Dinosaurs and Dragons

D. (LEE) NIERMANN

ABSTRACT

The biblical behemoth and leviathan are shown to clearly be dinosaurs, what the ancients called dragons. Dragons were known in many forms, both in the West and the East. Numerous sightings and descriptions are known from ancient records and eye-witness accounts in Europe, Asia and Africa. In the East, crushed dragon bones were used for medicinal purposes, even up to recent times when such bones have been identified as dinosaurian. Even very recent reports and encounters confirm that dragons were dinosaurs, some of which might have survived to the present day.

THE BIBLE

In the 38th and 39th chapters of the book of Job there is a creation passage mentioning 12 representative animals, each of which was real and living: the lion, the raven, wild goats, the hinds (deer), the wild ass, the wild ox, peacocks, the ostrich, the horse, the grasshopper, the hawk, and the eagle. Then two other animals are mentioned: behemoth and leviathan. These two have more space devoted to them (44 verses) than the other 12 combined. These are huge and mysterious animals, whose described characteristics correspond to no known living animals:

> *'Behold now behemoth, which I made with thee; he eateth grass as an ox. Lo now, his strength is in his loins, and his force is in the muscles of his belly. He moveth his tail like a cedar: the sinews of his thighs are knit together. His bones are like strong pieces of brass; his bones are like bars of iron. He is the chief of the ways of God; he who made him can make his sword to approach unto him. Surely the mountains bring him forth food, where all the beasts of the field play. He lieth under the shady trees, in covert of the reed, and fens. The shady trees cover him with their shadow; the willows of the brook compass him about. Behold, he drinketh up a river, he hasteth not: he trusteth that he can draw up Jordan into his mouth. He taketh it with his eyes; his nose pierceth through snares.'* (Job 40:15–24)

The reason commentators have struggled so much over the identity of this animal is that he is now extinct. Modern Bible 'scholars', for the most part, have become so conditioned to think in terms of the long ages of evolutionary geology that it never occurs to them that man once lived in the same world with the dinosaurs. They usually identify behemoth in their footnotes as a hippopotamus or, less frequently, as an elephant. An 'odd' interpretation has been the crocodile — who does not *'eat grass as an ox'* or find his food in the *'mountains'* — an interesting statement considering the Alpine legends of the fire-breathing *Tatzlwurm* in Switzerland and Austria.

Behemoth (Hebrew *behemowth*) is *'the chief of the ways of God'*, indicating that he might be the largest of all the land animals. He ate grass like a cow or an ox, with the mountain plants, meadows, trees, and shrubs providing him food. His tail was like the trunk of a large tree, but he could bend or move it like a branch. He enjoyed resting in water shaded by the trees. He was peaceful, and apparently the other animals could even play beside him.

These descriptions fit precisely all that we know about certain dinosaurs, the giant sauropods, but no other animal that we know of (see Figure 1). Fossil remains have been found in mountains.

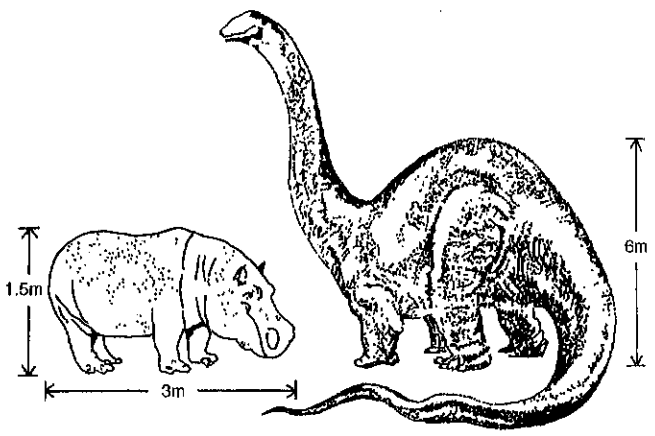


Figure 1. 'He moveth his tail like a cedar . . .' *Job 40:17 — hippopotamus or sauropodlan dinosaur?*

Job also speaks of the **leviathan** (Hebrew *livyathan*). In contrast to the behemoth who was the largest of creation, and peaceful, the leviathan was the most fearsome and terrifying. Like behemoth, it is probably now extinct.

The Bible 'scholars', once again limiting their thinking to existing animals, identify leviathan as a large crocodile. But just as with behemoth, the Joban description does not fit the crocodile at all. Whatever the leviathan may have been, it was not a crocodile.

> *'Canst thou fill his skin with barbed irons? or his head with fish spears? Behold, the hope of him is in vain: shall not one be cast down even at the sight of him? None is so fierce that dare stir him up: .... The sword of him that layeth at him cannot hold.'* (Job 41:7, 9, 10, 26)

These and other verses indicate that the leviathan was impregnable to human efforts to capture or slay him. Yet zoos are full of crocodiles, and crocodiles have been hunted so successfully that they are often considered an endangered species.

> *'By his sneezings a light does shine, and his eyes are like the eyelids of the morning. Out of his mouth go burning lamps, and sparks of fire leap out. Out of his nostrils goeth smoke, as out of a boiling pot or caldron. His breath kindleth coals, and a flame goeth out of his mouth.'* (Job 41:18–21)

This is surely **not** a crocodile. To the objection that not even dinosaurs breathed fire, we could answer first that no one **knows** what dinosaurs could do, and second that all the text observes are 'sparks'. We do know that in the traditions from all parts of the world, dragons were capable of breathing out fire and 'sparks' may be all that is necessary to originate a legend. And certain insects can, in effect, give out light or fire — for example, the bombardier beetle (see Figure 2)[1] and the firefly — as can various luminescent fish. Perhaps more to the point, dino-

10E Sunday/August 30/1992/Star Tribune

Fixit

The chemical warfare bug

Bombardier beetle explodes quinine at foes

Q My son claims there is a beetle that shoots boiling chemicals as a defense.

I say he's been watching too many beastie cartoons on TV, but he says they really exist and are called bombing beetles. Who's right?

A Sorry, Mom, but this time your TV-watching son is correct.

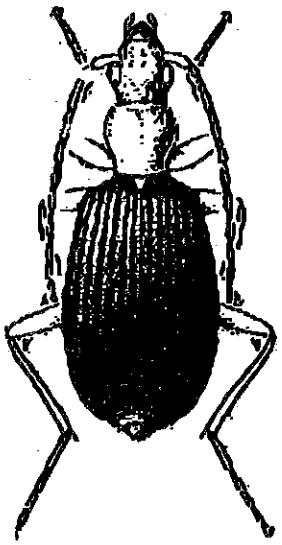
The bug in question, the bombardier beetle, belongs to the family *Carabidae* (ground beetles) and are commonly found in Minnesota.

When a bombardier beetle is attacked, it fires a scalding hot chemical called quinine at its aggressor. The chemical actually explodes from the tip of the beetle's abdomen, accompanied by a popping sound and a puff of smoke.

The beetle can rapidly fire this chemical salvo more than 20 times, providing itself a virtually foolproof system of defense against predators such as toads.

This defense system isn't dangerous to humans unless the beetle scores a direct hit into the eye, where it would be irritating. But because it's a ground beetle and not commonly encountered, this isn't likely to occur.

Bill Jurney, Dial U Insect and Plant Information, St. Paul



A rapid-fire chemical salvo is the the bombardier beetle's chief defense against aggressors. The firing of the scalding hot chemical from the beetle's abdomen is accompanied by a popping sound and a puff of smoke.

Figure 2. *The bombardier beetle makes it into the newspapers as a bug that fires a scalding hot chemical salvo accompanied by a popping sound and a puff of smoke.*

saur fossils have been excavated that show a strange protuberance, with an internal cavity, on the top of the head. It is conceivable that this could have served as a sort of mixing chamber for combustible gases — catalyst and inhibitor — that would ignite when exhaled into the outside oxygen.

It would not be necessary that **every** type of dinosaur had such a capacity. All that would be needed is for but one or two types, and the legends and the myths surrounding dragons would easily be perpetuated. In any case, it seems unlikely that the ubiquitous and universal tales of fire-breathing dragons in ancient times, coming as they do from all parts of the world, could have come into existence without some strong factual basis.

The Bible mentions dragons just as it mentions many other animals — usually in such a way as to show that the writers believed they were real animals. Whatever the original meaning and intent of the word, we do know it was the word meant to identify the animal called a dragon in other nations. The leviathan is specifically identified as a dragon in one biblical text, where it is called *'leviathan . . . . the dragon that is in the sea'* (Isaiah 27:1). That the Bible does not regard it as a mythical creature is clearly seen in the Psalms as well, when the text speaks of *'that great and wide sea'* in which there are *'things creeping innumerable'*, and adds that *'there is that leviathan, whom thou has made to play therein'* (Psalm 104:25–26). The leviathan was a real animal, large and presumably the fiercest of all the marine dinosaurs. Reptilian and lizard-like, fossil evidence suggests many types were well suited to an aquatic habitat, the larger forms being particularly benefited by the support that water provided them. Thus the leviathan may have been one of the theropods, one even possibly unknown and greater than *Tyrannosaurus.*

DRAGONS

'The creatures' monstrous strength and ferocity were such that in classical times they were said to be predators of that other natural behemoth, the elephant. In Ethiopia, it was reported, dragons were called simply, elephant killers. Pliny the Elder (AD 24–79), a Roman of infinite curiosity (he was killed investigating the Vesuvius volcano), speculated in his studies of natural phenomena that dragons hunted elephants to drink their blood — which was known for its remarkable coolness — and thus find relief from the heat of the desert and of their own bodies.'[2]

The description fits no known animal on earth today, but could fit a number of the larger carnivorous dinosaurs.

A *Tyrannosaurus* or *Allosaurus* (see Figure 3)[3] could certainly inspire both a mythology and a monstrous fear, and understandably in an age lacking modern weaponry and modern communication:

'Few human beings cared to discover more about dragons than how to avoid them or — failing that — kill them. Yet man was always curious, and in time dragons become a subject for scholars. Studying them was a daunting task, for the nature of dragons was confusing. The creatures seemed to defy sensible cataloguing, as though each dragon were a separate species.'[4]

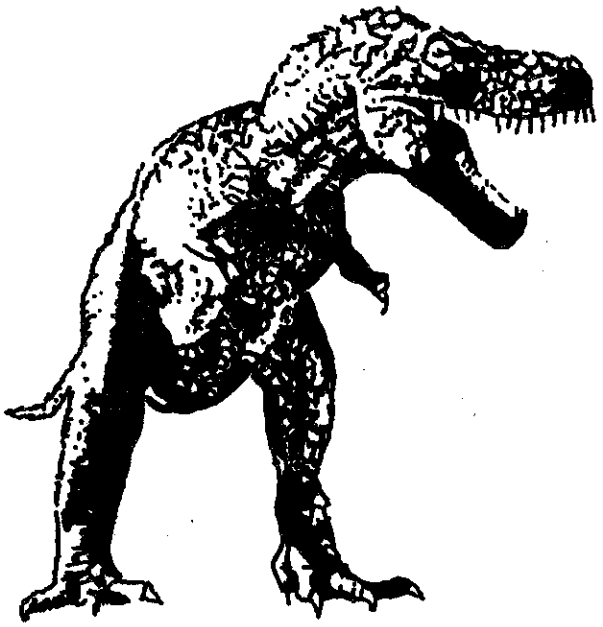


Figure 3. *The feared* Tyrannosaurus.

