Nazca Tridactyls Monograph:
A Comprehensive Report on the Unique Morphology and Life Processes of a New Amphibian-Grade Species

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Abstract

The Nazca tridactyls are here provisionally interpreted by the author as an amphibian-grade, stem-tetrapods with a proposed supraclass of Nagalomorpha, genus of *Naga* and species of *tridactyls*.

Drawing upon morphometric tomography (Hernández-Huaripaucar et al. 2024), anatomical reconstructions (Miles 2022), mineralogical assays of unknown metals and compounds (Jensen et al. 2024), and genomic sequencing analyses (Rangel-Martínez 2023–2025), this report integrates trait-level studies into a species overview. Josefina (NA 001 or J01) will likely serve as the holotype of this species.

Documented traits include cranio-cervical continuity and a axial gonoduct; gastralia; an interclavicle; a urostyle-like element; a tubular heart; a parietal–pineal complex; a marine-grade otic capsule; and tridactyl manus and pes with a fused radioulna.

Reproductive evidence indicates ovoviviparity with multi-embryonic eggs, embryophagy, and maternal dermatophagy, as well as metamorphosis with forelimb-first emergence.

These findings indicate an amphibian-grade physiology with a mosaic of specializations. The proposed supraclass Nagalomorpha emphasizes retention of plesiomorphic tetrapod traits into Holocene contexts and provides a basis for formal nomenclature and comparative evolutionary analysis.

Significance

This report presents a provisional, species-level introduction to the Nazca tridactyls.

The integration of amphibian-grade traits with a mosaic of specializations supports the proposed supraclass Nagalomorpha as a stem-tetrapod hypothesis.

By synthesizing existing datasets with new anatomical and genomic interpretations, the analysis argues for deep-time persistence into Holocene contexts.

The findings provide a foundation for peer-reviewed investigation and eventual nomenclatural formalization, with implications for evolutionary biology, anthropology, and vertebrate diversity.

Tubular Heart

In the Nazca tridactyls, tomographic studies have described an elongated thoracic organ. Galetckii (2019) reported “a tubular structure segmented into visible chambers” (CT dataset observations).

Miles (2022) noted “a structure that has been identified as the aorta; it is on right side of the body which is the opposite of humans. It is the only structure that can be identified as any kind of a heart. When all the study is concluded I believe it will be labeled as an aortic heart”.

Casas (2025) suggested the organ was likely “a peristaltic tubular heart, a primitive circulatory arrangement more consistent with basal chordates than higher vertebrates.”

Comparable systems occur in other groups. Amphioxus possesses “segmented vessels which function as contractile pumps” (classical chordate description). Ascidians circulate blood through “a peristaltic vessel in which the direction of flow periodically reverses.”

Amphibian larvae retain “a simple tubular heart prior to chamber formation,” underscoring functional parallels with the tridactyl configuration.

Parietal–Pineal Complex

Multi-slice CT imaging performed at the Universidad Nacional San Luis Gonzaga de Ica first documented a pneumatized midline cranial recess visible in the sagittal scans of several tridactyl skulls. This feature, distinct from paranasal sinuses, lies on the dorsal midline of the cranial vault, overlying the roof of the diencephalon and anterior to the occipital cavities.

Casas (2025) designated this chamber the *Kappa recess* and identified within it “a dual arrangement of parietal–pineal structures,” a radiodense ovoid body situated in the expected epiphyseal position. Casas interpreted this Parietal–Pineal Complex (PPC) as “potentially photoreceptive and neuroendocrine in function.”

In a blind analysis of the UNSLG datasets, Krister T. Smith (Senckenberg Research Institute; describer of *Saniwa ensidens*) confirmed the presence of “a parietal foramen and an epiphyseal complex.” He further remarked: *“My impression is that it is a mammal, and possibly a primate. At least, both (lateral) eyes seem to be pointing forward. If so, then it would be very unusual, because no mammal retains two organs in the epiphyseal complex.”*

Comparative analogues support this interpretation. In lampreys, both pineal and parapineal eyes are retained in the same dorsal diencephalic location. Among tetrapods, the extinct *Saniwa* exhibited paired parietal eyes, while the extant tuatara (*Sphenodon*) retains a single parietal eye (Clack 2012; Sues 2019).

Thus, the tridactyl condition can be defined as a Parietal–Pineal Complex (PPC) housed within the pneumatized Kappa recess, combining plesiomorphic photoreceptive organs with novel cranial pneumatization, reinforcing their mosaic status.

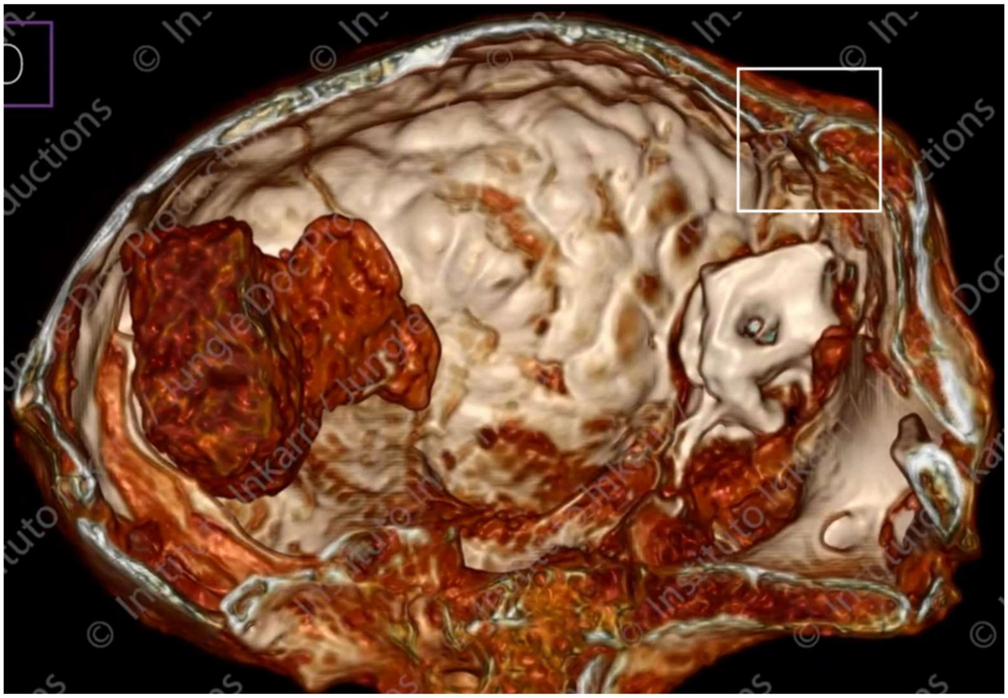

Figure 1: Sagittal view of the skull of the Tridactyl Alberto

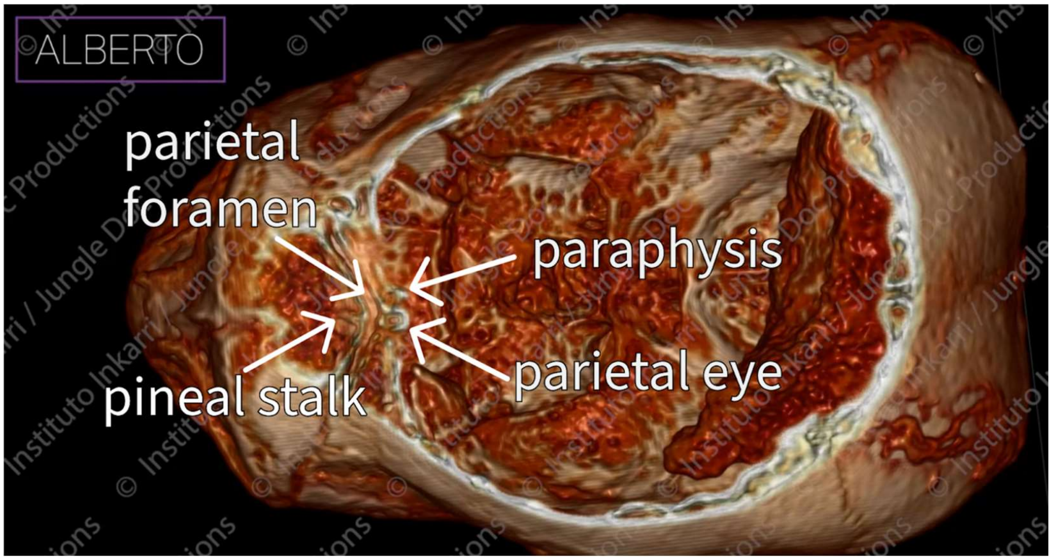

Figure 2: Dorsal view of the skull of the Tridactyl, Alberto

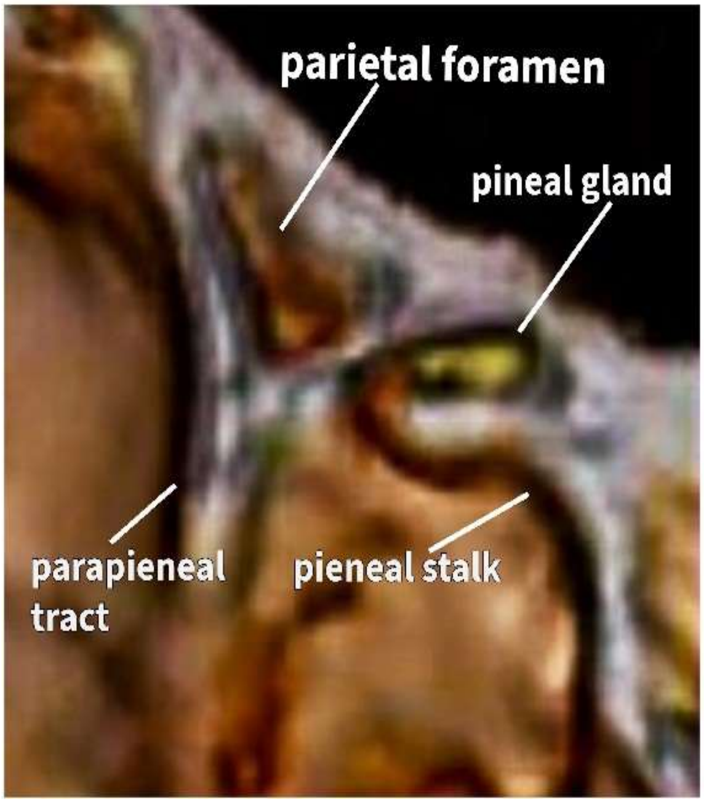

Figure 3: Parietal Pineal Complex, sagittal close-up, Alberto, pineal gland emphasis

