Phylogeny and Ontogeny of a Middle Miocene Kentriodontid (Cetacea: Odontoceti) from Oregon

by

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THESIS ABSTRACT

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Master of Science in Earth Sciences

Title: Phylogeny and Ontogeny of a Middle Miocene Kentriodontid (Cetacea: Odontoceti) from Oregon

Our understanding of the early evolutionary history of delphinids, or dolphins and their closest relatives, has been fraught with phylogenetic placement issues. The absence of conclusive taxonomic placements may be attributed to the incomplete nature of the fossil record, absence of a unified morphological phylogenetic framework, and a poor understanding of ontogenetic changes in extinct cetacean lineages. Among early delphinids, the extinct family Kentriodontidae is a point of major phylogenetic contention, as the taxa within this family possess a mosaic of ancestral and derived traits, and they underwent rapid, widespread diversification during the Miocene. Recent works are split between two different methodologies; while some studies opt for a restricted definition of the group and recover it as polyphyletic group of stem delphinids, others have favored broader definitions and place the group as monophyletic. Their unique cranial symmetry compared to other delphinids, homodont dentition, and periotic morphology may be convergent traits, leading to this disparity. The University of Oregon Museum of Natural and Cultural History (UOMNCH) Condon Fossil Collection holds several kentriodontids from different localities along the Oregon coast, few of which have been described. One of these specimens, UOMNCH F-37129, previously assigned to *Kentriodon sp.,* comes from the Middle Miocene Astoria Formation of the Schooner Creek locality (UO 3872), Lincoln County, Oregon. This locality possesses fossils from both the Astoria Formation and the underlying Nye Mudstone, and UOMNCH F-37129 was found on the shoreline in an Astoria Fm. concretion. Building upon the phylogenetic analysis of Kentriodontidae from Guo and Kohno (2023), I

reevaluate UOMNCH F-37129 within the context of present phylogenetic relationships among kentriodontids. Current descriptions of kentriodontids often fail to separate physical traits caused by ontogeny from those that are unique to individual taxa. Phylogenetic analysis reliably places UOMNCH F-37129 within Kentriodontidae, but the incompleteness of the specimen makes it impossible to confidently place it precisely within the clade. While this result could suggest the specimen is a new basal species, it is more likely that the ontogenetic age of the specimens means it lacks sufficient definitive characters to support clear phylogenetic resolution and only retains general characters that all members may possess early in development. In UOMNCH F-37129, there is enough evidence to support that the individual is a sub-adult; still present are distinct, unfused sutures throughout the specimen, some with noticeable gaps of empty space between bones. Additionally, the interparietal is present and completely unfused with the exoccipital, which often becomes one cranial plate in mature kentriodontids. Differences in taxonomic evaluation, unpublished data that create gaps in actual occurrence rates, and a lack of understanding of the morphological changes between ontogenetic stages of kentriodontids all contribute to the uncertainty surrounding kentriodontid relationships. To better understand the relationships among kentriodontid taxa, it is necessary to advance our understanding of the morphological changes that occur throughout their ontogeny. This will allow for the improvement of species diagnoses and rectification of disagreements between phylogenetic analyses.

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DEDICATION

To the invisible scientists of paleontology.

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CHAPTER I

INTRODUCTION

Diversity of DELPHINIDA in the Miocene

The parvorder Odontoceti is a diverse clade of cetaceans including dolphins and porpoises, as well as other toothed whales, like beaked whales and sperm whales (Lambert et al. 2026; Godfrey & Lambert 2023; Kimura & Hasegawa 2019; Fordyce 2017; Ichishima et al. 1994, Muizon 1984). One clade within Odontoceti, Delphinida, includes the family Delphinidae, which is believed to have originated in the late Oligocene. Stem delphinidans underwent evolutionary radiation in the Miocene and had a broad geographic range by the late Miocene (Dawson 1996; Ichishima et al. 1994). Alongside taxonomic diversification, there was morphological diversification (Nobile et al. 2024; Peredo et al. 2018); extant members of Delphinidae have body sizes ranging between 1–8 m (Brownell et al. 1987), and their extinct relatives within the clade are comparable in size but are typically on the smaller end of this range (Lambert et al. 2016; Marx et al. 2016). There are some standout character traits that all early delphinidans share, including a mostly homodont dentition, posterior reduction of the premaxilla, and some unique ear bone morphology such as a dense ventral wall of the tympanic bulla (Muizon 1988), an S-shaped curve to the ventral keel (Fordyce and Muizon 2001) and parabullary ridge along the anterior process (Fordyce et al. 1994); these latter characters are often used as valuable diagnostic criteria for members of Delphinidae (Marx et al. 2016; Lambert et al. 2015, McGowen et al. 2009). Of the members of Delphinidae that spread worldwide, kentriodontids and their closest kin were the first to reach almost all continents by the Early to Middle Miocene (Figure 1). Their fossils are known from North America, South America,

Europe, Asia, and New Zealand (Nobile et al. 2024; Kazár and Hampe, 2014; Bianucci and Landini. 2007).

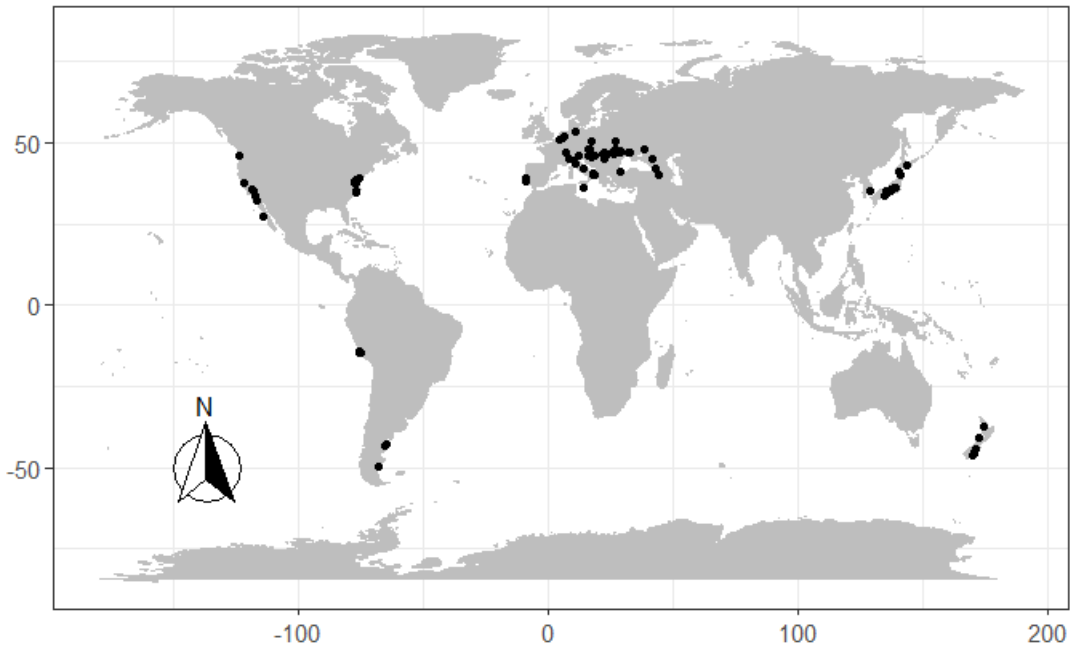


Figure 1. The global distribution of occurrences of kentriodontids (in black). The data were downloaded from the Paleobiology Database on 2 April 2026, using the group name 'kentriodontidae' for a visual search and no other parameters.

Phylogenetic Relationships and Ontogeny of Kentriodontidae

Kentriodontidae, an extinct family of dolphin relatives close to Delphinidae, is known for their problems surrounding structure within the clade (Murakami et al. 2014, Salinas-Márquez et al. 2014). Like members of Delphinidae, Kentriodontids were abundant and widely distributed (Figure 1) throughout the early to middle Miocene (Nobile et al. 2024, Coombs et al. 2022, Lambert 2017). Some phylogenetic analyses have suggested the family is a monophyletic stem group with archaic taxa that appears polyphyletic, due to the variation in included taxa and traits

expressed (Rompaey et al. 2026; Boessenecker and Geisler 2023; Lambert et al. 2018b, Lambert 2017). Additionally, the relationships between possible subfamilies, such as Lophocetinae and Kampholophinae, that have historically been placed within Kentriodontidae are subject to frequent revision (Rompaey et al. 2026; Guo and Kohno 2023). The taxa to be included in the family are frequently subject to debate. Generally, current research splits into two methodologies. Some authors restrict taxa into a polyphyletic group by using matrices that meant to investigate relationships between early odontocetes, instead of crown delphinids (Kimura & Hasegawa 2019; Lambert et al. 2018a, Geisler et al. 2011). Discovering or reevaluating specimens can introduce new data that leads to disagreements in these analyses (Boersma et al. 2017; Keating et al. 2013; Geisler et al. 2011; McGowen et al. 2009). Modern research consistently incorporates molecular tree constraints and agrees that four genera (*Kentriodon, Rudicetus, Wimahl,* and *Kampholophos*) belong within the Kentriodontidae family.

Poor understanding of ontogenetic changes in bony morphology further complicates phylogenetic analysis in the family. There is no published research on morphological differences between mature and juvenile individuals within Kentriodontidae, and available publications often lack descriptions of ontogeny for described specimens; at best, descriptions detailing evidence for developmental status are vague. While some research has pointed out the need for clarification on age-related traits (Rompaey 2026; Lambert et al. 2025), most present research uses extant cetacean development as analogs (Chen et al. 2011; Chivers 1993; Perrin 1975).

Kentriodontids are hypothesized to have originated and diversified primarily in the Pacific region (Nobile et al. 2024; Dawson 1996). Four of the eight known species (*Kentriodon hobetsu, K. diusinus, K. obscurus,* and *K. nakajimai)* of the most species rich genus in the family, *Kentriodon,* are found only from the Pacific coast of the Northern Hemisphere (Kimura and

Hasegawa 2019; Salinas-Márquez et al. 2014; Ichishima et al. 1995). An important part of their Pacific record derives from the Pacific Northwest, where there are many occurrences of delphinids, including kentriodontids, that have yet to be described.

Astoria Formation and Schooner Creek Locality

Over a dozen specimens of small-to-intermediate-sized toothed cetaceans housed in the Condon Collection at the University of Oregon have been collected from the Astoria Formation (Steere 1977, Dall 1892). While it has been theorized that the Astoria Formation is Burgundian-aged, there is little published evidence to support that, leaving its exact age contested (Deméré and Berta 2001). First described by Cope in 1880, the Astoria overlies the Nye Mudstone, Smuggler's Cove, and Pittsburg Bluff Formations found in the Northern and Central regions of the Oregon coast (Figure 2). From its stratigraphic context relative to these other formations, the best conclusion on geologic age of the Astoria Formation ranges from Late Oligocene to Late Miocene (Deméré and Berta 2001, Steere 1977, Snavely et al. 1969). It is geographically widespread, extending from Newport, Oregon northward, all the way to the Southwestern part of the Washington state coast (Nesbitt 2018; Orr and Orr 2012; Steere 1977; Etherington 1931). In the northern Oregon coast, it is overlain by the expansive Columbia River Flood Basalts found throughout the state (Snavely et al. 1969).

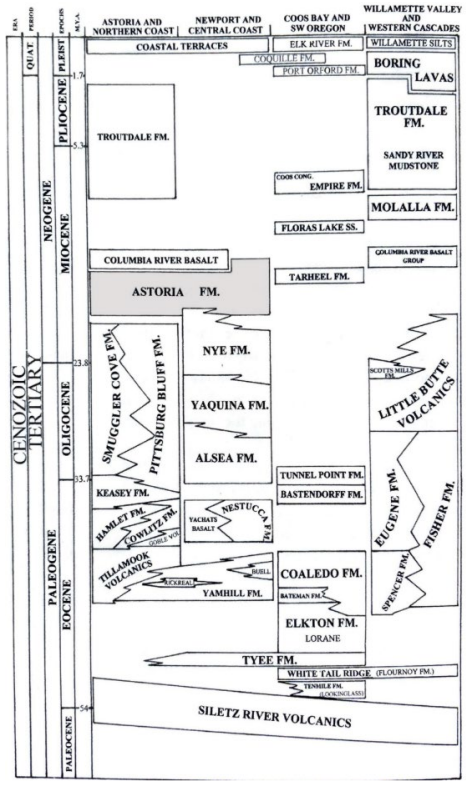


Figure 2. The stratigraphy during the Tertiary across the Oregon Coast Ranges, with the Astoria Fm. filled in grey (Modified from Orr and Orr, 2012).

The Astoria Fm. is dominantly composed of a dark bluish-grey sandstone and often produces highly indurated concretions. The UO 3872 Schooner Creek locality (Figure 3) exposes the Astoria and Nye Mudstone Formations, both of which contain vertebrate fossils. The site is located about 15 meters north of the northernmost reach of Agate Beach, Newport, Oregon. The cliff face along the shore of Schooner Creek is composed of Nye Mudstone; however, concretions belonging to the Astoria are distributed over much of the beach itself. The locality is well known for its abundance of cetaceans, pinnipeds, desmostylians, fish, and some terrestrial

mammal fossils (Deméré and Berta 2001, Kohno et al. 1995, Steere 1954, Condon 1906).

