

Vrae:

Wie van julle het hierdie nuwe flik gesien: Dinossaur?

Wie van julle glo dat daar regtig dinossaurusse was?

Miljoene en miljoene jare terug.

Maak dit julle ook deurmekaar?

- Al die jare geleer dat God alles geskep het
Nou: Self ontstaan
- Al die jare geleer dat God die mens gemaak het
Nou: Mens het oor miljoene jare uit die aap ontwikkel.
- Al die jare geleer dat die Skepping die begin was
Nou: Dinossaurusse en aapmense wat miljoene jare voor die skepping reeds gelewe het.

En dit skep baie verwaring:

Soms ongeloof.

Het die Bybel dan vir ons gejoj?

Was die dominees nie eerlik nie?

Is die Bybel dalk nie korrek nie?

Gaan die natuurwetenskap aan die einde die Bybel verkeerd bewys?

Die groot vraag:

Hoe rym die natuurwetenskap en Bybel?

Watter een moet ek glo?

BEGINSEL 1 : Al twee is belangrik!

Hoekom?

Want die Bybel vertel vir my meer van die Skepper.

En die Natuurwetenskap leer my meer van die skepsel/skepping.

Teologie

En Natuurwetenskap.

En as ons baie eerlik is in die teologie

En ons eerlik met in die natuurwetenskap

Dan behoort ons by dieselfde punt uit te kom.

Want dit gaan oor dieselfde Skepper en dieselfde skepping.

En dis interessant: Die grootste wetenskaplike deurbrake is deur christene gemaak:

- Louis Pasteur: bakteriologie
- Wiskunde & dinamika: Isaac Newton
- Medisynekunde: Robert Boyle
- Elektromagnetisme: Michael Faraday
- Hidrostatika: Blaise Pascal
- *Sir Isaac Newton: Net soveel teologie as wetenskap geskryf. Francis Shaeffer sê dat Newton aan die einde van Sy lewe meer tyd spandeer het aan die Bybel as aan die skepping los van die Skepper.”

Belydende christene.

Maar uitmuntende wetenskaplikes.

Hoekom: Want jy kan die skepping beter verstaan as jy Skepper daarvan ken.

Voorbeeld: Pinocchio

Ek besluit om 'n studie te maak oor Pinocchio.

Julle besluit om 'n studie te maak oor Jepetto.
2 Verskillende sake.

En tog, as ons eerlik is in ons studie, kom ons by dieselfde plek uit.
Want hoe meer oom Jannie gaan lees oor Jepetto, hoe meer gaan hy agterkom dat die grootste ding wat hy ooit gedoen het, was om vir Pinocchio te maak.
En in my studie oor Pinocchio, sal ek agterkom dat Pinocchio deur oom Jepetto gemaak is. En ek kan Pinocchio verstaan, as ek vir oom Jepetto verstaan.

BEGINSEL 2: Die Bybel is nie 'n handboek nie.

Daar was 'n ou oom wat alles in die Bybel letterlik opgeneem het.
Daarom het hy geglo dat die aarde plat was en op pilare staan.
Want dit staan in die Bybel.

- 1 Sam 2: Want aan die HERE behoort die pilare van die aarde, en Hy het die wêreld daarop gevestig.
- Psalm 75:4: "Al wankel die aarde en al sy bewoners - Ék het sy pilare vasgestel. Sela.

En hierdie oom het met alles in hom vasgehou daaraan dat die aarde op pilare staan.
En eendag het iemand vir hom gevra:

Maar oom, waarop staan die pilare?
Op 'n groot klip.
En die klip, waarom staan die klip.
Op nog 'n klip.
En die klip?
My broer, van daar af is dit net klippe en klippe...

Dis die gevaar wanneer ons die Bybel verkeerd gebruik - soos 'n wetenskapshandboek.

