

STASIS IN THE FOSSIL RECORD  
AS CONFIRMATION OF A BELIEF  
IN BIBLICAL CREATION

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ABSTRACT

A vast body of palaeontological observations points to the conclusion that "all living things make their first appearance in the geological record as separate and finished organisms". To offset this true state of affairs from the often suggested existence of evolutionary links between different types of organisms, a division into four units of fossil assemblages is proposed that represent two pre-Flood and two post-Flood chief ecosystems. The pitfalls of polymorphism, when assigning species rank to fossils or when lumping distinct forms into one created species, are brought to notice. One perfectly "modern" member of the insect order Zoraptera is described from Caribbean amber.

INTRODUCTION

Many creationists feel uneasy when confronted with the alleged evidence for evolution in the fossil record. In actual fact, the belief in evolution on the strength of fossils is thriving largely on ignorance. The descent of all birds from some small dinosaur, for instance, is by no means a stringent conclusion arrived at by the facts. What we have in hand are several more or less uniform skeletons (or parts), two of them with feathers, and an isolated superbly preserved fossil of what appears to be a primary feather\*. With regard to the supposed evolutionary progenitors of Archaeopteryx, these relics have nothing to contribute. In analogy to all propagation nowadays, the most natural conclusion would be that Archaeopteryx descended from its own kind. The same applies, of course, to all other fossil organisms.

However, why do fossil organisms appear normally only briefly in some restricted part of the geological column? Can they be regarded as anything else but the temporary stages in the evolutionary progress of families or phyla within ancient life communities? Would not the mere distance in time indicate an at best remote relationship between a fossil and some similar looking living species? Is not, to quote an example, the generic distinction of the Jurassic Mesolimulus from the living Limulus (which are very much alike) not only justified but actually necessary?

The speed of deposition and lithification of fossils does not lie within the scope of this paper. However, in view of the over-abundant evidences for the rapid, though orderly, formation of all fossiliferous rocks, the idea of the great ages of fossils in terms of geological periods is treated here as unworthy of further consideration. If the time is non-existent all guesses about evolution are superfluous.

For yet another reason can the fossilised witnesses of life in the past not be regarded as links in the evolutionary chain. They must go for what they are: life forms of a complexity far beyond the human grasp that have functioned with marvellous precision and fulfilled their individual tasks in the biosphere of this earth at some stage. In this way, four major units of fossil assemblages can be singled out. Two of them belong to the pre-Flood economy; the other two answer to post-Flood conditions.

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\* This feather, a counter slab, is housed in the Paläontologisches Institut in Munich. The writer has known it for 36 years. In 1982, he had the opportunity to study the specimen, the original Archaeopteryx of 1861. It is definitely not a fake. A thick sheet of lead is screwed to the reverse side. The slab is no longer on display but is kept in a safe.

# I. UNIT ONE: THE INHABITANTS OF THE SUBTERRANEAN PART OF THE PRE-FLOOD WATER CYCLE

## 1. The Enigmatic Source of the Lower Palaeozoic Fossil Beds

The faunal assemblages of the so-called marine Palaeozoic as a whole are characterised by the presence of

rugose corals	trilobites
tabulate corals	eurypterids
stromatoporoids	bellerophonitic snails
orthid,	sea urchins with flexible tests
strophomenid,	graptolites
pentamerid, and	conodonts
spiriferid brachiopods	and some other marginal groups

These assemblages are entirely distinct from all later marine life communities. Almost none of these organisms belonging to the so-called marine Palaeozoic has ever invaded other marine ecosystems. (The few exceptions from this rule are, therefore, the more interesting.) Where the sediments with faunas of the marine Palaeozoic occur they make up invariably the lowermost fossil-bearing strata. The complete lack of at least moderately permanent sea floors in the "marine" Palaeozoic has been dealt with by the writer in other publications (1,2,3). The rapid deposition of these sediments, including thick sheets of "reefal" limestone, may be taken for certain. Since none of them incorporates true sea floors or ancient coast lines, their fossil assemblages cannot have originated in place but must have been brought from somewhere and spread upon the surface of the earth. Although it is difficult to adduce direct proof for it, the most probable source of these strange-looking faunas are the subterranean ducts and caverns of the pre-Flood water cycle of our planet alluded to in Genesis 2,10-14. When these hidden water courses broke up at the onset of the Flood, their living contents were ejected with the water and lifted to the surface. Since no fossiliferous strata could have been laid before the Flood, these fossil beds are necessarily the first. The interesting enquiry into the morphological adaptations of these organisms to their presumed subterranean habitats will not be pursued here.

## 2. The Spatial Coherence of the Different Palaeozoic Faunas

The Ordovician through the Permo-Carboniferous systems need by no means to be regarded as periods in the sense of historical geology. Some of their fossil species remain identical through consecutive supposed "ages" so that the possibility of a free migration or movement within communicating water bodies must be considered. The most convincing cases come from organisms which live in narrowly definable niches. On comparing the flat undersides of stromatoporoid or tabulate colonies of "Silurian" or "Devonian" provenance, the fact emerges that both niches are inhabited by exactly the same organisms: the coiled tubes of the worm Spirorbis and the thin, circular, colonies of bryozoa (Figure 1). A similarly confined habitat is provided by the crowns of crinoids. Many different crinoid species, from the Silurian to the Permian, give permanent abode to the same parasitic snail Platyceras (Figure 2). In terms of the conventional timescale, cases like these would mean complete stasis of shape and function through a period of up to 200 million years.

## 3. Doubts about the Salinity of the "Marine Palaeozoic"

The expression "marine" Palaeozoic may be misleading as to the salinity of those ancient habitats. It goes without saying that, according to Biblical information, the water of the pre-Flood cycle was not saline in the sense of present-day oceans. This fact would explain why indeed no Palaeozoic species has found its way into Mesozoic or modern seas except very briefly and under the most critical and unstable circumstances. The contrast between Palaeozoic faunas and later ones can hardly be greater: Tetracorals are replaced by hexacorals; sea urchins with flexible tests are exchanged for such with rigid tests as we know them from present seas; byssus-attached bivalves are progressively superseded by sand-dwelling forms; and many Palaeozoic groups die out altogether while others enter the scene as complete newcomers. The term "marine" Palaeozoic has been coined in analogy to corals, crinoids, brachiopods, etc, that live exclusively in sea water today. However, there are at least two Palaeozoic organisms whose modern relatives live in the sea which are plainly associated with some type of fresh-water: the limulid crab Euproops and the annelid worm Spirorbis. Both occur with the leaves of the Carboniferous coal flora and cannot have been marine on this account. Much has yet to be learnt about the chemical composition of the pre-Flood water supply. It may be stated with confidence, however, that there must have occurred a substantial change in connection with the Flood events. The assumed salinity of the aquatic habitats of the Palaeozoic requires obviously rethinking.



