



Philip Senter

Biblical unicorns and fiery flying serpents: not dinosaurs and not pterosaurs

Abstract

An enormous body of literature claims that the Bible mentions dinosaurs and other Mesozoic reptiles. Such literature includes publications that claim that biblical “unicorns” are horned dinosaurs and that the “fiery flying serpents” of the Bible are fire-breathing or bioluminescent pterosaurs. However, clues from within the Bible and elsewhere reveal the biblical “unicorn” is most likely the rhinoceros or the aurochs and that the “fiery flying serpent” is most likely the cobra. The allegations that such animals are dinosaurs or pterosaurs is without supporting evidence.



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Keywords

Bible, Old Testament, Isaiah, unicorn, fiery flying serpent, dinosaur, pterosaur, creationism

1 Introduction

Advocates of the view that humans and dinosaurs coexisted have claimed that the Bible mentions dinosaurs since soon after dinosaurs were discovered. The earliest scientific description of a carnivorous dinosaur (*Megalosaurus*) was published in 1824,¹ and the earliest scientific descriptions of an herbivorous dinosaur (*Iguanodon*) were published in 1825² and 1833.³ In 1835, the English politician Thomas Thompson published an article arguing that *Megalosaurus* and *Iguanodon* were respectively the biblical monsters Leviathan and Behemoth.⁴ His article was the first drop in what would become a deluge of articles and books advocating the view that the Bible mentions dinosaurs, pterosaurs, and other reptiles that are known today only from Mesozoic fossils. In a previous article,⁵ I introduced the abbreviation DIBV (the Dinosaurs-In-the-Bible View) for that view and the

¹ W. Buckland, Notice on the *Megalosaurus* or Great Fossil Lizard of Stonesfield, *Transactions of the Geological Society, Second Series* 1 (1824), pp. 390–396.

² G. Mantell, Notice on the *Iguanodon*, a Newly-Discovered Fossil Reptile, from the Sandstone of Tilgate Forest, in Sussex, *Philosophical Transactions of the Royal Society of London* 115 (1825), pp. 179–186.

³ G. Mantell, *The Geology of the South-East of England* (London: Longman, Rees, Orme, Brown, Greene, and Longman, 1833), pp. 304–316.

⁴ T. Thompson, An Attempt to Ascertain the Animals Designated in the Scriptures by the names Leviathan and Behemoth, *Magazine of Natural History* 8 (1835) pp. 193–197, 307–321.

⁵ P. J. Senter, Leviathan, Behemoth, and other Biblical *Tannînim*: Serpents, Not Dinosaurs, *Perspectives on Science and Christian Faith* (in press).

term “DIBV authors” for the authors advocating it. Publications endorsing the DIBV exploded in number and popularity in the last few decades of the twentieth century. In the twenty-first century the explosion continues unabated.⁶ Publications endorsing the DIBV even include some grade-school science textbooks.⁷

DIBV authors profess the young-Earth creationist (YEC) worldview, according to which the biblical book of Genesis is an accurate record of past events. The YEC view rejects the abundant physical evidence⁸ that macroevolution has occurred and that billions of years have passed. Instead, it holds that the Earth was created approximately 6000 years ago and that all kinds of organisms were independently created during a single week at the beginning of that time span.⁹ That view is based on a literal reading of Genesis and as such is a sincere attempt at loyalty to biblical wording, although it is a misguided attempt, because the New Testament and a plethora of early Church Fathers recommend against taking Genesis (and the rest of the

⁶ P. J. Senter, *Leviathan, Behemoth, and Other Biblical Tannînim*; P. J. Senter, *Fire-Breathing Dinosaurs? The Hilarious History of Creationist Pseudoscience at Its Silliest* (Newcastle Upon Tyne: Cambridge Scholars, 2019) (in press).

⁷ A Beka Book, *Matter and Motion in God's Universe* (Pensacola: Beka, 1994), p. 300; B. R. Batdorf and T. E. Porch, *Life Science*, 3rd edn. (Greenville, SC: Bob Jones University Press, 2007), pp. 133–134; E. A. Lacy, *Life Science*, 4th edn. (Greenville, SC: Bob Jones University Press, 2013), p. 161.

⁸ M. Isaak, *The Counter-Creationism Handbook* (Berkeley: University of California Press, 2017); D. Prothero, *Evolution. What the Fossils Say and Why It Matters* (New York: Columbia University Press, 2007); F. Gradstein, J. Ogg, and A. Smith, *A Geologic Time Scale 2004* (Cambridge: Cambridge University Press, 2014).

⁹ J. Sarfati, *Refuting Evolution 2* (Green Forest, AR: Master Books, 2002); K. Ham, *Couldn't God Have Used Evolution?* in K. Ham (ed.), *The New Answers Book 1* (Green Forest, AR: Master Books, 2006), pp. 31–38.

Pentateuch) literally.¹⁰ Publications endorsing the DIBV are part of a YEC effort to portray dinosaurs and humans as contemporaries and therefore not separated by millions of years. That effort is meant to cast doubt upon the passage of millions of years and therefore upon macroevolution, a process that takes millions of years.