- Jos 10: ¹³ Die son het stilgestaan, die maan het nie geroer nie totdat Israel sy vyande verslaan het. Dit staan so geskrywe in die Boek van die Opregte. Die son het halfpad in die hemel bly staan. Byna 'n volle dag was hy nie haastig om onder te gaan nie.
Ons weet vandag die son draai nie om die aarde nie.
Die aarde draai om die son.
Is die Bybel nou verkeerd?
Nee - die Bybel wil nie vir ons kom leer hoe werk die sterrestelsel nie.
Dis die werk van die natuurwetenskap - die sterrekunde.
Die Bybel wil vir ons vertel dat God die mag het om hierdie totale heelal vir een dag te laat stilstaan.
- Voorbeeld: Liggaam, siel en gees
- * Voorbeeld: Studie oor Bybelse kosse

As ek die Bybel soos 'n handboek hanteer: probleme
Want die Bybel is nie 'n handboek nie.
Die Bybel is 'n liefdesbrief.

- Van God, aan die wêreld.
Om te sê: So lief het Ek julle...
- Johannes som dit baie mooi op in 1 Joh 5:13 "Hierdie brief skryf ek vir julle sodat julle kan weet...
...hoe die sterrestelsels werk?
...hoe God presies geskep het?
 - ... dat julle die ewige lewe het, julle wat in die Seun van God glo."

BEGINSEL 3 : Alle wetenskappe (teologie ingesluit) is mensewerk/feilbaar.

Ook die natuurwetenskap.

- Alles wat 'n mens lees en hoor is nie noodwendig feite nie.
- Voorbeeld: Een van die dinosourusse wat aan ons voorgehou word is die Troodon. Wat nie vir ons gesê word nie is dat daar slegs 'n paar tande opgegrawe is, en op grond van die tande is 'n hele dinosourus gebou.

Louw Alberts: Moenie alles glo wat die natuurwetenskaplikes sê nie.

Baie van die goed is net teorieë en sal eendag anders bewys word.

Ons is geneig om die wetenskaplikes meer te vertrou as vir God.

Ons almal glo in atome en molekules en goed.

Ons almal glo daardie lig werk omdat daar op hierdie oomblik miljoene elektrone daardeur beweeg.

Ons glo die dokters.

Ons glo die argeoloë.

Maar ons sukkel om God te glo.

As Hy sê: Hy sal voorsien - twyfel ons of Hy regtig sal.

As Hy sê "Ek kom weer" - dan twyfel ons.

Nee, Hy sal tog nie regtig kom nie.

As Hy sê: Hierdie liggaam sal weer opstaan, dan twyfel ons.

Is dit moontlik?

As Hy sê: Ek het die hemel en die aarde geskep - dan twyfel ons.

As ons meer geloof in die Wetenskap begin hê as in God - is daar fout!

As ek meer vertrou in die skepping het as in die Skepper - is daar fout!

Skepper en skepping gaan altyd saam.

Opsomming: 3 beginsels

1. Bybel en natuurwetenskap is NB
2. Bybel is nie 'n handboek nie.
3. Alle wetenskappe het foute/tekortkominge.

TOEPASSING: 2 RAAISELS

RAAISEL 1: Dinossourusse

Was daar regtig goed soos die dinossourusse? Waar pas hulle in?

Die Bybel praat nooit van dinossourusse nie.

Dis interessant: die Bybel praat op verskeie plekke van...

"Monsters" 4x (Ps 89:11, Jes 27:1, Jes 51:34, Eseg 3:2,

"Leviatan" = (4x) "monsteragtige waterdier, watermonster" (HAT)

"Drake wat rondvlieg (Jes 30:6)"

"Vlieënde draak" (Jes 14:29)

Maar die Bybel praat nooit van dinossourusse nie.

En nou kan 'n mens maklik sê dis omdat daar nooit sulke goed was nie.

Of omdat hulle al uitgesterf was.

Maar die Bybel praat van klomp ander diere ook nie:

Tiere

Kaketiele

Budgies

Hiënas

Zebra's

Want die Bybel se doel is nie om vir ons 'n opsomming te maak van alle diere nie.

Maar wat die Bybel wel vir ons wil sê: Elke dier wat bestaan is deur God geskep.

Niks het buite Hom ontstaan nie.

Niks het per toeval ontstaan nie.