Figure 1. Underside of a tabulate coral with attached tube worm Spirorbis and a colony of bryozoa. The specimen is from the Silurian of Gotland. The same organisms are found in corresponding ecological niches in fossil assemblages of the Devonian.



Figure 2. The parasitic snail Platyceras on the crown of a crinoid from the Mississippian of Crawfordsville, Indiana. Platyceras snails are found on many different crinoids from the Silurian to the Permian. Neither the snail nor the crinoids can be arranged in any form of an evolutionary lineage. They seem to be the local members of just one large ecosystem.

## II. THE FLOATING COMMUNITIES OF THE CARBONIFEROUS COAL FORESTS

### 1. The Repetitive Deposition of Coal Seams Explained

The most peculiar feature of the Carboniferous coal measures is the repetitive deposition of the seams in storeys above each other. The burial of these ancient forests must have been brought about by extraordinary geological processes unique in earth history. These unparalleled conditions during the "Carboniferous" alone suggest a brief duration of coal measures times rather than the conventional period of above 40 million years. The popular theories that presume to account for the repetitive deposition of coal seams are built upon improbable hypotheses in one way or the other. The only really satisfactory explanation for the regular occurrence of coal seams in storeys, in contrast to them, is resting on direct observation. From petrified peat, the so-called coal balls\*, it is known that the coal seams, in the first place, are not derived from slowly decomposing humus layers but from l i v i n g units of originally floating ecosystems. These were transported into rapidly subsiding basins. The plainly observable fact of the rapid burial of these forests can be linked with the rapid aggradation of the depressions developing above the "fountains of the deep" during the closing months of the Flood (Genesis 8:2).

### 2. Scale Tree Roots as the Main Constituents of All Carboniferous Coal Seams

There have been attempts to subdivide the coal measures into consecutive times marked by the occurrence of different index species. A certain variation in the composition of the coal flora in ascending order does exist. The principal constituent of all regular coal seams, however, remains unchanged from the lowermost seam to the top one. They are the roots of lycopods, i.e. scale trees, known under the name Stigmaria. This fact is established beyond dispute through the study of coal balls (Figures 3 and 4). Despite the variety of ferns, horsetails, etc. that are associated with practically every coal seam, the underclays supporting each of these seams contain never any other root organ except stigmarian axes with their appendages. The roots of ferns, horsetails, etc. on the other hand, are found only in the coal itself (Figures 5 and 6). This curious difference is explained once the water-borne nature of these scale tree forests is fully understood. The tangle of lycopod roots of chiefly Sigillaria and Lepidodendron provides the raft on which to settle (Figure 7). The remaining understorey plants are mere accessories.

### 3. The Sudden Burial of Floating Forests Precludes Evolutionary Changes with Time

The trunks of scale trees were light-weighted, hollow, structures (Figure 8). In the fossil state, these stems are found either flattened or, if buried erect, filled with sediment (Figure 9). The same applies to the axes of the stigmarian roots that are joined to them at the base. Apart from the spongy central cylinder, these structures were essentially hollow. Like the trunks, they are also preserved either flat or as casts (Figure 10 a-c). The central cylinder became usually compressed after burial. A characteristic groove on the top side of many stigmarian roots results from this compression (Figure 10b). This groove bears further witness to the hollow nature of the root organs and to their sudden burial. In previous publications (4,5) the writer has drawn attention to the fact that this type of vegetation cannot have grown on firm soil, as is universally believed, but must have constituted an independent pre-Flood ecosystem that stood on water. Viewed as such, the plants composing this ecosystem were, during life, all of the same age and buried within a matter of months. They cannot have undergone processes of evolution under these circumstances. On the evidence of the lycopod mats of the coal measures, the message of these life forms is unequivocally stasis.

### 4. Carboniferous Coal Forests as Inlets of the Pre-Flood Water Cycle

The waters supporting these forests were, of course, not saline. For reasons not to be discussed here it is conceivable that the forests of the Euro-American coal occupied something like the area of today's polar circle. In that region may have been concealed the inlets of two of the rivers named in Genesis 2:11-14. Such inlets in the vicinity of the poles must be postulated so as to provide a backflow underground for the pre-Flood water cycle. According to Genesis 2:10, the irrigation of the entire world was through four giant water courses which proceeded jointly from the Garden.

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\* The existence of coal balls as such is evidence for the rapid burial of the coal vegetation. Coal balls have formed from water trapped in hollow spaces within the coal plants, particularly stigmarian axes and appendices. The ball shape was acquired under extreme pressure. The water provided space for calcium and carbonate ions to enter and crystallise.

### III. UNIT THREE: THE TRANSIENT POST-FLOOD COMMUNITIES OF THE MESOZOIC

#### 1. Life Under Unstable Geological Conditions

On reconstructing the life communities of the two principal fossil assemblages already described it becomes clear that their original geological setting must have been one of permanence and stability. Floating forests cannot survive in their habitats if they are set into motion by unpredictable currents. Equally would subterranean aquatic ecosystems like those of the "marine" Palaeozoic not have tolerated the slightest tectonic disturbance. It would have meant disaster. Such came about with the collapse of the entire pre-Flood economy. The impressive array of Mesozoic fossil assemblages, in contrast, can be united under one heading: Transient communities under unstable geological conditions. To increase the difference to the assemblages of the Palaeozoic, practically every Mesozoic fossil assortment can be traced back to some relatively nearby place of origin or it has actually lived in situ. The implications of this observation are twofold. Firstly, substantial time must have been available for such communities to develop and, secondly, the shifting sediments under which these communities were buried were the result of a prolonged period of crustal movements.

#### 2. Evidences of In Situ Growth

In the following, some examples of in situ growth origin of fossil beds will be given. The animal track-strewn surfaces of the New Red (Permo-Triassic) are so widespread and well-known that they do not require documentation here. Such surfaces are preservable only under rapidly increasing sediment sheets. Where clay lenses occur they are potential depositories of superbly intact crustaceans and other invertebrates, including the egg badges of midges (Chironomidae) (6). Such egg badges exist only for two or three days. The reality of the daily changes during New Red times is thereby accentuated.

Other extremely rapid changes of environment are recorded by Jurassic brittlestar beds. Brittlestars have the habit of lowering themselves into the seabed. The characteristic casts of brittlestar impressions in sandstone (Figure 11) etc not only show that parts of the Jurassic sea floor were densely populated by them but also that these colonies were swept away by currents while their stationary tracks were buried within the shortest of time. Flourishing populations there were; but in contrast to the now prevailing conditions, these were shifted about and constantly in danger of being wiped out or becoming extinct altogether.

