Spring 2023

# The Foreign Earth: An Exercise in Speculative Biology

Aidyn Ruf

*Observations on the Morphology, Habits, and Natural History of Wildlife from Habitable Exoplanet Sol b.*

By Manbagea Ruoat, K.O.Y., Prime Naturalist of the Voljin Expedition to the Ekroan subcontinent.

CONTENTS.





## I. *Introduction.*

After the discovery of a deep space information cache recording knowledge about an extinct Type I civilization, an expedition was launched to survey the galaxy and planets of origin. As an expert in alien Flora and Fauna, I elatedly leveraged my extensive connections, developed in my many years of academia, to acquire a position amongst the research team.

While traveling to this distant star system, I deliberated upon the records seized from the foreign cache, acquiring data about the historic flora and fauna and environments of the exoplanet. Based on these accounts, I established a tolerable basis for comparison and observation, upon our forthcoming ingress to the stellar system. According to the records, at the current galactic time, approximately 250 million years have elapsed since the data cache was fabricated; and subsequently, the native organisms and environments, which naturally change with time, should be noticeably different.

Buried within the records, I happened across a sheaf of intriguing documents, holding a series of old naturalist journals describing the results of their own expeditions. In my early years, I oft examined such chronicles, which ignited a passion I had long mislaid. As such, in addition to the modern procedures upon which we practice, I have taken the liberty to compose a secondary account, full of drawing and observations, in the archaic style and techniques of the ages past.

## II. *Summary of Sol b Geography: Sol b.*

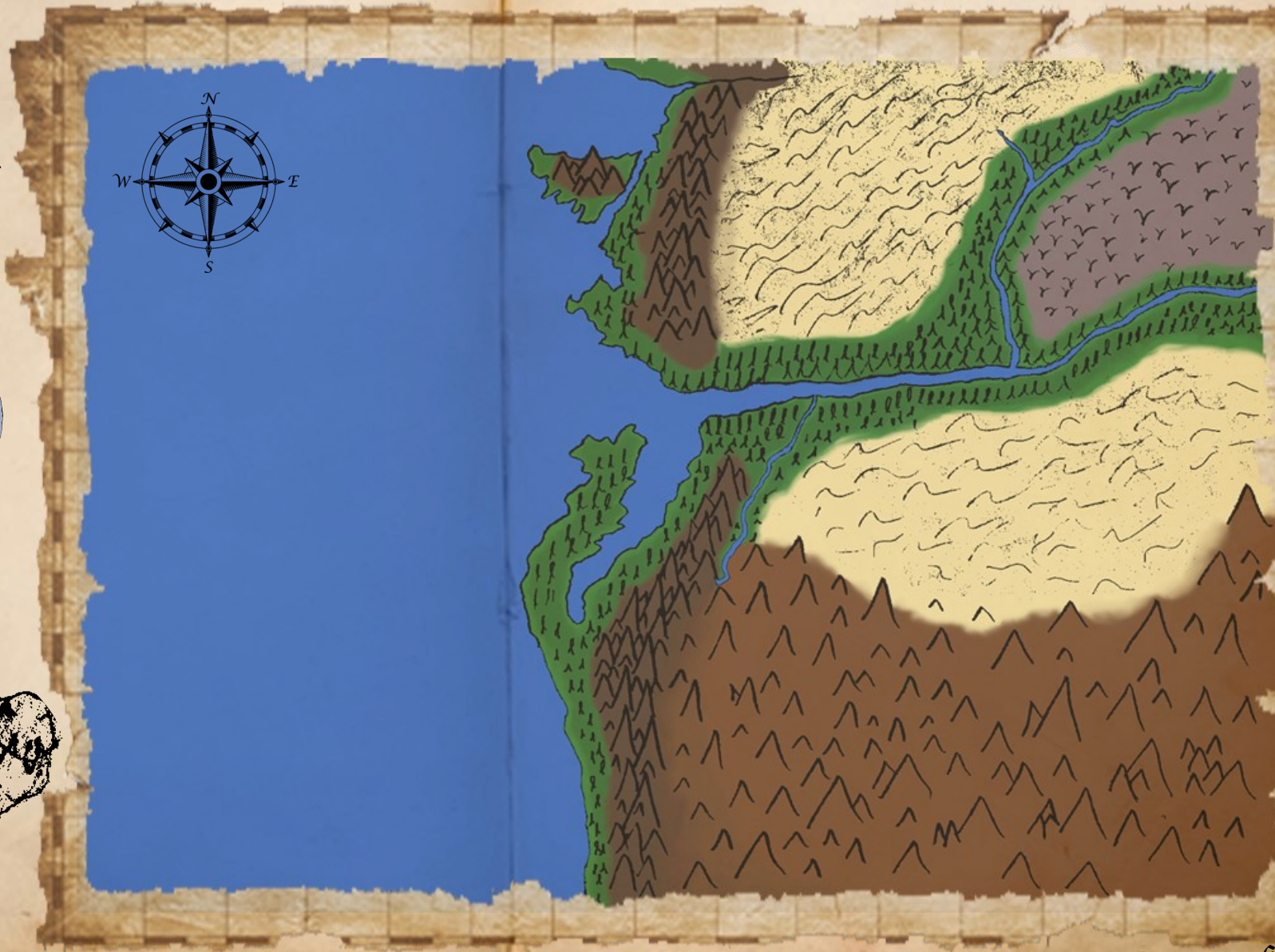
Habitable exoplanet Sol b has changed quite significantly from the state recorded in the information cache we recovered. Climatically, the exoplanet currently sits in the middle of a warm, greenhouse period, shifting the climate warmer, removing ice cover, and increasing habitable zone on the continents. Although some continental shapes remain similar, other aspects have changed substantially. The Central Asian continent lingers, relatively untouched by continental changes. The African continent has become skinnier, the northern portion warping upwards, and converting the Mediterranean into a landlocked sea. The Australian continent has travelled northwards, fusing with the south-eastern part of the Asian continent. Similarly, the Antarctician continent has begun travelling northwards, but remains covering parts of the exoplanet's southern pole.