Men would not be quick to approach a reptile of this size, and so 'study' would often need to be conducted from a distance. Thus an erect or semi-erect dinosaur with two smallish front legs might be confused as having only two large hind legs. Many may have preferred flight from man rather than confrontation — characteristic of animal and reptile of any size even today — and so sightings might frequently be of the hind parts of the animal. Since some reptilian creatures had flight (pteranodons, etc.) it became popular in the west, though not in the east, to assign flight to nearly all of the dragons. Medieval man also seemed to believe the smaller dragons would become the larger, and some reports stated it might take as long as a thousand years for the maturation of the heraldic dragon.

'Some were in fact unique. For example, hundred-headed Typhon, with his earthquake tread, was a monstrous rebuke to the idea that nature had organisation.'[5]

But many of the ancient mythological snakes also were multi-headed, feathered, large enough to encircle even the world, etc., and we would not conclude simply by these exaggerations that snakes themselves were non-existent. We only discount the proportions of the myth, but not the factual basis of the existence of snakes as genuine and real creatures. If some of the early recordings of dragons are humorously disproportionate, it remains still that later, as scholarship caught up with the mythical, *'lesser drag-*

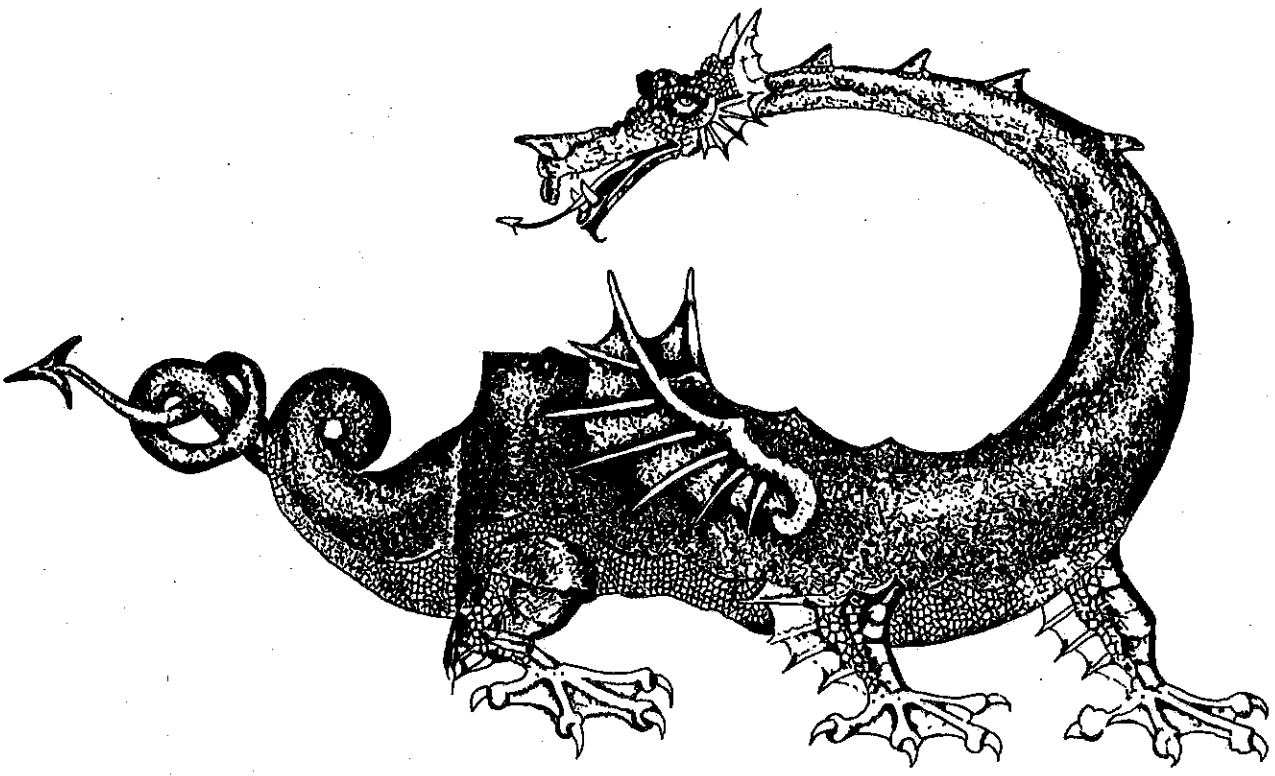


Figure 4. *The heraldic dragon was the most widespread and formidable of its kind.*

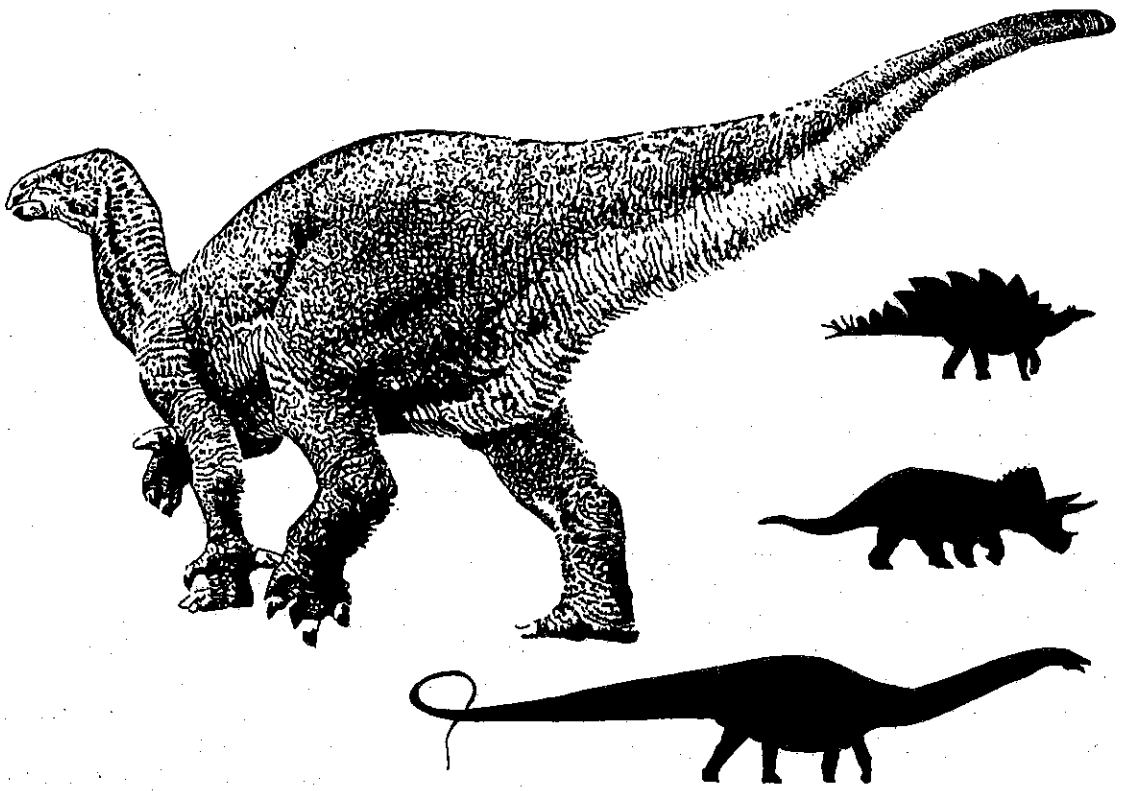


Figure 5. *Dinosaurs whose characteristics may have led to the common depictions of heraldic dragons — (left to right) Iguanodon (in a four-footed stance), Seismosaurus, Triceratops and Stegosaurus.*

ons were somewhat more consistent in behavior and appearance, and there arose schemes for classifying them.'[6]

The two civilized worlds make their contributions:

'In the West, dragons were described by body type and defined by habitat. In China, however, they were classified according to their purposes and functions.'[7]

Like the dinosaurs,

'most Western Dragons are fifteen to twenty feet long — the size of large crocodiles — a few varieties [again, like the dinosaurs!] *are less than four feet long when full grown.'*[8] Some were giants.

Western Forms

(1) **The Heraldic Dragon** (see Figure 4),[9] *cf.* the general, basic and combined features and shapes of the sauropods, stegosaurs, ankylosaurs and ceratopsians (see Figure 5).[10]

'The most widespread and formidable of its kind, the heraldic dragon had massive fangs, four clawed legs and a ridge of sharp spines that stretched from its spiked nose to its barbed and stinging tail.'[11]

The teeth of any of the larger dinosaurs, of course, would be massive in comparison to all other creatures. Of the clawed legs:

'Fossilized dinosaur footprints are more common than dinosaur skeletal remains. This is not surprising because each dinosaur could have left hundreds of thousands of prints over its lifetime.'[12]

Characteristic of even the largest of the sauropod dinosaurs are the three-clawed footprints. The *Apatosaurus* had front

'legs straight and massive, like an elephant's with short, stubby toes. The toes of the front feet were blunt, except for the inner toe, which had a toe that pointed inward. The rear feet had three claws . . .'[13]

Many had all *'four clawed legs.'*

The *'ridge of sharp spines'* and *'barbed tail'* would also be characteristic of many of the dinosaurs of this shape.

(2) **The Wyvern** (see Figure 6),[14] *cf.* the general, basic and combined features and shapes of the theropods, ornithopods and grounded pterosaurs, with an emphasis upon the generally larger and more ferocious theropods (see Figure 7).[15]

'Feared for its viciousness and for the pestilence it brought to northern Europe, Greece and Ethiopia, the Wyvern had a coiling trunk that bore a pair of eagle's legs, which were tucked beneath its wings. The name derived from the Saxon word wivere, *or serpent.'*[16]

To add to the western confusion here, any of the larger pterosaurs, resting upon the ground, might take on such a two-legged appearance. The *Quetzalcoatlus'* wingspan was 50 feet — larger than a modern jet fighter (see Figures 8 and 9).[17]

(3) **The Lindworm** (see Figure 10),[18] *cf.* the general, basic and combined features and shapes of the ornithopods and theropods, emphasizing features of the former order (see Figures 11 and 12).[19]

'Falling between the birdlike [his legs] *wyvern and the snakelike guivre, the lindworm had a serpentine body with one pair of legs. It was flightless. The Italian traveller Marco Polo reported seeing some lindworms while crossing the steppes of Central Asia.'*[20]

These are very much like the theropods in their basic shape, but being herbivorous and normally thought more peaceable by nature, would bear stronger, though not exclusive, identity to the ornithopods. Some, like the *Corythosaurus* and *Lambeosaurus* (see Figure 11 again), have hollowed cavities in their skulls — the purpose of which is simply not known — and may possibly have housed catalyst and inhibitor for 'fire'.

(4) **The Amphiptére**(see Figure 13),[21] *cf.* pterosaurs (see Figure 14).

'A legless [as it could appear while flying], *winged serpent, the amphiptére could be found along the banks of the Nile and in Arabia, where it guarded frankincense-bearing trees and threatened all who would harvest the precious resin.'*[22]

Casting the myths of *'defending treasures'* aside, the amphiptére would be one of the flying reptiles. In the principally agrarian world of its time, flight over a city would allow more people to see the dragon than might normally occur, thus encouraging and perpetuating the Western idea of dragon flight.