Another example of densely colonised Jurassic seabeds that were subject to rapid alterations are the petrified burrows ascribed to the shrimp Thalassinoides at Filey Brigg, E. Yorkshire (Figure 12). The rock-filled tunnels that are harder than the surrounding sandstone weather out at at least two different levels. It is unlikely that the inhabited levels that lie exactly above each other were colonised separately after long intervals of time. More probable is that the same shrimps re-settled in the top bed whenever their old level became covered up with too much sand. It is certainly remarkable that the producers of the mined horizons at Filey Brigg tenaciously kept to the same old boundaries.

Jurassic plant beds that are buried in situ occur along the already mentioned Yorkshire coast. As to preservation and beauty they are matched by probably no other exposure in the world. An extinct horsetail, Equisetites, was able to subsist on deltaic sand and mud flats. That this plant was eminently designed to live in unstable conditions can be gathered from erect stem bases in sandstone from which adventitious roots protrude (Figure 13). In various places along the Yorkshire coast, a sequence of up to six superimposed root layers of Equisetites may be recognised (Figure 14). Vast areas must have been covered by them when that delta was spread. The rapidity of this event is witnessed, in places, by enormous crossbedding, by filled channels, and even meandering stream courses. The extinction of those plants came about with the disappearance of these transitory habitats. It adorns the wisdom of the Creator to have designed organisms before the Fall that were to be used for the re-fitting of a Flood-stricken earth during an episode which modern man pleases to call the "Mesozoic".

#### 3. The Breeding of Pure Lines in Response to the Unfolding of Created Genetic Potential

The Mesozoic with its initially very small, or secondarily extremely reduced, populations is also a time of considerable genetic drift. Unless this fact is appreciated the cause for the fantastic diversification of eg ammonites remains obscure. Similar tendencies can also be observed in many post-Palaeozoic bivalve stocks. Here, at last, we have true evolution, i.e. the unwrapping of genetic potential that lay hidden in many created species, including man. This area remains virtually unexplored by believers in Creation. Since we have to do with an irreversible historical process, this genetic split-up cannot be studied experimentally. The subject is, therefore, particularly open to unwarranted speculations.



Figure 3. Enlarged photograph of a section through a coal ball. The bulk of most coal seams of the Carboniferous is made up of a dense fabric of stigmarian appendices. i.e. the root organs of scale trees. In life, the appendices were filled for the most part with air. Illinois.

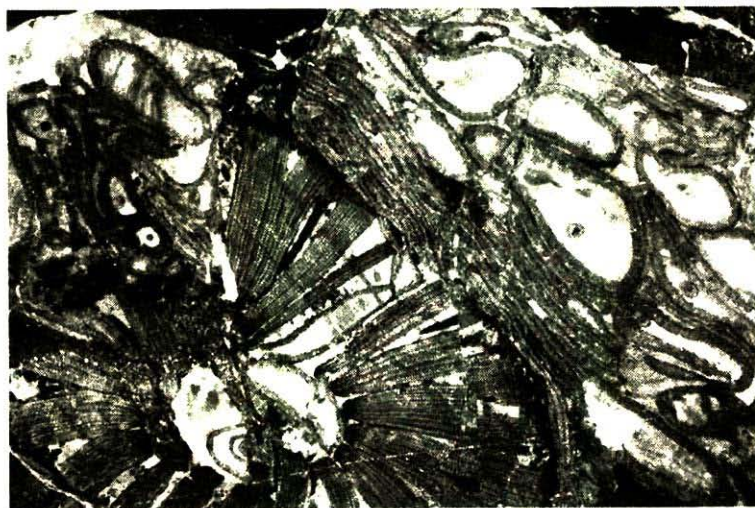


Figure 4. Section through a coal ball from Illinois. Dead plant tissues are invaded by young stigmarian appendices, here even entering the central cylinder of an old stigmarian axis. In coal peat the ubiquitous appendices occupied every available space. The enclosed air gave buoyancy to the floating mats.



Figure 5. Section through (presumably) a fern root in a coal ball. Roots of ferns, horsetails and cordaitan trees are confined to the coal peat and do not reach beyond the coal into the underclays. The roots of scale trees provided the substrate for them to settle upon.

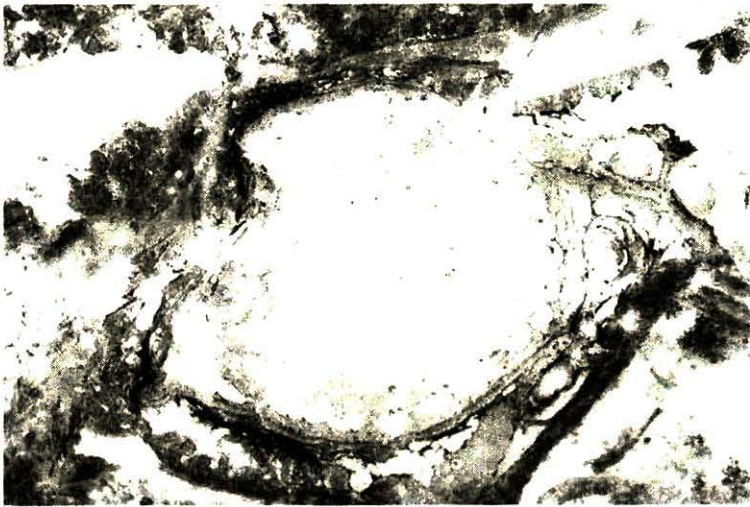


Figure 6. Section through a root with large air spaces (presumably of a horsetail). Like the above, these tender roots are only found in the coal peat itself and cannot have grown in dense mineral soil. Carboniferous coal forests formed a water-borne vegetation.