DIBV authors often focus upon the biblical Hebrew word *tannîn* and the biblical monsters Leviathan and Behemoth. DIBV authors often insist that the biblical Hebrew word *tannîn*, which the King James Version (KJV) of the Bible translates as “dragon,” is a reference to dinosaurs and Mesozoic marine reptiles such as plesiosaurs and mosasaurs.¹¹ It is also common for DIBV authors to insist that the biblical monster Behemoth was a dinosaur and the biblical monster Leviathan was a dinosaur, plesiosaur, or mosasaur.¹² However, as I demonstrated in the previous article,¹³ the Hebrew word *tannîn* means “serpent.” As I also demonstrated in that article, the Hebrew wording of the biblical passages on Leviathan and Behemoth indicates that those two creatures are not natural animals such as dinosaurs but are supernatural entities that were envisioned as serpents.¹⁴

¹⁰ P. J. Senter, Christianity’s Earliest-Recorded Heresy, and Its Relevance to Christian Acceptance of Scientific Findings, *Thinking about Religion* 12 (2016), (no page numbers), http://organizations.uncfsu.edu/ncrsa/journal/v12/SenterP_Peritomes.htm; P. J. Senter, Cognitive Styles Used in Evidence Citation by Ancient Christian Authors: The Psychology of a Major Ancient Controversy over the Historicity of the Pentateuch, and Its Implications for Science Education Today, *Open Library of Humanities* 3/1:3 (2017), pp. 1–50.

¹¹ P. J. Senter, Leviathan, Behemoth, and Other Biblical *Tannînim*; Senter, *Fire-Breathing Dinosaurs?*

¹² P. J. Senter, Leviathan, Behemoth, and Other Biblical *Tannînim*; Senter, *Fire-Breathing Dinosaurs?*

¹³ P. J. Senter, Leviathan, Behemoth, and Other Biblical *Tannînim*.

¹⁴ The parts of the Behemoth passage in Job 40 that seem to indicate an aquatic herbivore are references to his demonic nature. In the ancient

Some recent DIBV literature claims that the biblical Hebrew term שָׂרָפָה מְעוֹפֶפֶת (*sārāph mē'ōphēph*), which the KJV translates as “fiery flying serpent” (Isa. 14:29, 30:6), refers to pterosaurs, the flying reptiles of the Mesozoic (Fig. 1). Ken Ham suggested that biblical “flying serpents” were pterosaurs in a 1998 book¹⁵ and in subsequent books.¹⁶ In the twenty-first century, several other DIBV authors have followed suit.¹⁷ DIBV author David Woetzel took the notion a step further by suggesting that the biblical word “fiery” (*sārāph*) referred to bioluminescence,¹⁸ in accord-

Near East, rivers were thought to carry away demons from infected objects and people, and dispelled demons were thought to eat vegetation. The Hebrew wording of the anatomical descriptions of Behemoth and Leviathan in Job 40 and 41 are consistent with limbless creatures, despite contrary mistranslations in English-language Bibles. - See Senter, Leviathan, Behemoth, and Other Biblical *Tanninim*.

- ¹⁵ K. Ham, *The Great Dinosaur Mystery Solved!* (Green Forest, AR: Master Books, 1998), pp. 49–52.
- ¹⁶ K. Ham, *Dinosaurs of Eden* (Green Forest, AR: Master Books, 2001), pp. 16–17; K. Ham, What Really Happened to the Dinosaurs? in K. Ham (ed.), *The New Answers Book 1* (Green Forest, AR: Master Books, 2006), pp. 149–176.
- ¹⁷ K. Butt and E. Lyons, *Dinosaurs Unleashed. The True Story about Dinosaurs and Humans* (Montgomery: Apologetics Press, 2004), pp. 44–45; W. J. Gibbons, *Missionaries and Monsters* (Landisville, PA: Coachwhip, 2006), p. 75; K. Butt and E. Lyons, *Dinosaurs Unleashed. The True Story about Dinosaurs and Humans*, 2nd edn. (Montgomery: Apologetics Press, 2004), pp. 44–45; E. Lyons and K. Butt, *The Dinosaur Delusion* (Montgomery: Apologetics Press, 2008), pp. 112–113; D. Stuckwisch, *Biblical Cryptozoology. Revealed Cryptids of the Bible* (Bloomington: Xlibris, 2009), pp. 52–55; M. Baker, *The Real History of Dinosaurs*. 5th ed. (Redding, CA: New Century, 2010), p. 104; B. Thomas, *Dinosaurs and the Bible* (Eugene, OR: Harvest House, 2013), pp. 49–56; T. Clarey, *Dinosaurs. Marvels of God's Design* (Green Forest, AR: Master Books, 2015), p. 21; Institute for Creation Research, *Guide to Dinosaurs* (Eugene, OR: Harvest House, 2015), p. 14.
- ¹⁸ D. Woetzel, The Fiery Flying Serpent, *Creation Research Society Quarterly* 42 (2005), pp. 241–251; D. Woetzel, *Chronicles of Dinosauria. The History and Mystery of Dinosaurs and Man* (Green Forest, AR: Master Books, 2012), pp. 72–76.

ance with his claim that bioluminescent pterosaurs currently exist in Papua New Guinea.¹⁹

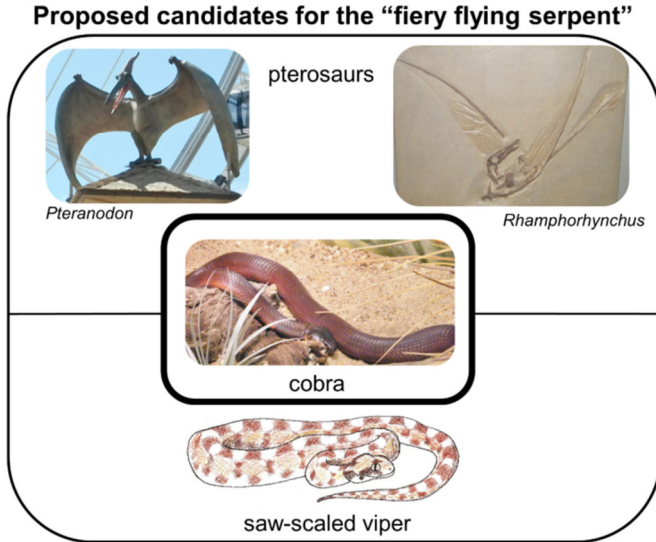


Figure 1. Proposed candidates for the *sārāph mā’ōphēph* (“fiery flying serpent”), with the author’s preferred candidate in the middle. The photographs show a *Pteranodon* statue at Dinosaur Adventure Golf, Niagara Falls, Ontario; a cast of *Rhamphorhynchus* skeleton at the American Museum of Natural History, New York City, New York; and a red spitting cobra (*Naja pallida*) at the St. Louis Zoo, St. Louis, Missouri. Drawing and photographs are by the author.