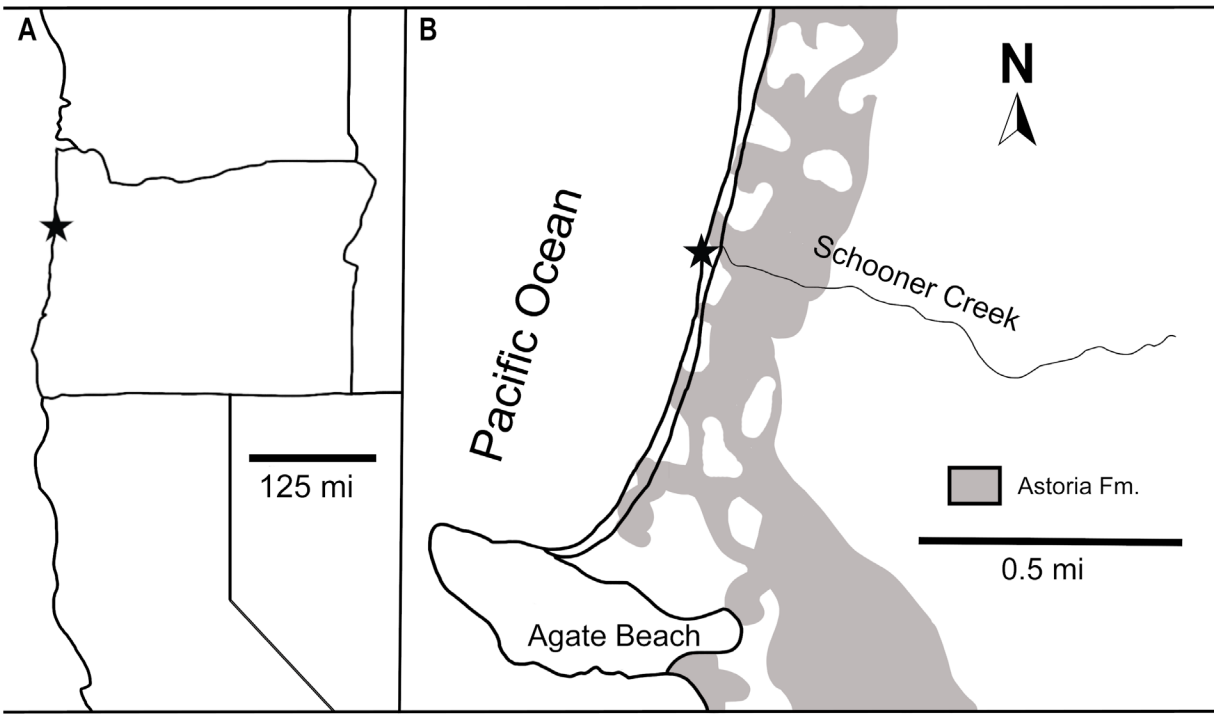


Figure 3. A schematic of A) the regional context of the Northwest coast and B) precise location of the Schooner Creek locality. The black stars indicate the approximate location where UOMNCH F-37129 was discovered.

Specimen UOMNCH F-37129 Background

In the spring of 1988, Guy Pierson discovered a small cetacean cranium in a nodule among the many concretions by Schooner Creek's cliffs. He gifted the specimen to Patrick Ward, a volunteer with the University of Oregon's Museum of Natural and Cultural History's Condon Fossil Collection (UOMNCH), to properly prepare the specimen out of the highly lithified sandstone before Ward accessioned it into the museum's collection. Using acid preparation methods and archival consolidants, the specimen was cleaned, and the resulting morphology enabled an initial identification of *Kentriodon sp.* based on its size, telescoped rostrum, and the presence of two homodont, hooked teeth. Since the specimen was donated to UOMNCH in 2019 and given the specimen number F-37129, it has remained undescribed.

After observing the specimen closely and consulting with Dr. Mark Uhen (Personal Communication, March 21st, 2025), I found that the large gaps between many sutures suggest a sub-adult status and cast doubt on its identification as *Kentriodon.* It was quick to discover that the Condon Collection housed multiple specimens of kentriodontids, mostly all incomplete crania or mandibles, from the Nye Fm. However, none of their occurrences have been recorded into public-access databases such as the Paleobiology Database, an issue many vertebrate paleontology collections face (Marshall et al. 2018). Only 5 cetacean specimens have been recorded being found from the Nye Fm, including *Perditicetus yaconensis, Yaquinacetus meadi, Goedertius oregonensis,* a platanistid of unknown affinity, and a cetotheriid (Nelson and Uhen 2020, Lambert et al 2019, Toshiyuki and Lawerence 2016). None of these recorded specimens are within the family Kentriodontidae. When expanding the search to the closely situated and similarly aged Astoria Fm., there are at least three recorded occurrences of *Cophocetus oregonensis*, and *Dilophodelphis fordycei,* neither of which are kentriodontids (Marshall et al. 2018, Boersma et al 2017, Ekdale 2016). There is only one recorded occurrence of a kentriodontid from the Astoria Fm. of Washington state, *Wimahl chinookensis*. The seemingly sparse distribution of this family in both formations hides many unpublished specimens housed in institutional collections. This project attempts to reevaluate the taxonomic affinities of UOMNCH F-37129, locate precisely where within the evolutionary tree of the family Kentriodontidae it lies and determine whether ontogenetic variation in skull morphology obscures taxonomic characteristics for members of this family.

CHAPTER II

METHODS

To compare the skull morphology of UOMNCH F-37129 with other known kentriodontid taxa and their close relatives, I utilized a character matrix of 387 characters from Guo and Kohno (2023), and after adding the specimen to the original authors' data matrix I had a total of 108 taxa. I first ran a test phylogenetic analysis in TnT 1.6 (Goloboff et al. 2025), without UOMNCH F-37129 to replicate the results of Guo and Kohno (2023), followed by a second analysis with the new specimen added to the data matrix. Character states were assigned based on comparisons with other taxa that were available within 3D model databases, including but not limited to Phenome10k and Sketchfab. When 3D models were not available, characters were compared with specimens from other publications with diagnostic descriptions (Lambert et al 2025, Coste et al. 2024, Nobile et al. 2024, Guo and Kohno 2023, Guo and Kohno 2021, Nelson and Uhen 2020, Kimura and Hasegawa 2019, Lambert et al 2018a, Peredo et al. 2018, Tanaka et al 2017, Kazar and Hampe 2014, Salinas-Marquez et al. 2014, Murakami et al 2012, Whitmore and Kaltenbach 2008, Kazar 2005, Bianucci 2001, Ichishima 1995, Barnes and Mitchell 1984, Rensberger 1969, Kellog 1931, Kellog 1927, Flower 1864). Because the specimen is a partial cranium, it could not be assessed for all characters in the matrix. Any missing or inconclusive characters were coded with question marks. Following Guo and Kohno's (2023) instructions for replication, I performed a 'New Technology Search' with the program's default values; after increasing our memory space to house 10,000 trees, we ran a sectoral search with additional sequences to 5, set to find the minimum length 1000 times, enforced constraints using the same backbone tree of extant species as Guo and Kohno (2023) and allowed tree fusing to generate most parsimonious trees, with no floating taxa. We created a 50% majority rule tree and a strict consensus tree of the retained trees, using the methods of Guo and Kohno (2023), and visually finalized results in FigTree v1.4.4 (Rambout 2018).

Institutional Abbreviations

CAS, California Academy of Sciences, San Francisco, California, U.S.A.; **FCMM**, Reference Collection of the State of Baja California, Ensenada, Baja California, Mexico; **FMNH**, Field Museum of Natural History, Chicago, Illinois, U.S.A.; **GMNH**, Gunma Museum of Natural History, Tomioka, Gunma, Japan; **HMG**, Hobetsu Museum, Hokkaido, Japan; **LACM**, Natural History Museum of Los Angeles County, Los Angeles, CA, U.S.A.; **MB**, Museum of Geology and Paleontology, University of Bologna, Italy; **MNU**, Museum of Nature and Environment, Lübeck, Germany; **MTM**, Hungarian Natural History Museum, Budapest, Hungary; **NMHF**, Ninohe Museum of History and Folklore, Ninohe City, Iwate, Japan; **RBINS**, Royal Belgian Institute of Natural Sciences, Brussels, Belgum; **USNM**, National Museum of Natural History, Smithsonian Institution, Washington D.C., U.S.A.; **UTHFM**, Ugo Town History and Folklore Museum, Ugo-town, Ogachi County, Akita, Japan; **UWBM**, Burke Museum, University of Washington, Seattle, Washington, U.S.A.

Table 1. List of available specimens used to compare character states and their institutional IDs.

Taxon Name	Specimen(s) Examined	Reference Source
Kentridon pernix	USNM 8060; USNM V 10670; RBINS M.2340	Kellog 1927; Surface Scan from Phenome10K.org; Lambert et al. 2025
Wimahl chinnokensis	UWBM 88078	Peredo et al. 2018
Kentriodon diusinus	FCMM 2387	Salinas-Marquez 2014
Kentriodon obscurus	CAS 4347; LACM 21256	Kellog 1931; Barnes and Mitchell 1984
Kentriodon nakajimai	GMNH PV 91, 3245	Kimura and Hasegawa 2019; Surface scan from Sketchfab.com
Kentriodon schneideri	USNM 323772	Van Rompaey et al. 2026
Kentriodon sugawari	NMHF 999	Guo and Kohno 2021
Kentriodon hobetsu	HMG 387	Ichishima 1994
Kampholophos serrulus	UCMP 36045	Rensberger 1969
Rudicetus squalodontoides	MB specimens	Biannuci 2001
Kentriodon hoepferni	MNU 071/18	Kazar and Hampe 2014
Sophianacetus commenticius	MTM V.93.2	Kazar 2005

Delphinodon dividum	USNM V 7278	Surface scan from Phenome10K.org
Squalodon calvertensis	USNM PAL 328343	Surface scan from Phenome10K.org
Platysvercus ugonis	UTHFM 00034	Guo and Kohno 2023
Eurhinodelphis sp.	USNM PAL 244404	Surface scan from Phenome10K.org
Delphinus delphis	FMNH 127168	Field Museum Collections photographs

Systematic Paleontology

Order CETACEA Brisson, 1762

Suborder ODONTOCETI Flower, 1867

Infraorder DELPHINIDA Muizon, 1984

Family KENTRIODONTIDAE Slijper, 1936

Genus indet.

Species indet.

Figures 4-8, Table 1

Referred Specimen- UOMNCH-F-37129. Partial cranium with 2 posterior maxillary teeth.

Locality- UO 3872 Schooner Creek

Description

UOMNCH F-37129 is a partial, small cetacean cranium with symmetrical morphology, having a slight incline of about 20° from the vertex, or the dorsalmost point of the skull. Importantly, many sutures throughout the specimen are not fully fused. The premaxillae and maxillae have a deep groove between the sutures (2.8 mm wide, roughly 5 mm at the deepest point), the suture between the interparietal and exoccipital is a well-defined arrow shape (Figures 8 and 12), and none of the bones that meet at the vertex are fused and have gaps as wide as 2 mm; all this

suggests that UOMNCH F-37129 may be a subadult. It retains most of the rostrum, which makes up more than half of its overall length. Like the rest of the cranium, the rostrum is symmetrical and relatively wide, with its widest point at the antorbital notches at 164 mm. It gradually tapers along its lateral edge anteriorly, made up of the maxilla and the premaxillae. Unfortunately, the anteriormost end of the rostrum is missing, as are the mandibles, tympanic bullae and post-cranial skeleton.

The premaxillae are narrow at the apex of the skull, and widen anteriorly while twisting laterally, so that they face almost completely laterally at the anterior extent of the preserved portion of the skull. At the apex of the skull, the premaxillae connect to the nasals and maxilla. Anterior to the apex, the premaxillae are laterally convex at their widest point before tapering off gradually at the mesorostral groove into a flattened, anteriorly pointed orientation. The left and right premaxillae do not meet at any point in the mesorostral canal, although they do curve towards the midline at the anterior end of the naris and just barely connect with the mesethmoid. The premaxillary sac fossae are shallow and smooth and are more excavated on the medial halves than the lateral halves.

The maxilla fans out mediolaterally from the base of the skull towards the ventral edges; this results in the ventral side of the maxilla being visible on the underside of the skull. There are five infraorbital fenestrae on the dorsal surface of the maxilla. On the left side, two are just posterior to the infraorbital notch and are of equal size (4 mm) spaced 3 mm apart laterally and 9.2 mm distance from the antorbital notch. A larger fenestra (4.8mm) is present sub-equal in height to the antorbital notch and is also the same height to both premaxillary foramina, of which there are two at equal radii (5 mm). The right side of the maxilla retains two fenestrae, the larger one also level with the antorbital notch and premaxillary foramina, and the other, smaller one

just posterior to the antorbital notch. The antorbital notches themselves are deep and narrow, almost level to the mesorostral groove at an angle of approximately 50°. The maxillae appear thin from the jugal to the posterior portion of the maxilla's end, and do not cover the jugals completely, leaving about 5.5 mm visible on the dorsal surface. On the left side, the maxilla has a slight impression just superior to the postorbital process and has two lateral infraorbital fenestrae visible on the dorsal surface. The right side retains only one fenestra that is shallower than the left side but has no concave depression, and the ascending process subtly curves upwards toward the suture with the frontals.

There is a missing piece of the left maxilla about 18.5 mm long that includes almost the entirety of the left side of the frontals, but the maxilla-frontal suture is just visible on the right side. Only the right side of the lateral surface of the frontal is left after taphonomic processes, 52 mm laterally along the maxilla-frontal suture and 4.7 mm anterioposteriorly. The frontals' posterior suture to the interparietal is broken but shows a clear suture, making a zigzagging line that should contact the interparietal. Both sides of the ascending process of the maxilla at the anterior and lateral sutures of the nasals curve almost completely posteromedially, making defined concave impressions on the lateral sides of the vertex.