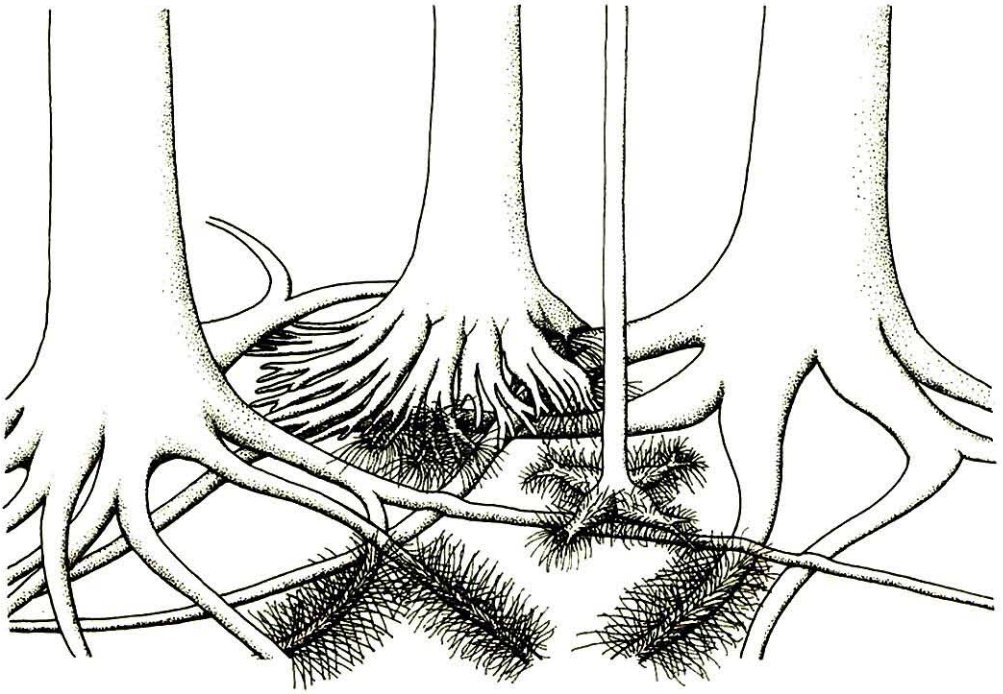


Figure 7. A reconstruction of four scale trees upholding each other as a floating ecosystem. The appendices are actually much more numerous and more densely matted than shown in the drawing. All specimens are drawn from sandstone casts of real stems preserved in museums.

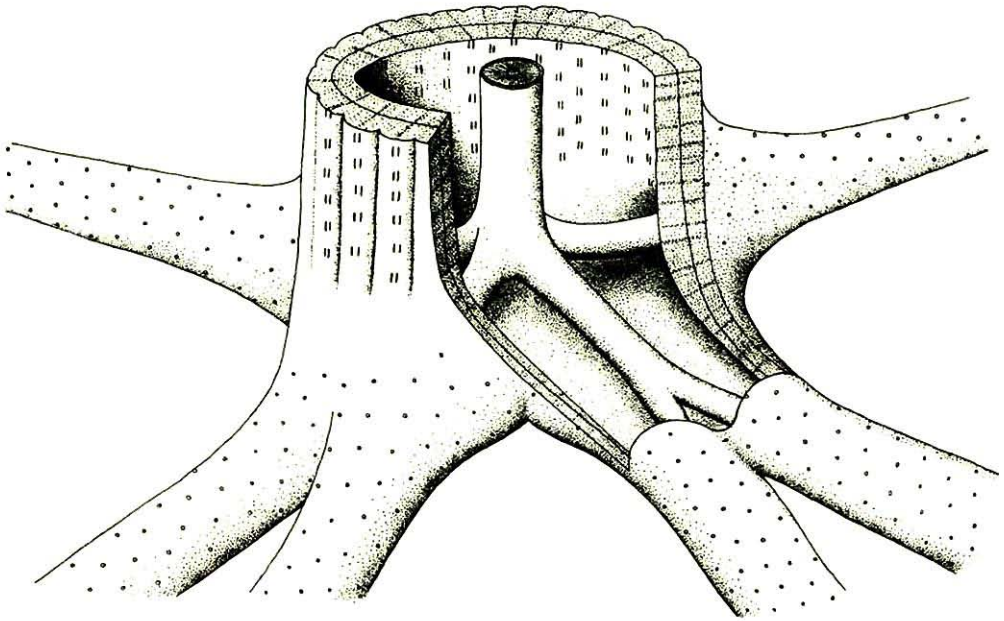


Figure 8. Reconstruction of the base of a young scale tree showing the hollow stem communicating with the cavities of the stigmarian axes. The pairs of parichnos scars served for the passage of air.



Figure 9. A fossil base of a scale tree weathering out of a rock face. The original bark has been compressed and altered to coal. The stigmarian roots are not filled with sediment but flattened instead. That coal tree stems consisted of solid wood is a widespread error. Creswell, Northumberland, 1983.

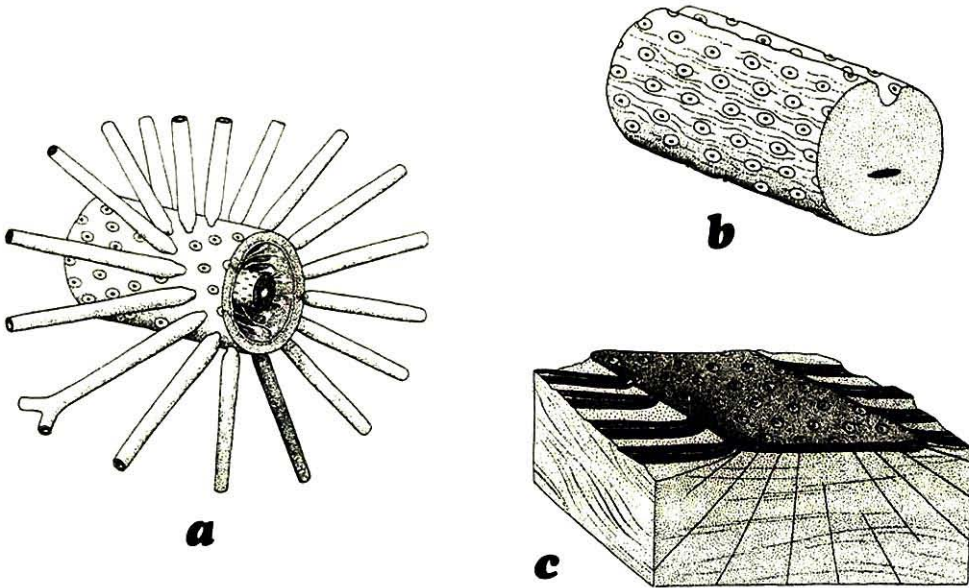


Figure 10. A reconstruction of a stigmarian axis (a). The lampbrush arrangement of the secondary roots (appendices) is found only in aquatic plants. b. Axis filled with sediment, central cylinder collapsed; c. stigmaria in the usual flattened condition.



Figure 11. Casts of brittlestar impressions in a seabed of the Jurassic. While substantial time must be allowed for such colonies to develop it is obvious that they lived under very unstable conditions. Specimen from S. Germany



Figure 12. Petrified burrows ascribed to the shrimp *Thalassinoides* at Filey Brigg, E. Yorkshire. These tunnels occur in several sandstone levels above each other and demonstrate the unstable living conditions on the seabed during the Mesozoic.



Figure 13. Stem base of the Jurassic horsetail Equisetites with adventitious roots protruding from its sides. These plants were able to colonise sands and muds that were subject to constant aggradation. Ravenscar, E. Yorkshire.



Figure 14. Four root horizons of Equisetites above each other. In this locality the plants were periodically choked under a new cover of sand. Cloughton Wyke, E. Yorkshire. Many now extinct organisms were used for the re-fitting of the Flood-stricken earth.