Along more literal lines, James Gilmer proposed that pterosaurs were called “fiery” because they breathed fire and that the crests of crested species housed a fire-production mechanism.²⁰ It would be easy to dismiss the YEC publications that endorse

¹⁹ D. Woetzel, *The Fiery Flying Serpent*.

²⁰ J. E. Gilmer, *100 Year Cover-Up Revealed. We Lived with Dinosaurs* (Bloomington: AuthorHouse, 2011), pp. 49, 96–97; J. E. Gilmer, *The Bible is Right! About Dinosaurs and Evolution!* (Bloomington: AuthorHouse, 2013), pp. 28–30, 83.

the pterosaur hypothesis as unimportant, because most are books written for a non-academic audience. However, the general public devours such works more readily than academic literature and is therefore more likely to be influenced by such works than by academic publications. It is therefore important to address claims published in such books, so as to investigate and understand and if necessary refute misinformation that the general public receives.

Three DIBV authors have recently suggested in non-academic works that the biblical Hebrew word רָאֵם (*rā'ēm*), which the KJV translates as “unicorn” (Num. 23:22, 24:8; Deut. 33:17; Job 39:9–10; Ps. 22:21, 29:6, 92:10; Isa. 34:7), refers to dinosaurs. Proposed dinosaurs include members of the taxon Ceratopsia (an herbivorous group that includes large, horned species) and the family Hadrosauridae (wide-snouted herbivores that are nicknamed “duckbills”). In a 2009 book, Dale Stuckwisch suggested the ceratopsian *Styracosaurus*, which had a long nasal horn, and the hadrosaurid *Tsintaosaurus*, which was once thought to have had an elongate, horn-like cranial spike (Fig. 2), as candidates for the *rā'ēm*.²¹ The alleged spike of *Tsintaosaurus* is now known to be part of the posterior edge of a broad crest, not a spike-like or horn-like structure.²² In a 2011 book, Glenn Wilson conjectured that the *rā'ēm* could be the elephant or the ceratopsian dinosaur *Triceratops* (Fig. 2).²³ In a 2014 book, Russ and Tricia McGlenn suggested that the *rā'ēm* was any of several ceratopsian dinosaurs.²⁴

²¹ Stuckwisch, *Biblical Cryptozoology*, p. 43.

²² A. Prieto-Márquez and J. R. Wagner, The ‘Unicorn’ Dinosaur that Wasn’t: A New Reconstruction of the Crest of *Tsintaosaurus* and the Early Evolution of the Lambeosaurine Crest and Rostrum, *PLoS ONE* 8/11:e82268 (2013), pp. 1–20.

²³ G. L. Wilson, *Behold Now Behemoth: Dinosaurs All Over the Bible* (Bloomington: WestBow, 2009), pp. 105.

²⁴ R. McGlenn and T. McGlenn, *Mystery of the Indian Effigy Mounds and Petroglyphs. Archaeological and Biblical Evidence for Humans and Dino-*

2 The “Fiery Flying Serpent”

Although the KJV translates *sārāph mə’ōwphēph* as “fiery flying serpent,” it is better translated “flying fiery-serpent” or “flying *sārāph*.” That is because *mə’ōwphēph* means “flying,” and *sārāph* - which literally means simply “fiery” - is a term for venomous snakes, in reference to the burning sensation of venom.²⁵

That the term *sārāph* refers to venomous snakes is confirmed by the wording of the episode in Numbers 21:6–9, which equates the words *sārāph* and *nāḥāsh* (נָחָשׁ, the generic Hebrew word for “snake”).

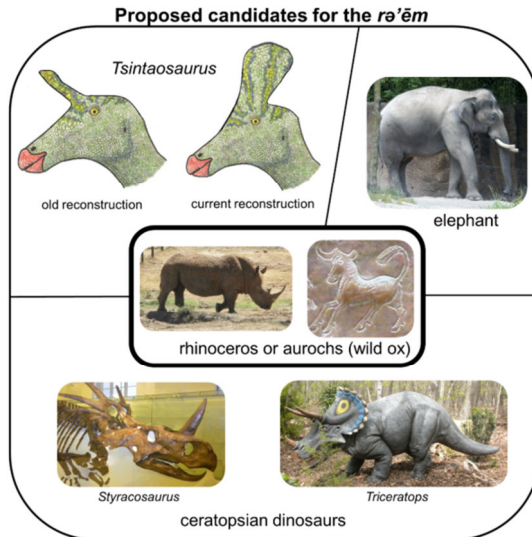


Figure 2. Proposed candidates for the *rə’ēm* (“unicorn”), with the author’s preferred candidates in the middle. The photographs show an Indian elephant (*Elephas maximus*) at the St. Louis Zoo, St. Louis, Missouri; a

saurus Living Together (Santa Maria, CA: Adventure Safaris, 2014), pp. 31–33.