(5) **The Guivre**, *cf. Squamata* (see Figure 15).[23]

'The legless and wingless guivre would have seemed a mere serpent, albeit an immensely powerful one, except for its massive dragon head, horned and bearded. Guivres liked to live in forests and wells — anywhere near water.'[24]

Guivres are not particularly important to our consideration, but called 'dragons' nevertheless. In a rare case where we have an expert witness and an excellent photograph, Belgian helicopter pilot Col. Remy van Lierde, D.F.C., who had been flying over 25 years and had very good experience for sight measurement, while returning from a mission over Katanga in 1959:

'We had the camera on board, I decided to make several passes over the hole where the snake was in . . . . to let the man take the picture of it . . . . and we made five or six passes . . . . and I would say the snake I saw there was close to fifty feet. Now when I came down on that snake in a hole, and I would say at about twenty-five to thirty feet up, the snake raised up by about ten feet and I could very clearly, closely see the head and I could not make a better comparison than with a very large horse, with big, very large jaws, looking triangular . . . . at least two feet wide and three feet long. It could have easily eaten up a man.'[25]

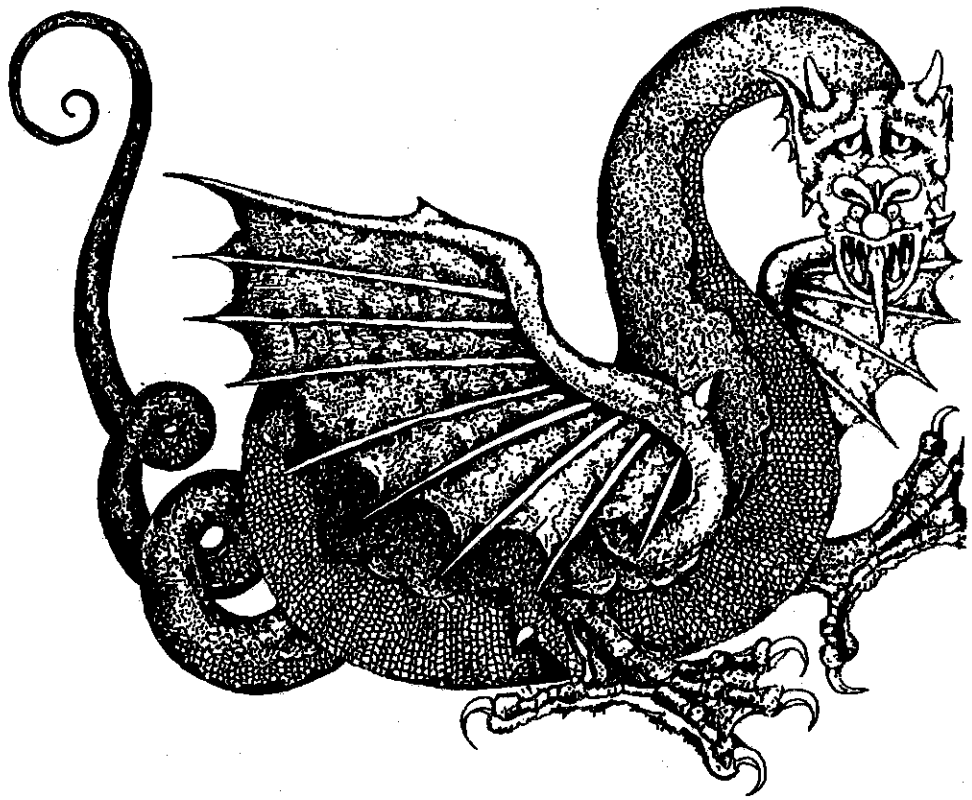


Figure 6. *The wyvern was feared for its viciousness and for the pestilence it brought.*

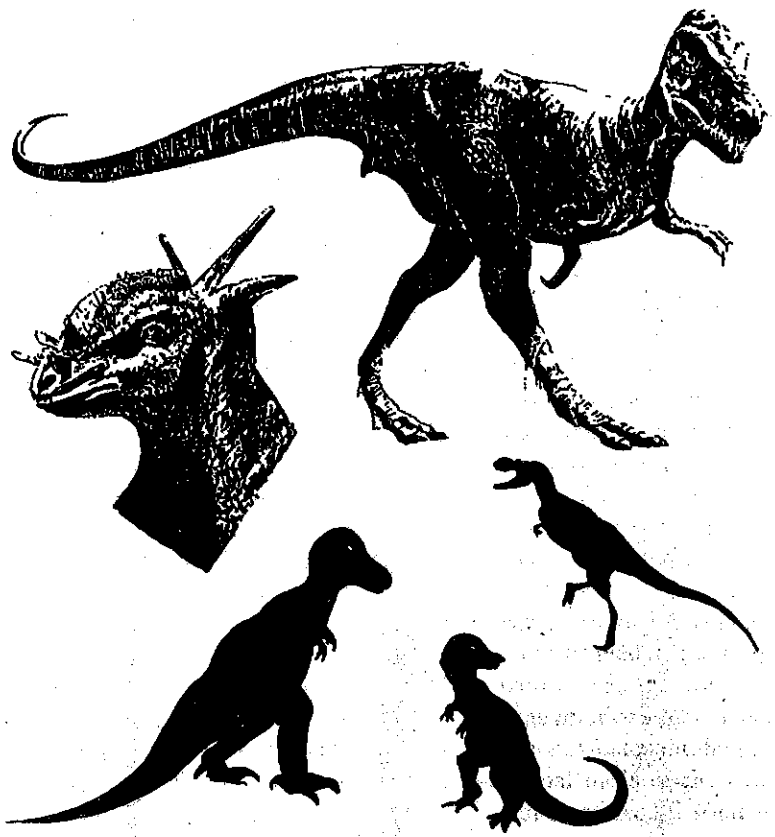


Figure 7. *Dinosaurs whose characteristics may have led to the common depictions of wyverns* — Daspletosaurus *(top right)*, Stygimoloch *(top left)* *and some silhouettes of theropods (bottom).*

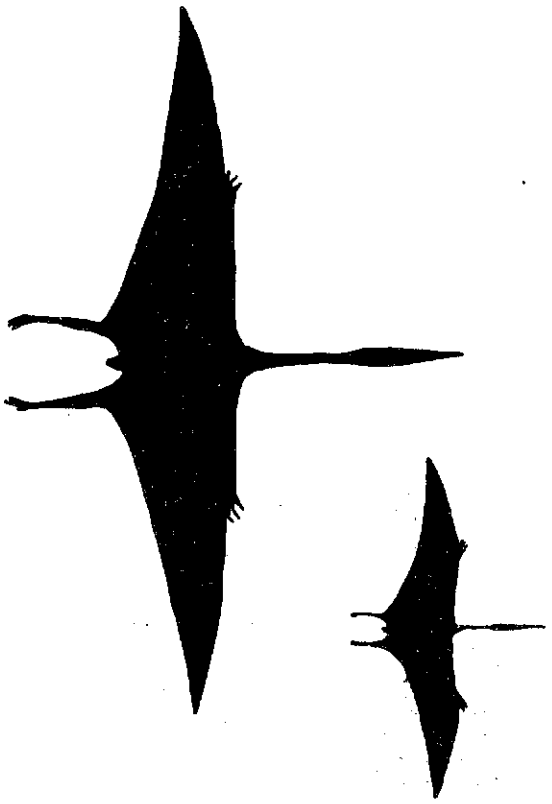


Figure 8. *The pterosaurs* Quetzalcoatlus *(left) with a wingspan of over 50ft (15.2m) and* Pteranodon *with a wingspan of 25ft (7.6m).*

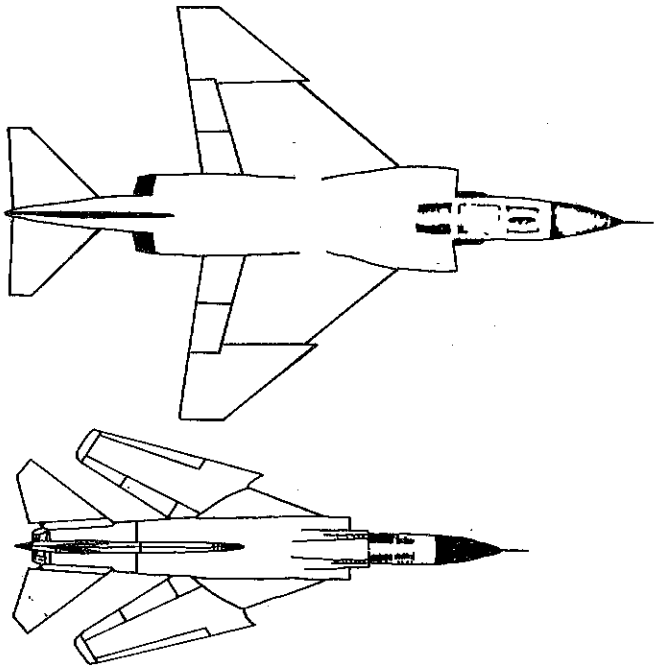


Figure 9. *The U.S. McDonnell Douglas F-15 Eagle (top), regarded in 1985 as the best operative fighter in the world, with a wingspan of 42 ft 9 ins (13m) and a length of 63 ft 9 ins (19.4m), and the Soviet MiG-21 'Fishbed' (bottom), with a wingspan of 23ft 6 ins (7.2m) and a length of 49 ft 6 ins (15.1m) (excluding the nose probe).*