Tot op hierdie oomblik kan niemand lewe maak nie.

Nie die slimste bioloog nie.

Nie eers 'n wurmpie nie.

God alleen kan dit doen.

En as daar dinossourusse was, het Hy hulle gemaak.

Saam met al die ander diere in Gen 1.

'N Mens sou kon vra: Hoekom lees ons nie in die Skeppingsverhaal daarvan nie?

- Geen spesifieke diere word in die skeppingsverhaal vermeld nie.

Verder Belangrik:

Gen 1 & 2 wil nie vir ons beskryf hoe alles ontstaan het nie.

Dis die fout wat ons baie keer maak.

Omdat ons self met die Bybel oneerlik is.

As ons mooi gaan kyk sal ons sien die Bybel het meer as een skeppingsverhaal.

Baie van ons ken net Gen 1

Maar wat van Gen 2?

Wat van Psalm 104? Jesja 40? Job?

Gen 1 & 2 wil net een groot saak vir ons duidelik stel:

God is die skepper.

Dit beskryf nie die skepping nie.

Dit beskryf die Skepper.

Dit gaan nie oor Pinocchio nie.

Dit gaan oor oom Jepetto.

Hy het alles geskep.

Die olifant, die bok, die arend, die leeu, ja ook die dinossourusse.

Alles.

Hy het net 'n woord gepraat - en alles het ontstaan.

RAAISEL 2 : Mens en/of aap?

Dominee, ons leer in die skool dat die mens oor miljoene jare ontwikkel het.

Eers was daar die Australopithecus

Toe die Homo Habilus

Toe die Homo erectus

En toe die Homo Sapiens

En iewers langs die pad die Homo Sapiens Sapiens.

Ja eers 'n aap

En toe 'n aap-mens

En toe 'n mens.

Die interessante is natuurlik dat 'n paar stukke van 'n skelet en nog 'n been opgetel word.

En hierdie paar beentjies word opgebou tot 'n hele aap-mens.

En ons glo dit - want die natuurwetenskaplikes sê vir ons so.

Die evolusioniste.

Prof Walter Veitch: verhaaltjie van visdammetjie.

Belangrik: Lou Alberts se waarskuwing.

(Doen uself 'n guns: Ek het 'n reeks wetenskaplike videos oor al hierdie goed - leen dit en kyk vir uself hoe belaglik meeste van hierdie aannames is)

Weet u wat sê God?

Hy sê Hy het die mens gemaak.

Na Sy beeld.

U sien, Hy het nie 'n aapmens gemaak wat oor miljoene jare ontwikkel het

En toe word Hy beeld van God nie.

Die eerste 50 miljoen jaar was hy beeld van 'n aap.

En toe ontwikkel hy tot beeld van God.

Nee.

Hy skep die mens as beeld van God.

En dit beteken: Van die eerste dag af lyk die mens soos God.

En as ek oor 100 miljoen jaar Kruger wildduin toe sal gaan.

Dan sal daar nog steeds ape in die bome wees.

Want God het hulle gemaak om ape te wees.

Ons kan nie teen opgrawings stry nie.

Dat daar miljoene jare gelede al lewe was, dis verseker.

Dat daar 'n vorm van 'n aapmens kon wees - dis moontlik.

Maar die mens wat vandag bestaan het nie daaruit ontwikkel nie.

Die mens soos ons hom ken - is 'n nuwe en unieke skepping van God.

Totaal anders en uniek as enige iets voor hom.

Hierdie spesifieke mens is geskep na die beeld van God.

En ons kan vandag opgrawings doen tot ons flou word

opsoek na die missing link.

Ons kan toor met die bene wat ons opgrawe.

Ons sal dit nie kry nie.

Want die missing link kry ons net in Gen 1:26

Waar die 3-enige God besluit om iets nuuts te doen.

Om iemand te maak wat soos Hy lyk.

Gen 1:25 sê: Hy het elke **lewende wese** gemaak na sy aard/soort.

En tot op hierdie oomblik is daar nog nie 'n voorbeeld van 'n radikale verandering nie.