²⁵ J. A. Benner, *Ancient Hebrew Lexicon of the Bible* (College Station, TX: Virtualbookworm, 2005), p. 397.

white rhinoceros (*Ceratotherium simum*) at Fossil Rim Wildlife Center, Glen Rose, Texas; bronze belt from Urartu at the Metropolitan Museum of Art, New York City, New York; a *Styracosaurus* skeleton at the American Museum of Natural History, New York City, New York; and a *Triceratops* statue on temporary display in 2012 at the North Carolina Zoo, Asheboro, North Carolina. Photographs and drawings are by the author.

In verse 6 of that passage, God punishes the insubordinate Israelites by sending them a scourge of *nāḥāshim sārāphim* (fiery snakes: the plural of *nāḥāsh sārāph*), which the Septuagint translates as ὄφεις θανατούντας (deadly snakes). In verse 7, the Israelites beg Moses to ask God to dispel the *nāḥāsh* (ὄφις [snake] in the Septuagint). In verse 8, God tells Moses to make a bronze *sārāph* (*ophis* in the Septuagint), so that anyone who looks upon it may be saved. In verse 9, Moses obeys the order to make a bronze *sārāph* by making a bronze *nāḥāsh* (ὄφις in the Septuagint), which indicates that a *sārāph* is a *nāḥāsh* (snake). The equivalence of *sārāph* with *nāḥāsh* and *ophis* demonstrates that the *sārāph* was a snake, not a pterosaur.

Biblical couplets confirm that the *sārāph* is a type of snake. Ancient Hebrew poetic literature frequently contains couplets in which the author makes a statement and then repeats it with different words for things in the same category. The couplets in Isaiah 14:29 and 30:6 show that the “flying *sārāph*” is in the same category of thing as the *tsepha*²⁶ (צִפְּהָ, a venomous snake²⁶) and the *’eph’eh* (אֶפְּהָ, a venomous snake²⁷). The former couplet colorfully describes a situation that goes from bad to worse as the replacing of one snake for another, with the second snake

²⁶ H. H. Hart, *The Animals Mentioned in the Bible* (Oxford: The Religious Tract Society, 1888), p. 63; Benner, *Ancient Hebrew Lexicon*, p. 429; J. Strong, *Hebrew and Aramaic Dictionary Accompanying the Exhaustive Concordance*, in James Strong (ed.), *The New Strong’s Expanded Exhaustive Concordance of the Bible* (Nashville: Thomas Nelson, 2010), p. 240.

²⁷ H. H. Hart, *The Animals Mentioned in the Bible*, p. 192; Benner, *Ancient Hebrew Lexicon*, p. 28; Strong, “Hebrew and Aramaic Dictionary,” p. 26.

being venomous: “from the root of the *nāḥāsh* will come forth a *tsepha*; its [the *nāḥāsh*’s] fruit will be a flying *sārāph*.” The couplet in Isaiah 30:6 describes the Negev as a land of “*labī*” and *laīsh*, *’eph’eh* and flying *sārāph*” (lion and lion, venomous snake and flying *sārāph*).

Modern scholars disagree as to what kind of snake the “flying *sārāph*” was. Some have suggested that the phrase *sārāph mā’ōwphēph* refers to saw-scaled vipers (snakes of the genus *Echis*) (Fig. 1), which sometimes strike with such momentum that they leave the ground and therefore “fly” in a limited sense.²⁸ Some have suggested the gliding lizard *Draco volans*,²⁹ but members of the genus *Draco* do not occur west of India. Others have suggested that it refers to snakes with feathered bird wings in ancient Egyptian iconography.³⁰ An implicit corollary to that suggestion is that the ancients thought such images depicted a real animal - which is unlikely, because ancient Egyptian iconography also put feathered bird wings on human figures, non-human animals, and disembodied eyes; the viewers of such iconography were presumably astute enough to recognize the composite nature of such images.

The connection with the writings of Herodotus (see below), in addition to the presence of “wings” in cobras (snakes of the genus *Naja*), make the cobra a more realistic candidate for the “flying *sārāph*.” It is plausible that the word “flying” is a reference to the spreading of a cobra’s hood, which resembles the spreading of little wings. In my own experience with *Naja melanoleuca* (the forest cobra) in Liberia, when a cobra slithers with its hood spread and its neck raised - a typical behavior for an agitated cobra - the snake really does look like it is spreading

²⁸ N. Slifkin, *Sacred Monsters. Mysterious and Mythical Creatures of Scripture, Talmud and Midrash* (New York: Yashar, 2007), p. 279.

²⁹ R. Waterfield, trans. *Herodotus. The Histories* (Oxford: Oxford University Press, 1998), p. 623.

³⁰ H. G. M. Williamson, *Isaiah 6 – 12, a Critical and Exegetical Commentary* (London: Bloomsbury, 2018), p. 53-54.

little wings and then flying at a low height, with its tail dragging on the ground behind it.

The Septuagint translates “flying sārāph” in Isaiah 14:29 as ὄφις πετόμενος (flying snake) and translates it in Isaiah 30:6 as ἄσπις πετόμενος (*aspis petomenos*: flying asp). The writings of Herodotus³¹ suggest that “flying snake” was an ancient Greek nickname for cobras and that the “wings” were the spread hood. When Herodotus traveled to Egypt to see the “flying snakes,” his destination was Buto, a center of cobra veneration that was sacred to a cobra goddess.³² Herodotus described the “flying snakes” as having the form of the ὕδρος (*hydros*: water snake) with “featherless wings,” a good description of cobras with spread hoods. In contrast, a beaked, birdlike biped such as a pterosaur cannot be said to have the form of a snake.³³

The use of the word *aspis* in Isaiah 30:6 of the Septuagint is also consistent with the “flying snakes” as cobras. Ancient Greek descriptions of the *aspis* demonstrate that the ancient Greeks applied the word specifically to cobras. Aristotle described the *aspis* as a venomous snake of Egypt that was attacked by the mongoose.³⁴ In a book on venomous animals, the ancient Greek physician Nikandros described the *aspis* as a dust-colored, venomous snake of Egypt that swells its neck (a reference to hood-

³¹ *Histories* 2.75, 2.76, 3.107; see English translation in J. B. Hare, Internet Sacred Text Archive, www.sacred-texts.com (2010; accessed January 17, 2019).