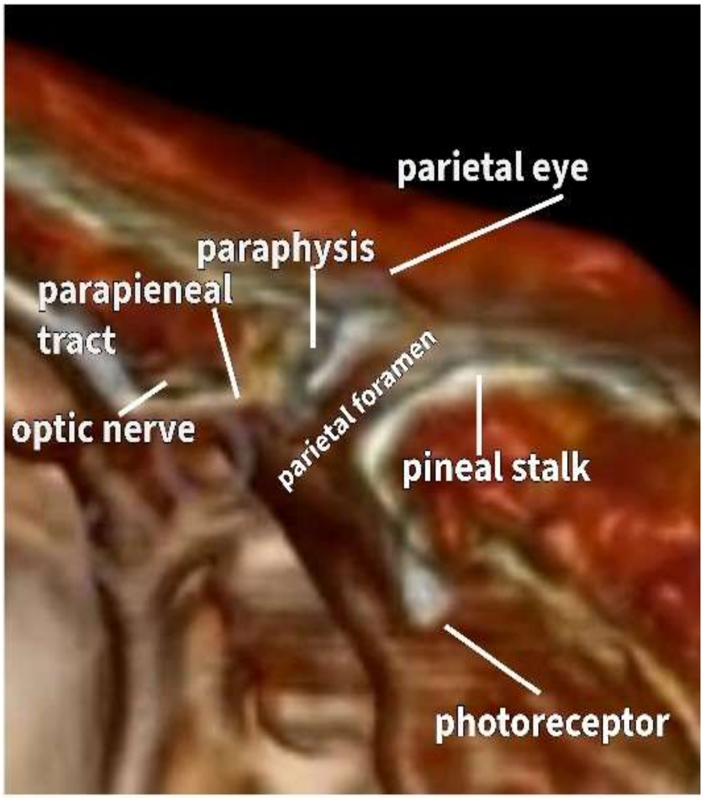

Figure4: Parietal Pineal Complex, sagittal close-up Alberto

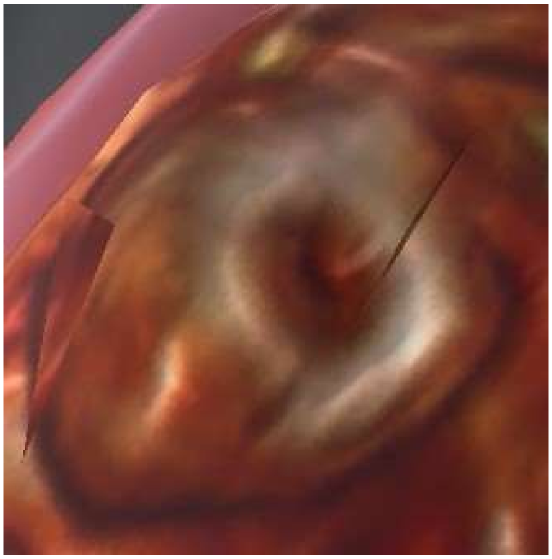

Figure 5: Skull of Tridactyl fetus in Artemis exhibiting the relective nature of the Parietal Pineal Complex

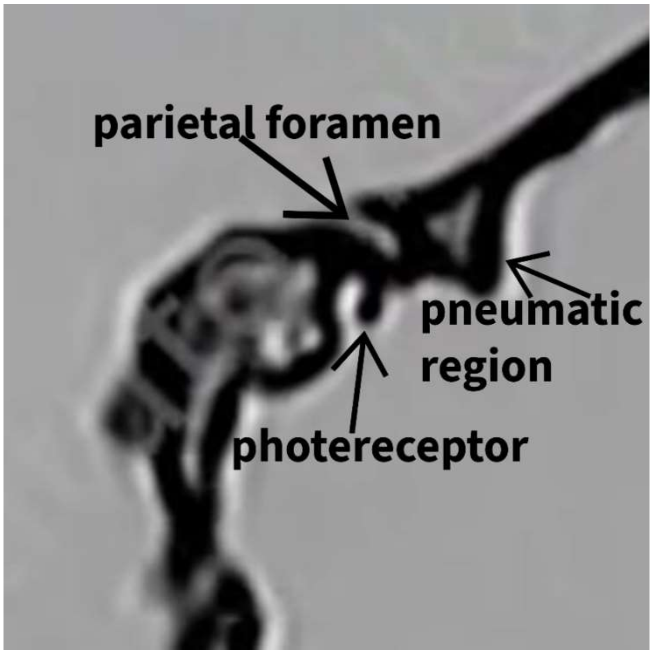

Figure 6: CT scan demonstrating the pneumatic region of Luisa's skull.

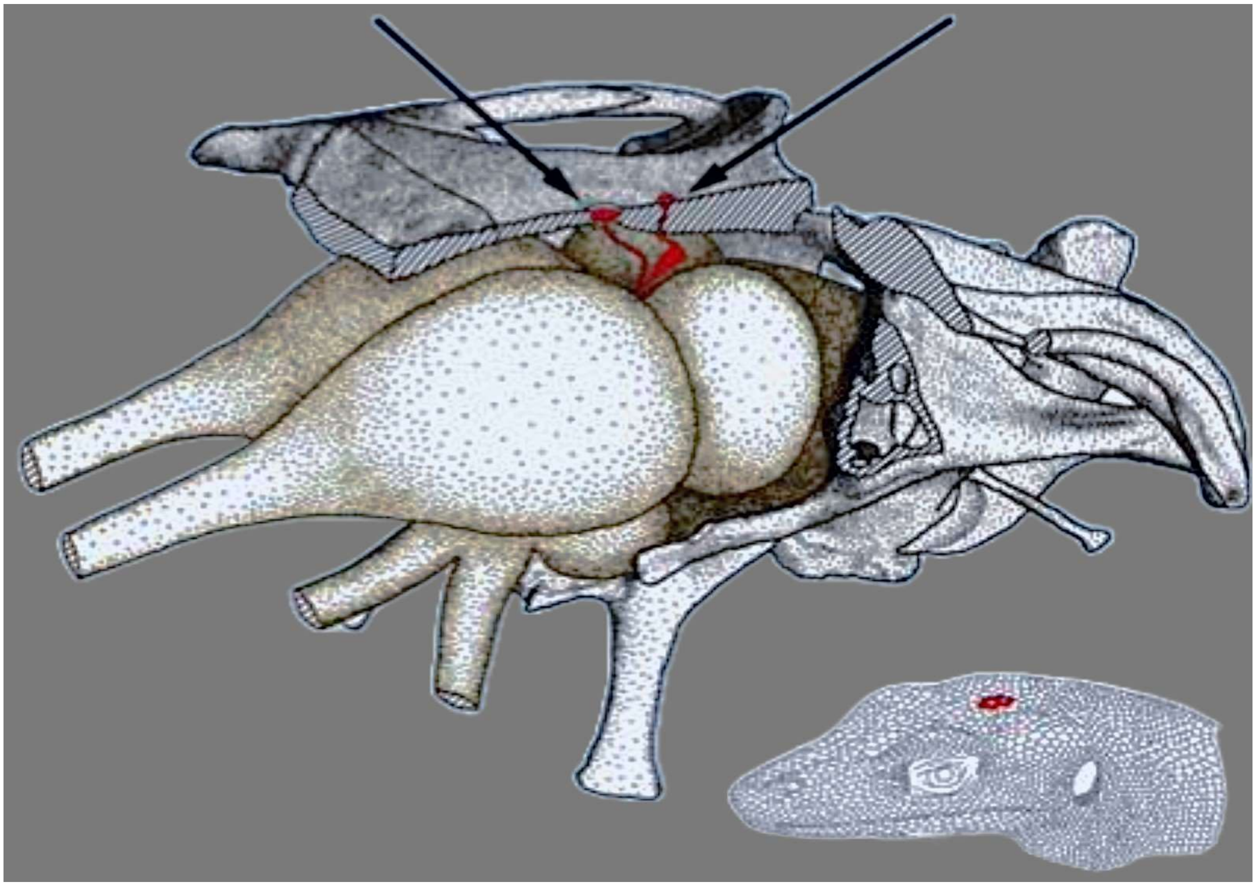

Figure 7: Diagram of a Parietal Pineal Complex in the extinct Saniwa ensidens from the Smith report.

Otic Complex

Tomographic analysis of the tridactyl cranium revealed labyrinthine elements that do not conform to known tetrapod configurations. Korotkov described that “the holes are interconnected by a system of channels. The middle (of the three holes of the temporal region) opens into the ‘pyramid’ and can serve as a vestibular apparatus”. He further noted “a dense bone formation (2350 HU) resembling a pyramid of the ‘temporal bone’, with several vertical canals… located behind the malar area and below the temporal area, inside the skull”.

Miles (2022) confirmed the CT findings of Korotkov. Korotkov asserted that apertures “open into the pyramid and possibly serve as a vestibular apparatus,” and citing Galetckii’s scans as evidence of a highly ossified labyrinth. He underscored the unusual sequence, quoting: “If this hole acted as an organ of hearing, then the vertebrate species of Earth have the reverse order—first the organ of hearing (external auditory meatus), then the pyramid”.

Casas (2025) highlighted the functional implications of this configuration: the tridactyls retain amphibian-grade architecture elsewhere, yet within the skull they possess a mammal-analog auditory labyrinth. He suggested that the absence of a direct canal-to-pyramid pathway indicate an otic capsule adapted for bone-conduction and aquatic or pressure-based hearing, comparable to the early archaeocete whales that evolved coiled cochleae for underwater acoustics.

Supporting evidence for this interpretation comes from mineralogical analyses that “revealed marine mineralization, supporting the hypothesis of a semi-aquatic or estuarine paleoenvironment”.

A secondary dataset is provided by Alberto (Paratype 1). In this specimen, the left otic capsule had been surgically displaced and rotated ca. 45°, inadvertently exposing labyrinthine structures normally enclosed within the skull. Although this distortion altered anatomical orientation, it permitted confirmation of bilateral symmetry when compared against undisturbed capsules in other specimens. This unusual preservation state offered rare access to the internal morphology, reinforcing that the labyrinth is a paired and organized system rather than an artifact of mummification or reconstruction.

Parallels across the animal kingdom strengthen this view. Lampreys retain a primitive otic capsule with direct conduction to the inner ear; amphibians such as caecilians and some salamanders lack tympana and rely on bone or skin transmission; and archaeocete whales convergently evolved coiled cochleae and dense bony capsules to specialize in aquatic hearing. The tridactyl otic pyramid, with its vertical canals and direct cranial openings, therefore represents a mosaic structure—primitive in its loss of a tympanic chain, yet convergently derived in its labyrinthine ossification for bone-mediated, aquatic or pressure-based sensory function.