'N Boerboel kan met 'n Kollie kruis - bly nogsteeds 'n hond

Bly nogsteeds 'n soogdier.

Maar 'n boerboel kan nie met 'n volstruis kruis nie.

Want dit is nie sy soort nie.

En daarom: oor 'n miljoen jaar van nou af sal honde nogsteeds nie vlieg nie.

Want God het hulle gemaak om honde te wees.

“Elkeen na sy eie aard”.

Voëls

Visse

Kruipende diere, mak diere, wilde diere

Mense

Hoe Hy dit presies gedoen het, weet ons nie.

Hoe lank dit geneem het, weet ons nie.

Of Gen 1:1 die heel eerste begin was of dalk 'n tweede begin, weet ons nie.

Of daar nog ander mense naas Adam en Eva gemaak is, weet ons nie.

Baie waarskynlik.

En daarmee kan die natuur-wetenskap baie help.

Opgrawings.

Studies.

En as ons eerlik is met alles:

Eerlik in ons omgang met die Bybel

Eerlik met dit wat ons opgrawe

Eerlik in die interpretasie van dit wat ons opgegrawe het

Dan behoort ons nogsteeds by dieselfde punt uit te kom

Naamlik dat God alles geskep het

Dat Hy verskillende spesies geskep het - elkeen na sy eie aard.

En dat Hy die mens van die begin af uniek geskep het

As beeld van God

As heerser oor die ganse natuur.

KONKLUSIE

Hoekom is dit alles so belangrik?

Wat maak dit saak of God dit alles geskep het ?

Dit maak baie saak.

Want as God nie met 'n Woord alles kon skep nie

Dan kan Hy ook nie met Sy Woord ons verlos nie.

As Hy nie toe al mag oor die skepping gehad het nie

Kon Hy nie 2000 jaar gelede 'n storm stilgemaak het nie.

As Hy nie lewe kan skep nie

Kan Hy ook nie hierdie liggaam van my opwek wanneer ek sterf nie.

As jy plekmaak vir 'n ander Skepper

Sal jy geleidelik ook moet plek maak vir 'n ander Verlosser.

Glo jy in die Skepper?

Vetrou jy Hom?

Jes 14:²⁹ Wees nie bly, o ganse land van die Filistyne, dat die roede verbreek is wat jou geslaan het nie; want uit die wortel van die slang sal 'n basilisk voortkom, en sy vrug sal 'n vlieënde draak wees.

Jes 27:²⁷ **IN** dié dag sal die HERE met sy harde en groot en sterk swaard besoeking doen oor die Leviátan, die vinnige slang, en oor die Leviátan, die kronkelende slang; en Hy sal die draak doodmaak wat in die groot water is.

² In dié dag sal daar wees 'n wingerd van skuimende wyn - sing daarvan!

Jes (NAV)27 Daardie dag sal die Here sy skerp, groot, sterk swaard gebruik om die Leviatan, die vinnige, kronkelende slang te verslaan en sal Hy die monster doodmaak wat in die see is. ² Daardie dag moet julle sing van die goeie wingerd;

Jes 30:⁶ Godspraak oor die diere van die Suidland. In 'n land van benoudheid en angs, waar leeuin en leeu uitkom, adder en vlieënde draak, vervoer hulle op die rugge van esels hul rykdomme en op die bulte van kamele hul skatte, na 'n volk wat geen voordeel bring nie.

Openb 12:

⁷ En daar het oorlog in die hemel gekom: Mígaël en sy engele het oorlog gevoer teen die draak, en die draak en sy engele het oorlog gevoer;

⁸ en hulle kon nie oorwin nie, en hulle plek was in die hemel nie meer te vinde nie.