The biggest change is the complete subduction of the Pacific tectonic plate, dragging the two American continents into a collision course with the Asian continent. Northwestern North America and Northeastern Asia have already collided, pushing land northwards in a large, relatively skinny offshoot. The South American continent has also slid behind the North American continent, twisting slightly to the fuse the respective western and southern sides. This leaves a large portion of the exoplanet as largely uninterrupted ocean.

# II. *Summary of Sol b Geography: Ekroan Subcontinent*

The Ekroan subcontinent is the region located on the Western edge of the North American continent, midway into the large sea separating the Asian and North American continents [See locator map below]. Due to the rise in sea level, the coast has shifted significantly inwards, creating new bays and sounds. Tectonic movement has split apart a thin portion of the cascade mountain range, allowing for a diverse variety of habitats to observe in this region. Additionally, volcanic activity from the central portion of the continent have shifted the general elevation, affecting geography such as rivers. The river shown here travels in a Northeast direction, before curving back Southeast towards its spring

In my regional map, I have indicated habitat types with different colors and symbology. Green represents coastal, riparian, and typical forests. Dark brown represents the taller mountain range. Light brown represents high elevation mountainous areas. Light yellow represents desert and scrubland. Purplish-grey represents swampland. And obviously, blue represents water.



# Green Lanette

*Chlorachus cancarpis*

## *Taxonomy.*

Descended from the Sea Robins, Order — Scorpaeniformes.
Lineage developed a 1st dorsal fin split into separate spines,
Family — Phytopterigiidae

Etymology: *Family*: Greek, phyto = plant + pterón = wing/fin
*Genus*: Greek, chloro = green + rhakhis = spine/back
*Species:* Greek, can = rod + carp = wrist

## *Morphology.*

The average specimen, once fully grown, is around 1 foot long. A semi-flattened body, tapering significantly towards the tail, usually colored in varied shades of tan, black and green, with a white underbelly. A wide head; eyes large, round and somewhat forward facing, with deep markings extending from the corners. Akin to their ancestors, Lanettes possess large pectoral fins, useful for stabilization while swimming and disturbing sand on the ocean floor. Some species still retain 'walking rays' for the original purpose of foraging the ocean sediment, though most specialized these appendages for greater movement and stability, or adversely, as ambush tools. The defining trait of the Lanettes is their unique 1st dorsal fin. The spines composing the 1st dorsal fin have become extended, and the membrane binding them has been completely severed, allowing each spine a certain degree of independent movement. These spines are tinted green, the exact shade variable, which match a species of sea grass present in the Lanettes' habitat; high freedom of motion allows the spines to naturally shift in the current, much like grass blades. In some species, the walking rays have also been adapted for camouflage, to mimic grass blades much like the spines.

## *Behavior.*

This lineage of fish consists of ambush predators specialized for life in brackish estuaries. Most Lanettes hunt by ambushing small prey, such as fish and crustaceans, approaching the border of sea grass beds. They locate a suitable spot along an edge or corridor, before semi-burying themselves, using their large pectoral fins as scoops for sand. The Green Lanette, specifically, possesses walking rays which dangle below their mouth, mimicking a worm as a lure. When prey gets close enough, they will use their large mouth to suck in the unsuspecting creature and crush them with powerful jaws. Lanettes are solitary fish and often fight over territory within the grass beds. They perform intricate courtship rituals wherein males control their dorsal spines to "dance" , thereby showing off to nearby females. Once the winners of these courtship rituals mate, the eggs are laid amongst the bases of sea grass and abandoned.