In ventral and lateral view, 37 alveoli for single rooted teeth are visible along each of the maxillae with only two posterior maxillary teeth still present in the specimen. Both teeth are equal in size and shape (~9.4 mm tall, 2.9 mm in diameter) which curves lingually and have smooth surfaces, lacking striations with little to no sign of wear. In the ventral view of the maxilla, five fenestrae are present on the palatal surface, and all appear quite shallow, with the largest two on each side of the medial plane separated by the vomer. The vomer is not visible in dorsal view as a lithified matrix has filled in the mesorostral canal. The vomer is very narrow

(1.2 mm at widest), broken off anteriorly where the rest of the rostrum is missing and has a faint U-shape at the rostral cross-section. In the palatal area, no fenestrae are visible, although there is damage to this part of the skull that makes it difficult to distinguish between a morphological feature or a preparation result. The palatines are short but far from the antorbital notches (30 mm distance), extending anteriorly 20.5 mm long.

The pterygoids project far enough ventrally that it is visible in lateral view at an angle of roughly 15°. The sinuses are approximately 18 mm deep, and 12 mm wide from the hamular process to the medial edge of the bone. The choanae are filled with matrix and their depth to the dorsal surface of the naris is obscured. The pterygoids are slightly separated by a thin, shallow canal that separates them the entire length of the hamular process; this suggests it is an unfused suture, with the vomerine crest starting just posterior to where the canal ends. There is damage and unprepared matrix obscuring most of the basisphenoid; therefore, it is unclear exactly where the vomer's posterior portion ends. There is a thin piece of bone roughly 2.5 cm long out of place on the ventral surface of the basisphenoid, just anterior to the basioccipital. Visually faint but present are two small fossae for the anterior lobe of the pterygoid sinuses directly posterior to the antorbital notches and jugals.

The muscular tubercle of the basioccipital is smooth but not completely level, as there is a subtle concave dip on both sides with 20 mm between them (about 8.5 mm from the midline) and ends at the crests of the basioccipital. The crests project posterolateral to the midline and are transversely thick throughout with spongy bone. Its posteroventral-most edge directs posteriorly before the jugular notch, with the crest flaring at an angle between 30-40°. Compared with the maximum width of the entire skull, the basioccipital accounts for 51%. The exoccipital in posterior view is squat and wide in overall shape, with a total width of 121.5 mm. The occipital

condyles lack a pedicle but seem not to have been completely ossified; the ventral side has mostly exposed spongy bone, and both dorsal and ventral condyloid fossae are undefined or absent. The wall of the hypoglossal foramen that it shares with the jugular notch is quite thin and narrow, and the paroccipital process flares concave to the sagittal plane and curves back posteriorly. The interparietal-supraoccipital suture is an arrow shape that points dorsally, exposing more spongy bone down the medial portion of the exoccipital from the dorsalmost tip to the foramen magnum (30 mm long).

The nasals are taller than they are wide, and the posterolateral edges are pointed slightly posteriorlaterally. Their height is equal to the height of the apex of the ascending process (18.5 mm). The nasal fossa is evenly separated by the mesethmoid, which protrudes dorsally and is just barely inferior to the nasal height. The frontal-nasal suture is well defined with no visible fusion on the apex. The posterolateral bulge of the maxilla is caused by the tallest point of the nasals, making the suture a wide U-shape. The interparietal is fractured in most places and caves inward to the braincase; its thin formation was likely susceptible to most taphonomic pressures during fossilization. The bone at its anterior end is spongy, smoothing out as it descends posteriorly and inferiorly. The largest piece of interparietal is 29 mm wide and about 42 mm long from the frontal suture to the supraoccipital suture. The frontal-parietal suture is only clearly visible on the right side, the two connecting on a slight posterolateral angle. The parietal on the right side seems continuous with the temporals, while there is taphonomic damage on the left side that crushes the parietal into the brain cavity. The parietals are concave medially towards the midline of the skull, and slope tightly posteriordorsally where there is a moderately sized gap of matrix and fractured bone. This is likely where the supraoccipital would be but has preserved poorly. The temporal crests are mostly obscured by matrix but appear to concave on the dorsal

surface and have a dorsoposterior curve. The temporal fossae are dorso-ventrally shorter than they are long from posterior to anterior and are partially roofed over by the lateral expansion of the maxillae.

The squamosals protrude anterolaterally from the temporals, and their width narrows briefly before widening into a slightly squared, rounded edge toward the zygomatics; the bone is long (about 46 mm) and the zygomatic process has a robust arch that curves anterodorsally towards the postorbital process of the frontal. This leaves a small, 9 mm gap between the bones. The falciform process is short and not visible in lateral view, and the squamosal plate is concave on the dorsal surface like a shallow bowl. Additionally, the squamosals extend laterally so that they are visible in dorsal view. There is a distinct ridge on the ventral surface of the postorbital process of the frontals that follows the lateral portion, giving the process a three-dimensional pyramidal shape that protrudes interiorly. The orbitals and the maxilla line up almost perfectly along the sagittal plane, giving the skull a dorsoventrally flattened look. The thickness of the supraoccipital process, between this ridge and the lacrimals, is about 10 mm and thickens slightly anteriorly as the preorbital process. The lacrimals make up the posterior walls of the antorbital notches and are not fused to the maxilla, and the orbital process is subtly pointed laterally. The jugals are fused with the lacrimals, thin, and pointed posteriorly into a delicate triangle.

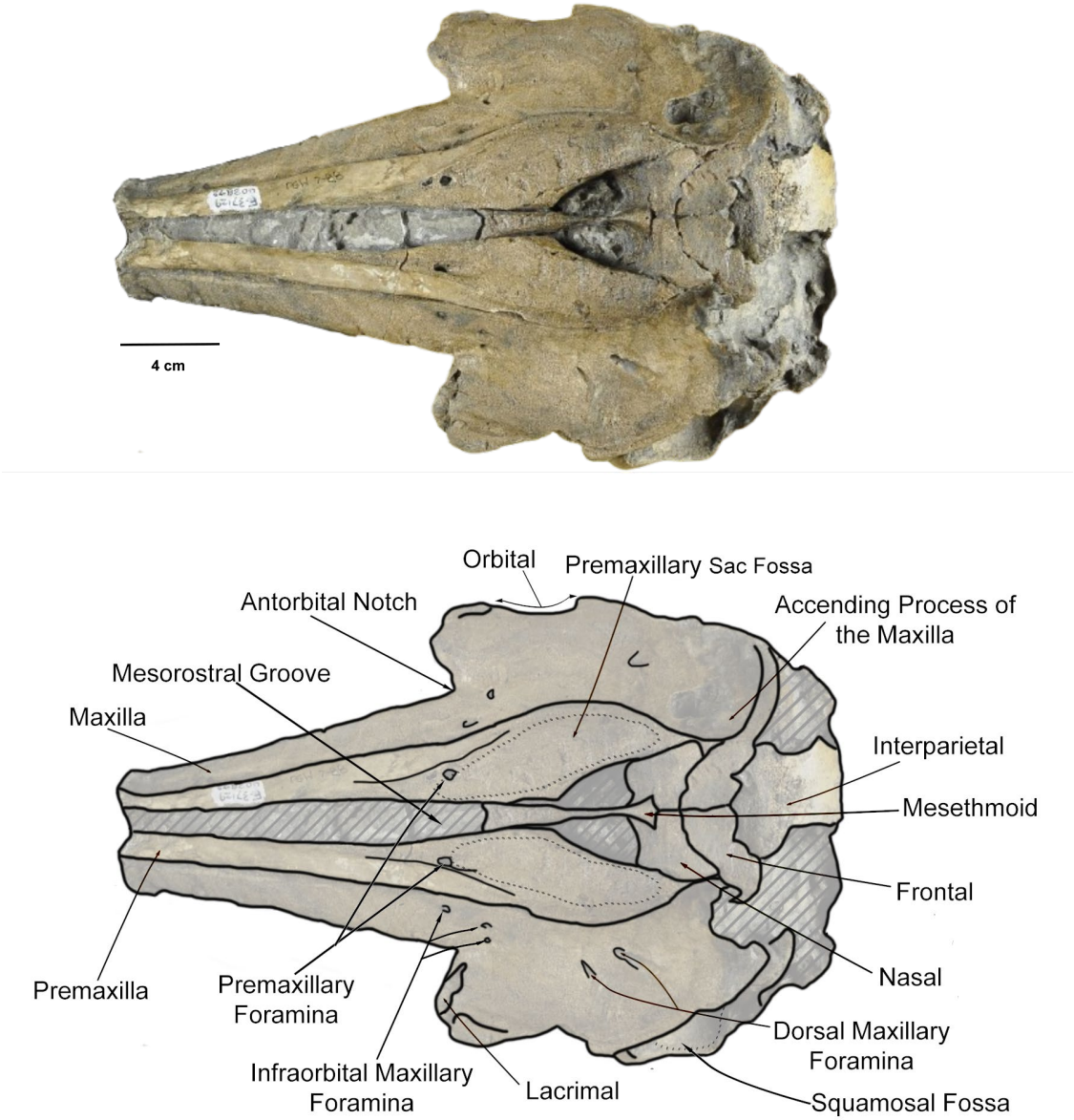
The external auditory bullae are both missing from the specimen; it is well known that these bones are only weakly attached to the skull, even in some mature individuals (Nobile et al. 2024; Yamoto et al. 2016; Oelschläger 1988) The periotic fossae are ovular and bowl shaped, roughly 11 mm wide from the medial wall to the lateral edge that meets the tympanosquamosal recess. Unfortunately, the depth of the fossae cannot be determined as the recesses have filled with matrix. Other morphologies of note include a fragment of thin bone trapped in the foremen

magnum (16 mm wide), almost completely perpendicular to the occipital condyles, wedged on the transverse plane of the specimen. Its fragility and rounded edge suggest that it could be a fragment of the braincase that broke inwards and floated around, eventually lodging in the middle of the foramen.

Table 2. Measurements of UOMNCH F-37129 in mm; Abbreviations: *I*, estimate; +, incomplete; r, right; l, left.

Dimension	Measurement
Condylobasal length	225.5+
Rostrum length	118+
Width of rostrum at base	86.6
Width of rostrum at mid-length	*59*
Distance from rostrum tip to anterior end of palatine	77.5+
Greatest width of the pterygoids	61.5
Width of premaxillae at rostrum mid-length	*38*
Maximum width premaxillae on the neurocranium	71.8
Width of right premaxillary fossa	*22*
Width of left premaxillary fossa	*22.7*
Greatest width of maxillae	151.2
Distance between last left and right maxillary alveoli	63
Distance between last maxillary alveoli and antorbital notch	27.1(r)/23.9(l)
Minimum number of upper alveoli per row	18(r)/19(l)
Width of mesorostral groove at rostrum base	10.2
Width of nasal bones	44
Greatest width of the external nares	*35.7*
Height of the nasal bones	*19*
Height of the ethmoid just anterior to the nasal bones	*12.5*
Length of medial suture of the nares	5.8
Length of medial suture of frontal at the vertex	13.7
Maximum length of frontal at the vertex	*17.3*
Greatest preorbital width	151.2
Greatest postorbital width	*159.6*
Bizygomatic width	164
Length of temporal fossa	*44.8*(r)/*47*(l)
Height of temporal fossa	35.4(r)/*47*(l)
Minimum distance between temporal crests	*102.8*
Length of orbit	45.7(r)/44.4(l)
Squamosal length	46.4(r)/47(l)
Width of squamosal fossa	*17*
Width across occipital condyles	59.8
Maximum distance between basioccipital crests	77.9

Width of the foramen magnum	26.6
Height of the foramen magnum	27.9



(Previous) Figure 4. UOMNCH F-37129 in dorsal view.

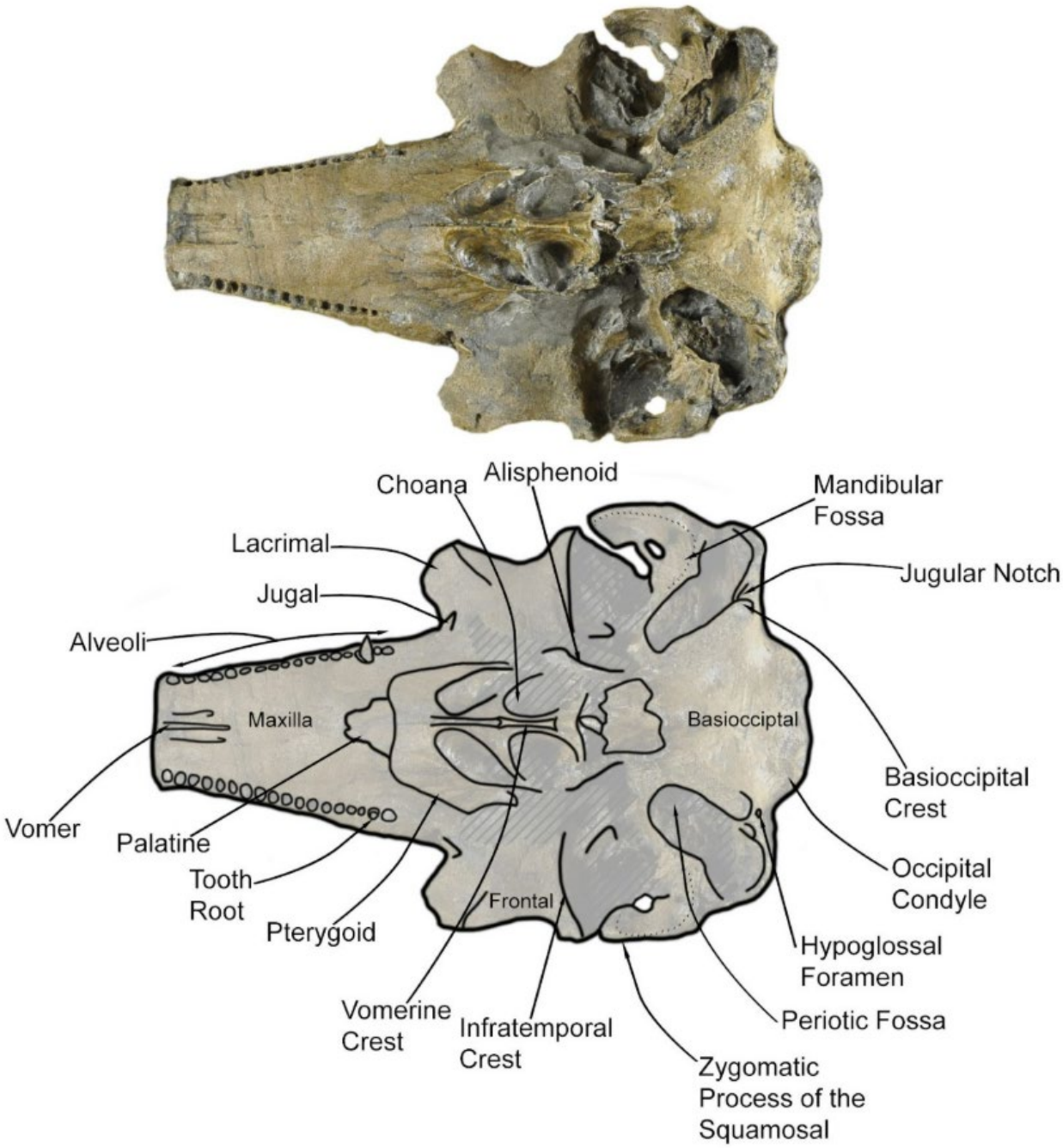


Figure 5. UOMNCH F-37129 in ventral view.