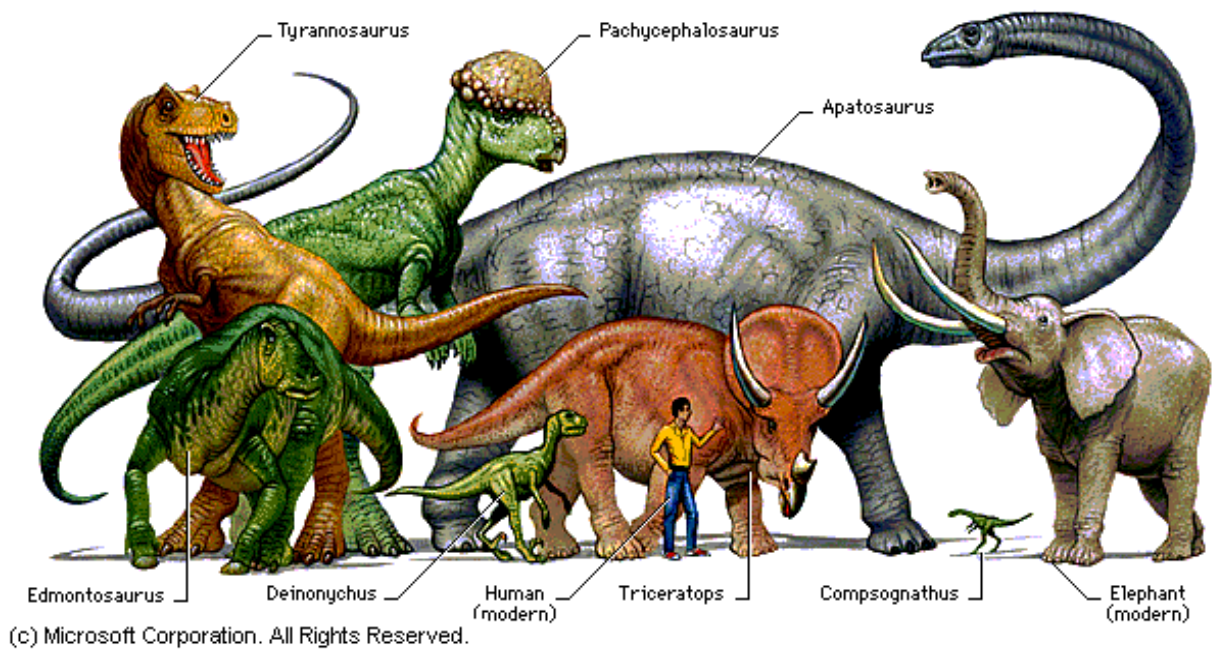
⁹ En die groot draak is neergewerp, die ou slang wat genoem word duiwel en Satan, wat die hele wêreld verlei, hy is neergewerp op die aarde, en sy engele is saam met hom neergewerp.

NAV Jes 30: ⁶ 'n Uitspraak van die Here oor die diere in die Suidland: Die gesante van Juda bring hulle ryk geskenke, hulle skatte, op die rûe van hulle donkies en hulle kamele; hulle bring dit deur 'n gebied vol gevaar en angs waar leeus en slange boer en waar drake rondvlieg, hulle bring dit na 'n volk toe wat nie kan help nie. ⁷ Egipte is niks, sy hulp beteken niks! Ek noem hom Rahab, die een wat niks kan doen nie.

Jes 51:⁹ Ontwaak, ontwaak, beklee u met sterkte, arm van die HERE! Ontwaak soos in die dae van die voortyd, onder die geslagte van lank gelede. Is dit nie u wat Rahab neergekap, wat die seemonster deurboor het nie?

Job 26: ¹³ Met die wind waai Hy die lug skoon, met sy krag deurboor Hy die seemonster. ¹⁴ Dit is maar die begin van sy dae, ons hoor net die gefluister van sy woorde. Maar die volle krag van sy dae, wie kan dit verstaan?"

Diere nie in die Bybel: Zebra, tier, hiëna, kaketiël, budgie...



Dinosaur, any member of a group of about 1300 reptiles that first appeared in the late Middle or early Late **Triassic period**, about 200 million years ago. Most dinosaurs are classified into two types, the “bird-hipped” Ornithischia, for example *Iguanodon* and *Triceratops*, and the “lizard-hipped” Saurischia, for example *Apatosaurus* and *Tyrannosaurus*. The earliest known dinosaurs, such as *Staurikosaurus* and *Herrerasaurus* from South America, are too primitive to be classified within either order. Dinosaurs died out about 65 million years ago, but one lineage, the **birds**, survives to the present.