³² E. W. Budge, *The Gods of the Egyptians, Vol. 2* (Dover: New York, 2013), p. 376; R. H. Wilkinson, *The Complete Gods and Goddesses of Ancient Egypt* (London: Thames and Hudson, 2017), p. 226–227.

³³ P. Senter, Dinosaur and Pterosaur in Greek and Roman Art and Literature? An Investigation of Young-Earth Creationist Claims, *Palaeontologia Electronica* 16/3.25A (2013), p. 1–16.

³⁴ *History of Animals* 8.28.2, 9.27.3; see English translation in R. Cresswell, *Aristotle's History of Animals in Ten Books* (London: George Bell and Sons, 1902).

spreading) and is attacked by the mongoose.³⁵ The Rosetta stone says that Egyptian crowns were adorned by an *aspis*.³⁶ These descriptions are consistent with the *aspis* as the cobra and, particularly in the latter two cases, inconsistent with any other sort of snake.

In addition to *sārāph*, the Septuagint also translates *tsepha'* and *'eph'eh* as *aspis*,³⁷ which could mean that *tsepha'* and *'eph'eh* were alternate names for the cobra in Hebrew, although the latter name is a cognate of the Arabic name for saw-scaled vipers.³⁸ On the other hand, the translation of *tsepha'* and *'eph'eh* as *aspis* in the Septuagint could instead mean that Hebrew names for snake species and/or the translation of snake species names in the Septuagint was more loose than strict. Either way, the use of Septuagint's use of *ophis* and *aspis* for the "flying *sārāph*" of Isaiah suggests that the Hebrew phrase *sārāph mā'ōwphēph* referred to a snake, which is consistent with its being a nickname for the cobra and inconsistent with a pterosaur.

The Hebrew term *pethen* (פֶּתֶן) also appears to have referred to the cobra,³⁹ but this does not mean that *sārāph* is not also a name for the cobra. It should not be surprising for the ancient Hebrews to have had more than one name for this familiar animal. They had at least four names for the lion,⁴⁰ and most other

³⁵ *Theriaka* 160–120; see text and English translation in A. S. F. Gow and A. F. Scholfield, *Nicaner: the Poems and Poetical Fragments* (Cambridge: Cambridge University Press, 1953).

³⁶ See text and English translation in S. Sharpe, *The Rosetta Stone in Hieroglyphics and Greek, with Translations, and an Explanation of the Hieroglyphical Characters* (London: John Russell Smith, 1871).

³⁷ *Tsepha'*: Isa. 59:5. *'Eph'eh*: Job 20:16; Isa. 59:5.

³⁸ H. H. Hart, *The Animals Mentioned in the Bible*, p. 192.

³⁹ The *pethen* was venomous (Deut. 32:33; Job 20:14, 20:16; Isa. 11:8) and was used by snake charmers (Ps. 58:4), which suggests cobras.

⁴⁰ אָרִי (*'ariy*), כְּפִיר (*kēphir*), לָבִיא (*labī*), לַיִשׁ (*laišh*) - H. H. Hart, *The Animals Mentioned in the Bible*, p. 144–145; Benner, *Ancient Hebrew Lexicon*, p. 156, 164, 257; Strong, "Hebrew and Aramaic Dictionary," pp. 28, 135, 140, 143.

cultures also have multiple names for some animals. For example, in the United States there are multiple nicknames for the snake *Coluber constrictor*: black racer, blacksnake, pilot snake, pilot blacksnake, etc. Likewise, in the United States the large cat species *Puma concolor* is called the puma, the cougar, the mountain lion, the panther, the painter, etc. To give an extreme example, there are approximately 150 names for the woodlouse (*Oniscus asellus*) in the British Isles.⁴¹

Because a *sārāph* is a snake, it is incongruous that the ancient Hebrews would have applied the term *sārāph* to a pterosaur. The ancient Hebrews included bats within the category “bird” (רִפְּוּד: *tsippōr*) (Deut. 14:11–18), and pterosaurs resembled birds even more than bats do. Most pterosaurs had elongate, beaklike snouts or true beaks,⁴² and the preserved outlines of their soft tissues show that they lacked the external ears that are prominent in bats and absent in birds.⁴³ Like birds, pterosaurs were winged bipeds. Like birds - and unlike snakes - pterosaurs were covered not in scales but in elongate integumentary structures. Pterosaur integumentary structures, which

⁴¹ M. Bright, *Beasts of the Field. The Revealing Natural History of Animals in the Bible* (London: Robson, 2006), p. xii.

⁴² The only known pterosaurs without beaks or beaklike snouts are the members of the family Anurognathidae. The anurognathids had short, rounded, froglike heads—See F. M. Dalla Vecchia, Observations on the Non-Pterodactyloid Pterosaur *Jeholopterus ningchengensis* from the Early Cretaceous of Northeastern China, *Natura Nascosta* 24 (2002), pp. 8–27; see also fig. 1b of Z. Yang, B. Jiang, M. E. McNamara, S. L. Kearns, M. Pittman, T. G. Kaye, P. J. Orr, X. Xu, and M. J. Benton, Pterosaur Integumentary Structures with Complex, Feather-Like Branching, *Nature Ecology and Evolution* 3 (2019), p. 24–30. Their fur-like covering made them bat-like in appearance, and the short snout made them more bat-like in appearance than other pterosaurs. If ancient Hebrews had encountered them, they would surely have considered them bats, which in turn they considered a category of bird (Deut. 14:11–18), not a category of snake.