# Alea

*Marupes cervicravus*



## *Taxonomy.*

Descended from Sea Gulls, Family — Laridae.
Lineage developed spring-like leg muscles to assist in vertical takeoff,
Order — Versura
Lineage developed pressurized tube-nostril , Family — Halijectidae

Etymology: *Order:* Latin, vertere = to turn/bend + sural = calf
*Family:* Latin, hali = salt + ject = throw
*Genus:* Latin, mare = sea + rupes = cliff
*Species:* Latin, cervix = neck + cappa = 'covering for the head' + ravus = gray

## *Morphology.*

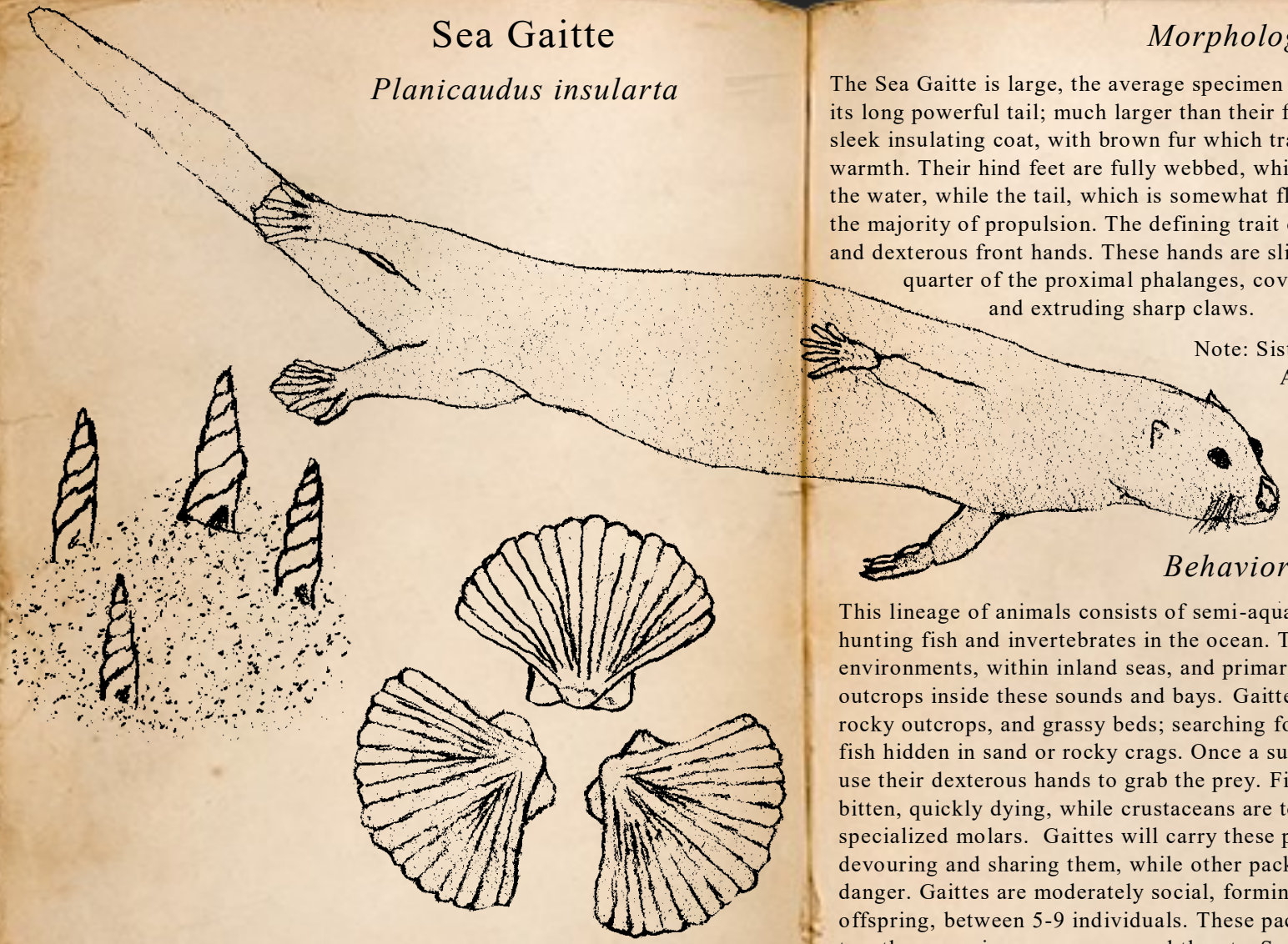
Alea are sizable birds, standing just under 3 feet tall, with a wingspan oft extending beyond 9 feet. They possess a lean build, with an apparently smooth surface as formed by primarily white bodily feathers. Long wings, thin and angled to a point; feathers colored solid black distally, gradually melding into white, moving proximally toward the body, with yellow patches marginally above the wing base. Comparatively long legs with protrusive coiled ridges spanning their length, allowing for easier vertical takeoff. The back of the Alea's neck and head are covered with grey feathers, forming the likeness of scarf or habit. The defining trait of the Alea is the broad bulge near the base of the upper beak. Within this cavity, two separate glands are located; specialized salt glands, which are capable of extracting, storing, and releasing ingested salts, and saline glands, which mixes water with the salts and stores them as a saline solution. A duct attached to the saline gland, allows for the pressurized release of the fluid within.