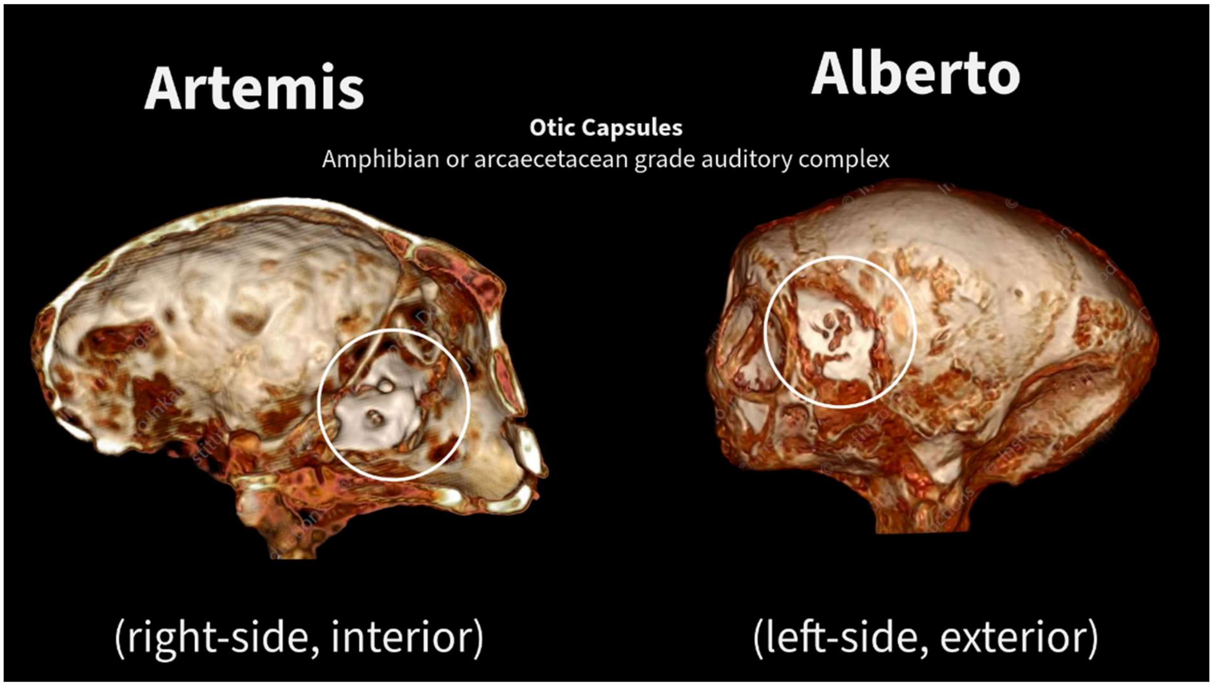

Figure 8: Healthy Otic Complexs (interior vs. Alberto's displaced Otic Capsule

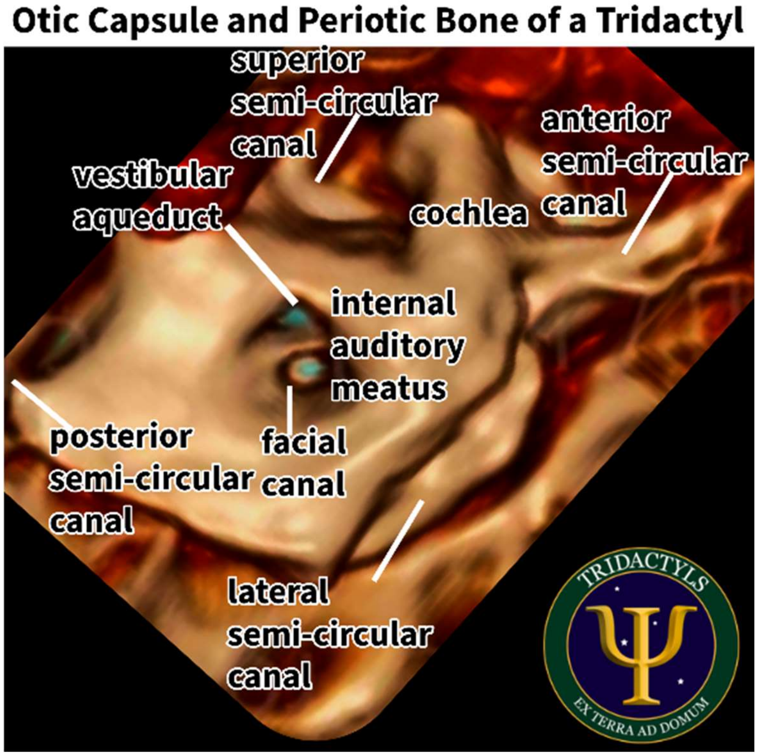
Otic Capsule and Periotic Bone of a Tridactyl

Figure 9: Otic Capsule of Artemis, sagittal interior view

Figure 10: Otic Capsule, Luisa

Rostrum and Fangs

Miles (2022) described the anterior cranial region with precise attention to the maxillofacial plates: *"the maxilla like it does in humans. Therefore, it is 12 mm at its narrowest… The nasals form a nasal ridge that divides the skull in half… The nasal opening is small… the nasal cavity begins at the level of the lower edge of the orbits and presents as an open slit-like cavity 7.5 mm wide and 17 mm high and 3 mm deep"*. He further documented the presence of an anterior *"premaxillary plate"* and a *"predentary plate"* forming the forward margin of the skull.

Casas has suggested that these elements together constitute a beak-like rostrum, a structural unit not emphasized in previous technical descriptions. Behind the rostral plates, he identified recessed dentition with a fang-like morphology. These concealed fangs are interpreted as adaptations for intra-egg predation, consistent with embryophagy and adelphophagy observed in *Luisa*, where larval forms appear to have penetrated the cranial capsules of siblings. The parallels with amphibian reproductive strategies are notable: certain oophagous tadpoles consume maternal eggs, while "vampire frogs" (*Limnonectes* spp.) possess odontoid fangs used to gain access to constrained nutrient sources.

Figure 11:The beak-like rostrum and proto-canine fang of Luisa.

Figure 13: The head of Suya,

Figure 12: Close-up of Suya's teeth, a rasping design.

Casas also identified lamprey-like teeth in the specimen *Suyay*, further suggesting affinities with primitive agnathan-grade feeding structures. Separately, he connected the rasping action of such dentition to the scaping involved in dermatophagy, a maternal skin-feeding strategy documented in caecilians and, in the case of the tridactyls, supported by CT scans of *Luisa's skull*, where larval forms are preserved in association with cranial feeding traces.

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Figure 14: Close-up of Vampire Flying Frog tadpole fangs.

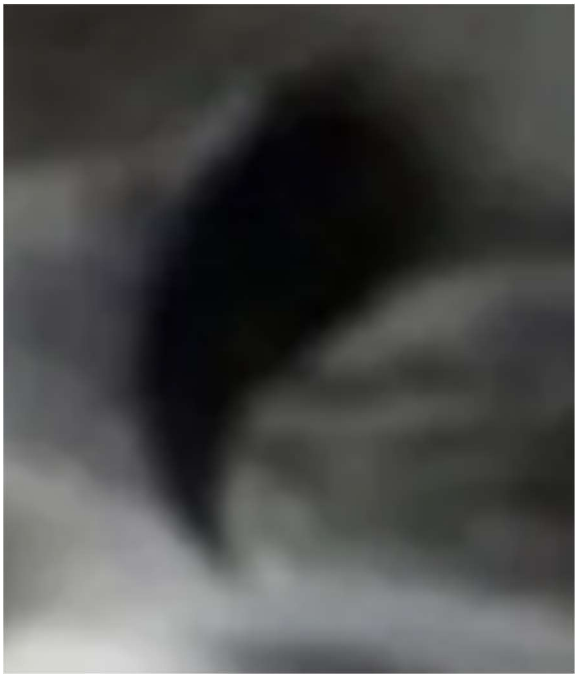

Figure 15: Extreme close-up of Vampire Flying Frog tadpole fang.

Gastralia

The ventral thorax of the Nazca tridactyls preserves a series of ossified struts identifiable as gastralia. These elements were first documented in tomographic datasets by Galetckii (2019), who described elongate ossifications running transversely across the ventral body wall. Miles (2022) incorporated them into his anatomical reconstructions, showing a continuous ventral lattice in the absence of a conventional sternum. Their form recalls the gastralia of archosaurs such as crocodilians and non-avian dinosaurs, where they function as an external brace to the thoracic cavity.

In the tridactyls, the gastralia appear unusually prominent and closely integrated with dermal tissues. Casas has emphasized two functional implications: first, that the thin, overlapping arrangement provided a structural brace for the abdomen during quadrupedal locomotion, stabilizing the trunk under load; and second, that their configuration enhanced the support of cutaneous respiration, increasing dermal surface area available for gas exchange.

Comparative parallels reinforce this dual role. In crocodilians, gastralia stiffen the abdomen during breathing and locomotion, while in salamanders ventral bracing is achieved by musculature rather than ossified struts. The tridactyl gastralia therefore combine reptilian-style thoracic reinforcement with amphibian-grade respiratory adaptation, situating them as a key mosaic trait within the proposed Nagalomorpha lineage.