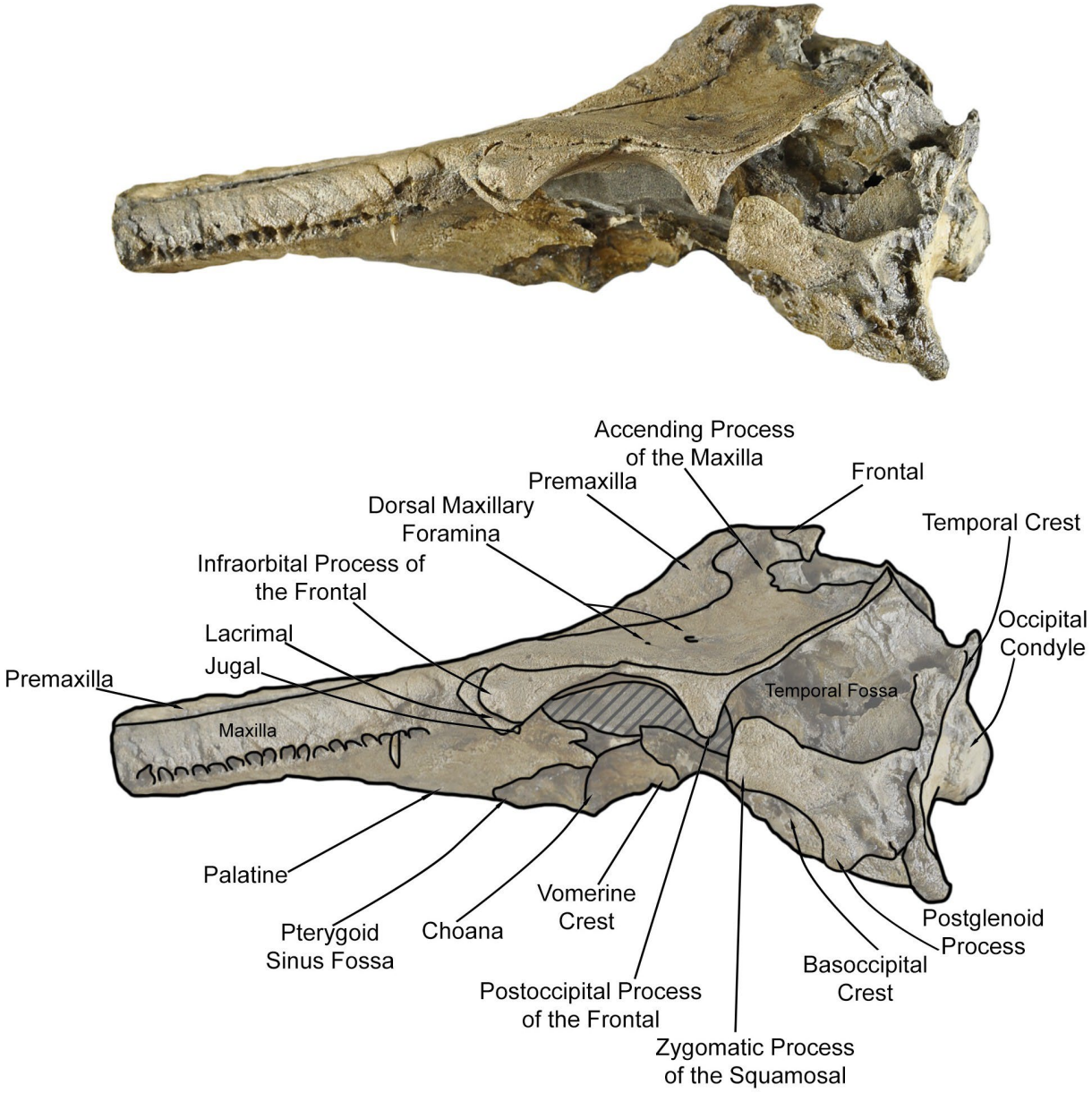


Figure 6. UOMNCH F-37129 in lateral view.

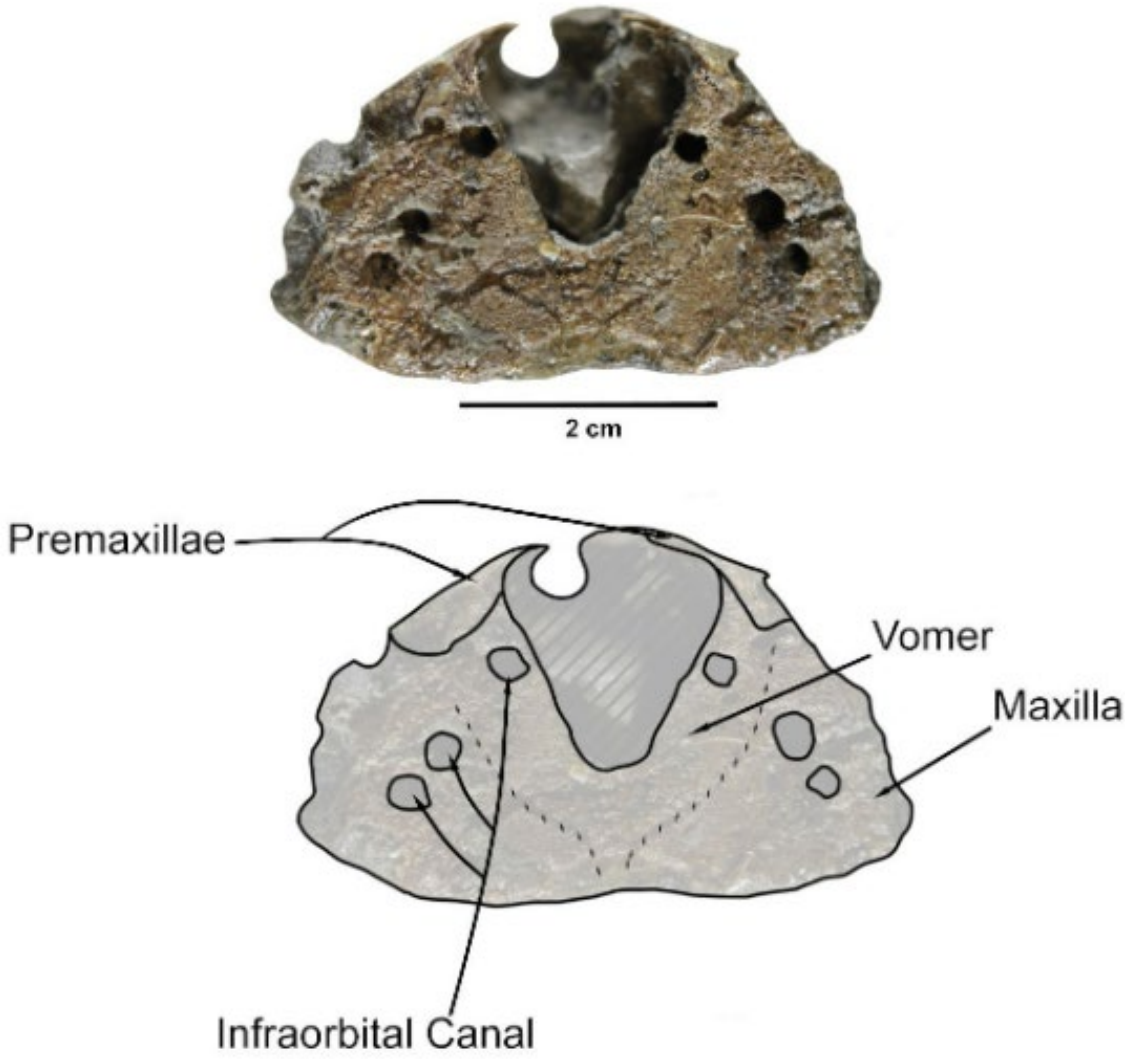


Figure 7. UOMNCH F-37129 in anterior view.

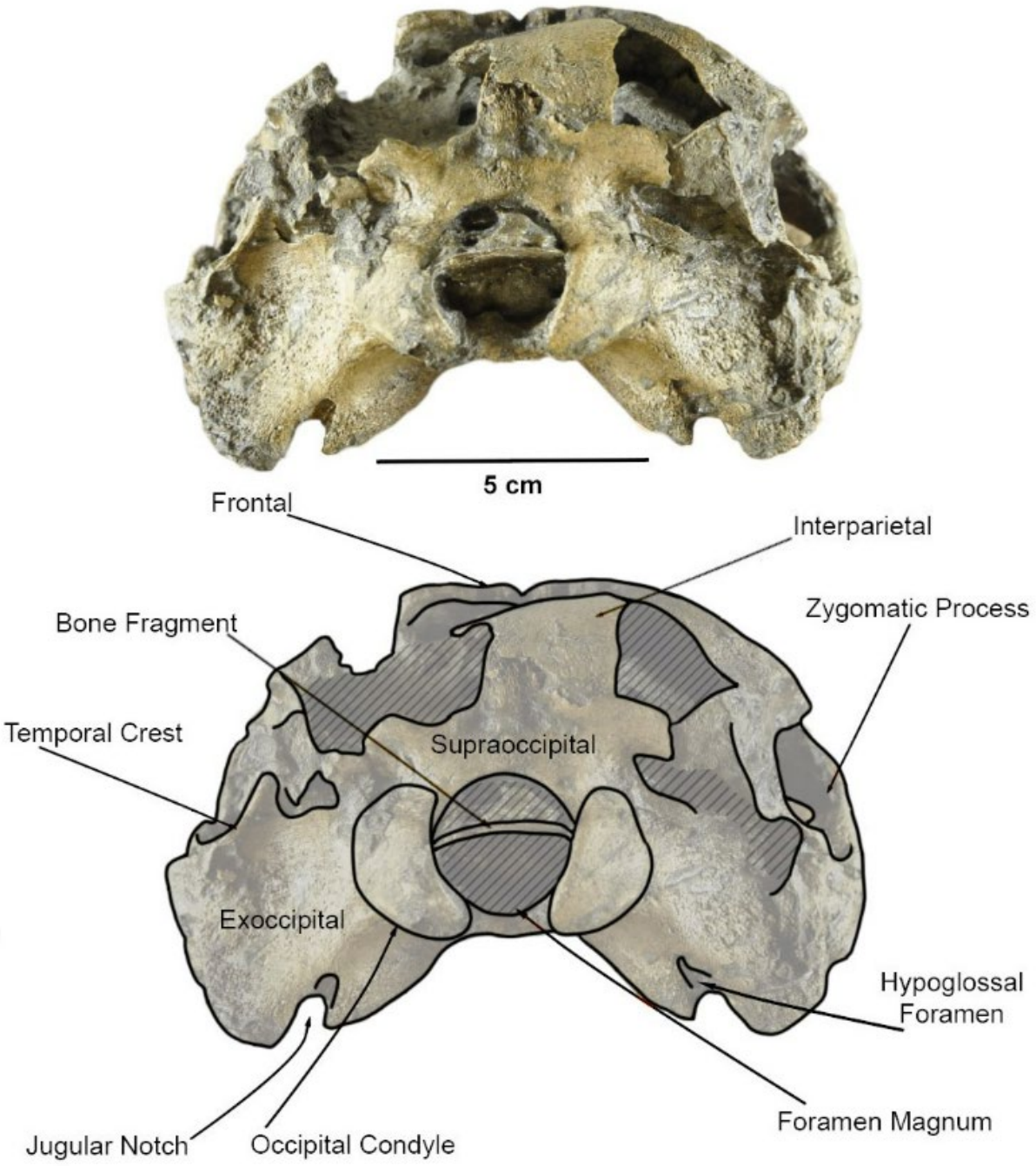
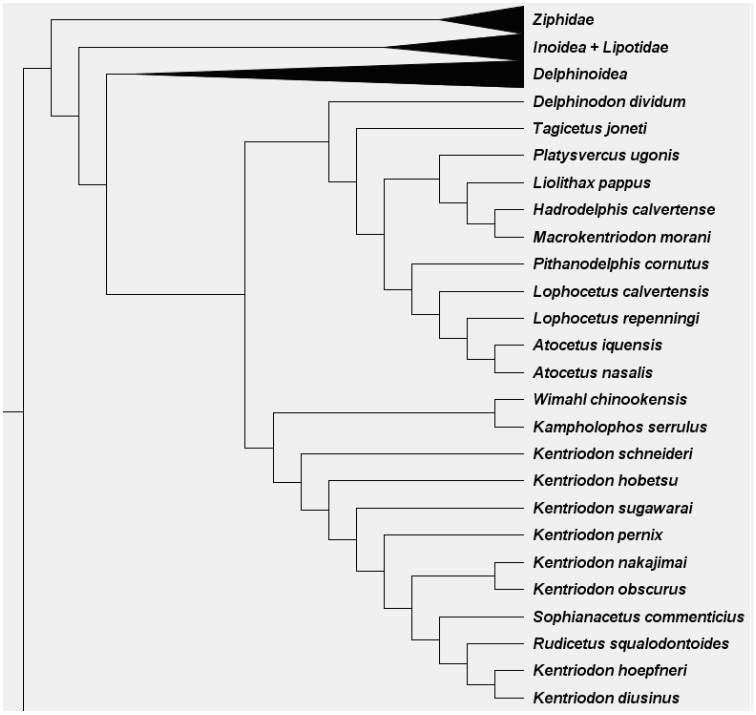


Figure 8. UOMNCH F-37129 in posterior view.