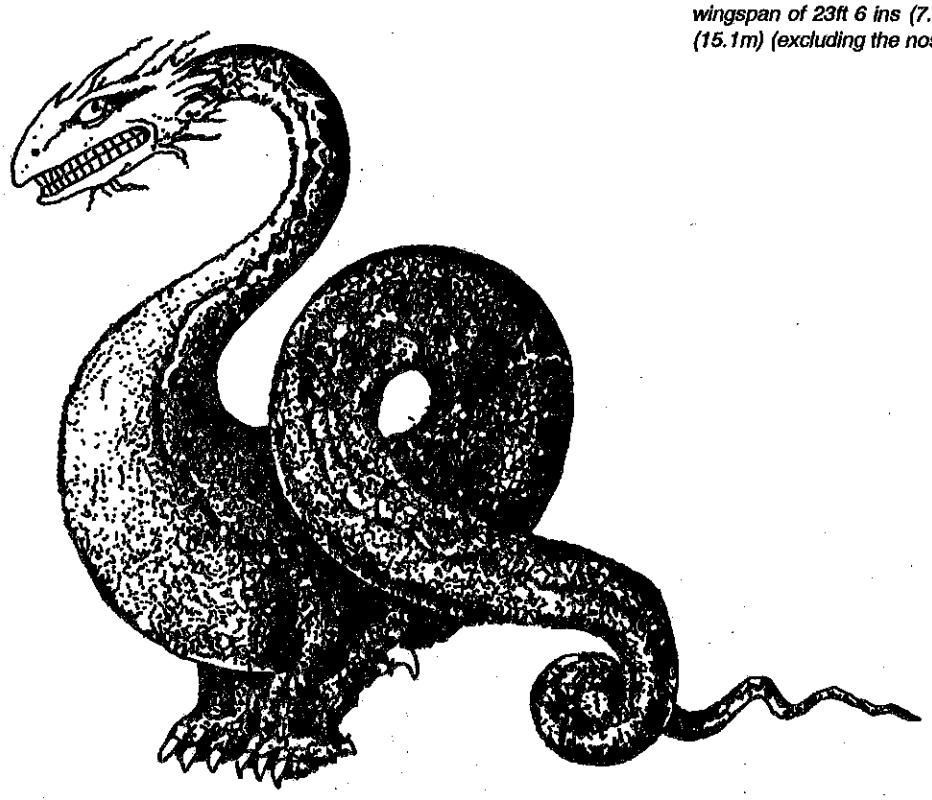


Figure 10. *The lindworm had a serpentine body with one pair of legs.*

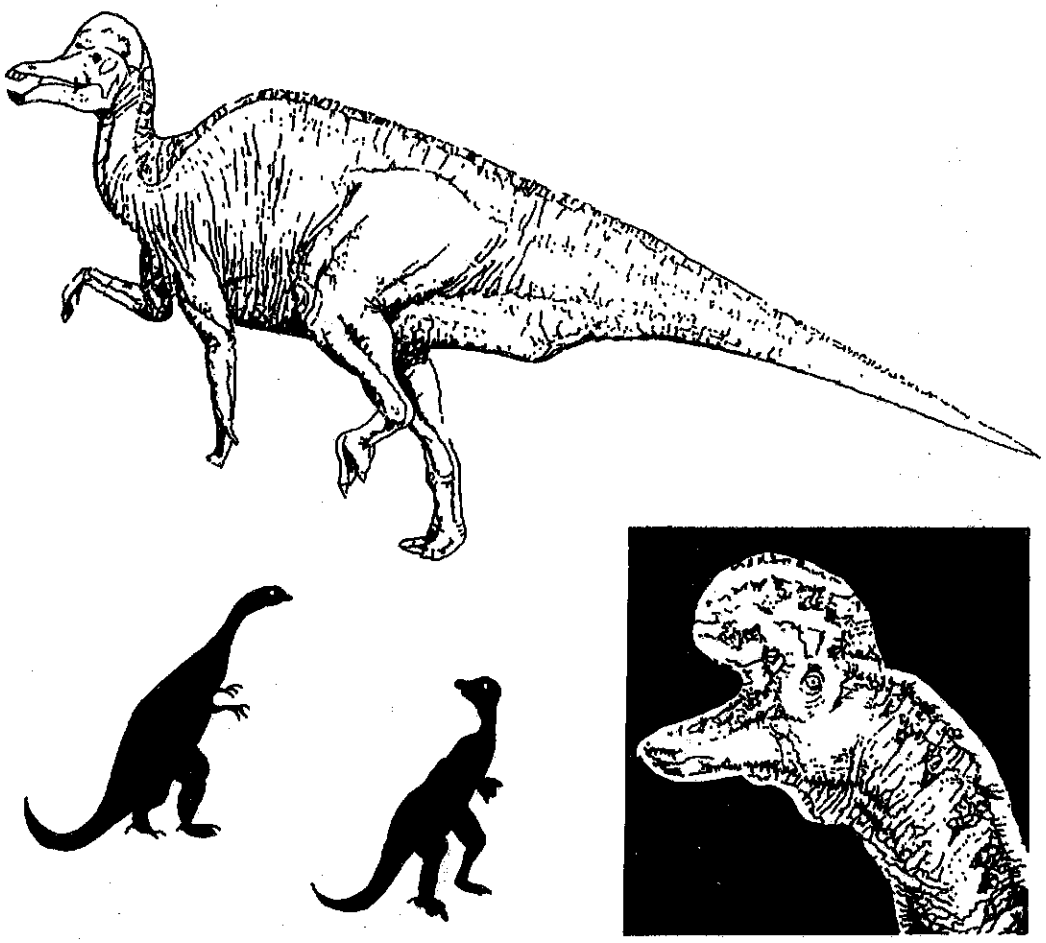


Figure 11. *Dinosaurs whose characteristics may have led to the common depictions of lindworms —* Corythosaurus *(top),* Lambeosaurus *(bottom right) and silhouettes of other ornithopods (bottom left).*

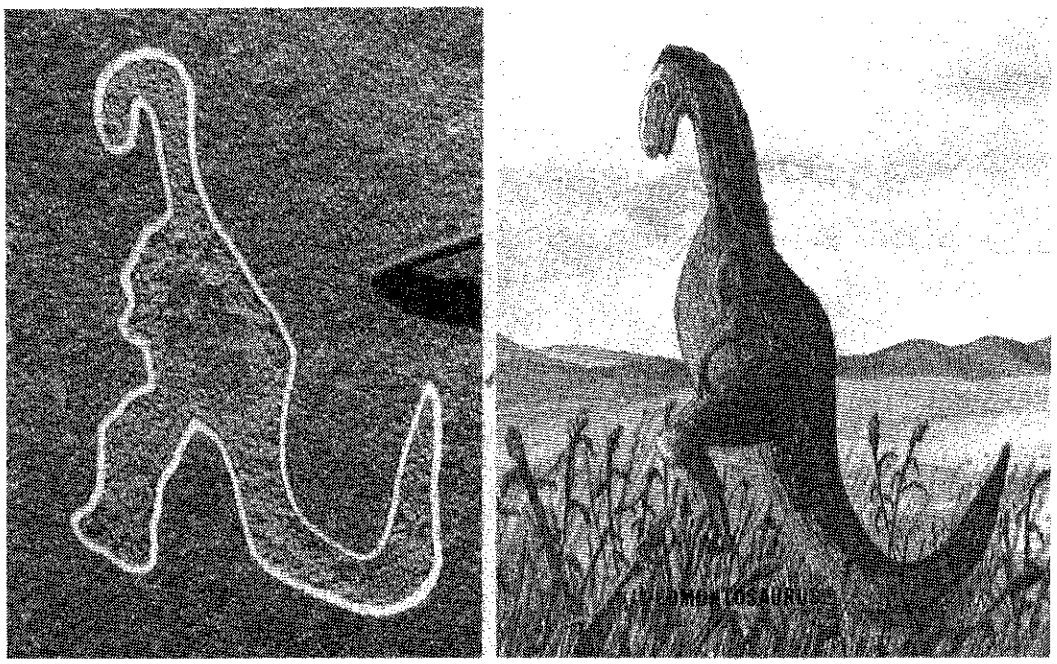


Figure 12. *Another lindworm-like dinosaur, the* Edmontosaurus *(right), compared with an ancient Indian etching on a wall of the Grand Canyon (left) (white outline added for clarity) — courtesy of Films for Christ Association.*

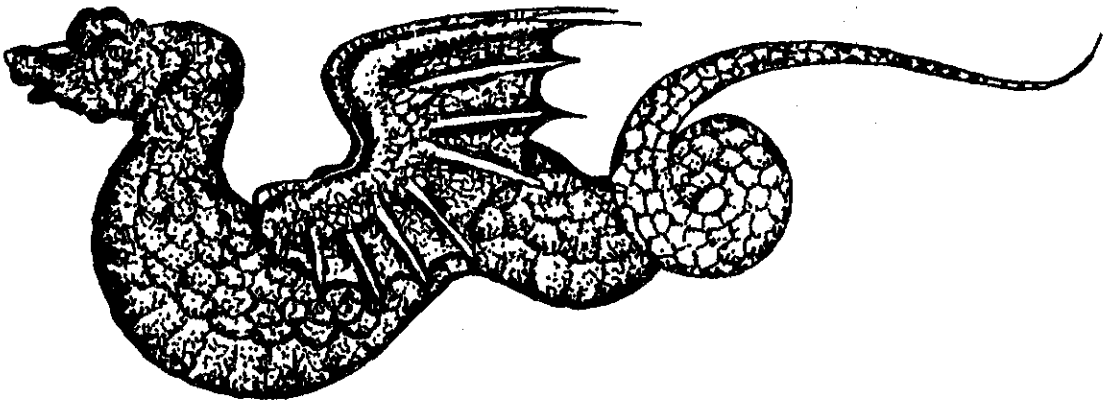


Figure 13. *The amphiptère was a legless winged serpent.*

Figure 14. *Pterosaurs, whose characteristics may have led to the common depictions of amphiptères, seen here in a variety of positions, both in the air (top) and on the ground (bottom).*

Figure 15. *The guivre was a wingless and legless serpent with a horned and bearded dragon's head.*

'Analysis of the grand features suggest this animal was indeed at least forty feet. So monstrous snakes do exist.'[26]

Table 1 lists some 28 sauropods, 38 theropods, 28 ornithopods, 19 stegosaurs and ankylosaurs, 21 ceratopsians, three segnosaurs and one 'ceratopsia',[27] and identifies which western dragons they likely equate to. From this total of 138 dinosaurs, deducting those unknown, the average size is approximately 25 feet (7.6m), which fits very comfortably the approximate 20 foot (6.1m) size of the average dragon report.

Eastern Forms

'Given the grandeur of the dragon's nature, it is not surprising that in China, long a center for scholarship, a distinguished line of scholars should have devoted such systematic attention to the character of the dragons that lived among them. They not only had defined what a dragon was but also developed schemes for categorizing its age, its position in evolution, its physical attributes, its functions and idiosyncrasies, and the hierarchy that existed within the dragon world.

There was, for instance, the question of dragon birth. It was widely held that the creatures mated in the form of small snakes. The female then deposited eggs near riverbanks, eggs that seemed to be huge stones or jewels.'[28]

Like the dinosaurs:

'Dragons lay eggs . . . .'[29]

'Dinosaur eggs usually are rare fossils, but they have been found in China, Mongolia, India, France, and South America.'[30]

Likely more accurate than Western considerations, in China and the East

'they rarely have wings, and they breathe clouds, not fire. Their voices sound like jingling coins, ringing bells, or clanging gongs.'[31]

Again:

'Dragons in the Eastern legends differ from Western dragons in a number of ways. . . . they seldom breathe fire [although] *hot-tempered . . . . and are said to be wingless.'*[32]

Dragons were dangerous and could kill a man, but

'as a rule, Eastern Dragons never eat people . . . . According to the ***Buddhist Records****, the custom of feeding dragons was common throughout the Orient.'*[33]

Hence, if we ignore the 'exaggerations' of wings, flight, and frequency of fire-breathing, and the rapacious killing of people:

'Ultimately, the hatchling [of the East] *became a creature not far different from the Western dragon.'*

In one particular description of a dragon from an article in the **Pan Ts'ai Kang Mu**, the monumental Chinese medical treatise compiled at the end of the 16th century, he was said to bear *'nine resemblances'* and to be the *'largest of the scaled creatures'*.[34]

The Chinese also made extensive use of the dragon/dinosaur for medical and other purposes; a difficult feat, and pointless prescription, if such creatures did not at all exist.