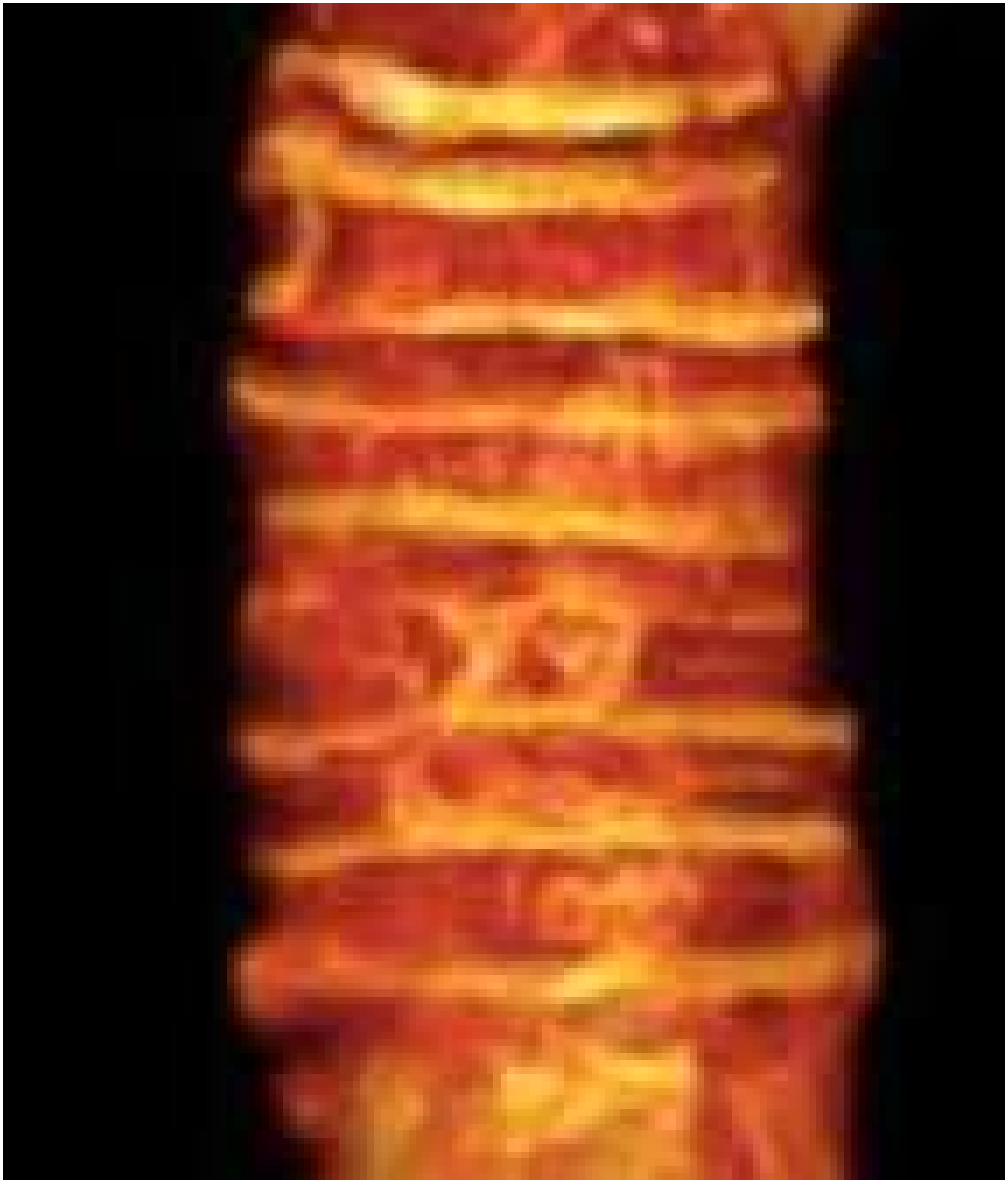

Figure 16: The stomach ribs (gastralia) of V004.

Interclavicle

Midline reinforcement of the pectoral girdle in the tridactyls is clearly demonstrated in CT datasets and anatomical reconstructions. Miles (2022) described “a discrete interclavicle” as a triangular ossification uniting the paired clavicles at the midline. This element, long absent in extant amphibians, is well documented in reptiles and Paleozoic tetrapods, where it functioned as a central brace for the pectoral girdle. Casas (2025b) emphasized its integration with gastralia, noting that together they form a ventral support chain stabilizing the thorax and enabling forelimb-led locomotion in the absence of a sternum.

In smaller tridactyl specimens, reports document a derived condition: “*not two clavicles but a single furcula as in birds*”. This contrast suggests that the interclavicle of the larger-bodied morphotypes represents a proto-furcular condition, while in the diminutive forms it has already fused into an avian-style furcula.

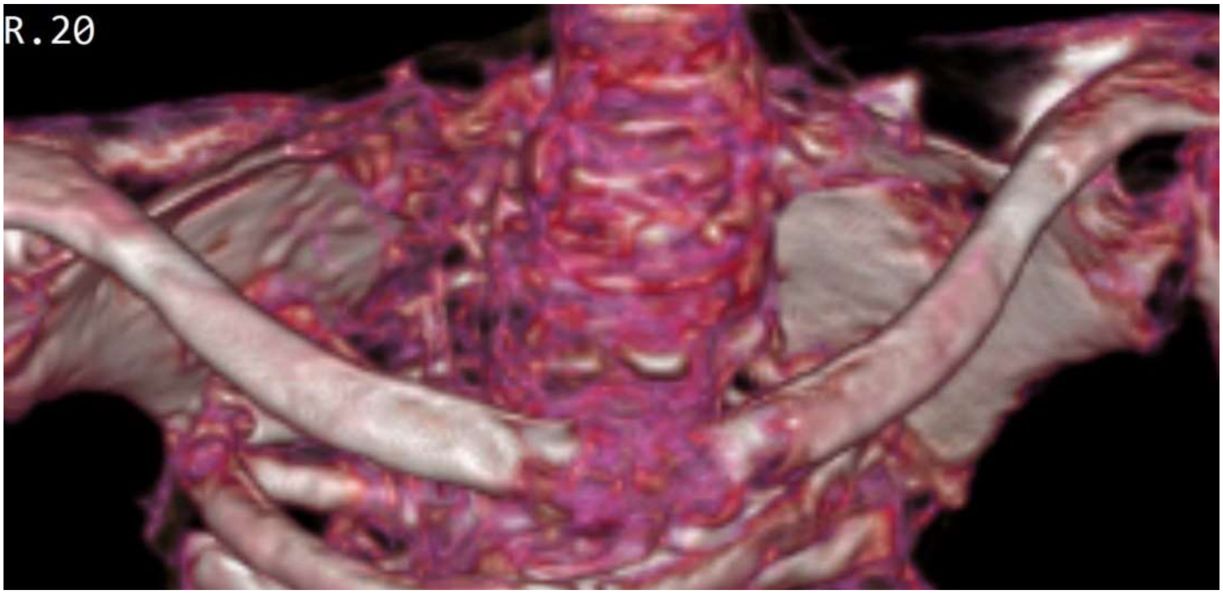

Figure 17: Interclavicle of V004

Casas further interprets the interclavicle/furcula complex as a developmental marker of forelimb-first metamorphosis. Because the forelimbs appear earlier in the life cycle, the thoracic girdle required immediate reinforcement. The interclavicle served to distribute load across the midline, while gastralia braced the abdomen, producing a ventral framework adapted for crawling and chest stability during early stages of locomotion.

This developmental–functional linkage underscores that the interclavicle/furcula complex was not simply a conservative retention, but a structural innovation tied to the tridactyl life history.

Thus, the interclavicle/furcula system exemplifies the mosaic organization of the clade. It combines a basal tetrapod thoracic brace with an evolutionary trajectory converging on the avian furcula, while simultaneously reflecting metamorphic priorities that privileged forelimb function and crawling as primary modes of progression.

Urostyle

Imaging of the sacral region in the tridactyls has consistently shown a combination of segmentation and partial fusion. Korotkov (2019) noted consolidation at the caudal terminus of the sacral series in CT datasets, and Miles (2022) documented five discrete but unfused sacral vertebrae in his reconstructions. Together, these observations establish a sacral field that retains primitive segmentation yet shows signs of terminal fusion into a rod-like element. Casas (2025) interprets this fused terminal structure as a metamorphic specialization directly comparable to the urostyle of anurans. In his view, it reflects tail resorption and axial reinforcement linked to metamorphic development.

Casas further suggested that this urostyle-like brace provided pelvic stability during forelimb-led locomotion, complementing the interclavicle and gastralia as part of a ventral and axial support chain. Whereas in frogs the urostyle evolved to support saltatory propulsion, in the tridactyls the function is better interpreted as facilitating crawling and bracing mechanics.

The combination of multiple unfused sacrals (Miles 2022) with a consolidated terminal element (Korotkov 2019) underscores their mosaic axial organization, integrating primitive segmentation with derived metamorphic fusion.

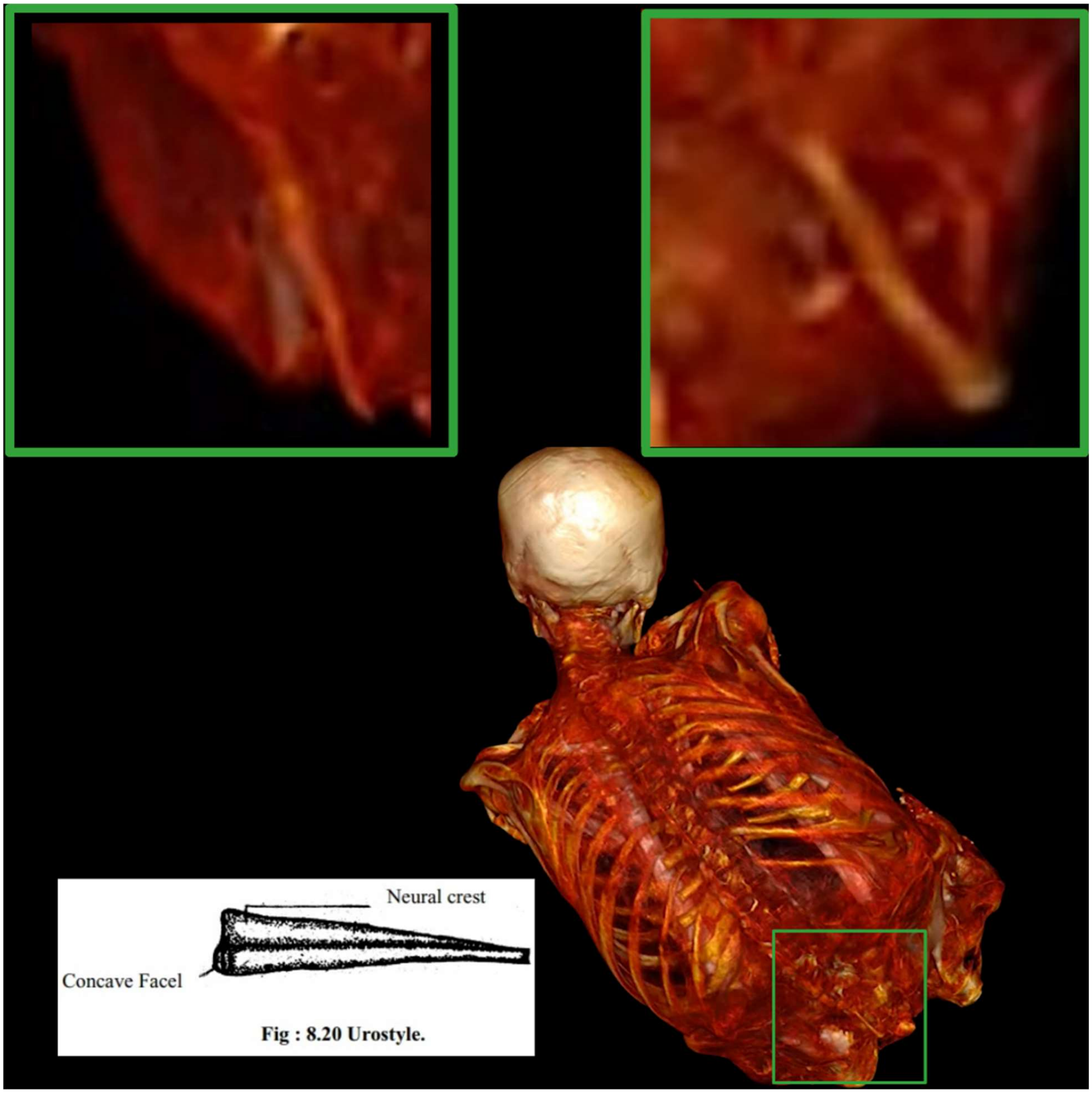

Figure 18: The urostyle of Maria and an example of an amphibian parallel.

