable data in their theorizing to "speculate" about genealogical relationships. (emphasis added)

Ball (1983, p. 446) also laments that transformed cladistics operates "in a non-evolutionary domain." Beatty (1982, pp. 29, 31) observes that, "[a]pparently in response to the perceived crisis in evolutionary biology, cladists have taken more or less extreme measures to sever their ties from that discipline" and are not merely "evolutionarily neutral" but "at odds with evolutionary thinking." Ridley (1983, p. 651) states that transformed cladists "are asserting that they can do cladism without evolution, and what they can do, they will." Benton (1984, p. 18) observes that they classify "without any prior assumptions that evolution has taken place."

Proponents of transformed cladistics agree that "cladistics calls into question much of conventional evolutionary history." (Patterson, 1982, p. 306). "Garth Nelson and Norman Platnick lodge a frontal assault on Darwinism in systematics by claiming it to be falsified," Cracraft (1985, p. 302) notes and they indeed do so by arguing that evolutionary phylogenies should be replaced with classifications that "include no ancestral taxa":

If phylogenies of one sort . . . are to pass away, is the notion of phylogeny doomed also? We judge not, for *there is an alternative notion, here simply termed classification* . . . Notions of this kind can be looked upon as phylogenies—as historical statements of ancestry and descent. But they are different in character. *They include no ancestral taxa. They deny the postulates of Darwinian systematics*: that ancestral taxa have an objective identity independent of their descendants; that ancestral taxa can be discovered and identified as such; that ancestral taxa are under the constraints of empirical investigation. (Nelson and Platnick, 1984, pp. 153-4, emphasis added)

The "phenetic schools refrain from taking any evidence from descent into account," Mayr (1982, p. 226) notes. Simpson concluded that phenetics brought "retrogression in taxonomic principle . . . a conscious revival of pre-evolutionary, 18th century, principles." (Mayr, 1982, p. 224). Thus, in the phenetics school, "some more radical numerical taxonomists have abandoned the goal of building a taxonomy that reflects evolutionary descent." (Luria *et al.*, 1981, p. 676). In the view of these specialists, the groupings in nature do not support Darwinian macroevolution but instead are at best irrelevant if not contrary to it.

A related problem is that essentially the same classification system was historically founded and developed by creationist scientists (Linnaeus and others), and was defended as more consistent with the theory of creation than with the theory of evolution by many scientists at the time of Darwin (Agassiz, Sedgwick, and others), as Stansfield (1977, p. 99), Dobzhansky

(1982, p. 734) and Patterson (1978, pp. 121-2) note. Darwin himself "took these relations to be established by previous biology," and "was clearly of the opinion that they were independent of that theory." (Brady, 1985, p. 113).

In fact, this preDarwinian classification system "has undergone surprisingly little change in the times following it, and such changes as have been made have depended only to a trifling extent on . . . phylogenetic relationships" proposed by macroevolution, Mayr (1942, p. 276) concedes:

The fact is that the classification of organisms that existed before the advent of evolutionary theories has undergone *surprisingly little change* in the times following it, and such changes as have been made have depended only to a trifling extent on the elucidation of the actual phylogenetic relationship through paleontological evidence. The phylogenetic interpretation has been simply superimposed on the existing classification; *a rejection of the former fails to do any violence to the latter*. The subdivisions of the animal and plant *kingdoms established by Linnaeus are, with few exceptions, retained in the modern classification*, and this despite the enormous number of new forms discovered since then. The new forms were either included in the Linnaean groups, or new groups have been created to accommodate them. There has been no necessity for a basic change in the classification. (emphasis added)

Simpson (1945, p. 4) acknowledges that, with the appearance of Darwin, classification continued to develop with no immediate evidence of revolution in principles." Blackwelder (1977, p. 134) agrees that, since that time, "[e]volutionary taxonomy never has been really different from classical taxonomy, in spite of all the fireworks." Thus, classification does not really provide an argument in favor of macroevolution.

Another weakness, of the evolutionary school of classification, is that the use of classification to support macroevolution involves circular reasoning because "[c]lassifications are designed primarily, we are so often told, to 'state,' or 'reflect,' or 'be consistent with,' evolutionary and genetic relationships," Kitts (1977, p. 190) points out. Also see Gould (1983, p. 355). Further, a "classification based on the idea of phylogenetic descent must at best remain highly speculative, for, save in a few fossil lineages, we do not and cannot know the actual course of events in the evolution of a group," as Huxley (1942, pp. 394-5) noted. Finally, the "two sources of information are often contradictory" that are used by the evolutionary school of classification, according to Luria, Gould, and Singer (1981, pp. 763-4).

A final difficulty of the classification argument, the one point on which all schools of classification generally would agree, is that it has not yielded much information about evolutionary relationships. Mayr (1982, pp. 217-8) summarizes the "uncertainty" and "ignorance":

It comes as rather a *surprise to most nontaxonomists how uncertain our understanding of degrees of relationship among organisms still is today*. For instance, it is still unknown for most orders of birds

which other order is a given order's nearest relative. The same is true for many mammalian families and genera, for instance the Lagomorpha, Tubulidentata, Xenarthra, and *Tupaia* . . .

Honesty compels us to admit that *our ignorance concerning these relationships is still great*, not to say overwhelming. This is a depressing state of affairs considering that more than one hundred years have passed since the great post - *Origin* period of phylogeny construction. The morphological and embryological *clues are simply not sufficient* for the task. (emphasis added)

Part of that uncertainty results from the "artificial" and rather arbitrary nature of the higher categories of classification themselves, which Stansfield (1977, pp. 510-1) describes:

[H]igher categories (genera, families, orders, classes, phyla, and even kingdoms), though they do represent greater levels of evolutionary divergence, are still artificial groupings made by humans for convenience in taxonomic work. They are not natural groups the way that species are.

Raup and Stanley (1978, p. 138) agree that higher categories have "no comparable objective basis" or division points. Richards (1970, p. 1477) suggests a view that:

Nearly all biologists must share, the species is the only taxonomic category that has at least in more favorable examples a completely objective basis. Higher categories are all more or less a matter of opinion.

Hence, there is no objective meaning of or agreement on what classifications mean or what the categories are.

Thus, the classification argument for biological macroevolution and Darwinism actually provides no support, because classification is not scientifically or historically supportive of macroevolution, according to the transformed cladistic school and part of the phenetic school of classification. Specifically, classification "has nothing to say about evolution," according to proponents of transformed cladistics such as Patterson (1981a, p. 92), and "is fundamentally a non-evolutionary classification," according to critics such as Oldroyd (1986, p. 154). The evolutionary school of classification only supports macroevolution through circular reasoning, and is speculative, according to Kitts (1977, p. 190) and Huxley (1942, pp. 394-5). Here, the biological theories of macroevolution and Darwinism do not have a compelling status, according to many of their scientific proponents.

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QUOTE

The God of the Bible is the self-revealing infinite Spirit. He is the sovereign source of all other being. He is the authoritative and purposive ruler of nature and history, the specifier of a worthy way of life and ordainer of the community of faith. He stands at the commencement of a flawlessly created cosmos, one which at every stage of its origination He as its Maker declares to be good.

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