'Certain parts of the body, for instance, made cures for the ills of humanity. The medical encyclopedias of ancient China were full of prescriptions. The bones — in particular the spine, when ground to a powder — could be used to cure gallstones, infantile fevers, paralysis of the legs and the ailments of pregnant women. The teeth were efficacious in the treatment of madness and headache. The brain and liver were prized specifics against dysentery. Nor were the virtues of dragon's bodies solely medicinal. Dragon skin was said to glow in the dark, and the fat burned so brilliantly that the flames were visible hundreds of miles away . . . . And the spittle of the great creatures formed the basis of the rarest perfumes and the most permanent dyes. It was said that an Emperor of the Sung Dynasty [c. AD 960–1279] used the spittle of a purple dragon to make an ink with which he inscribed the names of his most honored minis-

SAUROPODS
STANCE: Four-footed, Heraldic
Herbivorous

Seismosaurus (120–140ft/36.6–42.7m)	*Camarasaurus* (60ft/18.3m)	*Riojasaurus* (33ft/10.1m)
Antarctosaurus (80–100ft/24.4–30.5m	*Cetiosaurus* (60 ft/18.3m)	*Megalosaurus* (30ft/9.1m)
Supersaurus (100 ft/30.5m)	*Datousaurus* (50ft/15.2m)	*Yunnanosaurus* (18ft–25ft/5.5–7.6m)
Diplodocus (90ft/27.4m)	*Euhelopus* (50ft/15.2m)	*Plateosaurus* (23ft/7m)
Ultrasaurus (90ft/27.4m)	*Patagosaurus* (50ft/15.2m)	*Lufengosaurus* (20ft/6.1m)
Brachiosaurus (75ft/22.9m)	*Barapasaurus* (49½ft/15.1m)	*Massopondylus* (13ft/4m)
Apatosaurus (70ft/21.3m)	*Opisthocoelicaudia* (40ft/12.2m)	*Mussaurus* (10ft/3.1m)
Argyrosaurus (65–70ft/19.8–21.3m)	*Saltasaurus* (40ft/12.2m)	*Sellosaurus* (10ft/3.1m)
Omeisaurus (35–67ft/10.7–20.4m)	*Shunosaurus* (40ft/12.2m)	*Anchisaurus* (6½ft/2m)
	Euskelosaurus (33ft/10.1m)	

THEROPODS
STANCE: Erect and semi-erect, sinuous
Wyverns and Lindworms
Carnivorous

Tyrannosaurus (40ft/12.2m)	*Xuanhanosaurus* (20ft/6.1m)	*Shanshanosaurus* (6–10ft/1.8–3.1m)
Spinosaurus (40ft/12.2)	*Dryptosaurus* (18ft/5.5m)	*Troodon* (8ft/2.4m)
Allosaurus (35ft–40ft/10.7–12.2m)	*Gallimimus* (17ft/5.2m)	*Ornitholestes* (6½ft/2m)
Baryonyx (31ft/9.4m)	*Nanotyrannus* (17ft/5.2m)	*Sauronitholdes* (6ft/2m)
Albertosaurus (30ft/9.1m)	*Struthiomimus* (13ft/4m)	*Dromaeosaurus* (6ft/1.8m)
Daspletosaurus (30ft/9.1m)	*Dromicelomimus* (12ft/3.7m)	*Oviraptor* (6ft/1.8m)
Yangchuanosaurus (30ft/9.1m)	*Garudimimus* (12ft/3.7m)	*Velociraptor* (6ft/1.8m)
Abelisaurus (25ft–30ft/7.6–9.1m)	*Ornithomimus* (12ft/3.7m)	*Conchoraptor* (4–6ft/1.2–1.8m)
Acrocanthosaurus (25ft/7.6m)	*Anserimimus* (10ft/3.1m)	*Avimimus* (5ft/1.5m
Carnosaurus (21ft/6.4m)	*Coelophysis* (10ft/3.1m)	*Harpymimus* (3½ft/1.1m)
Ceratosaurus (20ft/6.1m)	*Syntarsus* (10ft/3.1m)	*Compsognathus* (2ft/0.6m)
Dilophosaurus (20ft/6.1m)	*Deinonyshus* (8–10ft/2.4–3.1m)	*Aublysodon* (?)
	Elmisaurus (6–10ft/1.8–3.1m)	*Deinocheirus* (?)

STEGOSAURS and **ANKYLOSAURS**
STANCE: Four-footed, Heraldic
Bulky, cumbersome, Tarasque-like
Plated/armored
Herbivorous

Stegosaurus (20–24ft/6.1–7.3m)	*Euoplocephalus* (20ft/6.1m)	*Dacentrurus* (13ft/4m)
Ankylosaurus (23ft/7m)	*Shamosaurus* (20ft/6.1m)	*Scelidosaurus* (13ft/4m)
Panoplosaurus (23ft/7m)	*Tuojiangosaurus* (20ft/6.1m)	*Chungkingosaurus* (12ft/3.7m)
Talarurus (23ft/7m)	*Wuerhosaurus* (20ft/6.1m)	*Kentrosaurus* (10ft/3.1m)
Edmontonia (22ft/6.7m)	*Sauropelta* (17ft/5.2m)	*Denversaurus* (?)
Saichania (22ft/6.7m)	*Pinacosaurus* (16ft/4.9m)	*Tarchia* (length unknown)
	Huayangosaurus (15ft/4.6m)	

CERATOPSIANS
STANCE: Four-footed, Heraldic
Bulky, cumbersome, Tarasque-like
Horned
Herbivorous

Triceratops (30ft/9.1m)	*Styrocosaurus* (18ft/5.5m)	*Avaceratops* (7½ft/2.3m)
Pentaceratops (25ft/7.6m)	*Cantrosaurus* (17ft/5.2m)	*Goyocephale* (6½ft/2m)
Torosaurus (25ft/7.6m)	*Chasmosaurus* (17ft/5.2m)	*Prenocephale* (6½ft/2m)
Anchiceratops (20ft/6.1m)	*Pachycephalosaurus* (15ft/4.6m)	*Tylocephale* (6½ft/2m)
Arrhinoceratops (20ft/6.1m)	*Homalocephale* (10ft/3.1m)	*Protoceratops* (6ft/1.8m)
Monoclonius (20ft/6.1m)	*Leptoceratops* (8ft/2.4m)	*Bagacertatops* (5ft/1.5m)
Pachyrhinosaurus (20ft/6.1m)	*Stegoceras* (8ft/2.4m)	*Brachyceratops* (5ft/1.5m)

ORNITHOPODS STANCE: Erect and semi-erect, sinuous **Lindworms** and Wyverns Herbivorous		
Shantungosaurus (52ft/15.8m) *Saurolophus* (33–43ft/10.1–13.1m) *Edmontosaurus* (42ft/12.8m) *Corythosaurus* (33ft/10.1m) *Iguanodon* (33ft/10.1m) *Parasaurolophus* (33ft/10.1m) *Brachylophosaurus* (30ft/9.1m) *Hadrosaurus* (30ft/9.1m) *Hypacrosaurus* (30ft/9.1m)	*Kritosaurus* (30ft/9.1m) *Lambeosaurus* (30ft/9.1m) *Malasaura* (30ft/9.1m) *Prosaurolophus* (30ft/9.1m) *Muttaburrasaurus* (23ft/7m) *Ouranosaurus* (23ft/7m) *Tenontosaurus* (22ft/6.7m) *Bactrosaurus* (20ft/6.1m) *Camptosaurus* (17ft/5.2m) *Dryosaurus* (10–13ft/3.1–4m)	*Thescelosaurus* (11ft/3.4m) *Othnielia* (10ft/3.1m) *Parksosaurus* (8ft/2.4m) *Hypsilophodon* (7½ft/2.3m) *Orodromeus* (6½ft/2m) *Yandusaurus* (6½ft/2m) *Scutellosaurus* (4ft/1.2m) *Lesothosaurus* (3½ft/1.1m) *Heterodontosaurus* (3ft/0.9m)
SEGNOSAURIA	**'CERATOPSIA'**	**PTEROSAURS** FLYING: About 85 known species including:
Erlikosaurus (20ft/6.1m) *Segnosaurus* (20ft/6.1m) *Therizinosaurus* (?)	*Psittacosaurus* (6½ft/2m)	*Quetzalcoatlus* (51ft/15.5m span) *Titanopteryx* (similar to the *Quetzalcoatlus*) *Pteranodon* (30ft/9.1m span) *Ornithodesmus* (15ft/4.6m span) *Dsungaripterus* (12ft/3.7m span) *Nyctosaurus* (8ft/2.4m span)

Table 1. *A listing of dinosaurs in their groups, with brief descriptions and average sizes, and an indication of which western dragons they likely equate to.*

ters and sages on tablets of jade, gold and crystal. To obtain an adequate supply of the ink, he had a dragon reared in his palace compound. It salivated when it was offered roasted swallows, a particularly cherished food of dragons.'[35]

SIGHTINGS

From pre-Christian times (the Tiamat of Babylonian legend) until the late 17th century, dragons roamed Europe, Africa and Asia, observed by knights errant, historians and naturalists.

'In the tenth century, an Irishman wrote of his encounter with what appears to have been a Stegosaurus (see Figure 16). *In the 1500s, a European scientific book,* ***Historia Animalium,*** *listed several animals which to us are dinosaurs, as still alive. A well-known naturalist of the time, Ulysses Aldrovandus, recorded an encounter between a peasant named Baptista and a dragon whose description fits that of the* [10 foot] *dinosaur* Tanystropheus (see Figure 17).[36] *The encounter was on May 13, 1572 near Bologna, Italy, and the peasant killed the dragon.'*[37,38]

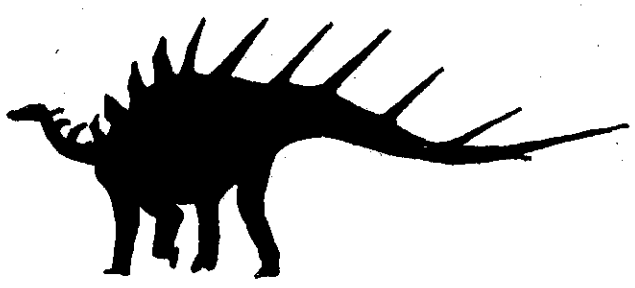


Figure 16. *The well-known* Stegosaurus.

France:

'Descriptions of dragons rarely are reliable, for those who encountered a dragon were usually so frightened that they seized on a single grisly feature without taking note of the beast as a whole. Confused as they are, though, records of the Tarasque suggest an exceptional dragon. The terror of a district in the South of France near the town then known as Nerluc — rapacious and cunning, the Tarasque brought horror to the farms of Provence. Unlike its northern cousins, the Tarasque was hulking rather than sinuous — a small mountain of flesh clad in armor-plated scales and supported on six (?) *stout legs. During its roamings through the fields and olive groves and vineyards, it devoured beasts and herdsmen alike.'*[39]

Engendering the fear and dread it did, a beast such as the 20–25 foot *Ankylosaurus* (see Figure 18)[40] with its hulking body low to the ground, might, from a distance, appear to be grounded on more than four legs. And further research into other descriptions of the Tarasque might give modification to the **Time-Life** version. The legs might be