Spinal Eminences

Perhaps the most anomalous feature and likely indicator of the deep time origins of the Tridactyls are the twin spinal, dorsal eminences projecting from the backs of the smallest specimens.

Scans reveal pneumatic chambers within the eminences that could have assisted with buoyancy. The eminences may have aided with cutaneous respiration and possibly thermal regulation.

Figure 19: Suyay and Spinal Eminences

Perhaps the most anomalous feature, and likely indicator of the deep-time origins of the Tridactyls, are the paired dorsal spinal eminences projecting from the backs of the smallest specimens.

CT scans confirm internal pneumatization, with hollow chambers continuous with vertebral canals. Such morphology suggests a functional role in buoyancy regulation within a semi-aquatic context, likely allowing for surface-water predation, and perhaps defense.

The increased surface area of the projections may have facilitated cutaneous respiration, analogous to dermal elaborations in early amphibians, and could also have served in thermal regulation by dissipating or retaining heat.

Comparative assessment indicates no direct homology to reptilian neural spines, dermal sails, or mammalian processes. Rather, the twin eminences appear unique to the “insectoid” morphotype, absent in larger J-type specimens.

Their presence implies lineage-specific axial innovation, possibly retained from a basal chordate template. In this regard, the dorsal eminences may represent one of the most diagnostic characters of *Nagalomorpha*, situating the clade closer to primitive semi-aquatic tetrapods than to any derived lineage.

Limb Morphology

The manus and pes of the Nazca tridactyls are diagnostic. CT scans confirm that the hand is composed of a single robust carpal element, three elongate metacarpals, and three phalanges per digit, with no distinct palm, the metacarpals extend directly into the fingers (Miles 2022).

The feet similarly lack differentiated tarsals and metatarsals, presenting instead as three elongate toes with limited segmentation (Miles 2022).

The forearm departs from tetrapod norms in presenting a fused radioulna, a condition paralleled in anurans.

Casas (2025) emphasized that the radioulna here is optimized not for manipulative dexterity but for bracing quadrupedal locomotion, reflecting forelimb-first progression.

The hindlimb mirrors this strategy with a fused tibiofibula, again recalling the anuran condition. In the tridactyls it appears adapted for crawling and brace-supported stance rather than leaping.

Most distinctive is the presence of a unicarpal: a single consolidated carpal articulating directly with the metacarpals. Unlike the multiple carpal blocks of amphibians, reptiles, or mammals, this unicarpal abolishes any true palm and yields elongated digits directly continuous with the wrist. It represents a unique derivation without known analogue in living tetrapods.

Korotkov (2019) described the large tridactyl hands as disproportionately robust, with phalangeal counts exceeding the standard tetrapod pattern. In these specimens, each digit carried four to five phalanges, extending the length of the fingers well beyond mammalian norms and terminating in clawless, hominid-like distal elements

Together, the tridactyl radioulna, tibiofibula, unicarpal, and expanded phalangeal series define a consistent pattern of skeletal consolidation. Functionally, these traits converge on a locomotor strategy of structural bracing, aligning with the overall ventral support architecture of gastralia and interclavicle.

Figure 20: Artist depiction of a Tridactyl in a quadrupedal stance.

Facultative Bipedalism

Proportional analysis of limb elements underscores forelimb dominance in the tridactyls. Miles (2022) recorded Josefina's forelimbs at 25.4 cm against hindlimbs of 18.7 cm, establishing a consistent anterior emphasis.

The pectoral girdle is further stabilized by a discrete interclavicle forming a midline brace (Miles 2022).

Casas (2025) interprets these features collectively as evidence for facultative bipedalism, particularly suited to semi-aquatic or uneven substrates where rigid bracing enhanced stability.

He situates this locomotor profile within the specimens' broader life history: their morphology reflects marine adaptation and a larval-origin body plan, in which forelimbs develop early and dominate locomotion.

This is consistent with metamorphic patterns in amphibians, where forelimb emergence precedes terrestrial competence.

Reproduction & Development

Hermaphroditism & Parthenogenesis

Anomalies in both anatomical and genetic data suggest that the tridactyls may not have reproduced in a manner typical of known tetrapods.

Imaging surveys have failed to identify clear gonadal structures in several small-bodied specimens, and in others, the abdominal contents are dominated by eggs or embryonic forms rather than differentiated reproductive organs (Galetckii 2019; Hernández-Huaripaucar et al. 2024).

This absence has raised the possibility of functional hermaphroditism or reproductive modes that bypass the need for fixed male–female pairing.

Genetic analyses reinforce this interpretation. Sequencing studies recovered large fractions of unidentified DNA, with some specimens returning no clear mammalian or human matches, and in certain cases, evidence of clonal or reduced-diversity profiles (Rangel-Martínez 2023; Abraxas Biosystems 2018).

Such patterns are compatible with parthenogenesis, in which eggs develop without fertilization. This phenomenon is documented in modern amphibians and reptiles, notably in whiptail lizards (*Aspidoscelis*) and some salamanders, where all-female lineages perpetuate themselves clonally.

Casas (2025) proposed that hermaphroditism and parthenogenesis may have provided the tridactyls with reproductive assurance in small or isolated populations, ensuring lineage continuity even under demographic bottlenecks. Such facultative strategies could have coexisted with other reproductive modes, producing a flexible system resilient to environmental instability.

By establishing a baseline of self-sufficiency, these findings frame the more specialized strategies that follow, most notably ovoviviparity and coelomic brooding, where reproductive investment extended beyond the formation of eggs to their retention and development within the maternal body cavity.

Axial Gonoduct & Follicular Loculi

In the Nazca Tridactyls, the most striking departure from tetrapod organization is the direct continuity between skull and thorax.

Korotkov (2019) described “a continuous canal extending from the cranial cavity through the foramen magnum into the anterior thorax.”

Hernández-Huaripaucar et al. (2024) confirmed “atypical, strange, and exceptional morphometric imaging features in the cephalic segment” including thoracic continuity with vascular structures.

Inside this framework with parallels to a cephalothrorax in arthropods, lies a continuous Axial Gonoduct, This structure runs from cranium to cloaca. It is not an esophagus, nor a spinal canal but serves as the main reproductive tract.

Along its walls are serial loculi, small chambers that generate oocytes. These develop in sequence. The eggs are released into the gonoduct and move caudally, then disengage in clutches of three into the coelomic, womb-like brood chamber where they enlarge and become multi-embryonic eggs. Hatching occurs outside the cloaca, consistent with ovoviviparity,

No spermatic structures appear present. The evidence indicates parthenogenesis. A tubular heart runs beside the gonoduct, working as a peristaltic vessel and could help in egg movement.

Control of the system likely comes from the cranial Parietal–Pineal Complex (PPC), which acts through paired thyroid-like glands at the neck. A midline sagittal vascular channel distributes PPC signals to the tract. Together these features form a continuous neuro–gonadal axis, linking brain, circulation, and reproduction along the midline.

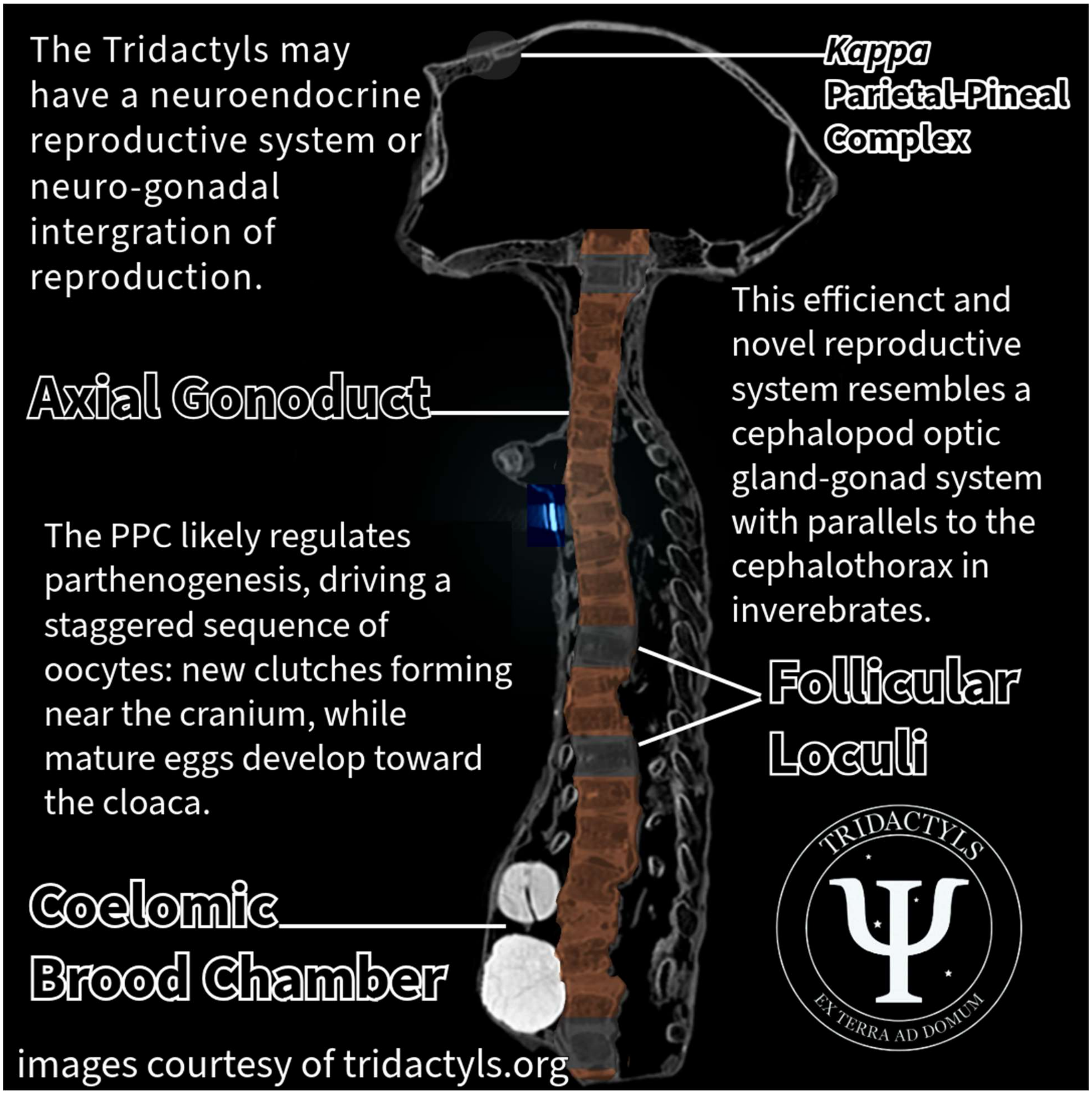

Figure 21: Diagram of the Tridactyl Reproductive System

Comparable arrangements are seen in other groups. Arthropods such as crustaceans and arachnids exhibit a cephalothorax. Annelid gonadal sacs and insect ovarioles provide analogues for the loculi (Anderson 1966; Chapman 1998). The brood chamber strategy is consistent with ovoviviparity (Blackburn 1994). Parthenogenesis is known in insects and reptiles (Suomalainen et al. 1987; Watts et al. 2006).