Many Middle Jurassic ammonite genera occur in such a variety of forms that apparently so distinct groups as Garantiana, Strenoceras, Spiroceras, Macrocephalus, Kosmoceras, and Hectioceras, to name only a few, can be merged with some borderline form somewhere. It is reasonable to regard them as more or less established pure lines that have sported from one common ancestor. Differences of sutures, of oral lappets, as well as of nearly all other measurements used in ammonite classification may ultimately lead nowhere if the attempt is undertaken to differentiate between created ammonite species. There were evidently not very many.

Something similar as to ammonites seems to have happened to many groups of bivalves. The genus Inoceramus, for instance, appears in the Lower Cretaceous with an astonishing diversity of shapes, sizes and shell ornamentations. The conclusion of a genetic split-up under the conditions of the Cretaceous sea seems inescapable. Comparable processes of speciation may be presumed to have taken place also within other stocks of Mesozoic bivalves, eg the oysters and the trigonias.

#### IV. UNIT FOUR: THE FOSSIL ASSEMBLAGES OF THE STABILISED CLIMAX COMMUNITIES

##### 1. Post-Flood Speciation Distinguished from Created Diversity

The preceding conclusions about an unfolding of created genetic potential after the Flood must not be driven too far, however. The cockle family (Cardiidae) with its spectrum of ecologically adapted genera, for instance, is already fully diversified immediately after its rise in the Tertiary. Whether the elongate Laevicardium, the angular Trigonocardium, the tightly fitting Nemocardium, or the gaping Ringicardium (Figure 15), they all are recorded from Tertiary rocks and show no difference from their now living descendants. Since in contrast to the above mentioned bivalve groups these cockles cannot be linked by intermediate forms to only one created species, it is unwarranted to postulate a common genetic ancestry for them. They appear to be descendants of separately created pre-Flood species that met their favourite living conditions not until the physiography of the earth had regained something like its, at present, relatively stable state. Tertiary fossils look more familiar to us because man, since recorded history begins, shares with them the same geological setting.

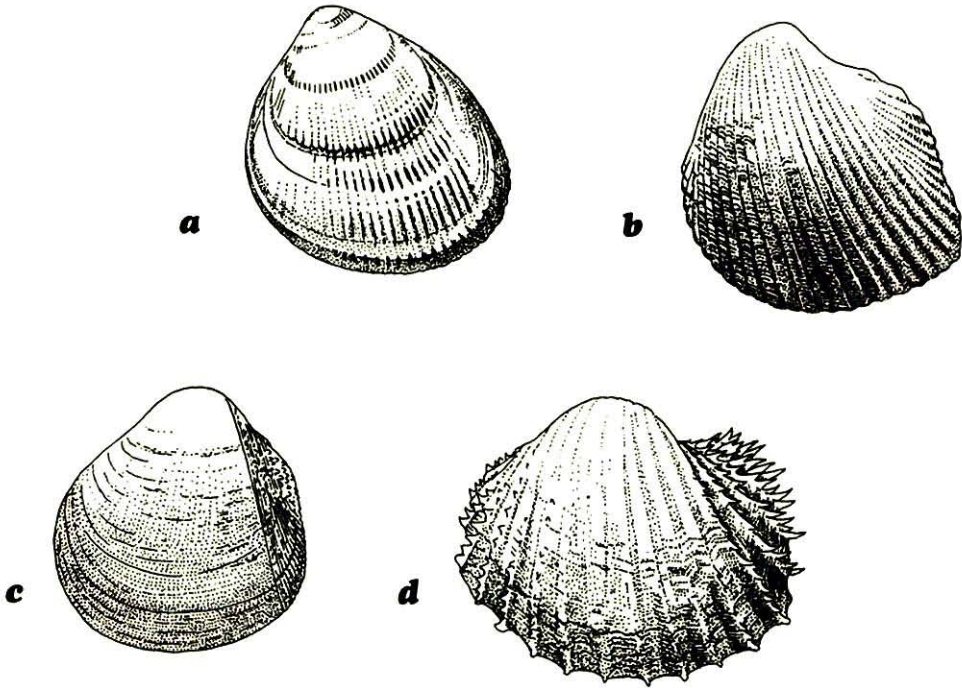


Figure 15. Four genera of the cockle family Cardiidae. Their shapes reflect the different modes of burrowing. Despite general similarities it is unlikely that the widely gaping shell of Ringicardium (d) has originated from the same common ancestor as eg the tightly fitting shell of Nemocardium (c).

## 2. Stasis in Polymorphic Tree Leaves

The high degree of diversification from the very first appearing is also demonstrable with fossil leaves. The living maidenhair tree, Ginkgo biloba, exists in distinguishable strains, eg one with small and one with large foliage (Figure 16). Both are recorded from the probably most ancient occurrence of this tree in the Palaeocene of N. Dakota. Similarly, the two leaf types of juvenile and mature amber trees, Liquidambar, are known from Tertiary deposits in Germany where it is extinct since the ice age (Figure 17). The same applies to the leaves of Zelkova which in living trees may be very large or, if associated with fruiting branchlets, very small (Figure 18). They are well known from many Old World Tertiary occurrences.

## 3. Stasis Among Closely Related Species

The hundreds of living species of oak (Quercus) have apparently undergone very little speciation after the Flood since many of their characteristic leaf forms are preserved in Tertiary rocks. Four of the Old World species that match certain fossil forms are illustrated here (Figure 19), but their number is much greater. With such a wealth of fossil tree species available it will surprise one to find forms that cannot be matched with a living representative. The Tertiary maple Acer tricuspidatum of S. Germany may serve as an example (Figure 20d). It does bear a resemblance to the living Acer calcaratum of Birma, but the latter is a tropical species so that the true affinity remains uncertain. The important point to remember is that extinct forms appear as suddenly and fully developed in the fossil record as those that have managed to survive until today. In both cases their unchanged leaf shapes spell out the permanence of design. Living things are made for a purpose. If the research into origins had been always governed by facts only, evolution could not have attained its quasi-religious status. It is the r e v e a l e d notion of Creation that raises the gropings of the human mind to the level of reality. Fossils are much nearer to the origin of all living things. As such, they furnish the most reliable information on matters relating to the most vital decision a person has to make in his life.