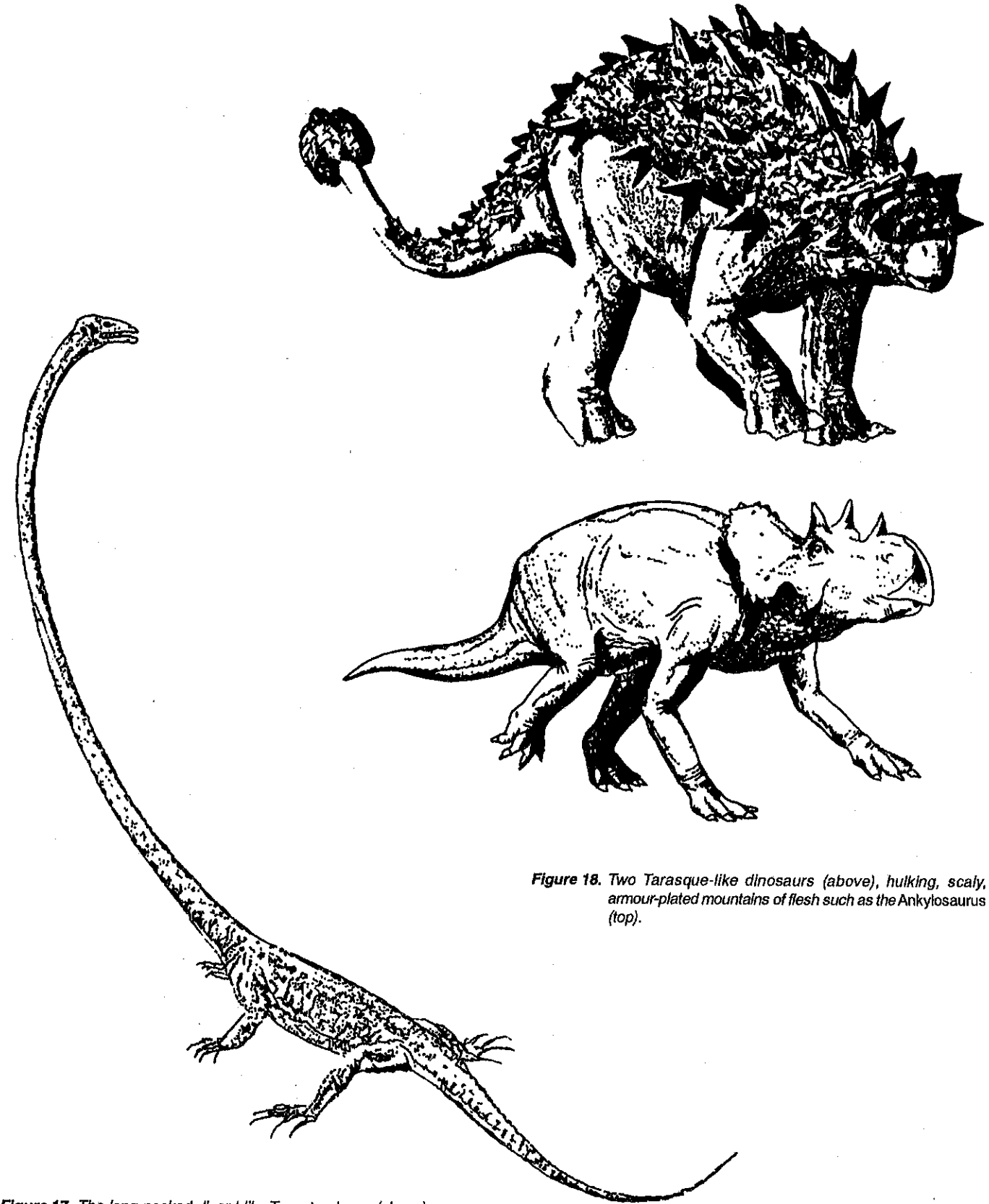


Figure 18. *Two Tarasque-like dinosaurs (above), hulking, scaly, armour-plated mountains of flesh such as the* Ankylosaurus *(top).*

Figure 17. *The long-necked, lizard-like* Tanystropheus *(above), one of which may have been the dragon killed near Bologna, Italy on May 13, 1572.*

reduced by other witnesses to four, and given Western exaggeration it may not have actually eaten anyone. Others of the plodding, Tarasque-type dinosaurs/dragons are cited in Western literature, but they never cause any actual harm. Like the rhinoceros, they were likely bad-tempered to any approach and given to fatal charges and attacks.

'Scandinavia:
As recorded in 1572, a dragon inhabited the area north of Lapland; so desolate was the region that the creature was reduced to a diet of mice.

London, England:
On November 30, 1222, dragons were seen over the city; the flights preceded — and may have caused — thunderstorms and severe flooding.

Henham, Essex, England:
An amphiptére 9 feet long was discovered on a hillock near the town in 1669. The terrifying serpent remained in the area for some months but inflicted no actual harm.

Ireland:
According to legends, Tristan of Lyonesse slew a dragon here in the 11th century. The commentator Giraldus Cambrensis, however, announced in 1188 that Ireland was free from all dragons, possibly because of the intervention of Saint Patrick in the 5th century.

Provence, France:
A dragon called the Drac inhabited the Rhone River throughout the 13th century; the town of Draguignan was named for it, although its worst attacks seem to have occurred in Beaucaire.

Isle Ste. Marguerite, France:
This island off the French coast sheltered a dragon during much of the Middle Ages; because of the beast's ferocity, it was often confused with the Tarasque . . . .

Drachenfels, Germany:
Some time before a fortress was built here in the 12th century, this mountain hid a dragon that subsisted, it was said, on a diet of young women.

Sanctogoarin and Neidenburg, Germany:
The naturalist Edward Topsell wrote in 1608 that Sanctogoarin was plagued by a dragon whose flights caused fires; the dragon of Neidenburg poisoned wells by bathing in them.

Bonn, Germany:
The Italian naturalist Ulisse Aldrovandi [Ulysses Aldrovandus] *had in his collection a lindworm killed near Bonn in 1572.*

Switzerland:
Christopher Schorer, the Prefect of the canton of Solothurn, reported the sighting of a winged mountain dragon near Lucerne in 1619, as well as an encounter in 1654 between a hunter and a dragon. The latter retreated with a rustling of scales into its mountain den.

Rome, Italy:
The ***Historia Naturalis*** *of Pliny the Elder reported that a dragon killed on Vatican Hill during the reign of the Emperor Claudius (died AD 54) contained the body of a child; centuries later, in 1669, the German Athanatius Kirchyer examined a dragon killed near the city. He commented on its unusual webbed feet.* [Many of the dinosaurs had webbed lizard-feet.]

Kiev, Ukraine:
As recorded in the ***Byliny*** *— legends of heroes — dating from the 11th century, a dragon called Gorynych terrorized this region for years before the hero, Dobrynja, slew it.'*[41]

Monastery of St Cuthbert, England:
'In 793, the monks at the monastery, on the steep, rocky island of Lindisfarne, off the east coast of England, were roused from their prayers and studies. A hiss, as if from a vast bonfire of green logs, cut through the roar of the surf on the shore far below. In windows, courtyards and colonaded galleries, monks threw back their cowls to stare into a sky that was alive with dragons — an airborne festival of the great beasts. At play, the dragons soared and tumbled and romped, and their scales shimmered in iridescent colors under the weak northern sun.'[42] (See Figure 19.)

India:
'It was said of Alexander the Great that he fought many dragons as he swept across the world. Advancing into India, his army was beset by boars, grif-

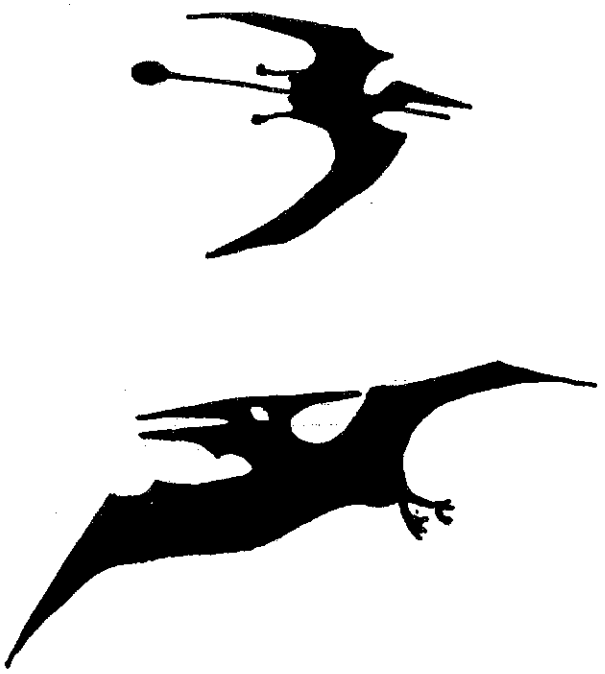


Figure 19. *The pterosaurs* Rhamphorhynchus *(top) and* Pteranodon *(bottom).*

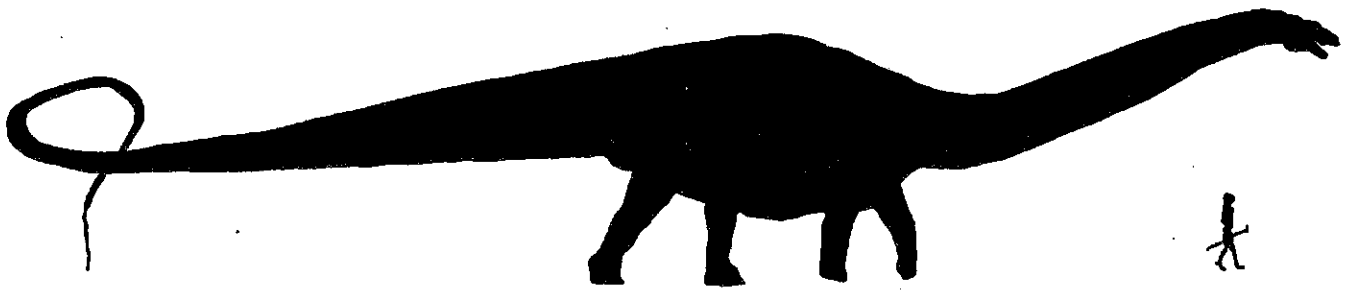


Figure 20. The largest dinosaur known, the sauropod Seismosaurus, *compared for scale with a man.*

fins and monstrous serpents. All were vanquished, like every human enemy who tried to thwart his drive for empire.'[43]

'When Alexander the Great and his solders marched into India, they found that the Indians worshipped huge hissing reptiles that they kept in caves.'[44]

Phrygia:

Aelian's **De Natura Animalium:**

'The Phrygian History also states that dragons are born which reach ten paces in length; which daily . . . are wont to proceed from their caverns, and (near the river Rhyndacus), with part of the body on the ground and the rest erect, with the neck gently stretched out, and gaping mouth, attract birds, either by their inspiration, or by some fascination, and that those which are drawn down by the inhalation of their breath glide down into their stomach.'[45]

Poland:

Ulysses Aldrovandus, **Historia Serpentium et Draconum:**

'Cracus [c. AD 700], *who later named the city of Cracow after himself, slew an immense dragon which laired in the aforementioned crag.'*[46]

Africa:

'Super sized dragons have always been seen more frequently than tiny terrors. One African reptile attacked the Roman army of General Regulus. According to the Roman historian Livy, "After many of the soldiers had been seized in [the dragon's] *mouth, and many more crushed by the folds of its tail, its hide being too thick for javelins and darts* [cp. the biblical Leviathan], *the dragon was at last attacked by military engines and crushed by repeated blows from heavy stones."'*[47]

'This dragon was a midget compared with another African monster described by the geographer Iphicrates. His dragon had grass growing on its back. It was so big that Iphicrates said people mistook it for a meadow.'[48]

Such an exaggeration, for all practical purposes, is even common for us to speak in 20th century America. The largest dinosaur we know of is the *Seismosaurus* (120–140 feet or 37–43 metres), but larger may yet be waiting discovery — and 140 feet (43 metres) is likely big enough to be called 'large as a meadow' (see Figure 20).

Pliny the Elder:

'Gold is a magnet that attracts dragons. The Roman writer Pliny relates that hunters baited a dragon by hanging gold at the entrance to its cave. When the beast came out, the hunters played soft music to lull it to sleep. Then they cut off its head.'[49]

'Advice from the thirty-seven volume ***Natural History*** *by Pliny, a first-century Roman . . . included, uses of dragons' teeth, ointment made from dried dragon's eyes and honey, the fat of a dragon's heart . . . .'*[50]

Apparently, Pliny considered the remedies obtainable, or why should he have prescribed them?

'Africa produces elephants, but it is India that produces the largest, as well as the dragon, who is perpetually at war with the elephants.' (Pliny, **Natural**

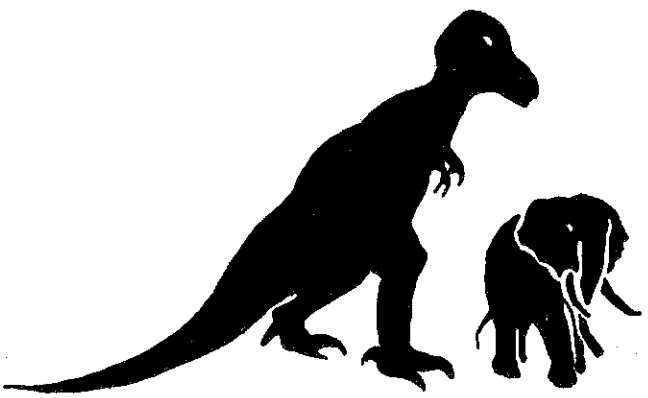


Figure 21. An elephant compared (for scale) with an 'elephant killer', probably one of the theropods.