CHAPTER III

RESULTS

Results from Guo and Kohno (2023) were successfully replicated, retaining 52 most parsimonious trees with a length of 3384, before I repeated the New Technology Search with UOMNCH F-37129 added to the original data matrix. The new search found 91 trees with the lowest tree score of 3390, placing UOMNCH F-37129 within the family Kentriodontidae, after a runtime of just over 4 hours and 40 minutes. The analysis clearly showed that the specimen belongs within the family, and toggles between three possibilities: a basal member of *Kentriodon*, a basal member of *Wimahl* and *Kampholophos*, or as a basal member of the entire clade. A 50% majority rule consensus of all retained trees (Figure 10) places UOMNCH F-37129 at the most basal level in a trichotomy with *Wimahl* and *Kampholophos.* A strict majority-rule consensus of the 91 trees (Figure 10) collapsed the last six branches of Kentriodon into a polytomy but resulted in the same placement for UOMNCH F-3712 as the 50% consensus.



(Previous) Figure 9. A 50% majority rule tree resulting from the original 52 most parsimonious trees after replicating methods from Guo and Kohno 2023.

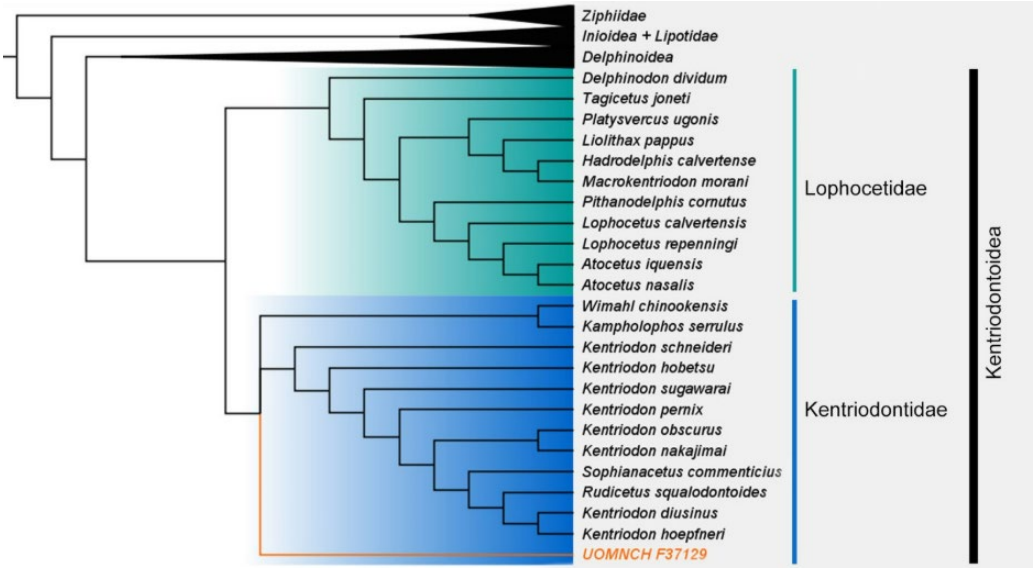


Figure 10. A 50% majority rule tree resulting from the retained 91 most parsimonious trees. UOMNCH F-37129 (text in orange) consistently stays within Kentriodontidae (highlighted in dark blue) as opposed to related families.

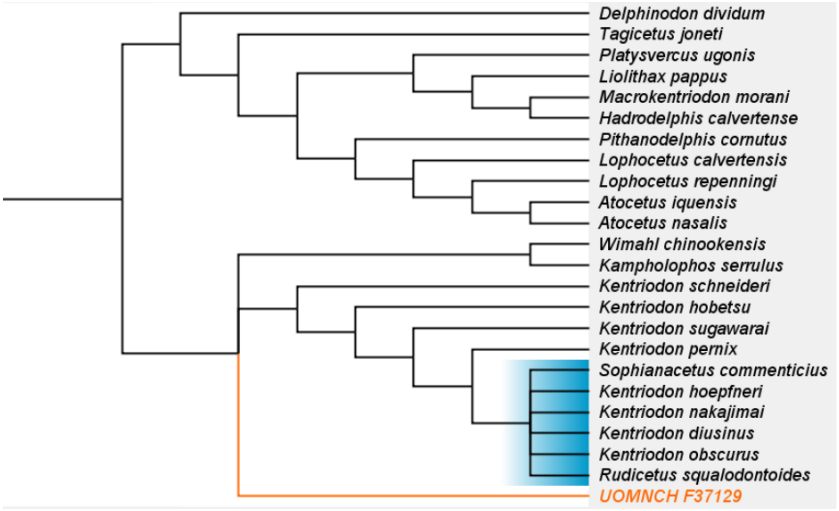


Figure 11. A strict consensus majority rule tree resulting from the 91 retained most parsimonious trees. After including UOMNCH F-37129 into the data matrix, *K. hoepfneri, K. nakajimai, K. diusinus, K. obscurus, Rudicetus* and *Sophianacetus* all collapse into a polytomy at the most derived end of the tree (highlighted in blue).

Character Comparisons

Six characters consistently support the monophyly of the family Kentriodontidae in all of my most parsimonious trees. UOMNCH F-37129 is confidently placed in the family based on the specimen possessing two of these character states: in kentriodontids, the zygomatic process has a clear flange on the anterodorsal side which articulates with the frontal, and the pterygoids on the ventral side partially connect with each other. The other four characters that group this clade together pertain to the periotics, which UOMNCH F-37129 is missing. However, the specimen shares enough characters with other members of the family that placement outside of it would be substantially less parsimonious. These characters provide support for UOMNCH F-37129 at the base of the clade seventeen times out of the total ninety-one most parsimonious trees. When not placed at the basal node, seventy-three placed UOMNCH F-37129 within Kentriodon, and one of them placed it at the base of the branch containing Wimahl and Kampholophos. Forty-three of these trees were decided by character #27: the presence or absence of an ectocingulum on the cheek teeth. This trait aids in protecting the gums and reinforcing the tooth when masticating (Loch and Lopes 2013; Anderson et al. 2011). Wimahl and Kampholophos do not possess an ectocingulum, but only some species of Kentriodon do; K. sugawari, K. hobetsu and K obscurus have this character as inconclusive due to incompleteness. This character is the only one across trees that seems to influence placing the specimen as a basal Kentriodon, suggesting it is an important but ambiguous character.

Like *K. obscurus* and *K. nakajimai*, the specimen possesses two maxillary foramina on the posterior area of the bone, closer to the ascending process than on the supraorbital process of the frontal. However, the mesethmoid being nearly flush to the premaxilla is a character state it shares with K. diusinus, which is marked inconclusive with *K. obscurus* and *K. nakajimai*. The vomer's posterior area in relation to the basicranial bones in UOMNCH F-37129 is like

Kentriodon schneideri in that the posterior end of the vomer ends at the anterior edge of the basisphenoid. *K. schneideri's* holotype is a partial cranium that is missing more material than this specimen, an issue of preservation that is consistently present in the fossil record of kentriodontids (Nobile et al. 2024). It is on the basal-most branch of the family and is the only other kentriodontid taxon to share this character state with UOMNCH F-37129 in which the vomer covers the basisphenoid and ends at the basioccipital.

What seems to keep UOMNCH F-37129 from definitively being placed in any currently recognized genus within this framework is the lack of characters that group them together. Without the framework put in place with Guo and Kohno (2023), general diagnostic criteria of Kentriodon would apply to UMNCH F-37129, such as the slender rostrum relative to the short braincase, spike-teeth that lack accessory cusps, large nasal bones anteriorly facing and an obvious antorbital notch among other descriptions (Kellogg 1927). The dorsal edge of the specimen's orbitals is slightly low relative to the height of the lateral edge of the rostrum, somewhere between 50 and 92 percent of the base of the rostrum.

There are also several important differences from the current Kentriodon hypodigm. In Kentriodon, the orbitals are less than 45 percent of the base of the rostrum. Because the specimen is missing most of the teeth, the position of the inflection of the premaxilla, adjacent to the nares, is inconclusive; some of the character states are based on the location of the P1. The length of the zygomatic process in UOMNCH F-37129 is less than 30 percent of the width of the maxilla at the postorbital process, where in most Kentriodon, the percentage is greater. Additionally, the occipital condyles in Kentriodon rest on a pedicle, whereas UOMNCH F-37129 lacks one. On the other side of the tree, a similar issue of lacking characters keeps the specimen from a confident Wimahl and Kampholophos placement. The ratio between the greatest width of the

premaxillae to the maxillae at the postorbital process is between 0.49 to 0.38 in the specimen, where in *Wimahl* and *Kampholophos* the ratio is evenly split at 0.50. The posterior portion of the nasals face anteriorly and partially dorsally in the latter, where in UOMNCH F-37129 they only face anteriorly. Other than knowing the presence of the temporal crest, taphonomic damage to the specimen leaves more specific characters inconclusive, which unfortunately are unique to both *Wimahl* and *Kampholophos* by being almost completely horizontal dorsally and directed laterally. UOMNCH F-37129 possesses shallow dorsal condyloid fossae like in Wimahl and Kampholophos, though they are much less prominent. This reflects a broader trend where the specimen's traits frequently approach, but do not quite reach, the diagnostic thresholds required for a more specific placement on the evolutionary tree.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

Phylogenetic Implications

UOMNCH F-37129 shares with *K. schneideri* a vomer where the posterior end terminates at the anterior edge of the basisphenoid (character 222), which is either a plesiomorphy or an apomorphy that is reversed in the other members of *Kentriodon*. While the results from Guo and Kohno (2023) were able to be replicated without UOMNCH F-37129, its topology yielded a polytomy in the strict consensus. This topology presents challenges to the non-monophyly of the Kentriodontidae that need to be addressed. Many of the holotypes and paratypes used for phylogenetic analysis are incomplete crania, some missing the tympanic bullae; however, others including *K. schneideri,* are based on the tympanic bullae alone, creating a challenging basis for comparison with many characters missing across defining taxa.

UOMNCH F-37129 is similar to many holotypes of Kentriodontidae, in that it is also missing many characters. On average, taxa within the family are missing forty-three out of 84 characters that are found from the tympanic bulla and periotic; this disparity is even greater when combining the ear bone characters with the postcranial characters, where the number of missing data increases to one hundred and nine out of one hundred and eighty-four. Overall, degree of completeness varies among all known taxa, but none of them reach a percentage over 90% (Table 3). The most complete holotype specimens included *K. pernix, K. sugawarai* and *W. chinookensis,* which possess at least 220 of the 387 total characters. The incomplete holotypes and paratypes deserve to be reevaluated and recoded for characters that are missing, as current conclusions of their diagnosis prove difficult to make comparisons with. Removing characters in a given character matrix that may change with an individual's ontogeny might help this issue.

Table 3. List of taxa within kentriodontidae and percent of character completeness based on character type.

Taxon Name	% of total characters	% of bulla/periotic characters	% of cranial characters	% of postcranial characters
UOMNCH F-37129	41.6	0	51.1	0
Rudicetus squalodontoides	43.1	0	53	0
Kentriodon obscurus	35.5	59.5	39	0
Kentriodon diusinus	45.5	0	54.6	5.6
Kentriodon nakajimai	62.5	84.5	73.3	15.3
Sophianacetus commenticius	31.8	69	38.7	1.4
Kentriodon pernix	77	98.9	90.4	18.1
Kentriodon sugawarai	60	91.7	73.7	0
Kentriodon hoepfneri	21	73.8	22.5	13.9
Kentriodon hobetsu	26.6	0	32.7	0
Kentriodon schneideri	34.1	0	41.9	0
Kampholophos serrulus	48.1	61.9	58.1	4.2
Wimahl chinookensis	72.9	84.5	79.7	43.1

Based on the results of the retained trees, two possibilities are presented for a diagnosis of UOMNCH F-37129. One suggests that the specimen could be an unnamed basal species belonging to the Kentriodontidae. Another, more likely suggestion, is that the specimen is a subadult of a known species that we are unable to assign it to because some of the diagnostic characters are defined as ratios that likely change throughout ontogeny. As mentioned in the *Character Comparisons* portion of the "Results" section, many characters have specific thresholds that may place a character state as one or the other, and ontogenetic changes in the relative size of skeletal dimensions may shift a specimen from one state to another. These spectra

could very well be influenced by the development of an individual as it ages and might not represent traits of specific taxa. Ultimately, I assigned UOMNCH F-37129 to Kentriodontidae gen. et sp. indeterminate rather than to a specific genus or species, because of the lack of agreement within my retained trees and which characters determine placement.