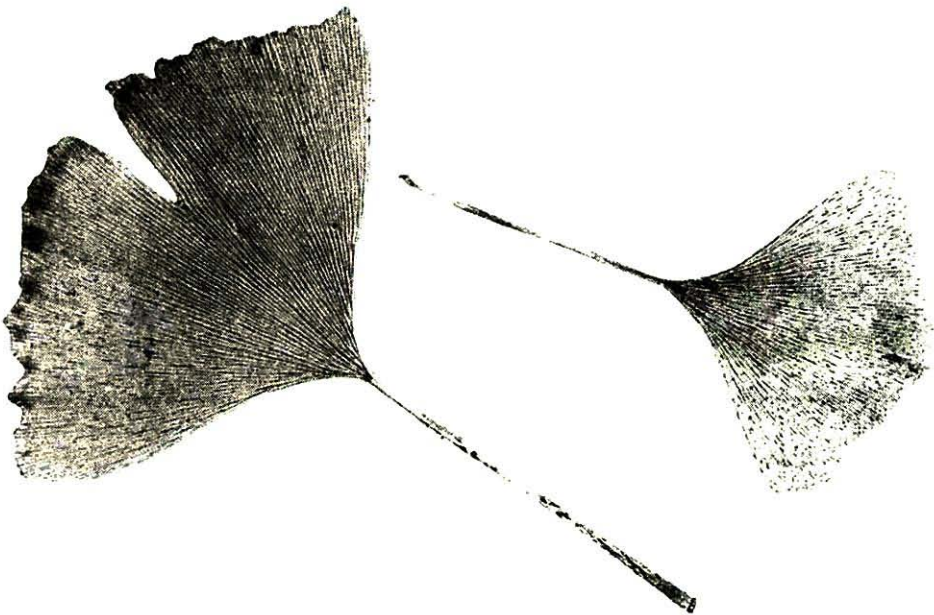


Figure 16. Autotype of Ginkgo leaves from two different trees that bear a foliage of strikingly different size as inherited traits. The same difference in leaf sizes is recorded from fossil Ginkgo leaves. About 1/2 natural size.

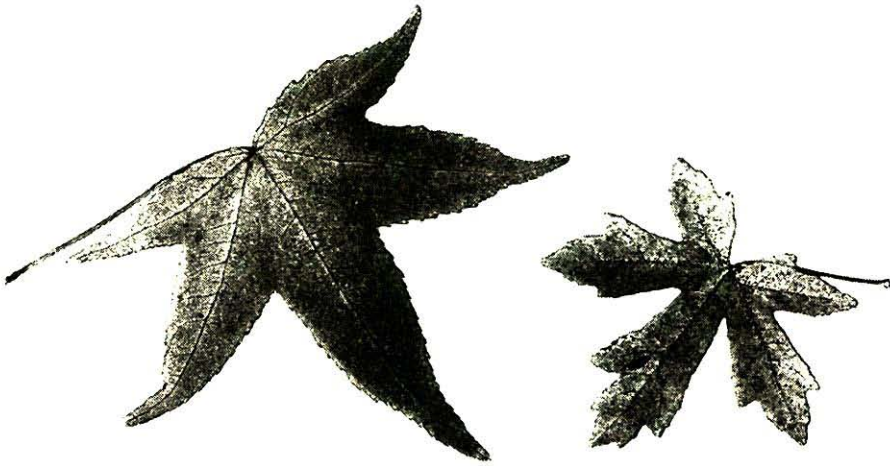


Figure 17. Leaf from a mature amber tree, Liquidambar, (left) and from a juvenile one (right). The two easily distinguishable leaf types are well known from Tertiary deposits in Germany. The supposed evolutionary origin of the flowering plants is still shrouded in mystery.



Figure 18. Two leaf types of Zelkova carpinifolia from the Caucasus. The tiny leaves are associated with fruiting branchelets. Both leaf sizes are regular plant fossils in Tertiary deposits of Germany. About 1/2 natural size.

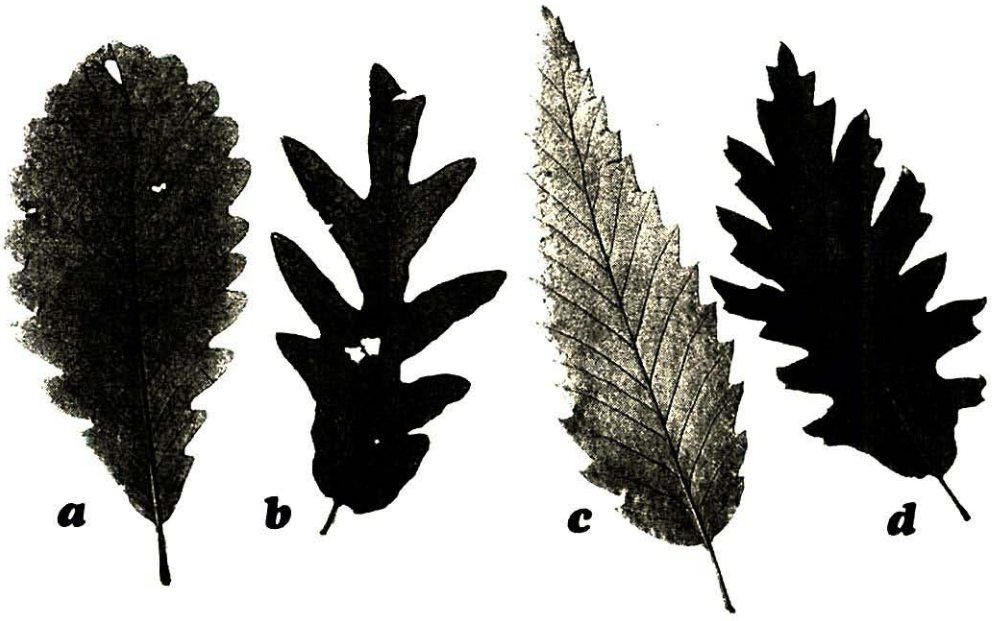


Figure 19. Autotypes of four different species of oak, *Quercus*, that are represented by fossil specimens in the Tertiary of Germany. a. *Quercus macranthera*, Persia; b. *Q. pyrenaica*, Spain; c. *Q. castaneifolia*, Persia; d. *Q. cerris*, SE Europe. About 1/2 natural size.