The tubular heart recalls dorsal vessels in annelids and arthropods (Ruppert et al. 2004). The PPC shows parallels with the optic gland of cephalopods (Wells & Wells 1959) and the pineal of vertebrates (Reiter 1993). Integration of nerve and gonad is also observed in cnidarians (Boelsterli 1977), cephalopod optic–gonad control (Messenger 1996), and insect neuroendocrine systems (Raabe 1986).

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Ovoviviparity and Coelomic Brooding

Tomographic surveys of the Nazca tridactyls have repeatedly demonstrated retention of eggs and embryos within the abdominal cavity, establishing ovoviviparity as their fundamental reproductive mode.

Galecki (2019) described *"three large radiopaque ovoid objects of heterogeneous structure… in the abdominal cavity… Thus, the obtained image can be interpreted as an egg with an embryo of about 8 weeks. We can see a rudiment of the heart protrusion, rudiments of the lower and upper extremities, forebrain."*

Hernández-Huaripaucar et al. (2024) likewise reported *"with high probability, eggs with embryos"* in the pelvic region of small-bodied specimens.

Miles (2022) confirmed three discrete eggs in Josefina, staged at different points of development: *"The holotype female has three eggs preserved within her pelvic cavity. Each is a different size… Dr. Dmitrii V. Galetckii determined that the eggs contain embryos. Changes in the density show structural irregularity… This is interpreted as an egg with an embryo of 8 weeks."*

This asynchrony is consistent with prolonged brooding, where the maternal body serves as a protective chamber.

Casas (2025) reported a particularly striking case in the specimen Artemis, where an embryo was visualized in the process of hatching from its egg capsule. Recognizing this as a distinct biological individual, Casas designated the larva *Casas* to mark its discovery.

This constitutes direct evidence that hatching could occur internally, with larvae maintained for a period inside the maternal coelom. Casas interpreted this as a specialized form of coelomic brooding, whereby both eggs and post-hatching larvae coexist in the same maternal cavity.

Comparative parallels exist in amphibians that brood internally, such as the gastric-brooding frogs (*Rheobatrachus*) and some plethodontid salamanders.

Yet the tridactyls diverge in combining asynchronous egg retention with post-hatching larval maintenance.

Reinforcement of the abdomen by gastralia, together with expanded dermal respiratory surfaces, likely facilitated gas exchange and waste buffering for multiple stages simultaneously. This composite strategy places tridactyl reproduction at an amphibian grade while highlighting unique innovations not present in extant lineages.

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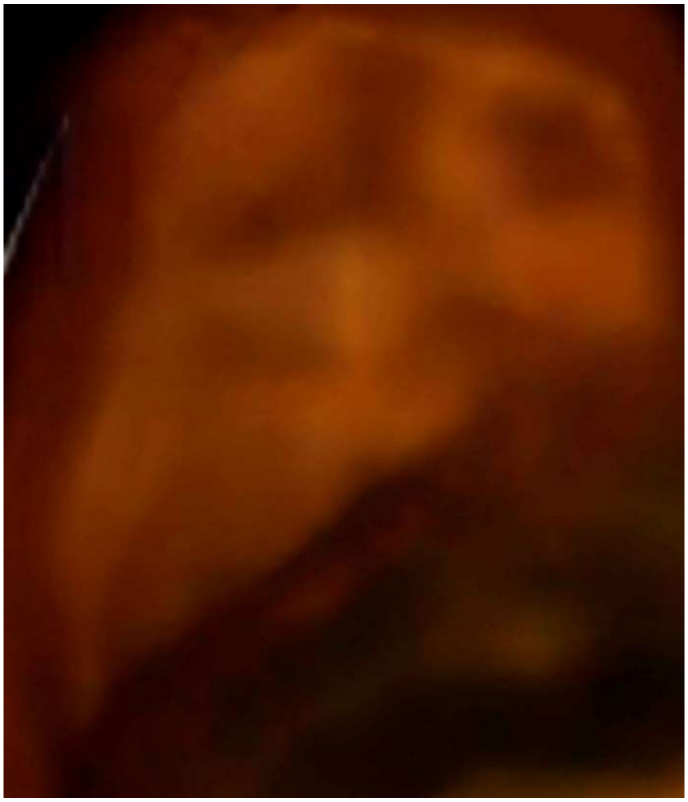

Figure 22: Embryo emerging from the egg of Artemis engaged in feeding.

Figure 23: The eggs of Josefina

Polyembryony

Among the most unusual findings in the tridactyl reproductive system is the occurrence of multiple embryos within a single egg capsule. Tomographic imaging of *Luisa* and *Artemis* revealed ova containing more than one developing individual, often at staggered developmental stages (Casas 2024).

This condition is atypical among tetrapods, where egg capsules are generally monospecific, but it demonstrates that tridactyl reproduction incorporated both polyembryony and asynchronous development within a single ovum.

Comparative analogues are sparse but instructive. In armadillos (*Dasypus* spp.), monozygotic quadruplets arise from a single fertilized egg, while in certain sharks, multiple embryos develop within the same egg case or uterine compartment. The tridactyl condition differs in combining multiple embryos with asynchronous growth rates, producing intraovum disparities in size and maturity.

Casas (2025) underscored the evolutionary implications of this condition, noting that multi-embryonic eggs introduce direct competition among siblings even before hatching. This sets the stage for adelphophagy, in which stronger embryos may consume weaker ones as an extension of intraovum rivalry. Thus, multi-embryonic reproduction in the tridactyls not only illustrates developmental plasticity but also provides a structural foundation for the more dramatic cannibalistic strategies observed in the clade.

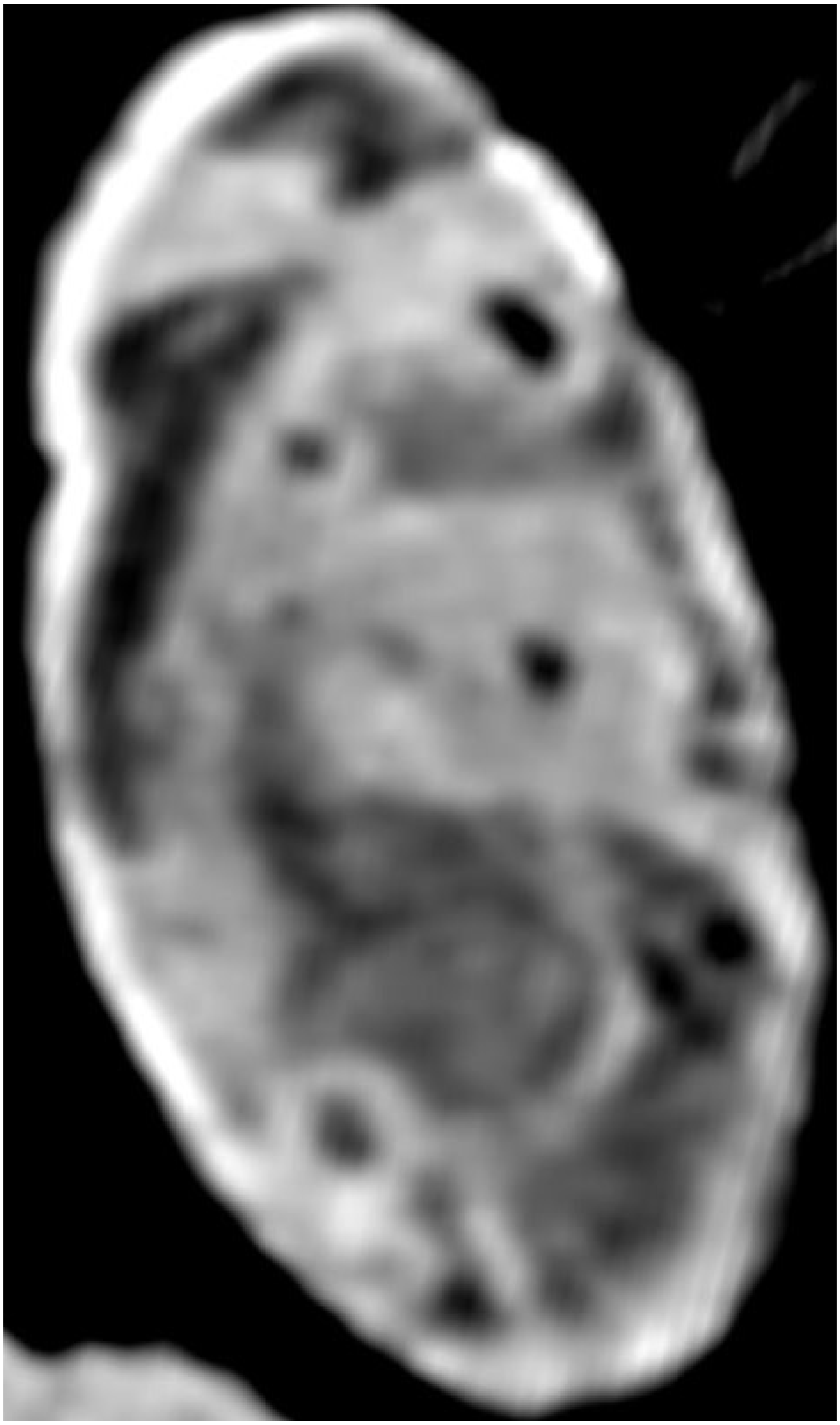

Figure 24: The most developed of the three eggs in Luisa, demonstrating polyembryony.