History.)[51] (See Figure 21.)

Saint George (*c.* AD 1098):

'was said to have slain dragons at Mansfeld in the center of Germany; he is also said to have killed a dragon in England, in Berkshire, where the people pointed to a place called Dragon Hill, made grassless and barren by the venomous blood of its victim. Yet this first account of Saint George's slaying of a dragon is set not in Europe at all, but far south, in Africa.'[52]

'It was also said of various wanderers that they had killed dragons by thrusting balls of pitch and straw down the beasts' throat . . .

But humble folk did not ordinarily engage in battle in those days. That was the business of the nobility, and most dragons were killed with the weapons of war —broadswords and lances —wielded by men whose lifelong training had made them experts. With few exceptions, this discipline was granted only to the gentle-born.'[53]

China:

'In 1611 BC, the Emperor of China appointed the first Royal Dragon Feeder . . . [which] *remained an honored post for years. The custom of feeding dragons was common throughout the Orient. According to the* ***Buddhist Records*** *a dragon chapel on the banks of the Indus River had a copper vessel filled with cream . . . .'*[54]

which was, consistently, a favourite of dragons not only in China, but among the Egyptians, Greeks and Romans as well.[55] *'As a rule, Eastern Dragons never eat people.'*[56]

Time-Life Books tell us of the Chinese lord Szu-ma Niu of the Chou Dynasty (*c.* 481 BC), whose *'Venerable books told him that the huge beasts* [elephants and rhinoceroses] *had once overrun the land,* along with other unimaginable monsters, *until they were driven away by the good and valiant kings of old.'*[57]

Just as not **all** the elephants and rhinoceroses were driven from the land, neither were **all** the dragons, as evidenced by the continuing accounts:

'Dragon blood, fat, brains, saliva, teeth and horns are miracle medicines curing everything from measles to madness. Dragon bones are the best remedies and easy to find.'[58]

'Dragon meat; reserved for royal kitchens. Emperor Hwo ordered soup made from a dragon that fell on his palace grounds during a storm. He and his ministers enjoyed the broth. Emperor Chao [1085-1135] handed his chefs a tusked dragon which he caught while fishing in the Wei River.'[59]

And, as earlier mentioned, one of the Sung Dynasty emperors had a dragon reared in his palace compound. The dragons of China are so voluminous it would be impossible in a paper this length to catalogue sightings.

'There are odd-looking varieties. Horse-headed dragons have been showing up for at least 5,000 years.'[60] (See Figure 22.)[61]

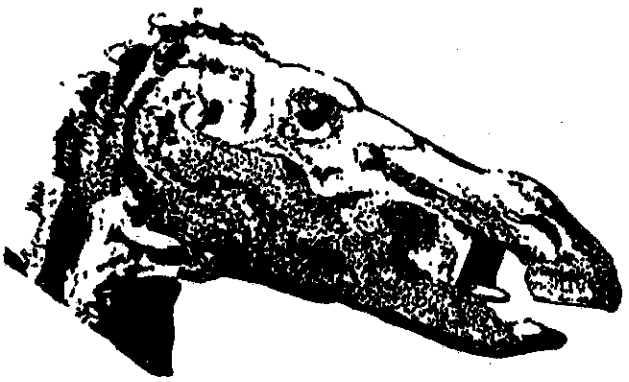


Figure 22. *A 'horse-headed' dinosaur,* Shantungosaurus, *whose fossil remains were found in China.*

'. . . the head of Diplodocus was long and slender, a ***little like the shape of a horse's head, and about the same size.'***[62]

'Cow heads (see Figure 23)[63] *are also common. A 10-footer, found lying on the banks of China's Yangtze River, was different from most because of its long thick eyebrows. A Yellow River variety, seen on shore in the 1920s by a Chinese teacher, was bright blue, and big as five cows. Both dragons crawled into the water as soon as it started to rain.'*[64]

The oldest record of possible dinosaur bones is in a Chinese book written between AD 265 and 317. It mentions 'dragon bones' found at Wucheng, in Sichuan Province. *'This area has produced many dinosaur bones.'*[65] To the Chinese, 'Dragon bones' and 'Dinosaur bones' were one and the same.

'Until 1927 entire villages in China supported themselves by digging and selling dragon bones. Visiting scientists from the American Museum of Natural History were very upset when they saw warehouses filled with the bones, because they claimed that these were

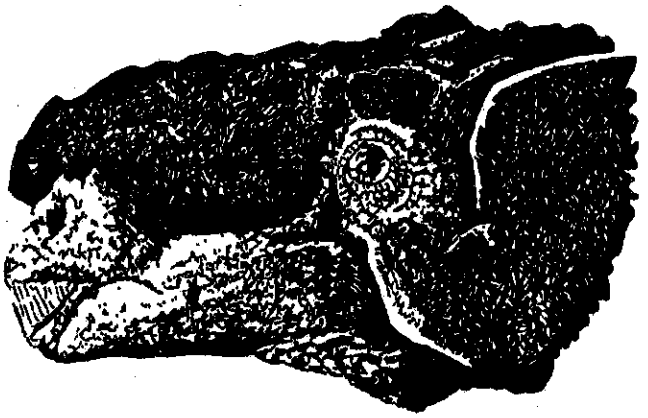


Figure 23. *A 'cow-headed' dinosaur,* Tarchia, *whose fossil remains were found in Mongolia.*

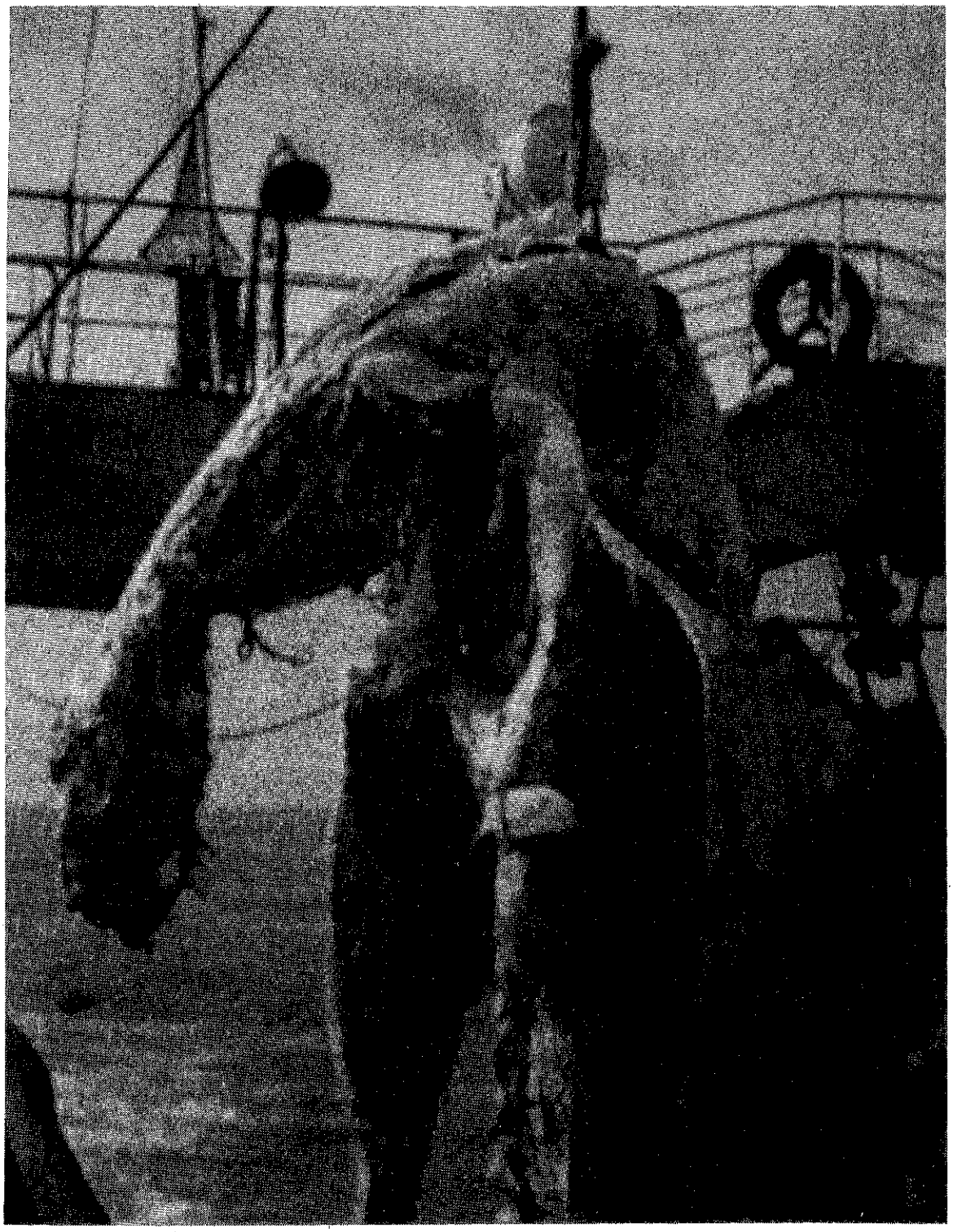


Figure 24. *The decayed remains of a carcass netted 900 feet (275m) underwater off Christchurch, New Zealand, in 1977 by a Japanese fishing trawler. The small 'head', long 'neck' and four 'flippers' initially suggested that this possibly might have been a recently living plesiosaur, a marine reptile believed to be extinct but which once flourished during the supposed 'age' of the dinosaurs.*

fossils of prehistoric animals. They bought and shipped huge quantities to their museum in New York City, and presented some to a museum in Peking. Thereafter, selling dragon-bone medicine was forbidden. However, an undercover dragon-bone business continues to cater to customers all over the Orient.'[66]

They called them 'Dragon bones'. They still do. But their identification is 'Dinosaur'.