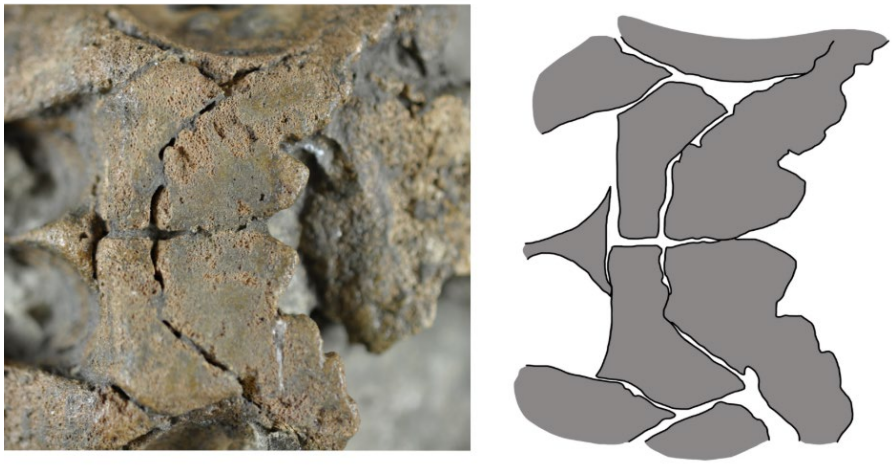
Character States and Ontogeny

An important but seemingly often-overlooked aspect of describing taxa within Kentriodontidae is detailing the evidence for a specimen's ontogenetic status. While some characters can help hint where a specimen was in its development at the time of preservation, better developmental criteria are needed to place some juvenile or subadult kentriodontid specimens into a more secure phylogenetic context. Characters that pertain to the occipital bones and degrees of fusion throughout the specimen may vary greatly depending on developmental status, and as a result offer less phylogenetic information.

For example, character #155 is dependent on the presence of the interparietal, being present or absent/fused to the parietals and/or exoccipital (Fig 12). However, sutural fusion is not a reliable character on which to reliably base species diagnoses as it could differ with maturity of specimens within a species. Singling out the suture fusion between the interparietal and exoccipital is specifically unadvised, as it is the most common suture to ossify in modern cetaceans (Telizhenko and Gol'din 2025; Bärmann et al. 2012). The same can be said for character #16, which focuses on the degree of sutural fusion where the maxilla and premaxilla meet. Twelve other listed character states relate to fusion degree, or lack thereof.

Additionally, the degrees of bone length/width ratio relative to other bones in a specimen may have less to do with speciation, and more to do with developmental status. To reference a previous example, the absence or presence of a pedicle that the occipital condyles rest on

(character #231), may change as an individual ages (Melor et al. 2009; Calzada et al. 1997). Bones grow and stretch throughout an individual's life, for a variety of reasons; while some are functional or stress related, others can be as simple as growing larger or more robust to survive as an adult (Coombs et al. 2022; Roston 2019; Mead and Fordyce 2009). It's very possible that UOMNCH F-37129 is not only missing characters, but that the character states it shows are in-between stages that do not meet the current diagnostic criteria for possible species. For example, the specimen may be a sub-adult of *Wimahl,* but some of its morphology, such as the presence of deep dorsal condyloid fossa, places the specimen as basal rather than including it within the genus. Further comparisons of known mature specimens with specimens yet to be described, with a focus on ontogenetic differences, would be the next step to straighten out these potentially variable character states. It is essential to recognize that juveniles differ morphologically from mature specimens, to better distinguish ontogenetic stages, and improve the resolution of kentriodontid evolutionary history.



(Previous) Figure 12. (Left) A closeup of the dorsal surface of UOMNCH F-37129, focused on the sutures of the vertex. (Right) A schematic shows the lack of consistent fusion and many open sutures between bones.

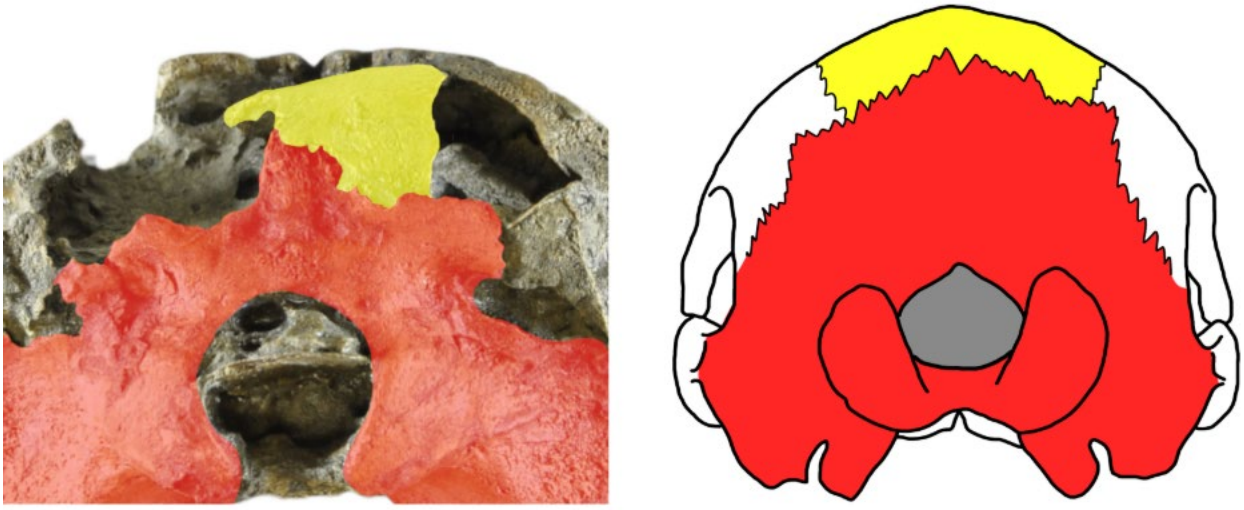


Figure 13. (Left) UOMNCH F-37129 and (Right) a generalized schematic of an odontocete (after Mead and Fordyce 2009). The suture between the interparietal (in yellow) and the exoccipital (red) on UOMNCH F-37129 is well defined, having broken along the shape of it.

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APPENDIX

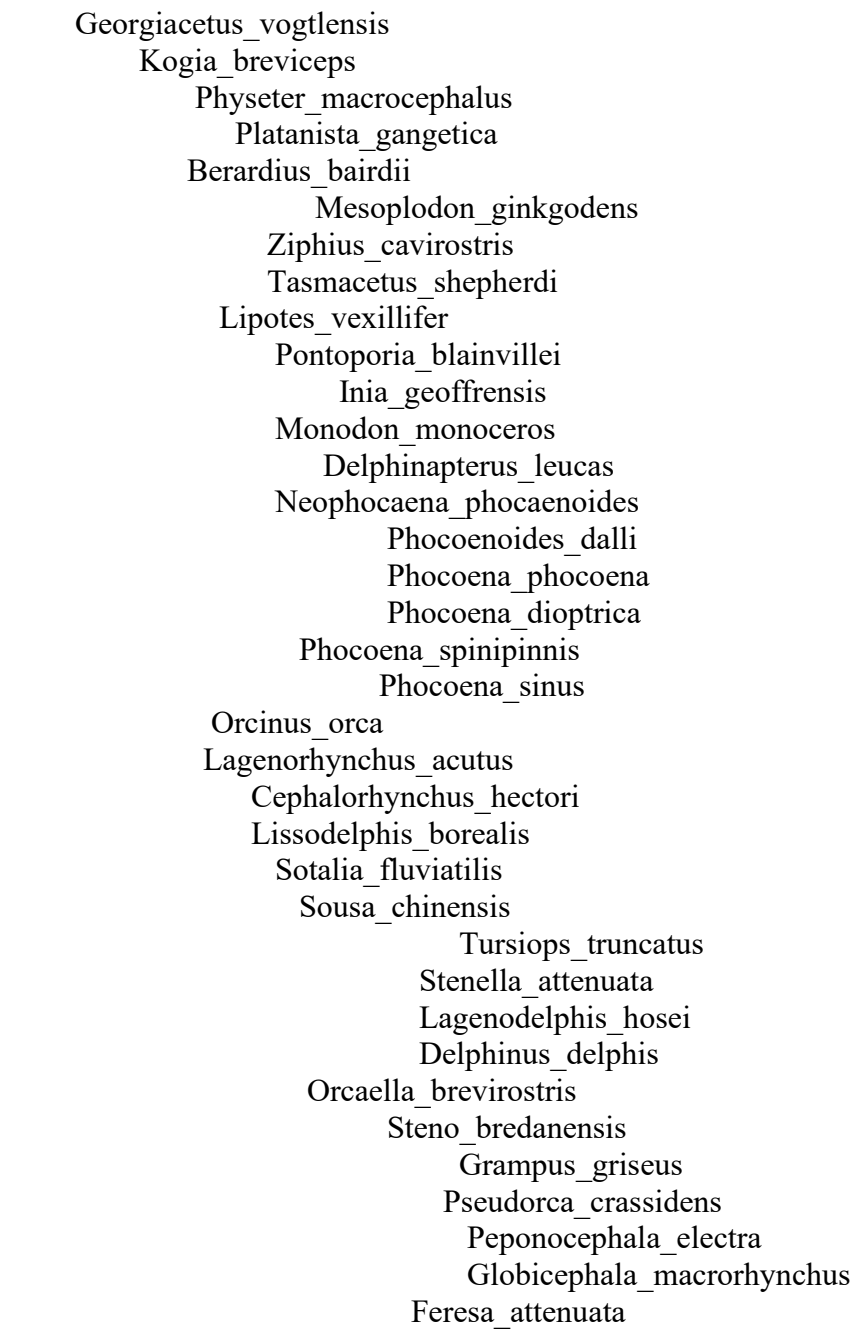
Supplementary Material

S1. TnT output from my phylogenetic analysis.

Reading from C:\Users\alq\Downloads\Guo_2023_UO_for_TNT
Matrix (388x108, 16 states). Memory required for data: 0.79 Mbytes

1 trees read (trees 0-0)

Tree 0:



Time 1.27 secs.
Read
    0 negative constraints
    25 positive constraints
Space for 10000 trees in memory

Constraints is ON
Random seed is 1
0 trees in memory

Repl.	Algor.	Tree	Score	Best Score	Time	Rearrangs.
1000	FUSE	157	------	3390	4:41:55	368,133,743,692

Completed search.
Total rearrangements examined: 368,133,743,692
Constraints enforced during search.
No target score defined. Best score hit 1000 times
Best score: 3390. 91 trees retained.
Time 16915.05 secs.

Note: for consensus calculation, trees will be
temporarily collapsed (when min. branch length = 0)
Strict consensus of 91 trees (0 taxa excluded) calculated. as tree 91

Note: for consensus calculation, trees will be
temporarily collapsed (when min. branch length = 0)
Majority rule tree (from 91 trees, cut 50) calculated as tree 92
Time 0.06 secs.

S2. Data matrix from Guo and Kohno 2023 with UOMNCH F-37129 included.