Subnote: Telescopic Generations

CT datasets have also produced images in which developing embryos appear to contain smaller oviform structures within their own coelomic cavities. If these represent true eggs, they imply the presence of telescopic generations, where a mother, embryo, and embryo-within-embryo coexist in recursive succession. Though without precedent in vertebrates, this phenomenon echoes certain parasitic hymenopterans that produce nested broods. Casas interprets these scans not as wholly speculative but as provisional evidence that tridactyl development may have incorporated reproductive recursion, an innovation that would radically extend the known possibilities of amphibian-grade reproduction.

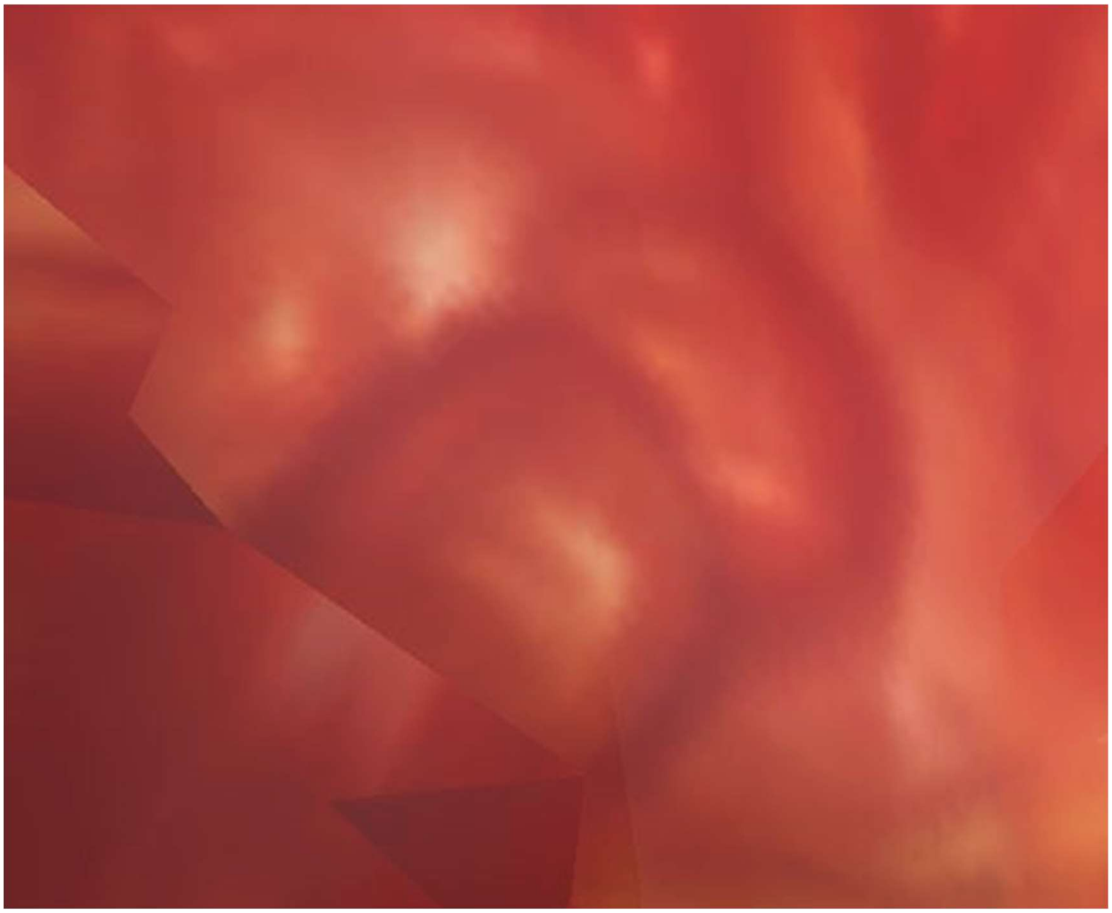

Figure 25: Suspected ovum structures located in an embryo, within the egg of Artemis

Adelphophagy

Imaging evidence from specimens such as *Luisa* and *Artemis* has documented the presence of multiple embryos occupying the same maternal cavity or even the same ovum (Hernández-Huaripaucar et al. 2024; Miles 2022). In several cases, embryos appear at markedly different developmental stages, with smaller forms juxtaposed against larger, more advanced siblings. Casas (2025) interpreted this disparity as evidence of adelphophagy—direct sibling cannibalism during development.

The cranial evidence strengthens this interpretation. CT datasets and surface reconstructions show a recessed rostral complex with fang-like elements. Miles (2022) described maxillary projections, while Casas emphasized their functional significance, noting that *Suyay* preserves lamprey-like dentition arranged for piercing and scraping. These dentognathic features, concealed within the rostral profile, would have provided the mechanical means for embryos and larvae to puncture and drain clutchmates.

Figure 26: An amphibian parallel demonstrating Adelphophagy

In vertebrate biology, adelphophagy is rare but well-documented in certain taxa. In lamniform sharks, embryos consume both unfertilized eggs (*oophagy*) and, in some species, their less-developed siblings. Salamanders of the genus *Ambystoma* similarly exhibit cannibal morphs with enhanced dentition, preying upon siblings within ephemeral aquatic habitats. The tridactyl condition, however, integrates specialized rostral fangs with multi-embryonic eggs and asynchronous growth, creating conditions where consumption was not incidental but structurally prefigured.

CT datasets reveal several candidate instances where smaller embryonic structures appear truncated, compressed, or partially resorbed against larger siblings, consistent with trophic reduction. These cases suggest that adelphophagy functioned as a developmental filter: larger larvae gained direct nutrition from siblings, increasing survival probability at the expense of broodmates.

Casas emphasized that adelphophagy should be understood not as pathology but as an adaptive reproductive strategy in semi-aquatic environments where resource provisioning was limited. By concentrating maternal investment into the most viable embryos via intra-ovum competition—and equipping juveniles with a rostral apparatus suited for piercing and drainage—the tridactyls exemplify a uniquely integrated reproductive ecology.

Figure 27: Close-up of the egg of Artemis demonstrating Embryophagy with Rostrum Proto-Canine Fangs

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Figure 28: Artist rendition of Tridactyl Larva Predation

Matri-Dermatophagy

Imaging datasets have preserved a unique moment of reproductive behavior: larval tridactyls positioned within the maternal cranium, captured in the act of feeding on dermal tissues. This constitutes the most direct evidence of maternal provisioning yet identified, offspring consuming the mother's cranial integument in situ.

The tridactyl head is not an isolated anatomical unit, but part of an integrated cranio-thoracic continuum.

Parallels can be drawn with dermatophagy in caecilians, where hatchlings strip and ingest maternal skin, and with matriphagy in spiders, where the entire maternal body is consumed. Yet in the tridactyls, this may be due to the unexpected death of the mother, or due to a hybrid birth gone awry.

Figure 29: Tridactyl larvae feeding within the skull of Luisa.

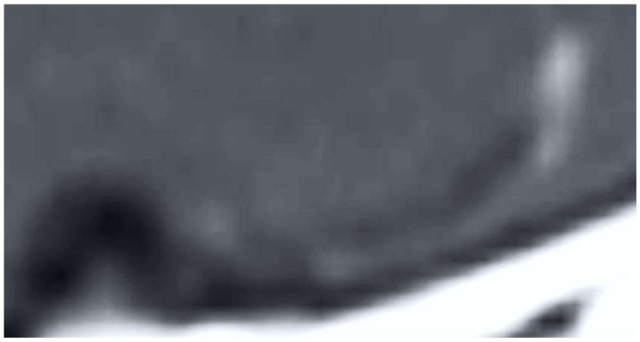


Figure 30: Tridactyl larva feeding within the skull of Luisa.

Metamorphosis (Forelimb-First)

Casas (2025) proposed that tridactyl development followed a forelimb-first trajectory, in contrast to the hindlimb-first emergence typical of anurans. His prediction was based on comparative morphology: the reinforced thoracic apparatus (interclavicle, gastralia, and urostyle-like sacral element) indicated that forelimb priority was a developmental correlate of brace-assisted crawling.

Tomographic datasets subsequently made available allowed this prediction to be tested, and embryonic ossification patterns were consistent with the model: forelimb elements appeared earlier than corresponding hindlimb structures. While salamanders demonstrate variable timing of limb emergence, the tridactyl condition stands out for its consistency across examined specimens, suggesting a fixed developmental program.

This inversion of the canonical amphibian sequence had functional consequences. Early forelimb competence, supported by thoracic reinforcement, ensured that juveniles were locomotor-capable soon after hatching. Casas emphasized that tridactyl metamorphosis was a definitive marker of an amphibian grade species.

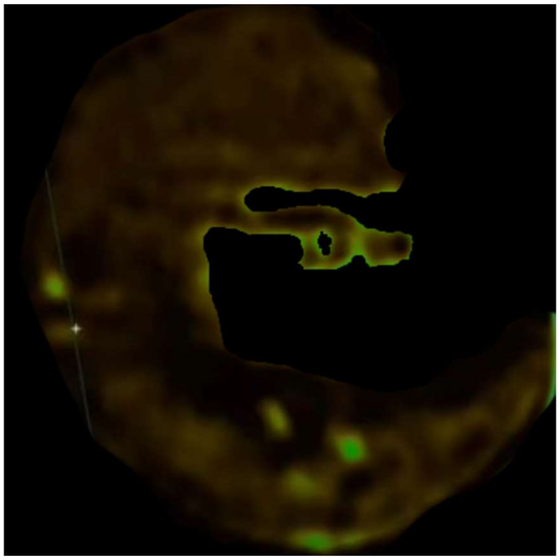


Figure 31: Scan of Tridactyl embryo demonstrating forelimb first metamorphosis. Image courtesy of Tridactyls.org

Amphibian Affinities with Invertebrate Parallels

The Nazca tridactyls exhibit a mosaic of characteristics most significantly aligned with amphibian-grade tetrapods. Casas (2025) emphasized the presence of gastralia functioning in both cutaneous respiration and abdominal bracing during quadrupedal locomotion, consistent with basal amphibians. Miles (2022) and Korotkov (2019) each documented the presence of multiple unfused sacral vertebrae; Casas (2025) interpreted a terminal consolidation beyond these elements as a urostyle-like structure, paralleling axial reinforcement in anurans and indicating metamorphic tail reduction.