## *Behavior.*

This lineage of seabirds consists of highly migratory birds, who spend the majority of their life drifting upon the inland sea and hunting for fish. The Alea traverses the inland sea, returning to land biennially to seek a mate and build nests on the coastal cliffs. Alea hunt by snatching small baitfish from the surface of the ocean and swallowing them whole, although they can store the fish in a crop to later regurgitate. Alea possess a special defensive mechanism; spraying a concentrated salty solution at potential predators. The salty solution stored in their saline glands is pushed through a pressurized duct, and expelled as a thick cloud of stinging salt. Alea are monogamous, mating for life after choosing their partner through a special mating dance. When the breeding season occurs, mature individuals return to cliffsides on the Olympic coast, and raise their young. The parents rotate taking care of the chicks and hunting for food, until the fledglings are a few months old, and practicing flight on their own. Over the following month, the parents will teach their chicks how to fish, before leaving them and returning to the sea.

# Sea Gaitte

*Planicaudus insularta*



## *Taxonomy.*

Descended from racoons, Order — Carnivora, Family — Procyonidae

Lineage developed aquatic hunting adaptations, Order — Platydactyla
Lineage became fully semi-aquatic, Family — Sacidactylidae

Etymology: *Order:* Latin, platy = broad + dactyl = finger
*Family:* Latin, sacire = 'to take possession of' + dactyl = finger
*Genus:* Latin, plan = flat + caud = tail
*Species:* Latin, insula = island + artista = artist



## *Morphology.*

The Sea Gaitte is large, the average specimen reaching 4-5 feet long, including its long powerful tail; much larger than their freshwater relatives. It possesses a sleek insulating coat, with brown fur which traps air, boosting protection and warmth. Their hind feet are fully webbed, which increases maneuverability in the water, while the tail, which is somewhat flattened dorsal-ventrally, provides the majority of propulsion. The defining trait of Gaites are their highly flexible and dexterous front hands. These hands are slightly webbed, between the bottom quarter of the proximal phalanges, covered with thickened finger pads and extruding sharp claws.

Note: Sister lineage to the fully aquatic, Aerocystidae family.

## *Behavior.*

This lineage of animals consists of semi-aquatic predators specialized for hunting fish and invertebrates in the ocean. The Sea Gaitte lives in costal environments, within inland seas, and primarily nests on small islands and outcrops inside these sounds and bays. Gaittes hunt amongst kelp forests, rocky outcrops, and grassy beds; searching for large invertebrates and slow fish hidden in sand or rocky crags. Once a suitable target is found, Gaittes use their dexterous hands to grab the prey. Fish are instantly gashed and bitten, quickly dying, while crustaceans are torn apart, gnawed on with specialized molars. Gaittes will carry these prey back to the surface, devouring and sharing them, while other pack members help keep watch for danger. Gaittes are moderately social, forming familial packs of parents and offspring, between 5-9 individuals. These packs hunt and patrol their territory together, ganging up on supposed threats. Sea Gaittes like to decorate their island nests with trophies from their hunts, such as crab shells and pieces of fish bones, often stacking or rearranging them into odd patterns and shapes. Once a batch of brothers and sisters reach adulthood, usually at around 4 years old, they set out together in an odd summer migration. Newly matured offspring from all around converge on one of several spots, competing for partners by comparing hunting prowess. Male and Female Gaittes will both participate, seeking to match with a partner possessing similar or higher talent than themselves. These mating pairs will remain together for life as monogamous couples, with the more talented individual being more dominant. Once mates are selected, the dominant partner will return to their original pack, accompanied by their new mate. Once a pack grows too large, they split into two groups, forming two new packs.