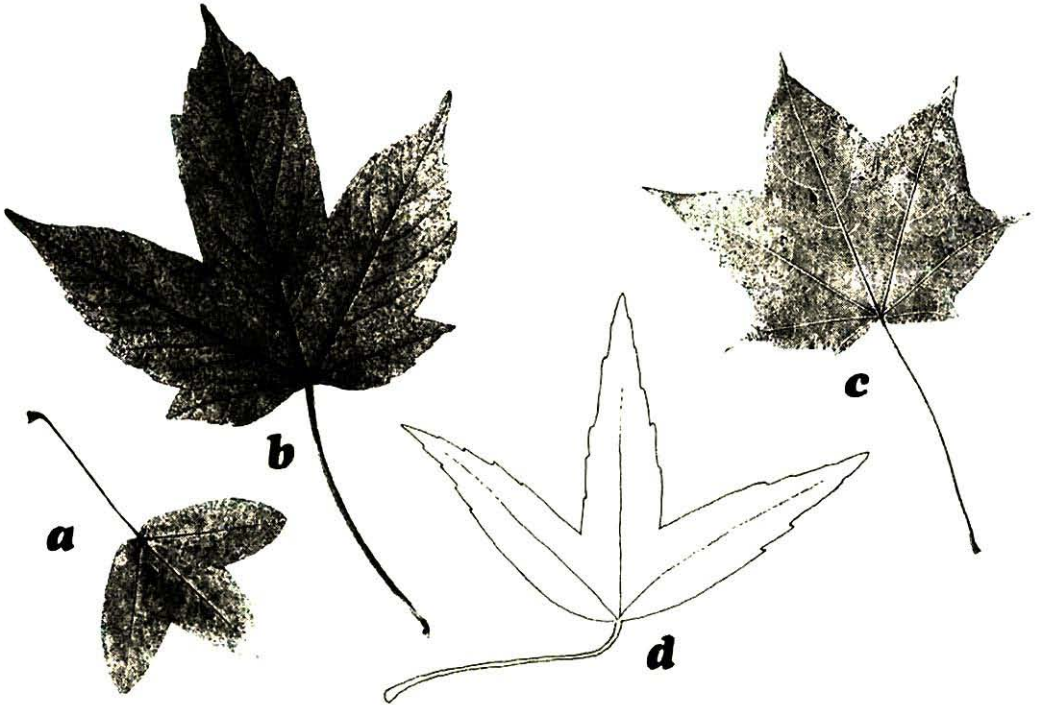


Figure 20. Leaves of four different species of maple, *Acer*, known as fossils from the Tertiary of Germany. a. *Acer monspessulanum*, Mediterranean; b. *A. pseudoplatanus*, Europe; c. *Acer cappadocicum*, Turkey; d. *A. tricuspidatum*, a species that appears to be extinct.

#### 4. Stasis in the Fossil Record: The Futility of Claiming an Evolution of Higher Categories, eg Social Insects

To adduce scientific proof for darwinian evolution, i.e. for an increase of genetic information that changes whole populations into organisms of higher categories, rests with those who propose it. Social insects, for instance, are said to have arisen from solitary or "pre-social" ones. The Mastotermitidae of Australia have, on account of their less reduced wing venation, long been regarded as the most primitive termite stock of which the higher termites have developed. Their fossil remains are widespread in Tertiary deposits. However, a much older termite from the Cretaceous of Labrador has come to light that belongs to the far more "advanced" family Hodotermitidae (7). The predicted order is thus reversed by the fossil record.

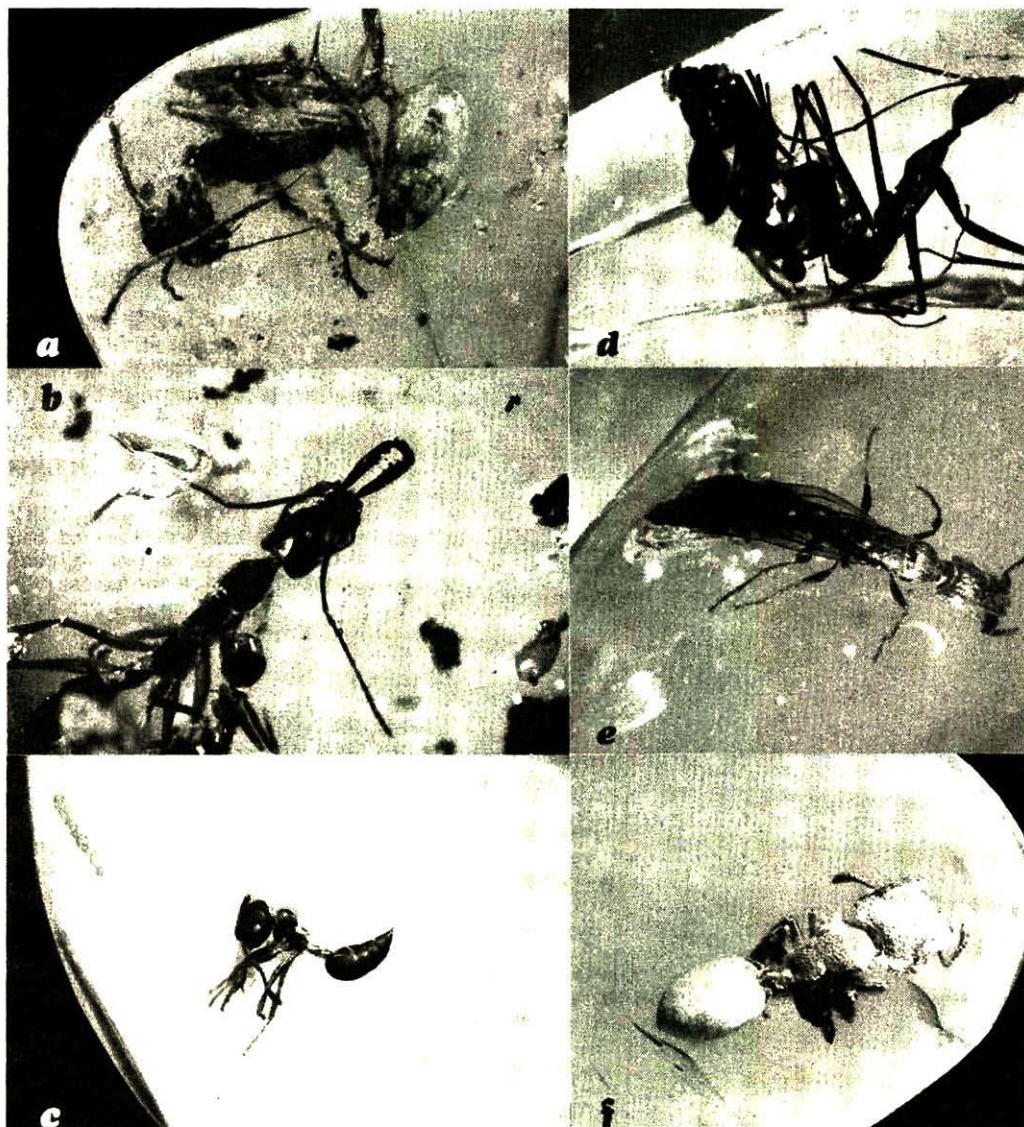


Figure 21. Ants in Caribbean amber of completely different ecological adaptations, representing equally different tribes, or genera respectively. a. A leaf-cutting ant (Attini); b. the genus Anochaetus; c. the tree-living genus Crematogaster; d. the honey-storing ant Leptomyrmex; e. the genus Gnaptogenys; f. the timber-dwelling ant Cryptocerus.