Limb elements likewise reinforce amphibian affinities. CT datasets show a unicarpal structure in the manus, interpreted as a form of carpal synostosis, and fusion of the paired mid-limb bones into radioulna (forelimb) and tibiofibula (hindlimb). These consolidations restrict rotation and increase bracing rigidity. Comparable fusions are diagnostic of anuran frogs, which also evolve a radioulna and tibiofibula as singular load-bearing shafts. Digit reduction to three robust rays in both manus and pes further recalls amphibian evolutionary experiments in digital simplification.

Cranial specializations support this framework. A parietal–pineal complex, identified in sagittal CT sections, corresponds to a third-eye sensory structure otherwise retained in amphibians and lampreys, that may regulate parthenogenesis, and alludes to invertebrate morphology.

The otic capsule presents ossified semicircular canals and a labyrinthine chamber, which Casas (2025) suggested was optimized for bone-conducted sound reception in aquatic contexts. Dermatophagic behaviors, supported by lamprey-like dentition in Suyay, parallel amphibian larval feeding strategies.

Developmental evidence corroborates this interpretation. CT imaging has revealed ovoviviparity, asynchronous embryonic stages, and forelimb-first metamorphosis—an inversion of the anuran pattern. Cranio-thoracic integration is reminiscent of neotenic amphibians, or the cephalothorax of arthropods.

This cephalothorax like continuity includes an Axial Gonoduct that is lined with follicular, loculi which create eggs, a significant invertebrate trait.

Taken together, these features establish amphibian affinities as the most rigorous phylogenetic framework for the tridactyls. Yet the incorporation of invertebrate-like gonoducts, cephalothoracic integration, and dermatophagic larval strategies underscores their mosaic nature. Within this context, Casas (2025) has proposed the recognition of Nagalomorpha, a basal tetrapod clade that retained amphibian-grade traits and novel hybridizations well into the Holocene.

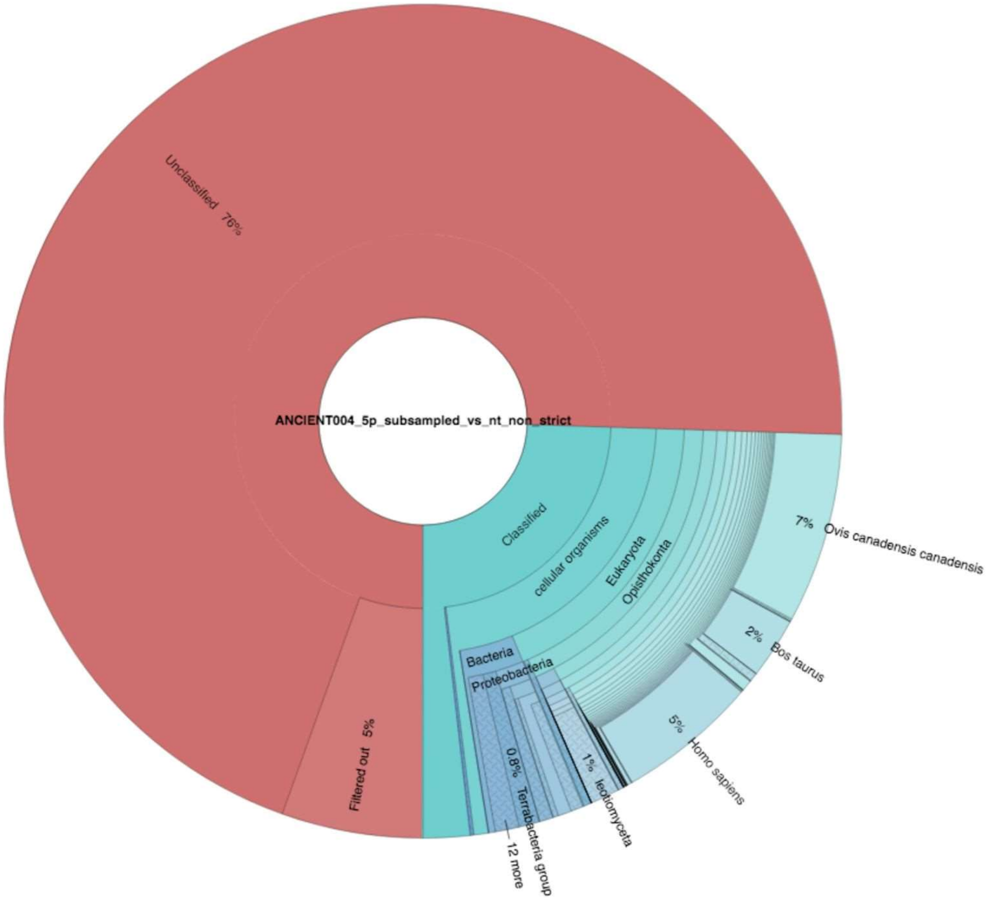
Deep-Time Origins and Clade Definition

The Nazca tridactyls present two independent lines of temporal evidence for their origin and persistence.

Morphological Evidence

Casas (2025) mapped the skeletal suite onto the Devonian–Carboniferous transition. Gastralia, interclavicle, radioulna and tibiofibula fusions, carpal synostosis (unicarpal), and the parietal–pineal complex were identified as plesiomorphic mosaic features of early tetrapod-grade anatomy. Casas emphasized that a terminal sacral consolidation represents a urostyle-like element, reinforcing parallels with amphibian metamorphosis. This morphological clock situates the lineage within 419–299 Ma, well before the time of the dinosaurs (Mesozoic, 252–66 Ma).

Figure 32: The DNA of Victoria



Genomic Evidence

About half a billion DNA reads were generated; a 5% sample (~25 million reads) screened against a global DNA library returned 76% unclassified. After removing obvious contaminants—human (~5%), sheep (~7%), and cattle (~2%)—approximately 94% of the remaining reads still had no match. Read alongside Devonian–Carboniferous–grade anatomy (419–299 Ma), this dominant unknown signal is interpreted (Casas, 2025) as consistent with a lineage splitting >300 Ma, earlier than the first reptiles and long before the dinosaur interval (252–66 Ma), advanced here as the Genesis Taxon hypothesis; precise dating will follow from de novo assemblies and ortholog-based phylogeny.

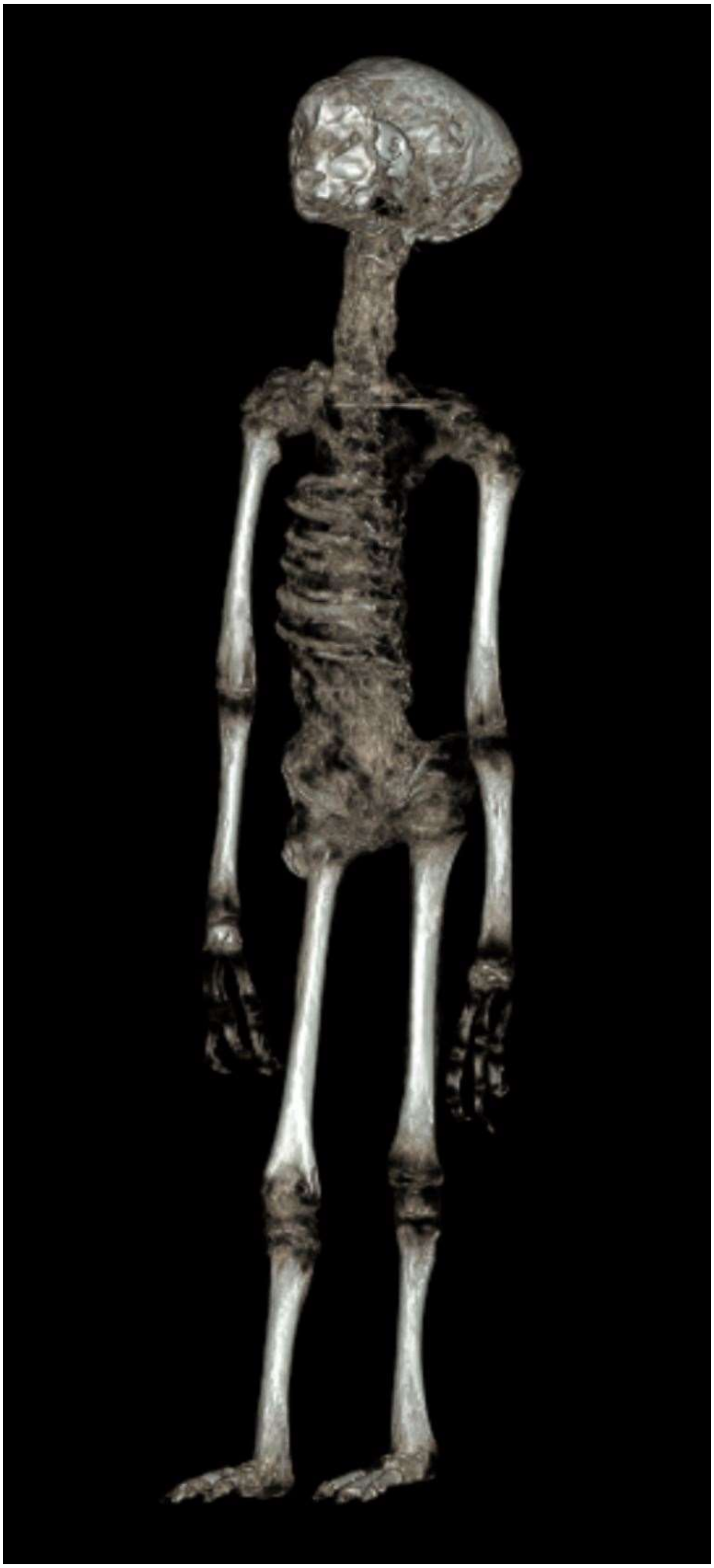


Figure 33: Alberto, J002, Tridactyl suggested Paratype 001

Images

18. Urostyle of Maria and amphibian parallel
    The-Alien-Project.com
19. Spinal Eminences of Suyay
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20. Artist's depiction of a Tridactyl in quadrupedal stance
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21. Sagittal scan of Luisa courtesy of Tridactyls.com, graphic from
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22. Embryo emerging from egg of Artemis engaged in feeding
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23. Eggs of Josefina
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25. Suspected ovum structures located in an embryo, within egg of
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29. Tridactyl larvae feeding within the skull of Luisa
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30. Tridactyl larva feeding within the skull of Luisa
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31. Scan of Tridactyl embryo demonstrating forelimb-first
    metamorphosis
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32. DNA of Victoria —Rangel-Martinez
33. Alberto (J002), suggested Tridactyl Paratype 001 —
    Tridactyls.org

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