# Khallasier

## *Forfemuscla baditufa*

### *Taxonomy.*

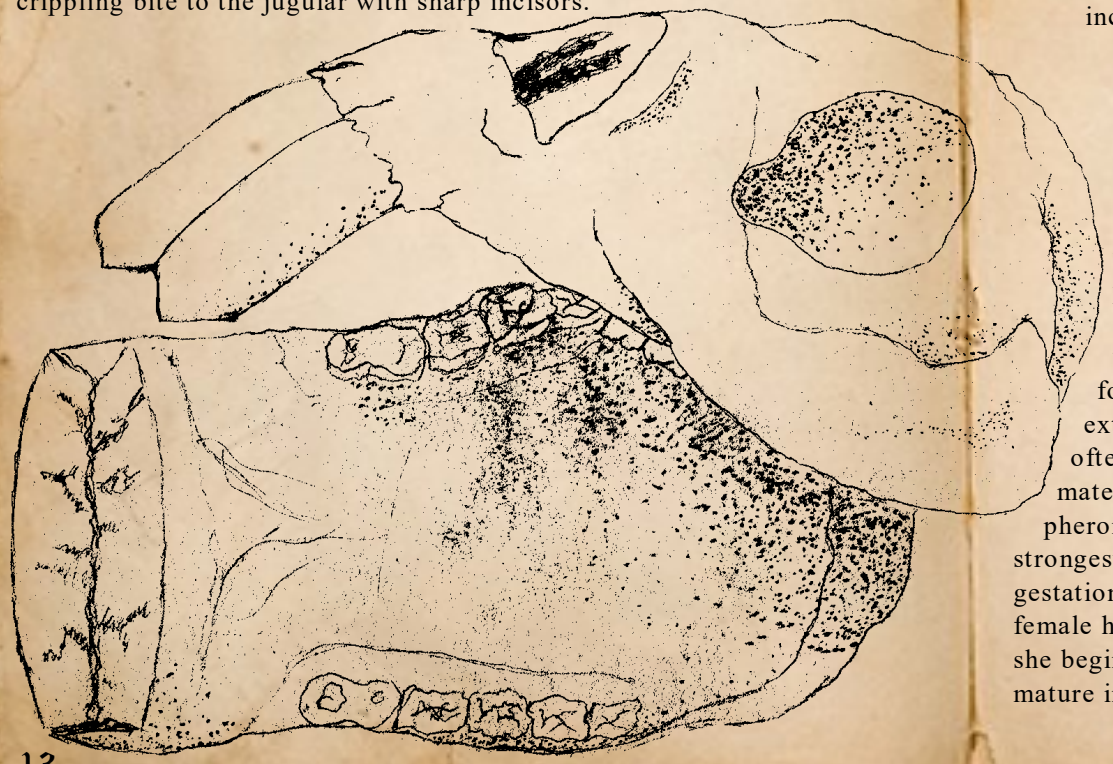
Descended from common rats, Order — Rodentia

Lineage developed carnivorism, Order — Novicida
Lineage developed fused, lower incisor plate, Family — Dentracuidae

Etymology: *Order:* Latin, nova = new + caedere = killer
*Family:* Latin, dentri = tooth + acuere = sharpen
*Genus:* Latin, fort = strong + femur = thigh + musculus = muscle
*Species:* Latin, badi = 'reddish brown' + tufa = 'helmet crest'