⁴³ P. Wellnhofer, *The Illustrated Encyclopedia of Pterosaurs* (New York: Crescent, 1991).

are called pycnofibres, resembled fur⁴⁴ and would have given pterosaurs the furry appearance of birds such as kiwis, emus, or cassowaries. Because of its beak, legs, and pycnofibres, even if a pterosaur's wings were removed it would resemble a wingless bird and would bear no resemblance to a snake.⁴⁵ Given all this, if the *sārāph* were a pterosaur, the writer of Numbers 21 would have called it a *tsippōr* (bird), not a *nāhāsh* (snake), and the couplets in Isaiah that include the *sārāph* would have paired it with words for birds, not words for snakes such as *tsepha'* and *'eph'eh*.

Some DIBV authors have identified certain winged carcasses that were illustrated by artists of Europe's Renaissance period as pterosaurs that survived into historical times, citing such carcasses as "evidence" that pterosaurs were the "flying serpents" of the Bible.⁴⁶ However, those carcasses are now known to have been taxidermic hoaxes, in which the hoaxers attached pieces of different animals together to make composites that they pretended were "dragons." One such specimen consisted of the skull of a dog, the forelimb bones of a bear, and fish ribs,

⁴⁴ D. M. Unwin, *The Pterosaurs. From Deep Time* (New York: Pi Press, 2006), p. 131–135; A. W. A. Kellner, X. Wang, H. Tischlinger, D. de Almeida Campos, D. W. E. Hone, and X. Meng, The Soft Tissue of *Jeholopterus* (Pterosauria, Anurognathidae, Batrachognathinae) and the Structure of the Pterosaur Wing Membrane, *Proceedings of the Royal Society B* 277 (2010), p. 321–239; Yang et al., Pterosaur Integumentary Structures.

⁴⁵ P. J. Senter, Dinosaurs and Pterosaurs in Greek and Roman Art and Literature?

⁴⁶ J. C. Goertzen, Letter to the Editor: Living Dinosaurs, *Creation Ex Nihilo Technical Journal* 7 (1993), pp. 200–201; J. C. Goertzen, The Rhamphorhynchoid Pterosaur *Scaphognathus crassirostris*: A 'Living Fossil' until the 17th Century? in R. E. Walsh (ed.), *Proceedings of the Fourth International Conference on Creationism* (Pittsburgh: Creation Science Fellowship), pp. 253–269; D. Woetzel, Fiery Flying Serpent; Thomas, *Dinosaurs and the Bible*, p. 53.

in addition to fake wings.⁴⁷ Another included a weasel's skull and an eel's tail.⁴⁸ In other cases, fish fins served as "wings" on specimens that included snake skin and mammalian heads.⁴⁹ In each case, the composite animal bears so little resemblance to a pterosaur that to cite it as evidence of human coexistence with pterosaurs is incongruous.

Another major misinterpretation of DIBV authors is to view the term *sārāph*, which literally translates as "fiery," as a reference to bioluminescence or literal fire-breathing.⁵⁰ Gilmer's assertion that the crests of pterosaurs housed a fire source is untenable, because pterosaur crests were as thin as a knife blade, which precludes storage of anything therein, fire source or otherwise.⁵¹ The word *sārāph* refers to the burning sensation of venom,⁵² not to fire production.

3 The "Unicorn"

The Hebrew scriptures do not unambiguously reveal the identity of the *rā'ēm*, but they do offer a few hints. Couplets in which the *rā'ēm* is linked with cattle (Deut. 33:17; Ps. 29:6; Isa. 34:7)

⁴⁷ P. Senter and P. D. Wilkins, Investigation of a Claim of a Late-Surviving Pterosaur and Exposure of a Taxidermic Hoax: The Case of Cornelius Meyer's Dragon, *Palaeontologia Electronica* 16/6A (2013), pp. 1–11.

⁴⁸ P. Senter and D. M. Klein, Investigation of Claims of Late-Surviving Pterosaurs: The Cases of Belon's, Aldrovandi's, and Cardinal Barberini's Winged Dragons, *Palaeontologia Electronica* 17/3.41A (2014), pp. 1–19.

⁴⁹ P. Senter and D. M. Klein, Investigations of Claims of Late-Surviving Pterosaurs.

⁵⁰ D. Woetzel, Fiery Flying Serpent; Gilmer, *100 Year Cover-Up*, pp. 49, 96–97; D. Woetzel, *Chronicles of Dinosauria*, pp. 72–76; Gilmer, *The Bible Is Right*, pp. 28–30, 83.

⁵¹ S. C. Bennett, The Osteology and Functional Morphology of the Late Cretaceous Pterosaur *Pteranodon*, *Palaeontographica Abteilung A* 260 (2001), pp. 1–112.

⁵² S. C. Benner, *Ancient Hebrew Lexicon*, p. 397.

suggest that the Hebrew writers considered it to fall within a category that also included cattle. It is said to be horned (Deut. 33:17; Ps. 22:21, 92:10), strong (Num. 23:22, 24:8), and undomesticated (Job 39:9–10). There is nothing specifically dinosaurian in those descriptions, and something as unlike hoofed mammalian livestock as a dinosaur would not have been considered part of the cattle category.