The first dinosaurs were small, lightly built, bipedal (standing on two legs) **carnivores** or **omnivores** that were probably quicker and more agile than their contemporaries, most of which became extinct by the end of the Triassic period, about 208 million years ago. During the following **Jurassic period** and **Cretaceous period** the dinosaurs evolved into myriad adaptive types, many of which reached colossal size.

Remains of dinosaurs were first discovered in England in the 1820s. By the 1840s several genera were well enough known that the great comparative anatomist **Richard Owen** gave them the name Dinosauria (Greek, “terrible lizard”). In doing so, he recognized the uniqueness of their great size, their land-living habits, their upright posture, and the inclusion of at least five vertebrae in their hip girdles. It was not until the explorations in the 1880s, however, and the recovery of complete fossil dinosaur skeletons, that dinosaurs were recognized as having been largely bipedal—a most unusual stance for a reptile, and one that led to much speculation about their locomotion, behaviour, and physiology.

In the 1880s, H. G. Seeley saw that Dinosauria could be divided into two groups based on the form of the hip girdle. The Ornithischia had pubic bones that, superficially resembled those of birds. The more conventional Saurischia had pubic bones that resembled those of extant reptiles. Ironically, it was the “lizard-hipped” Saurischia from which birds evolved, specifically from small carnivorous dinosaurs related to *Deinonychus* and *Compsognathus*.

Dinosaurs are distinguished by an erect posture in which the limbs are brought more or less under the body in the fashion of birds and mammals, rather than sprawling to the side as in crocodiles, lizards, and turtles. They share this characteristic with **pterosaurs**, their closest relatives, as well as with their descendants the birds. Their footprints show that the bipedal dinosaurs walked as birds do, putting one foot in front of the other, toed slightly inwards. Their brain size compared to body size was variable and was lowest in the Sauropods (see below) and highest in small carnivores.

Ornithischian Dinosaurs

The earliest ornithischians include the poorly known Triassic form *Pisanosaurus* from South America, and Early Jurassic groups such as *Heterodontosaurus* and *Scutellosaurus*. By the Early Jurassic the ornithischians had already split into several major lineages. One lineage, known collectively as Thyreophora, includes the plated stegosaurs and the armoured ankylosaurs, and ranges in time from the Early Jurassic to the Late Cretaceous. A second group, the Ornithopoda, includes the duck-billed hadrosaurs and their relatives the iguanodonts, as well as the horned ceratopsians and their relatives the pachycephalosaurs. The Ornithopoda also ranged from the Early Jurassic to the Late Cretaceous.

Ornithischian dinosaurs are distinguished by their “bird-like” hip girdles, and also by the presence of bone, called the predentary, on the tip of the lower jaw. All ornithischians were herbivorous, and the predentary appears to have served as a beak by which to crop vegetation. It also connected the two halves of the lower jaws and enabled them to transmit and absorb force during chewing. In duck-billed dinosaurs the jaws held dozens of teeth tightly arranged to form a single bevelled battery of chewing surface. As in all other vertebrates except mammals, the teeth were continually replaced through life as the roots were resorbed and new crowns developed.

Saurischian Dinosaurs

The Saurischia include two major groups: (1) the herbivorous Sauropodomorpha, which comprise the giant, long-necked Sauropoda such as *Diplodocus* and *Apatosaurus*, plus the less-well-known Prosauropoda, which include *Plateosaurus*; and (2) the carnivorous Theropoda, which include all the large and small meat-eaters from *Coelophysis*, *Compsognathus*, and *Deinonychus* up through the giant

meat-eaters such as *Allosaurus* and *Tyrannosaurus*, as well as their descendants the birds. Larger, bulkier, sauropods, called Supersaurus (a diplodocid) and Ultrasaurus (a brachiosaurid) have been found in Colorado in the United States, and Seismosaurus, which may be the largest dinosaur yet discovered, has been found in New Mexico.