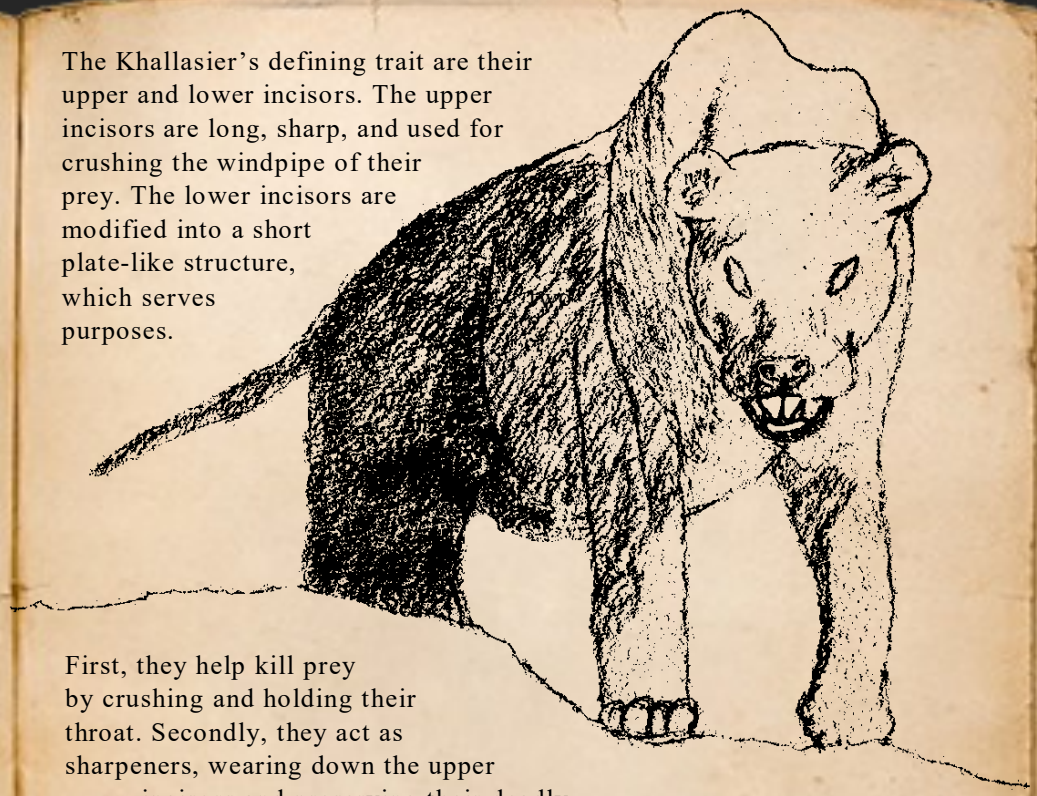
### *Morphology.*

Khallasiers are large predators, 7 to 8 feet long when fully grown, with a sinewy build. Strong muscular lines show evidently through their short-haired coats, dull brown or grey in color, with green speckles. Plus, a long, skinny tail for maintaining balance, and rounded ears. They possess curved claws, which though sharp, are inefficient for slashing; and are better suited rather, for grappling, while they deliver their killing strike, a crippling bite to the jugular with sharp incisors.





The Khallasier's defining trait are their upper and lower incisors. The upper incisors are long, sharp, and used for crushing the windpipe of their prey. The lower incisors are modified into a short plate-like structure, which serves purposes.



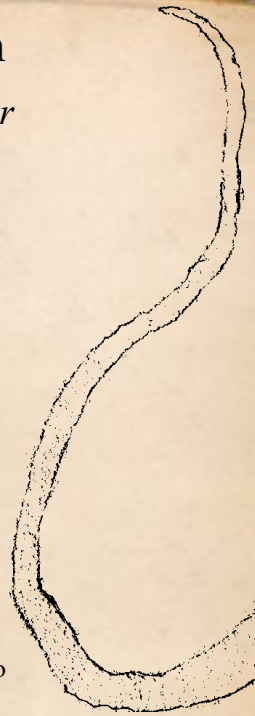
First, they help kill prey by crushing and holding their throat. Secondly, they act as sharpeners, wearing down the upper incisors and preserving their deadly effectiveness.

### *Behavior.*

This lineage of animals consists of predators who prey mainly upon large and mid-sized herbivores, such as Oruses, utilizing ambush tactics. Khallasier are adept at climbing, preferring to ambush their prey by leaping down from higher elevations, such as tree branches or canyon walls. They usually establish their dens at higher elevations, upon mountain sides or cliffs, actively entering the lower coastal forests and rocky zones while hunting for prey. Khallasier are extremely solitary creatures, and highly territorial. Young males are often mauled after invading the territory of a female who is not ready to mate. Only after a female has marked her territory, with a special pheromone, can males enter and fight amongst themselves to determine the strongest suitor. The winning male spends the latter ends of the female's gestation period hunting for her, but avoids her the rest of the time. Once the female has given birth, the male is promptly chased out of her territory, and she begins hunting for herself again, while raising the young cub, who will mature in 2-3 years.

# Maned Kulleon

*Arboscanus monater*



## *Taxonomy.*

Descended from common rats, Order — Rodentia

Lineage developed enhanced scent capabilities,
Order — Euryrhisa

Lineage developed prehensility in the tail,
Family — Caudhensidae

Etymology: *Order:* Greek, eury = broad/wide + rhis = nose

*Family:* Latin, cauda = tail + prehendere = grasp

*Genus:* Latin, arboreus = 'pertaining to trees' + scandere = climb

*Species:* Latin, monile = necklace + ater = black

## *Morphology.*

The average specimen is between 1-2 feet long, about a foot tall, with a skinny body plan and short powerful legs. Clawed feet, with toe pads intended to grab and protect from bark A wide, flattish head; small triangular ears, a wide nose with extended lateral lobes, and many small sharp teeth. They are short-haired with bare feet, primarily brown in color, and a thick, glossy black mane in males. The defining trait of Maned Kulleons are their long prehensile tails and wide powerful noses. Their tails are hairless, scaly and long, longer than the rest of their bodies, and appear deceptively weak, compared with the amount of muscle within them. The Kulleon's nose encompasses the entire distal snout, the lobes wrapping around laterally; colored black, blending into light brown on the lobes. They are quite noticable and a powerful sensory organ, strong enough to smell carrion a mile away.



## *Behavior.*

This lineage of animals consists of scavengers who are specialized for movement amongst the treetops. After smelling a corpse, Maned Kulleons pursue the scent, running through the thick forest canopy by utilizing their legs and tail, descending to the ground for quick stretches whenever necessary.