#NEXUS
begin data;
dimensions ntax=108 nchar=387;
format missing=? symbols="0~9ABCDEF";
matrix
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Inia_geoffrensis
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0010001000 00?212??0001110?20?10010??00110?0011011
Pontoporia_blainvillei
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Pliopontos_littoralis
?00??00?0??11??310?11?0?0??000122??????????0{23}0{01}{12}0?????1??10000{01}012101
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100110??200?00??1221101000???1?2100{234}{123456}?1{12}{5678}1??????????????????
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Brachydelphis_mazeasi
001010{01}00121110211 1?1?0?0??0????????40?1??10302001 1?0?21110101{12}01210110020
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Atocetus_iquensis
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Albireo_whistleri
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Denebola_brachycephala
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Delphinapterus_leucas
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Lomacetus_ginsburgi
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Archaeophocaena_teshioensis
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Haborophocoena_minutus
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Haborophocoena_toyoshimai
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Piscolithax_tedfordi
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Semirostrum_ceruttii
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Phocoena_spinipinnis
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Phocoena_phocoena
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213{23}{12}5010100111113011012 20?00121000?000?1100?21420111?012120100100111010
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Phocoenoides_dalli
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Lissodelphis_borealis
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Cephalorhynchus_hectori
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Lagenorhynchus_acutus
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Orcaella_brevirostris
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Orcinus_orca
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Feresa_attenuata
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Globicephala_macrorhynchus
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Grampus_griseus
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Hemisyntrachelus_cortesii
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01101{01}551501?1?001110?1001210??00102{12}01??0010100?0???2010110 3?20?00202011
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0????3?3111102??100????2?????001????1????2?2?????0????{12}0??01{23}{34}???{12}?10?
1???0??000011???????10??1021?1111011?020?1?34?0?{45}01??111?????12020??111102????
??????????????????????????????
Peponocephala_electra
1101110200012102111112???11000102001{45}100112010 2?03110130111{02}012012201101
156{12}501?11001110211012 10??00102121?00010100?024120101203120001202011?20030?
0?10102011?000020020010203121210100022131 21?10100110302{12}?0010?310?1??4{01}31
110021?000?01020?0011011?2013111202{01}00000{23}{12}1110000133???{12}100{34}110
101?000011010110010101001111111011??22?21??????0???2112101110110??11110??00110?10
100001101110110100 1?002
Pseudorca_crassidens
31011102000111{01}21111120?0??000111011{01}100100021110311013011 0{23}002012101
1111{05}5{12}50101{01}0011102{01}{01}012100?001121{12}1?0001???0?024?2010110312
010020201101003 0?02101020111{01}001200{12}00001?2011210101022 1?120?10100012303
210010?310?1??303111002110001010 20?0000011?2013111301001000{23}23120000132???21
00411010010000010101000101010011111110?{01}?022?3165?01{45}01?{01}1?111010{01}0
0000011?102?00110?10100001101010110100 1?003
Delphinus_delphis
100110020221150013111 20?011000112011710011201012121101100 11{23}002012101101055
150101000111021101210 0?001021{12}1?0001011 0?014120101103120001202011?100300101
010201110011200200001 03{12}112101000221312011010011020201111 0?310?1??{34}03111
002{01}110110102 0?0011012?2013110312100000212020000134???111031101011001011010
100010101001111101 1{01}1021?11{23}1?01{89}0??421121{01}1{01}10110??110102100110
?101000011011101101001?002
Lagenodelphis_hosei
010110020101250{12}131112???11000112011{67}100112010{12}?121101010113002002200
101155150 1?10001110?11{01}1210??00102111?00010110?024120101103120001202011020 0
30?0?10102{01}11?001020020000103211210100{02}221312{01}?101001102020?1110?310?1
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101?001011010110010101001111110110??22?21??0???010?211210111211 0??11110??00110?1
010000110101011010 01?002
Sousa_chinensis
200110002121150211111 2???110001?2011610010101{01}{01}?0311013001{01}0002012101
101155150 1?11001110?{01}001{12}10??001{12}2111?00010100?0{01}41201011031200002
02011?00030?0?10103011?{01}00021?200001131112101000221312011010001 0?021??110?{2
3}102100??3111002 0?000?0?0?0?0??????????0?1???0200???1??????0001???????10?110101???
001????1?0?????10????1???????20?21??0???010?211{02}101102110??111{01}0??00110?101
000011011101101001?002
Stenella_attenuata
200110{01}10121{12}502121112 0?011000112011{67}100112010 2?1{23}1101101113002012
201101154150 1?11001110?{01}1012100?001121{12}1?00010200?024120101103120000202 0
11?10030?01101020110001{01}20020000{12}032112101002221312 0?1010011{02}2020?111
0?310211?403111002{01}?10110102 0?0011012?2013111212100000212120000134???111030
101011001011010110 01{01}1010011{01}110110??22?21??0???01??2112101112{01}10001?1
10??00110?101000011011101101001?002

Tursiops_truncatus
10011002011115021211120?0110001?2001{45}10010201012131101{012}0011{23}01201210
11011{05}31401011001110211012100?00112?11?0001???0?033?????11031200?02020110100
30003101020111{01}011200200{01}0{12}?3111210100{02}221{23}120110100112{23}0211
1110?31021{01}0{134}0{13}11100211{01}001010201001?011?20131113021101003121?100
0132000211021101011000011010100010{01}11001101111111022?11{23}{12}0018010{34}2
11{02}{01}0111011000111102100110?1010000110111011010011002
Sotalia_fluviatilis
1001100101211502111112???110001?2011{56}1001020101?0311013{01}0101002012101101
1541501?1000111021{01}01{12}10??00112111?00010110?0{01}4120101103120001102011?
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?1?0011??1001?1110010??20?21??0???010?211210110201{01}??11010??00110?10100001101
1101101001?002
Steno_bredanensis
10011000112125021110120?0110001010{01}1{45}0000020{12}02?0{23}1101100111002012
20{01}1011551401?1100111021{01}012100?00102111?00010100?0222201011031200011020
11010030?0210102011?00102002000011322121010{01}0221?120110100110{23}02111010?3
1021{01}?40311100211{01}00101020?0011011?2?13111202100000{23}31111000133???{12}
110{34}010101?00001101011001000102110111010??22?11??????0???2112101112{01}10??1
1010??00110?101000011011101101001?002
Eodelphinus_kabatensis
??????1?????{12}3?{12}???11???????????2??????0?121{01}????????????110?120?210?0111?
{34}2501??0???1102?10{01}{12}000????1212??00???000?0?{23}?20101??????????????10?0?
300{01}?1??0??1?1002120010010?????12?01012221?12???0100?10{23}02{23}{12}0?{12}??
3102?0030?111???????????0201000001{12}?201311?30210{01}0?02{12}{12}0000001{23}{2
3}0001110?01010010000110100?0010101021111110?1?????????????????????????????????????
????????????????????????????????????
Papahu_taitapu
310??0000??11?0?1????0??0??0?????????????0?030120111110{03}0112002011201100113140
10100010?0110101200?0010?000400100000000130????11010100?000101001002??100010?11?
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10?101001123?30011??010?1??0??0012000134?0?101?????????????????????????????????????
?????10???
Waipatia_hectori
????????????????????0????????21???1?????????????????????????00???????????1??????????1?
?0???????????0???1?0?00???00001????10101310010010
?0?1???????????0??0??????????????1?0000200??11211?00??2?000?0?????????????????????
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Awamokoa_tokarahi
????????????????????20?????????1???1?????????????????????????02???????????????????01?0???
??000??????0101?2001?001??
????????????????????????????????????00??{123}????11????0????????????10121101??23?20?111
?12001010213020?00?230011011?00011??00?100011200?00001021{01}00020????0000??????
????????????002?2000?????????????????????????????????????

Waipatia_maerewhenua
?00?00000??101?210?20?11?101010?0?0??0000110201201110?0101020020211011001152401
0100010001100000000?001200005001{01}0000{01}0120????{01}1000200?0001011?10?2??10
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00002000000??101211111123?10211120200?0101100000001230011?11000011010011000??2
00100001021?00?20????00?0??????????????????????????????0?????????????????????????????
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Otekaikea_marplesi
?????0??????{01}?0?1??20????10??1????????????102?0?011???011?0200??2{01}????0??1{45
}1{45}010100010?011000{01}{01}01000120110?00?000000013121?011010100?1101011010
03??00001?1?110100{01}110200000011??110??????0??0??????0???????1?01?02001111??100
0??2?0?000??101211001123?1001111020010102220100001330111111000111010 0??001112?0
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Otekaikea_huata
201??0?????11{12}??1?120???110??????????0110?102???011?1?011?02001??1???????042501
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101?2?1111000110100000011??1????????0?????????0???????1?01?02001111??1000?0210000
0??101211001123?100111{12}1201?0101120100001330111111000111010 0????111???0?????
?????????????00?0???????00?????10101021200000010?????????????????????????????????
Squalodon_calvertensis
2100?000022121?310001??00101010?00??0?0000002012??10{01}?11?103012011101{01}010
152{45}01110001000110?01000?00100?1060020???00010?????10000200?0001011110030113
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4}10000002100000??10010111112{01}?2021110010000102120100101340000011200102110 0
21010??2?0?00??1021000120???120???????1?01????????10?0121??00?11?1?????????????????
??????????????
Notocetus_vanbenedeni
20001000022121?20?1010110100?00?1????0110?1020131?????11011200{01}02?1010002052
5111110010000100011 00?00100?00?00?1???0???1?????210101????1?1011?{12}003?{01}{01
}0{01}1102?11110002000100{01}1??11011000??310{23}111?1?00????{23}0??20?0??20??12
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00??000100001031000000???200????{0123456}??????????????102?02111?????????????????
????????????????????
Squalodelphis_fabianii
2000?0010221?402??1210?1010000001012401 10?201?1???????????020??022??000???5?5????
100?0?0???0?1000000?101?0?0001010????{34}????????????????0?011?2?03??000?1???1?1{0
1}0??2??100001001???????????0?????????????????2??00?20?????1?100??2?0100?0?????{12}
?111??23??0??11???????1????????????????11??????????002??1???0?0?0?????3??0??00???????
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Prosqualodon_davidis
0100100002111112000200000110000?00?10?0001?01020?1??1?010102{01}1{12}0101001000
14{12}5011110110001100010 00?00110?00500?0???00012?????{01}1000200?0101011?10?3?
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34}??00?002?001?0??12??0?????????0?11?????1?1?????????????????1?????01{01}101?????0

110????????????0?0??00????????????????????20?000102?021?????1011?????????????????????????
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Squaloziphius_emlongi
?????00?0??11??210?????????????????????????010{01}20111??01111201200110110020515011
1001100011000110??00120?00?000{01}000000220????11000100?0201020?10?3??{01}?001
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0101020?110???
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Zarhachis_flagellator
2000100002211402101111???10??00?20{01}170110020310{12}???????1?1220020111000002
16151111110100?010001000?00110?00?0021???00012?????20000200?0101010010030001{01
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00?002001010??121?1{01}001023?1001111010{01}001011{23}0{12}{01}1011{23}4???2012
0000{01}?1?0021?1010200{01}0011103111010010?100?0?66002{345678}010??????????????
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Pomatodelphis_inaequalis
20001000012214020011???????????????07?110??2310??1????0?112200?021100001216?501?1
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101?21001010100?0?2?1???131??111?0000??0?10????0?01300???12?3?0?0001?000000021?1?
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?????????0???
Platanista_gangetica
20101000022214020011110?0?????1?1111501100024101?1?1?03311221020{01}2301100115{
12}5110111010002{01}0011000?00110000?00210100?13{12}21?101000010001{01}110010{
12}101000000103111010002010111000001??120?013100111?0000120?10?320000130010?12
0300000{12}1100100?101{12}120101?31??01110010000112?32201111?30112112001011110
0200011120010010103111100000?000000{56}400?40?0{34}100000102??2111000{01}2?000
1111100?????10??0001010101010
Phocageneus_venustus
????????????????????????????{01}??
??
??121?1{01}00??23??0?111?
01?0??10???122?0????11211?1??01121?0021?{01}???00???010102???000????????????????????
??
ZMT_73
??
??2?02?????
???????????0???0???????????????0???20???21??1????????????0?100201111?23130?111??1000
010223122??0?340101110????????00???10112?????????31012010????????????????????????
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Urkudelphis_chawpipacha
?????0000???2?0?????????????????????????????01?0?????????0102?0201{01}????002?415?101
000?????10000100??0?1?1???0011010????{23}?2??01??????????0?010??002??0000?0001????
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Lophocetus_calvertensis
?0???0110???11?{12}?1?????????0??????????????0????????????1????10121??101{12}05{12}50111?0?1100010001?00?00100100{56}00??000010{23}?020?0120012100l?12010?2?130?001?102?1?????????????001?11210100???0?121??0?0?????????????????????{123}????1??????1?1??02010000001?201{12}1113120010102122100l0133?002010?000110100????1??????????????????0???0??
Lophocetus_repenningi
10111011011115011111??00?0??0????2???????????30120011??32?1??011012101001201{456}15011100?1100010002100?0011122O?0000000010{23}30100122001200011?201??20130?{012}?10102?1?????????????001?11210110?????121?10100???????1???

{23}{12}0000?01{23}{234}?00{12}?10?000{01}?0100001{01}?100?0{01}1?001?2?101??0??
????10??????{23456789}??0???
Macrokentriodon_morani
201?0011012111021110?10??100??1?1??????????0{23}?120011??20?112001002101101105{1
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10103?101102020000000000?1{01}210100???0{02}1?1?1010????{12}???10????310210?2000
010?{12}10101???12010001012?201?11?302001101331010010132?001010?000010?00??????
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Rudicetus_squalodontoides
0010101001211102?11??0??0??0????2??????????01?12?0???????11?00?012101001104?50111
00?1100010001{01}00?00100000{45}00010100?012020101200?2??00101011?20?3??0010102
11011021??000000001?002101002???3120?10?00???30??1?1?0?3102?00?0?001002101010???
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Pithanodelphis_cornutus
??0?0?2?????????11000???2???????0515011100?1
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0211?00101000122?????????????????1??????0?????1??3?????????0111???010?????????????
??22?????????
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Tagicetus_joneti
201?101002212502?11??1?????0????2??????????0101103?1?1???112002012101001105150111
00?1100010001100?00100020?000100000012020001100121021102 01?010?30?00?010211011
0????0010000011?12?01?0?0?0?1?1?10100????0??1?????31021?????1110010?10?1??????????
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1?{01}1????????00????000?????????????????????????????????????
Kentriodon_obscurus
?01??01?01211103111????????0????2??????????010120311??2??11200201?1?10011?{34}2??1
?10?0?10?0?0001100?0??0??0?40001?0????????0?01?????????????????????????????????????
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?11130200{01}010222010000134?001010?000110?00?????????????????????????????????????
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Kentriodon_diusinus
?01??010022111021111?????10001112????????120101{12}0311?13??10000101110100121415
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??2100??
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Kentriodon_schneideri
??????1?0??1?1?2?011?????10?001?1??????????01?12?????????112001012101101105?501110
001?00010001100?00?00?0?40001000??0?2??010?10012000????010?1?????001010????1101??
?0010100111???1?1?02????120?10?00010????1??????10??0????0100?10???10??????????????
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Wimahl_chinookensis
1011001002202502?011100?011000112???6100012020130??????2011?00?0121010011061501
1100?1100010001000?001020005000001000012 0?0001100121?001??011?11?3??001?102?1?1
1101200210100?121?2101?02??0?120?10?00210????1?????310??0????0010010?10?1??120100
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Kentriodon_nakajimai
201?10100221?1021111?????110?01?2????0100120101203?1???2010000101210100120525 01
110001100010001100?00100?0040001???0001??2010110012{01}02{01}102010010?3??00101
0211?1101???00?0100?2?0????1?0?????121?10100???????1?????310??0????0??0010??010??1
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?011?02200?????2???0??????0??2??
Norisdelphis_annakaensis
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01000111010101{12}100?00101121??0010000?01211??0110312100020200101 00?????10????
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Kentriodon_sugawarai
?????01????1110?1??1?????????01?2??????????0??1{23}?3?1?13??1?2002012{12}?10011051
501110001100010001100?0010000040001000000 1?02010110{01}120020102011?10?3??0010
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0100012010001012?201?1113{01}2000010{23}12000000134?001010?0001101001011010 0?0
0100012011011 20???
??
Kentriodon_hobetsu
??????1????1?1??1?????????????????????????0?01?03????3??1??0120121011012051501110 0
0?1???10001000?00?0????4000101?????{12}?10?01?0????????0?010?10????00101?211?1101?
?0??0?1?002?202?01?02????1?0?1010????????1???????0???????0?1?010?????????????????
??
??
Kentriodon_hoepfneri
???????????????????11????10??01?????????????????????????????0?????????????????????????
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??12010001012?201??11302?0?
?00111010000134?002010?000110?0000?1010????0??????1101120???022?0?3????70101?????
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Sophianacetus_commenticius
?????0????????0????11??????0?01?????601?0????01??????1????????0012101001105?5?111?0
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?02?0??0?21???101?134?001010?010110?0000?10??????00001201101120?????????????????
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Platysvercus_ugonis
101110100221{12}102111??0?????0????2??????????02?13?3????3??1??002002101101205{12
}501110001100010001100?0010002060001000010120100011001210211020 10?10?3??001010