The Septuagint translates *rə'ēm* as *μονόκερως* (*monokeros*), which means one-horned. *Monokeros* is the ancient Greek word for the Indian rhinoceros (*Rhinoceros unicornis*), to which the Greeks were introduced during the military campaign of Alexander the Great in India. Pliny the Elder's first-century Latin description of the *monoceros* says that it is hunted in India and has a deer-like head, elephant-like feet, a boar-like tail, and a horse-like body.⁵³ That is a description of the Indian rhinoceros. He adds that in India there are oxen with solid (i.e. non-cloven) hooves and a single horn, which is another description of the rhinoceros, one that shows that at least some of the ancients considered the animal to be part of the cattle category. The Vulgate's translation of *rə'ēm* as *rhinoceros* and *unicornis* are also consistent with the Indian rhinoceros (Fig. 2).

The pre-Septuagint Hebrews may not have come into direct contact with the Indian rhinoceros, but it is possible that they knew of its existence. The Hebrew words for “peacock,” “monkey,” and “ivory” in 1 Kings 10:22 and 2 Chronicles 9:21 are derived from the Tamil language.⁵⁴ This indicates contact with Indian vocabulary, perhaps via trade, as suggested by those passages' assertion that ships brought those Indian goods via the sea trade. Trade with India may have brought knowledge of Indian fauna, such as the rhinoceros.

⁵³ *Naturalis Historia* 8.31; see English translation in J. Bostock, *The Natural History. Pliny the Elder* (London: Taylor and Francis, 1855).

⁵⁴ H. H. Hart, *The Animals Mentioned in the Bible*, pp. 18, 174; R. Pinney, *The Animals in the Bible*, (Philadelphia: Chilton, 1964), pp. 124, 129, 154; Bright, *Beasts of the Field*, p. 243.

Also, if the *rə'ēm* is the rhinoceros, it is not necessarily only the Indian rhinoceros. The geographic range of the black rhino (*Diceros bicornis*) extended as far north as Punt, on the Red Sea, during the time of the New Kingdom of Egypt (the sixteenth – eleventh centuries B.C.). The Egyptians were familiar with African rhinos, as witness their use of rhinoceros horns in folk medicine and their illustrations of rhinos on artifacts,⁵⁵ and at least one rhinoceros was imported from Punt to Egypt during the fifteenth century B.C.⁵⁶ The ancient Hebrews may therefore have known of African rhinos via contact with Egypt. Deuteronomy 33:17 says that the *rə'ēm* has “horns” in the plural, which makes the animal more likely to be an African than Indian rhinoceros, because both African species of rhino are two-horned, whereas the Indian species is one-horned. It is plausible that the term *rə'ēm* originally referred to an African rhino and that, recognizing this, the authors of the Septuagint used the only Greek term that existed for a rhinoceros: *monokeros*.

Some previous authors have hypothesized that the *rə'ēm* was the aurochs (*Bos primigenius*)⁵⁷ (Fig. 2). The aurochs was a wild ox that inhabited the Middle East and Europe in historical times but had become extinct outside Europe by the time of the Roman Empire. The latest Near Eastern records of its presence are from the fourteenth century B.C. for Egypt, the twelfth century B.C. for Palestine and Lebanon, and the ninth century B.C. for Mesopotamia.⁵⁸ It therefore existed in the Near East late enough for the ancient Hebrews to have known of it. Job 39:9–

⁵⁵ D. J. Osborn, *The Mammals of Ancient Egypt* (Warminster: Aris and Phillips, 1998), pp. 140–141.

⁵⁶ P. F. Houlihan, Animals in Egyptian Art and Hieroglyphs, in B. J. Collins (ed.), *A History of the Animal World in the Ancient Near East* (Leiden: Brill, 2002), pp. 97–143.

⁵⁷ H. H. Hart, *The Animals Mentioned in the Bible*, pp. 214–215; Pinney, *The Animals in the Bible*, pp. 102–103; Bright, *Beasts of the Field*, p. 7; N. Slifkin, *Sacred Monsters*, pp. 50–52.

⁵⁸ H. Epstein, *The Origin of the Domestic Animals of Africa, Volume 1* (New York: Africana, 1971), pp. 235, 253.

12 describes the *rā'ēm* as an animal that can't be domesticated and put to work, whereas the aurochs was domesticated independently by multiple ancient human populations and is the ancestor of all breeds of domestic cattle.⁵⁹ However, cattle had long been domesticated by the time Job was written,⁶⁰ and the origin of cattle from the aurochs had plausibly been long-forgotten. If the ferocity of the wild aurochs contrasted suffi-

⁵⁹ C. S. Troy, D. E. MacHugh, J. F. Bailey, D. E. Magee, R. T. Loftus, P. Cunningham, A. T. Chamberlain, B. C. Sykes, and D. G. Bradley, Genetic Evidence for Near-Eastern Origins of European Cattle, *Nature* 410 (2001), pp. 1088–1091; M. W. Bruford, D. G. Bradley, and G. Luikart, DNA Markers Reveal the Complexity of Livestock Domestication, *Nature Reviews: Genetics* 4 (2003), pp. 900–910; H. Mannen, M. Kohno, Y. Nagata, S. Tsuji, D. G. Bradley, J. S. Yeo, D. Nyamsamba, Y. Zagdsuren, M. Yokohama, K. Nomura, and T. Amano, Independent Mitochondrial Origin and Historical Genetic Differentiation in North Eastern Asian Cattle, *Molecular Phylogenetics and Evolution* 32 (2004), pp. 539–544.