Upon reaching their prize, they descend from the treetops, tearing off manageable sized pieces of flesh if the corpse is too big. The Kulleon grasps the torn piece with their tail, dragging it up a nearby tree to eat in safety. This process repeats until there is nothing left, and they start fighting with other Kulleons and scavengers for remaining scraps of meat. Despite their apparent savagery, Kulleons are actually very clean creatures, with extensive grooming care. For Maned Kulleons especially, maintaining a shiny black mane whilst eating rotting flesh is a desirable trait for female mate selection. Kulleons have a wide range of activity, and usually, only the territories of males and females overlap. Kulleons have a polygamous mating system, wherein males will mate with any females his territory intersects with. The female births 2-3 kits, and solely raises them. Kulleons create their dens in old snags, high off the ground, so the mother can leave the kits for extended periods of time while scavenging for food.

# Dappled Orus

*Concurvancea maculosa*

## *Taxonomy.*

Descended from common rats, Order — Rodentia

Lineage developed hoof-like feet, Superorder — Fusallusia
Lineage developed guy symbiotes to digest wood, Order — Dendrogasta
Lineage developed additional pair of incisors via hyperdontia,
Family — Bidentidae

Etymology: *Superorder:* Latin, fus = pour/fuse/blend + allus = great toe
*Order:* Greek, dendro = tree + gastro = stomach
*Family:* Latin, bi = two + dent = tooth
*Genus:* Latin, con = together + curvare = 'to bend' + lancea = spear
*Species:* Latin, maculosus = 'full of spots'

## *Morphology.*

The Dappled Orus is on the smaller side, between 4-5 feet tall and 6-7 feet long, although other close relatives can reach larger sizes. They possess slender, cylindrical bodies with two-toed hoof-like feet, long slim legs, and a shortish tail. They are short-haired, primarily light brown with white mottled along the back and a black tail.



A round head with short snout, perched upon a short neck; large squarish ears, a brown nose shaped like an inverted heart, and two long inclinate tusks extending from the lower jaw. The defining trait of the Dappled Orus is this set of large tusks, derived from its secondary incisors. Their duplicated incisors, at the anterior of the diastema ,are rounder than the primary incisors and constantly grow outwards, diagonally from the lower jaw ,until they begin curling back on themselves. When Orus live long enough, these tusks can curl all the way around, connecting above their snout and limiting the opening of the jaw. However, the tusks are usually worn down before that occurs.

## *Behavior.*

This lineage of animals consists of herbivorous species which reside in habitats with dense forests and shrubs, specialized in eating woody plants. The Dappled Orus feeds primarily on small woody shrubs, while other species specialize on both herbaceous plants and smaller woody trees. Orus are generally grazers, gnawing off and eating low-hanging branches, before moving into new areas. However, if food cannot be easily procured, Orus are entirely capable of chewing down small trees and shrubs, staying in an area until all the vegetation is consumed. During mating displays, Orus males will posture, comparing size and wrestling with their tusks to show strength. Additionally, Orus males will rub their tusks against trees, leaving large gashes and scent marks which indicate their presence and maintain their tusk length. It is easily discernable when a group of bachelor Orus have inhabited an area, due to the carnage they leave behind on the vegetation. Orus live in predominantly female herds with a male patriarch who duties are fending off other males who wish seize his harem.

# Veiled Hecitid

*Oblaqueatus masca*

## *Taxonomy.*

Descended from common rats, Order — Rodentia

Lineage developed carnivorism, Order — Novicida
Lineage developed thin ears for improved hearing, Family — Dolikotidae

Etymology: *Order:* Latin, nova = new + caedere = killer
*Family:* Greek, dolikhos = long + ot = ear
*Genus:* Latin, oblaqueatio = 'dig around tree-roots'
*Species:* Latin, masca = 'spectre/nightmare + mask'



## *Morphology.*

Hecitids are small predators, no longer than 2 feet max. A long thin body, equally thick throughout, and generally brown with a cream underbelly, but with possible patches of black, white, green, and orange fur intermixed in their pelts. They possess stout legs with clawed toes, and a small tail. A long neck supporting a short head, with tall skinny ears. These flexible ears, as long as their head and neck combined, are the defining trait of Hecitids, which are used to help pinpoint their prey in the tall grass. These ears can rotate independently of each other to distinguish the direction of sounds. Veiled Hecitids also have a solid white patch covering their upper head, with two thin black patches painted on the forehead.