Saurischians have long necks and large claws on the first digits of their hands and feet; the fourth and fifth fingers of the hand are reduced or absent (as in birds, which retain only the first three digits). The sauropods became very large and quadrupedal (walking on all fours), and evolved some interesting adaptations for feeding on high vegetation. In *Diplodocus*, for example, the neck and tail are both very long; the tail has a long whip-lash end which may have been used for defence. In *Brachiosaurus*, by contrast, the neck is very long but the tail is short. *Brachiosaurus* had forelimbs that were longer than its hind limbs, which, along with a long neck, enabled it to reach high vegetation.

Large carnivorous theropods such as *Tyrannosaurus* had very large heads with great jaws filled with backward curving, doubly serrated teeth. Their forelimbs were reduced but their hips and hind limbs were massive, and clearly the predator had little to do beyond grasping its prey in its jaws, planting its feet, and tearing and ripping the flesh. Small theropods such as *Deinonychus* must have been much more agile, persistent hunters that chased down prey and attacked in packs, ripping with teeth and claws. However, some lineages of small theropods, such as *Struthiomimus* and its relatives, were toothless.

Like most living reptiles and birds, many, if not all, dinosaurs built nests and laid eggs. The remains of dinosaur nests containing eggs and newly hatched dinosaurs of two different kinds of plant-eaters have been found in Montana in the United States. Nests of *Oviraptor* have been discovered recently in the Gobi Desert. Layer upon layer of nests suggest that dinosaurs returned to the same nesting sites year after year.

Warm-Bloodedness

The evidence as to whether dinosaurs were warm-blooded is mixed. Like birds and mammals, dinosaurs had rapid rates of growth. They did not sprawl like most living reptiles. Their footprints and long limbs show that they were capable of high speeds. Probably no single thermal regulation mechanism can describe all dinosaurs; mammals, such as bats, cats, elephants, and whales, control their body temperature in different ways, and the thermal regulation mechanisms of dinosaurs were probably equally varied.

Extinction

Dozens of explanations for the late Cretaceous extinction of dinosaurs have been offered, most of them fanciful or outside the resolution of evidence. Until recently dinosaurs were considered to have died off gradually through the Late Cretaceous. The recent discovery at the Cretaceous-Tertiary boundary, dating from about 65 million years ago, of evidence of the impact of a large asteroid or comet, fuelled speculation that such an impact could have triggered changes in climate that ended the dinosaurs' reign. Although such events, which are known to be common in geologic history, might have had some environmental consequences, the vast majority of dinosaurs were long extinct by that time. Moreover, the other organisms such as crocodiles, turtles, fishes, birds, and amphibians, which might have been expected to suffer equally from such a cataclysm, survived with only minor losses—a pattern that has yet to be explained by any catastrophe hypothesis. It is known that through the Late Cretaceous the climate was becoming more unstable and seasonal, and waves of extinctions had long been affecting both marine and terrestrial life. Although the effects of extraterrestrial impact cannot be ruled out, they do little to explain the observed evidence of extinction and survival at the end of Cretaceous.

Creation, the creating of the universe, and often also of the creatures that inhabit it, explained in mythological terms. One of the principal purposes of mythological traditions worldwide is to give an account of the creating of the cosmos. Mythographers (i.e. those who record and analyse myths) often make a distinction between “creation myths” (cosmogonies), which tell how the world arose or was created from a primal state, and “myths of origin”, which explain how later features of the known world, such as human beings, animals, or the social order, came into being. In reality, myths of origin are usually continuations of a cosmogony, revealing the further action of an original creative impulse. In the biblical Book of **Genesis**, for example, the Hebrew god Yahweh (see **Jehovah**) is first a primary creator deity, separating the elements and forming the Earth. Later, after he has made the first humans, Adam and Eve, Yahweh becomes a law-giver; and the myth of the exile from the Garden of **Eden** accounts for the origin of such aspects of life as the need to cultivate the soil, the pain of childbirth, and the presence of death. One aspect of the telling of a “living myth” (i.e. a myth that belongs to the religious experience of its audience) is that it enables the listener to re-enter the “strong” time of creation when the world was in its infancy.