An extinct but otherwise unmistakable ant was found in Cretaceous amber from New Jersey and declared to be the most primitive member of the order. The only reason for this were the more "wasplike" mandibles of the fossil species (8). Since other ants exist that have a much more wasplike body but more elaborate antlike mandibles instead, this opinion is completely arbitrary. The ant in question, *Sphecomyrma freyi*, represents the worker cast and must therefore be a social insect. How diversified ants in amber really are may be gathered from Figure 21. These specimens are from Dominican amber and each of them can be identified with living families or even genera.

#### V. ON THE TREATMENT OF "MISSING LINKS"

How much reserve is advised whenever a discovery of an "unspecialised ancestor" of some animal or plant is hailed in can be learnt from the allegedly "oldest known fly". The one single wing was discovered in Permian deposits of Australia more than 50 years ago (9). Being comparable to the wings of the familiar dipterous craneflies (*Tipulidae*), the fossil was named *Permotipula*. The unique find was then lost. In subsequent quotations in works dealing with the evolution of insects (10,11), the single wing "metamorphosed" to the remains of an insect with four wings! Thus, the two-winged flies and midges of modern times had received an ancestor possessing the "primitive" number of four wings. Although less widely known than other missing links, *Permotipula* had attained the status of an "Archaeopteryx of the flies". The type specimen was eventually rediscovered in the British Museum. A fresh study of the wing venation of the fossil revealed that "one character which was believed to be indicative of a close relationship to the Diptera is absent" (12). The same author concludes, "*Permotipula* cannot be one of the direct ancestors of the recent Diptera".

#### VI. A NEW INSECT ORDER DISCOVERED IN CARIBBEAN AMBER

In Caribbean amber, originally loaned to the writer for the identification of enclosed insects, an unusual specimen caught his attention which, at the first sight, looked something like a "cross between a winged termite and a barklouse" (Figure 22). The specimen belongs to the rare order *Zoraptera*.

The description of this insect poses special problems since the whole order consists of only about 20 known species all of which are very similar. They are recorded from very distantly spaced localities in the warmer parts of both the New and the Old World. Their retiring habits under decomposing wood and their small size may be partly responsible for their apparent rarity. The individuals within the colonies exhibit polymorphism. There are adults with functional wings and fully developed eyes, such with their wings shed as in termites, and forms totally wingless and without eyes. To complicate matters further, some of the illustrations in the literature are of poor quality.

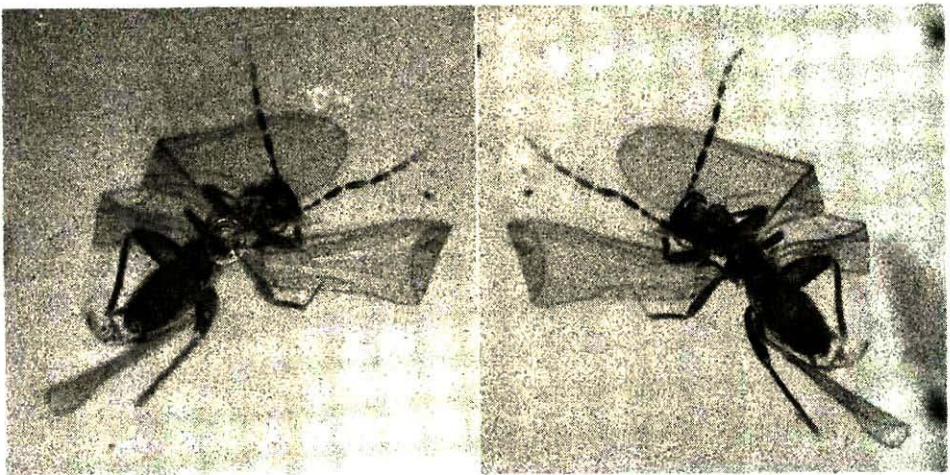


Figure 22. *Zorotypus confirmans* n. sp. in Caribbean amber, holotype. The insect is externally indistinguishable from some of the now living species.

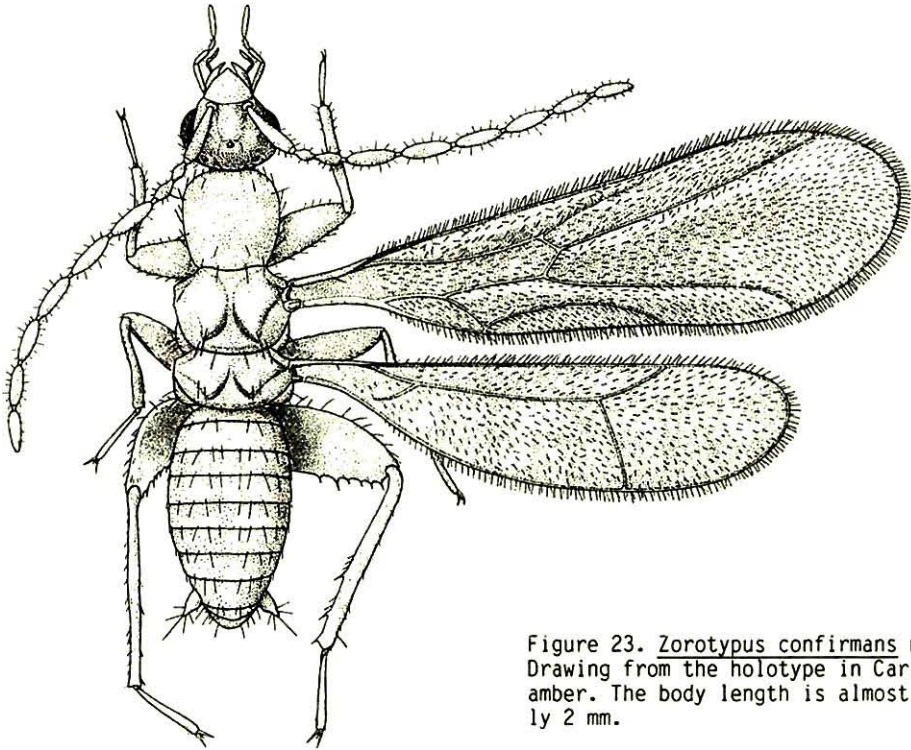


Figure 23. Zorotypus confirmans n. sp. Drawing from the holotype in Caribbean amber. The body length is almost exactly 2 mm.

A drawing of the fossil in a reset posture (Figure 23) reveals a winged male of the originally described genus Zorotypus (13). The body length is almost exactly 2 mm. With its body proportions and the distribution of bristles it is perfectly indistinguishable from several now living species of Zorotypus. In allusion to this fact, the name Zorotypus confirmans n. sp. is given because the fossil confirms the contention of this paper that all living things make their first appearance in the geological record as separate and finished organisms. The described specimen was given to the writer and is deposited in his private collection. With this new fossil, the record of the living genus Zorotypus has been pushed back into the Tertiary. However, Zorotypus confirmans n. sp. contributes nothing to the evolutionary origin of the order as such. The message of even the most insignificant creature is stasis.

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