'In 1856, workmen digging a railway tunnel in France were using gunpowder to remove a boulder. When the dust settled, the surprised workmen brought a huge bat-like creature out of the tunnel. But the animal wasn't dead. When it reached the light it began to shake its wings, making a hoarse cry. It was shiny black, had a long neck, and rows of sharp teeth in its long beak-like mouth. Soon after it was removed from the mine, it died. Its wingspan was measured to be more than 10 feet . . . . and a scientist called in to examine the creature concluded the animal was a Pterosaur *— supposed to be extinct 65 million years ago.'*[67,68]

'On April 10, 1977, off the coast of New Zealand, the nets of the Japanese fishing trawler, **Zuiyo Maru,** *pulled in an unexpected catch. Filling the net was the rotting body of a recently dead ocean reptile. Not wanting to spoil his other catch, and not realizing the value of his find, the ship's captain had the smelly carcass thrown back into the ocean. But fortunately, they took photographs and measured the monster first.* (See Figure 24.)[69]

The animal was 32 feet long and weighed approximately 4,000 pounds. The skin had mostly decayed, but in places where it was still attached, it was a pinkish-red colour. Tissue samples were saved to be analyzed by the marine scientists when the ship returned to Japan. The best guess was that the animal was a Plesiosaur. *A scientist at the famous National Science Museum of Japan said, "It seems that these animals are not extinct after all. It's impossible for only one to have survived. There must be a group." Although the discovery of a Plesiosaur was ignored, excused, and overlooked by European and American scientists, it was called the "scientific discovery of the year" in Japan. So amazing was this find that the Japanese issued a commemorative postage stamp to honor the discovery.'*[70,71] (See Figure 25.)[72]

There have been reported sightings of dinosaurs even up to the present day. In **Science Digest**, June 1981, and as late as 1983 (**Science Frontiers**, No. 33), explorers and natives in the dangerous Congo swamps and lakes have reported sightings of dinosaur-like creatures.[73] On-site research reported by University of Chicago Professor Roy Mackal and his colleague, James Powell, in the African jungles identify a large *Diplodocus*-like sauropodian yet living:

'In several different villages representing at least two

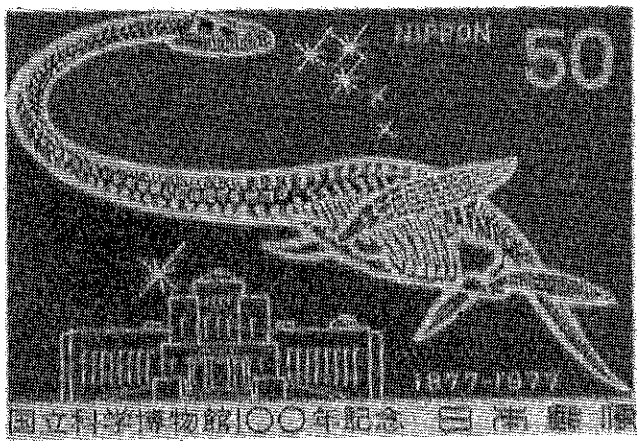


Figure 25. *The Japanese postage stamp featuring a plesiosaur as the official emblem for the 1977 National Exhibition, which celebrated 100 years of scientific endeavour.*

different cultural groups, I would get consistent answers: "Yes, that's the Yamala, we know that animal. He lives back in the deep lakes, deep in the jungles."'[74]

Another tribe in the Lake Tele region calls him 'Mokele-Mbembe'[75] and

'in one 1980 sighting, a native came to a jungle mission after having seen a strange creature . . . . a reddish-brown animal in the water. Above the water was a "snake-like" head, six to eight feet long. As he paddled away, more of the animal's back appeared. Later, when looking at artists' pictures of dinosaurs, the native identified the animal as a sauropod . . . .'[76]

Another identification *'described the body as the size of four elephants.'*[77]

CONCLUSION

In a recent book, **The Dragons of Eden**, Professor Carl Sagan tried to account for the spread and consistency of dragon legends from China, Japan, Australia, South America, Persia, India, Europe, Rome, Greece, Egypt, in the Americas, etc., by saying that

'they are fossil memories of the time of dinosaurs, come down to us through a general mammalian memory inherited from the early mammals, our ancestors, who had to compete with the great predatory lizards.'[78]

There is no known scientific way in which memory can be inherited. A much better explanation is the obvious one — people really saw such creatures. Their descriptions are coloured by their terror and fear, and sometimes stories were just made up — while rooted in fact — so that the storyteller could get the attention he wanted. Some of the 'terrors' are modified as we move from the West to the East, where the scholarship was greater, and

the fear less. But even in the West hundreds of reports are reliable enough, and sensible enough, to warrant the logical conclusion — dragons existed, and their general descriptions, though oft times distorted, are dinosaurian.

REFERENCES AND FOOTNOTES

1. Minneapolis **Star Tribune**, August 30, 1992, p. 10E.
2. **The Enchanted World: Dragons**, edited by Time-Life Books, Alexandria, Virginia, 1984, p. 23. (Editors are evolutionists and consider dragons to be mythological.)
3. **Encyclopedia of Dinosaurs**, Publications International Ltd, Lincolnwood, Illinois, 1991.
4. Ref. 2, p. 31.
5. Ref. 2, p. 31.
6. Ref. 2, p. 31.
7. Ref. 2, p. 31.
8. Blumberg, R., 1980. **The Truth about Dragons**, Four Winds Press, New York, p. 8. (This book is written by an evolutionist and considers dragons to be mythological.)
9. Ref. 2, pp. 32–33.
10. Ref. 3, p. 21.
11. Ref. 2, p. 33.
12. Ref. 3 (evolutionist), p. 43.
13. Ref. 3, p. 76.
14. Ref. 2, p. 32.
15. Ref. 3.
16. Ref. 2, p. 32.
17. Ref. 2, p. 33.
18. Ref. 3.
19. Taylor, P. S., 1987. **The Great Dinosaur Mystery and the Bible**, Chariot Books, David C. Cook Publishing Co., Elgin, Illinois, p. 39.
20. Ref. 2, p. 33.
21. Ref. 2, p. 32.
22. Ref. 2, p. 32.
23. Ref. 2, p. 33.
24. Ref. 2, p. 33.
25. Interview with Colonel Remy van Lierde on **Arthur C. Clarke's Mysterious World**, Continental Cablevision, Discovery Channel 22,'Dragons, Dinosaurs and Giant Snakes', September 8, 1992.
26. Ref. 25, commentary — Arthur C. Clarke.
27. Ref. 3.
28. Ref. 2, p. 44.
29. Blumberg, Ref. 8, p. 44.
30. Ref. 3, p. 43.
31. Blumberg, Ref. 8, p. 32.
32. Dickinson, P., 1979. **Flight of the Dragons**, New York, Harper & Row. (Dickinson is an evolutionist who believes dragons were real creatures evolved from the dinosaurs. He believes even the large sauropodian dragons could fly — but then an evolutionist really will believe anything!)
33. Blumberg, Ref. 8, p. 42.
34. Ref. 2, pp. 44–45.
35. Ref. 2, p. 57.
36. **MacMillan Illustrated Encyclopedia of Dinosaurs and Pre-Historic Animals**, MacMillan, New York, 1988, p. 86.
37. Taylor, Ref. 19, p. 41.
38. Ham, K. A., Snelling, A. A. and Wieland, C., 1990. **The Answers Book**, Creation Science Foundation, Brisbane, Australia and Master Books, El Cajon, California, p. 33.
39. Ref. 2, p. 97.
40. Ref. 3.
41. Ref. 2, p. 79.
42. Ref. 2, p. 81.
43. Ref. 2, p. 122.
44. Ham *et al.*, Ref. 38, p. 31.
45. Dickinson, Ref. 32, p. 67.
46. Dickinson, Ref. 32, p. 79.
47. Blumberg, Ref. 8, p. 8.
48. Blumberg, Ref. 8, p. 8.
49. Blumberg, Ref. 8, p. 20.
50. Blumberg, Ref. 8, p. 27.
51. Dickinson, Ref. 32, p. 83.
52. Ref. 2, pp. 107–108.
53. Ref. 2, p. 123.
54. Blumberg, Ref. 8, p. 42.
55. Blumberg, Ref. 8, p. 14.
56. Blumberg, Ref. 8, p. 42.
57. Schafer, E. H. *et al.*, 1967. **Great Ages of Man: Ancient China**, Time-Life Books, New York, p. 12.
58. Blumberg, Ref. 8, p. 52.
59. Blumberg, Ref. 8, p. 53.
60. Blumberg, Ref. 8, p. 33.
61. Ref. 3, p. 225.
62. Ref. 3, p. 92.
63. Ref. 3, p. 229.
64. Blumberg, Ref. 8, p. 33.
65. Ref. 3, p. 7.
66. Blumberg, Ref. 8, p. 52.
67. Unfred, D., 1990. **Dinosaurs and the Bible**, Huntington House, Lafayette, Louisiana, p. 34.
68. *Editor* — The original report was in **The Illustrated London News** of February 9, 1856, p. 166 and the find was at Culmont in Haute Marne. The creature had thick oily skin, and the measured wingspan was 3.22 metres (10 feet 7 inches). The naturalist recognized it as belonging to the genus *Pterodactylus anas*.
69. Taylor, Ref. 19, p. 47; Unfred, Ref. 67, p. 35.
70. Unfred, Ref. 67, p. 34.
71. *Editor* — From further evidence to hand, some have suggested it is likely that the carcass was that of a giant basking shark (or a related species) which had lost its jaws, gill arches, pectoral fins and part of its tail (Heuvelmans, B., 1966. **In the Wake of Sea Serpents**, Hill and Wang, London, p. 134; **Diving World**, No. 29, January 1978; 'On the nature of the carcass of a large vertebrate found off New Zealand', Y. Hasegawa and T. Uyeno, 1978). One morphology/chemical study of the horny fibre from the carcass, the only material evidence kept, revealed it to be almost identical to that of a basking shark or a closely related species ('The morphology and chemical composition of horny fiber from an unidentified creature captured off the coast of New Zealand', S. Kimura, K. Fujii, H. Sato, S. Seta and M. Kubota, 1978). These Japanese scientists in their reports also state that the trawler dragged up this carcass on April 25, 1977 (**not** April 10 as reported by Taylor, Ref. 19, p. 46 and Unfred, Ref. 67, p. 34) about 30 miles (about 48 km) off the coast from Christchurch.

    Nevertheless, while the **Encyclopaedia Britannica** (15th edition, 1992, Vol. 1, p. 942) says of the basking shark that *'when found decaying on beaches, it is sometimes reported as a sea serpent'*, the accompanying drawing clearly shows the pectoral and pelvic fins as vastly different in size. Yet the Japanese scientists Hasegawa and Uyeno (referred to above) report, with reference to the carcass trawled off New Zealand, that *'Witnesses stated that the pectoral and pelvic fins were almost the same size. In sharks, the pelvic fin is much smaller than the pectoral fin.'* Furthermore, they noted that *'. . . witnesses also stated that the carcass did not smell of ammonia, which is a characteristic feature of shark flesh. . . . The strongest argument opposing the shark theory comes from Yano's observation that the carcass was covered by a fat-like sticky substance. Sharks do not have a thick layer of fat under the skin.'* As for Kimura *et al.*'s report on the composition and chemistry of the horny fibre from the carcass (referred to above), even though the horny fibre was almost identical to that of a basking shark or closely related species this in no way proves that the carcass was that of a shark, simply because no one has ever studied the horny fibre of a plesiosaur to know whether it too is almost identical to that of a basking shark, etc. In the absence of a proven living plesiosaur for comparison, this carcass found off New Zealand still cannot be discounted as possibly having been that of a recently alive plesiosaur.
72. Taylor, Ref. 19, p. 46; Unfred, Ref. 67, p. 35.
73. Ham *et al.*, Ref. 38, p. 35.

74. Interview with James Powell, **Arthur C. Clarke's Mysterious World**, Continental Cablevision, Discovery Channel 22, 'Dragons, Dinosaurs and Giant Snakes', September 8, 1992.
75. Mackal, R. P., 1987. **A Living Dinosaur? In Search of Mokele-Mbembe**, E. J. Brill, Leiden, The Netherlands.
76. Unfred, Ref. 67, p. 36.
77. Unfred, Ref. 67, p. 37.
78. Sagan, C., 1978. **The Dragons of Eden: Speculations of the Evolution of Human Intelligence**, Book Club Associates, London.

D. Leland (Lee) Niermann works with the U.S. Postal Service and resides in St Paul, Minnesota. *'The Lord saved me when I was twenty-five years old, and with it He gave me a consuming interest in anything Biblical. And so for twenty-three years . . . my reading, and thinking and living has wanted most to serve Him, to search and to study His truths.'*