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21101102120000?0?001?1?2101?0?0?0?120?10?00???????1??1??310??0??0?011001101010???
????????????????????????????????????????????????????????????????????????????????????????????
????????????????????????????????????????????????????????????????????
UOMNCH_F37129
?011?0100??1110{12}10111?????00?01????????????020120311?1?2011?00?012101101105250
11100?1100010001100?0010?100?00010000?01{12}0?0?0110012{01}02{01}102010?1?????0
01010?11?11011?000101000?1?12?010020?031?0??0?0??1??0??1?????3??2?0??001100010010
11?????????????????????????????????????????????????????????????????????????????????????????
????????????????????????????????????????????????????????????????????????
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end;
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S3. All retained most parsimonious trees.

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begin trees ;
tree tnt_1 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus )),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens ))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani )))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri ))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis )))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros ))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi ),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis ),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli ))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis ))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori ),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra )))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei ))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis )))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
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))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_2 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
)))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Steno_bredanensis ,((Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra))),(Grampus_griseus
,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus
,(Stenella_attenuata ,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_3 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri

,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,((Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis))),(Sotalia_fluviatilis ,(Sousa_chinensis
,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis ,Lagenodelphis_hosei
)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi
,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni
,Phocageneus_venustus)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis
,Platanista_gangetica))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori
,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata
))))))))));
tree tnt_4 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis

,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_5 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
)))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,((Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis))),(Sotalia_fluviatilis ,(Sousa_chinensis
,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis ,Lagenodelphis_hosei
)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi
,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni
,Phocageneus_venustus)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis
,Platanista_gangetica))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori
,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata
))))))))));
tree tnt_6 = [&U]

(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_7 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai

)))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_8 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata

,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_9 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_10 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi

)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_11 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum

,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_12 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));

tree tnt_13 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Steno_bredanensis
,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_14 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai

,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_15 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens

,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
)))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_16 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
)))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_17 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi

,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi)))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris ,((Grampus_griseus
,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_18 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi

),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris ,((Grampus_griseus
,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_19 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica

))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_20 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_21 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri

,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_22 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris

,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_23 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_24 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus

,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_25 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai

,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_26 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus

)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))))));
tree tnt_27 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi)))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris ,((Grampus_griseus
,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))))));
tree tnt_28 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense

,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_29 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis

,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_30 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_31 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu

,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_32 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas

,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi)))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
)))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_33 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73

,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_34 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_35 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis

)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_36 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica

,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Steno_bredanensis ,((Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra))),(Grampus_griseus
,Hemisyntrachelus_cortesii))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus
,(Stenella_attenuata ,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_37 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_38 = [&U]

(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_39 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus

,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_40 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
)))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Steno_bredanensis
,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra

)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_41 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_42 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis

,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_43 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi

))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_44 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica

))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_45 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_46 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri

,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_47 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris

,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii))))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))))));
tree tnt_48 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_49 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus

,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi)))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_50 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai

,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_51 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus

)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_52 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_53 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense

,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_54 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis

,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_55 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_56 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu

,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_57 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas

,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_58 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii

,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_59 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,((Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis))),(Sotalia_fluviatilis ,(Sousa_chinensis
,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis ,Lagenodelphis_hosei
)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi
,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni
,Phocageneus_venustus)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis
,Platanista_gangetica))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori
,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata
))))))))));
tree tnt_60 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus

,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius))))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_61 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides

,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Steno_bredanensis ,((Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra))),(Grampus_griseus
,Hemisyntrachelus_cortesii))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus
,(Stenella_attenuata ,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))))));
tree tnt_62 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))))));
tree tnt_63 = [&U]

(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi)))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_64 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai

)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_65 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis

,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_66 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_67 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi

)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_68 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii

,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_69 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));

tree tnt_70 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(Brabocetus_gigaseorum
,(Septemtriocetus_bosselaersi ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis
))),(Norisdelphis_annakaensis ,(Orcinus_orca ,(((Lissodelphis_borealis
,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Steno_bredanensis
,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_71 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai

,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
)))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_72 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens

,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
)))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_73 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
)))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_74 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi

,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_75 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((Kentriodon_schneideri ,(Kentriodon_hobetsu
,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Sophianacetus_commenticius
,(Rudicetus_squalodontoides ,(Kentriodon_diusinus ,Kentriodon_hoepfneri
))),(Kentriodon_obscurus ,Kentriodon_nakajimai))))))),(UOMNCH_F37129
,(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia

,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_76 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica

))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_77 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_78 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri

,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_79 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris

,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_80 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(Brabocetus_gigaseorum ,(Septemtriocetus_bosselaersi
,(((Australithax_intermedia ,Lomacetus_ginsburgi),(Piscolithax_boreios
,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Salumiphocaena_stocktoni
,(Semirostrum_ceruttii ,(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_81 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus

,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,((((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi))),(Semirostrum_ceruttii
,(Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
)))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi)))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_82 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai

,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_83 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra)))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus

)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_84 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_85 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense

,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_86 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis

,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
)))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii
,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_87 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas
,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,((Grampus_griseus ,(Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Hemisyntrachelus_cortesii ,Steno_bredanensis
))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_88 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu

,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),(UOMNCH_F37129 ,((Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis)))),((Pterophocaena_nishinoi
,((Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_89 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),(((Pterophocaena_nishinoi ,(Albireo_whistleri
,(Denebola_brachycephala ,(Odobenocetops_peruvianus ,(Delphinapterus_leucas

,Monodon_monoceros))))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,(Semirostrum_ceruttii ,((Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_90 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,((Kentriodon_nakajimai
,(Kentriodon_diusinus ,(Rudicetus_squalodontoides ,Kentriodon_obscurus
))),(Kentriodon_hoepfneri ,Sophianacetus_commenticius)))))),(Kampholophos_serrulus
,Wimahl_chinookensis))),((Pterophocaena_nishinoi ,((Albireo_whistleri
,(Odobenocetops_peruvianus ,(Denebola_brachycephala ,(Delphinapterus_leucas
,Monodon_monoceros)))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai
,(Haborophocoena_minutus ,(((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Septemtriocetus_bosselaersi ,(Semirostrum_ceruttii
,Brabocetus_gigaseorum)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis)))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,((Pseudorca_crassidens ,(Globicephala_macrorhynchus ,(Feresa_attenuata
,Peponocephala_electra))),(Grampus_griseus ,Hemisyntrachelus_cortesii)))),(Sotalia_fluviatilis
,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata ,(Delphinus_delphis
,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus ,Eodelphinus_kabatensis
))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73 ,((Squalodelphis_fabianii

,(Notocetus_vanbenedeni ,Phocageneus_venustus)),(Zarhachis_flagellator
,(Pomatodelphis_inaequalis ,Platanista_gangetica))))))))))),(Waipatia_maerewhenua
,((Waipatia_hectori ,Awamokoa_tokarahi),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi
,Otekaikea_huata))))))))));
tree tnt_91 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))))),((UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
)))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Denebola_brachycephala ,(Odobenocetops_peruvianus
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,(((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Salumiphocaena_stocktoni ,((Semirostrum_ceruttii ,(Brabocetus_gigaseorum
,Septemtriocetus_bosselaersi)),(Neophocaena_phocaenoides ,((Phocoena_sinus
,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli
))))))))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_92 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis

)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix ,(Rudicetus_squalodontoides
,Kentriodon_obscurus ,Kentriodon_diusinus ,Kentriodon_nakajimai ,Kentriodon_hoepfneri
,Sophianacetus_commenticius)))))),(Kampholophos_serrulus ,Wimahl_chinookensis
))),((Pterophocaena_nishinoi ,(Albireo_whistleri ,(Denebola_brachycephala
,Odobenocetops_peruvianus ,(Delphinapterus_leucas ,Monodon_monoceros
))),((Haborophocoena_toyoshimai ,(Numataphocoena_yamashitai ,(Haborophocoena_minutus
,(Semirostrum_ceruttii ,Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi
,Salumiphocaena_stocktoni ,((Australithax_intermedia ,Lomacetus_ginsburgi
),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Neophocaena_phocaenoides ,((Phocoena_sinus ,Phocoena_spinipinnis
),(Phocoena_phocoena ,(Phocoena_dioptrica ,Phocoenoides_dalli))))))),(Miophocaena_nishinoi
,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis ,(Orcinus_orca
,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris ,(Grampus_griseus
,Hemisyntrachelus_cortesii ,Steno_bredanensis ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei)))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));
tree tnt_93 = [&U]
(Georgiacetus_vogtlensis ,(Zygorhiza_kochii ,((Archaeodelphis_patrius ,Xenorophus_sloanii
),(Simocetus_rayi ,(Agorophius_pygmaeus ,(Patriocetus_kazakhstanicus ,((Papahu_taitapu
,(Squalodon_calvertensis ,(Prosqualodon_davidis ,((Kogia_breviceps ,(Physeter_macrocephalus
,Orycterocetus_crocodilinus)),(((Berardius_bairdii ,(Ziphius_cavirostris ,(Tasmacetus_shepherdi
,Mesoplodon_ginkgodens))),((Lipotes_vexillifer ,(Parapontoporia_sternbergi ,(Inia_geoffrensis
,(Pontoporia_blainvillei ,(Pliopontos_littoralis ,Brachydelphis_mazeasi
)))))),(((Delphinodon_dividum ,(Tagicetus_joneti ,((Pithanodelphis_cornutus
,(Lophocetus_calvertensis ,(Lophocetus_repenningi ,(Atocetus_iquensis ,Atocetus_nasalis
)))),(Platysvercus_ugonis ,(Liolithax_pappus ,(Hadrodelphis_calvertense
,Macrokentriodon_morani))))),(UOMNCH_F37129 ,(Kentriodon_schneideri
,(Kentriodon_hobetsu ,(Kentriodon_sugawarai ,(Kentriodon_pernix
,((Sophianacetus_commenticius ,(Rudicetus_squalodontoides ,(Kentriodon_diusinus
,Kentriodon_hoepfneri))),(Kentriodon_obscurus ,Kentriodon_nakajimai
))))))),(Kampholophos_serrulus ,Wimahl_chinookensis))),(((Pterophocaena_nishinoi
,(Albireo_whistleri ,(Odobenocetops_peruvianus ,(Denebola_brachycephala
,(Delphinapterus_leucas ,Monodon_monoceros)))))),((Haborophocoena_toyoshimai
,(Numataphocoena_yamashitai ,(Haborophocoena_minutus ,((((Australithax_intermedia
,Lomacetus_ginsburgi),(Piscolithax_boreios ,(Piscolithax_longirostris ,Piscolithax_tedfordi
))),(Semirostrum_ceruttii ,Salumiphocaena_stocktoni ,(Neophocaena_phocaenoides
,((Phocoena_sinus ,Phocoena_spinipinnis),(Phocoena_phocoena ,(Phocoena_dioptrica
,Phocoenoides_dalli))))))),(Brabocetus_gigaseorum ,Septemtriocetus_bosselaersi

))))),(Miophocaena_nishinoi ,Archaeophocaena_teshioensis))),(Norisdelphis_annakaensis
,(Orcinus_orca ,(((Lissodelphis_borealis ,Cephalorhynchus_hectori),((Orcaella_brevirostris
,(Steno_bredanensis ,(Hemisyntrachelus_cortesii ,(Grampus_griseus ,(Pseudorca_crassidens
,(Globicephala_macrorhynchus ,(Feresa_attenuata ,Peponocephala_electra
)))))),(Sotalia_fluviatilis ,(Sousa_chinensis ,(Tursiops_truncatus ,(Stenella_attenuata
,(Delphinus_delphis ,Lagenodelphis_hosei))))),(Lagenorhynchus_acutus
,Eodelphinus_kabatensis))))))),(Squaloziphius_emlongi ,(Xiphiacetus_bossi ,(ZMT_73
,((Squalodelphis_fabianii ,(Notocetus_vanbenedeni ,Phocageneus_venustus
)),(Zarhachis_flagellator ,(Pomatodelphis_inaequalis ,Platanista_gangetica
))))))))))),(Waipatia_maerewhenua ,((Waipatia_hectori ,Awamokoa_tokarahi
),(Urkudelphis_chawpipacha ,(Otekaikea_marplesi ,Otekaikea_huata))))))))));

end ;