Cosmogonies usually take for granted the existence “from the beginning of time” of primal matter, or even of the world itself, which is then shaped into a recognizable form either by the action of cosmic forces or by creator deities. Certain images of the uncreated cosmos often recur in different traditions: it may be represented as a void, as a state of chaos or of unformed elements, as a primeval sea, or a “cosmic egg” containing all things in embryonic form. Creation myths may reflect the environmental circumstances of a particular society. In Mesopotamia, the land between the great rivers Tigris and Euphrates, the development of irrigation systems and the fear of the sudden flooding that occurred periodically were from the earliest times a major feature of life; and accordingly the action and control of the waters plays a major role in Sumerian mythology. The primeval sea, personified by the goddess Nammu, is the source of the gods and the cosmos; and at one stage the gods decide to destroy their human creation by sending a deluge. (In many myths the creation of man and the evolution of human society is soon followed by a cataclysmic fire or flood sent by the gods.)

The processes by which the world is formed include the moulding or coalescing of elements, particularly water and earth; a struggle between supernatural powers; the sacrifice of a primal being (for example a giant or world-serpent); the incubation of the “cosmic egg”; or the uttering of a divine “word”. Where primary creation is ascribed to deities, such as the Greek **Uranus** (sky god) and Gaea (earth goddess), these tend to become hazy, remote figures in later mythology, and stories recount their overthrow by their own offspring: thus in the Greek tradition, **Zeus** succeeded his father Cronus and grandfather Uranus to become undisputed head of the Greek pantheon. Many traditions, however, do not ascribe creation to individual deities. In African mythology a cosmic egg hatches to release spirits called Nommo, who then set about the creation of mankind. Both “personal” and “impersonal” creative forces occur in **Egyptian mythology**: elemental energies were personified by four divine couples, who fused to form the cosmic egg; from this the sun god was born. Later the sun god was worshipped in the figure of **Ra**, who engendered a pantheon of high gods (known as the Nine Gods of **Heliopolis**) by eating then spitting out his own semen. The motif of self-fertilization by a creator deity occurs widely: his offspring may then, through an incestuous sexual union, give birth to other gods, creating a pantheon based on family relationships. The most famous such “family tree” is the ancient Greek one, centring on the offspring of Zeus by many goddesses and mortals.

Creation myths often contain the idea of separation or distinguishing (this function also belongs to solar deities, who, like the light of the Sun, reveal the true form of things). Thus the elements that constitute matter are made distinct; in ancient Egypt a mound of land was believed to have risen from the primal waters; and in the biblical Genesis story, Yahweh's creation of the world is described mainly in terms of “dividing”. Alternatively, the raw material for making the world may derive from a specific source. A widespread Native American myth tells of the descent into the depths of the ocean of an “earth-diver”, an animal—often a turtle—who brings back mud from which the world is fashioned. In Indian Vedic tradition (see **Veda**) the body of the primordial man, Purusha, is dismembered to provide material for the world and everything in it. A similar theme occurs in the Norse myth in which the primal giant Ymir was killed by **Odin** and his brothers, who then make the sky out of his skull, the earth from his body and the sea from his blood.

The process of creation is sometimes perceived as belonging to a mythic past; often, however, it is seen as a continuing cycle of creation and destruction, as in Hindu tradition or in the Mesoamerican belief in the “Five Suns” that governed successive worlds. Since the 19th century, Western thought has been accustomed to equating the passage of time with the idea of material progress; but in mythic history the earliest era of the world is usually the closest to perfection—a Golden Age or Garden of Eden—with later phases showing the progressive degeneration of the world as it grows more distant from the original creative impulse. Cosmogonic myths generally culminate in the creation of humankind, after which point the mythic cosmos comes to resemble the inhabited world of human experience. The earliest humans are often thought to have been of extraordinary stature and longevity and to have been much closer to the gods, and in many traditions the story-cycles associated with demigods and heroes are a richer source of myth than those involving the gods themselves.