⁶⁰ The book of Job contains references to iron tools (19:24, 20:24, 28:2), domesticated camels (1:3, 1:7, 42:12), and mounted cavalry (39:18, 39:21–25). Ironworking was unknown in the Levant before the eleventh century B.C. - See J. D. Muhly, Metalworking/Mining in the Levant, in S. Richard (ed.), *Near Eastern Archaeology. A Reader* (Winona Lake, IN: Eisenbrauns, 2003), pp. 174–183. Dromedary camels were domesticated no earlier than the tenth century B.C. - See P. Rowley-Conwy, The Camel in the Nile Valley: New Radiocarbon Accelerator (AMS) Dates from Qaṣr Ibrim, *Journal of Egyptian Archaeology* 74 (1988), pp. 245–248; L. Sapir-Hen and E. Ben-Yosef, The Introduction of Domestic Camels to the Southern Levant: Evidence from the Aravah Valley, *Tel Aviv* 40 (2013), pp. 277–285. The Assyrians invented mounted cavalry in the ninth century B.C., but it was not extensively used until the eighth century B.C. - See R. Drews, *Early Riders. The Beginnings of Mounted Warfare in Asia and Europe* (New York: Routledge, 2004); R. Archer, Chariotry to Cavalry: Developments in the Early First Millennium, in G. G. Fagin and M. Trundle (eds.), *New Perspectives on Ancient Warfare* (Leiden: Brill, 2010), pp. 57–79. Textual evidence therefore indicates that the book of Job was not completed until sometime after the ninth century B.C. More specifically, linguistic evidence indicates that its completion was post-exilic - See A. Hurvitz, The Date of the Prose-Tale of Job Linguistically Reconsidered, *Harvard Theological Review* 67 (1974), pp. 17–34.

ciently with the docility of tame cattle, then to the writer of Job the aurochs may indeed have seemed incapable of being tamed. Furthermore, the aurochs had become locally extinct in the Near East centuries before the Septuagint was written. It is therefore possible that the writers of the Septuagint did not know of the aurochs and translated *rə'ēm* with the name of the rhinoceros, an appropriate proxy.

Advocates of the aurochs hypothesis point out that in Isaiah 34:7 the narrator seems to speak of the *rə'ēm* as a sacrificial animal,⁶¹ which means that it must be kosher.⁶² The rhinoceros is not kosher, because it does not have cloven hooves (Lev. 11:3–6). Isaiah 34:5–10 prophesies the impending doom of Edom, likening the slaughter of its people to the sacrifice of goats and sheep (verse 6). The prophecy continues in verse 7 by saying that the *rə'ēm* and bullocks and bulls will fall along with the livestock from verse 6. However, the sacrifice metaphor ends with verse 6. Verse 7 is speaking not of kosher sacrifice of livestock but of the falling of mighty men. The ancient Hebrews figuratively called mighty fighting men bullocks (e.g. Ps. 22:12; Jer. 50:27) and bulls (Judg. 5:22; 1 Sam. 21:7; Job 24:22, 34:20; Ps. 22:12, 68:30, 76:5; Isa. 10:13, 46:12; Ler. 46:15; Lam. 1:15). English translations often render the Hebrew word “bulls” as some equivalent of “mighty men” in such passages, and the Septuagint similarly renders *rə'ēm* as ἄδρός (the mighty) in Isaiah 34:7. The *rə'ēm*, bullocks, and bulls of that verse are therefore not kosher livestock but humans. The ending of the sacrifice metaphor in verse 6 and the listing of humans figuratively as animals in verse 7 undermines the argument from kosher-ness that the *rə'ēm* is the aurochs. That particular argument is therefore questionable, even if the *rə'ēm* is the aurochs.

⁶¹ H. H. Hart, *The Animals Mentioned in the Bible*, p. 214.

⁶² N. Slifkin, *Sacred Monsters*, pp. 48–49.

Could it be that the *rā'ēm* is the elephant (Fig. 2), as Wilson suggested,⁶³ in which case its tusks are the “horns” of the *rā'ēm*? The Syrian elephant, a western variety of the Asian elephant (*Elephas maximus*), inhabited Syria and Mesopotamia until the eighth century B.C.⁶⁴ A Syrian elephant was sent to Egypt as tribute from Syria during Egypt's eighteenth dynasty,⁶⁵ and an African elephant was sent from Egypt to Assyria as tribute in the ninth century B.C.⁶⁶ Elephants were therefore crossing through Palestine and were present in neighboring lands during a late enough period for pre-Septuagint Hebrews to have known about them. Elephant ivory was used extensively in the lands around Palestine,⁶⁷ and the Hebrew scriptures make much mention of ivory, demonstrating knowledge of that elephant-derived material. However, if the *rā'ēm* was the elephant, one would expect the writers of the Septuagint to have translated *rā'ēm* as ἐλέφας (elephant), whereas they instead consistently translated it as *monokeros* (rhinoceros).⁶⁸ It is therefore more likely that the *rā'ēm* was the rhinoceros than the elephant.

4 Conclusions

The Bible's “fiery flying serpents” and “unicorns” are not pterosaurs and dinosaurs. The former are venomous snakes, most likely cobras. The latter are horned mammals, most likely the

⁶³ G. L. Wilson, *Behold now Behemoth*, p. 105.

⁶⁴ F. E. Zeuner, *A History of Domesticated Animals* (New York: Harper and Row, 1963), pp. 276–278.

⁶⁵ A. Caubet, *Animals in Syro-Palestinian Art*, in B. J. Collins (ed.), *A History of the Animal World in the Ancient Near East* (Leiden, Brill, 2002), pp. 211–234.

⁶⁶ P. F. Houlihan, *Animals in Egyptian Art and Hieroglyphs*.

⁶⁷ A. Caubet, *Animals in Syro-Palestinian Art*.

⁶⁸ Num. 23:22, 24:8; Deut. 33:17; Job 39:9–10; Ps. 22:21, 29:6, 92:10. The only exception is Isa. 34:7, in which it is translated as ἀδρός (the mighty).

rhinoceros or the aurochs. These lines of “evidence” for the coexistence of humans with dinosaurs and pterosaurs are spurious and should be discarded.

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