## *Behavior.*

This lineage of animals consists of social predators who hunt fast, small sized prey. Hecitids are voracious pack predators, willing to tackle prey species several times their size. Usually, they sneak and pounce on their prey, utilizing tall grass as a cover and listening for sounds with their ears. Using their sharp claws, they cling onto the poor creature's back and sides, biting its flesh with their sharp teeth. Depending on the prey's size, and number of Hecitids in a pack, hunts can finish extraordinarily quickly. Hecitids live together in dens, located underneath the roots of large trees, in groups of up to 12 individuals. They dig large extensive dens, with multiple chambers for different pack members and couples, including several exit tunnels. Hecitid packs are strictly matriarchal, with the eldest female leading hunts and controlling decisions for the whole group. When searching for a mate, male Hecitids will leave their birth families and search for other packs in the surrounding areas. Often, males will group up to form small bachelor packs. When these males find a new pack, they perform acrobatics, in an attempt to showcase their hunting prowess and athleticism to eligible females in the pack. If the male is accepted by a young female, he will join the new pack and mate with her to produce a litter of kits.

# Freshwater Grutt

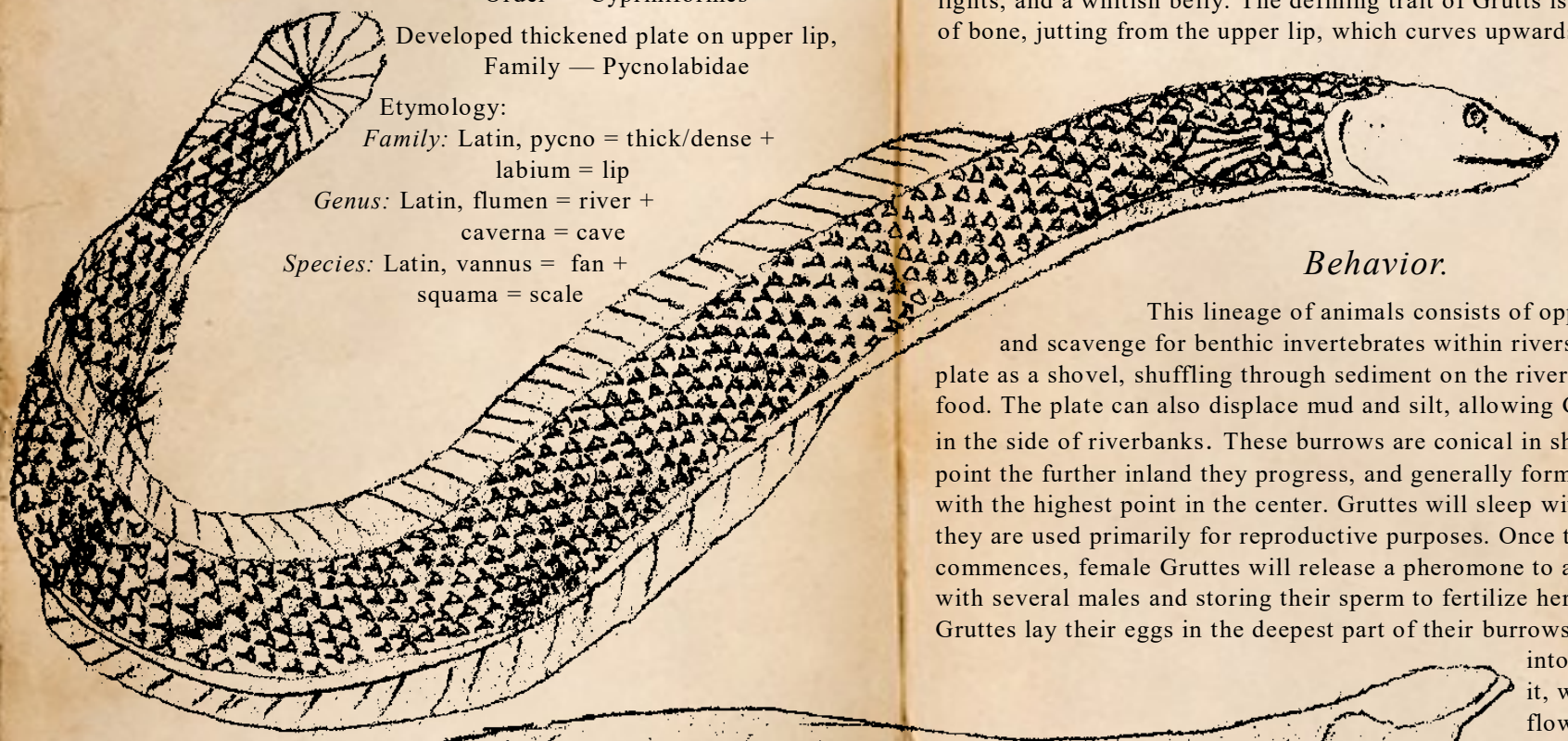
*Fluvernus vansquamis*

## *Taxonomy.*

Descended from carp,
Order — Cypriniformes

Developed thickened plate on upper lip,
Family — Pycnolabidae

Etymology:
*Family:* Latin, pycno = thick/dense + labium = lip
*Genus:* Latin, flumen = river + caverna = cave
*Species:* Latin, vannus = fan + squama = scale



## *Morphology.*

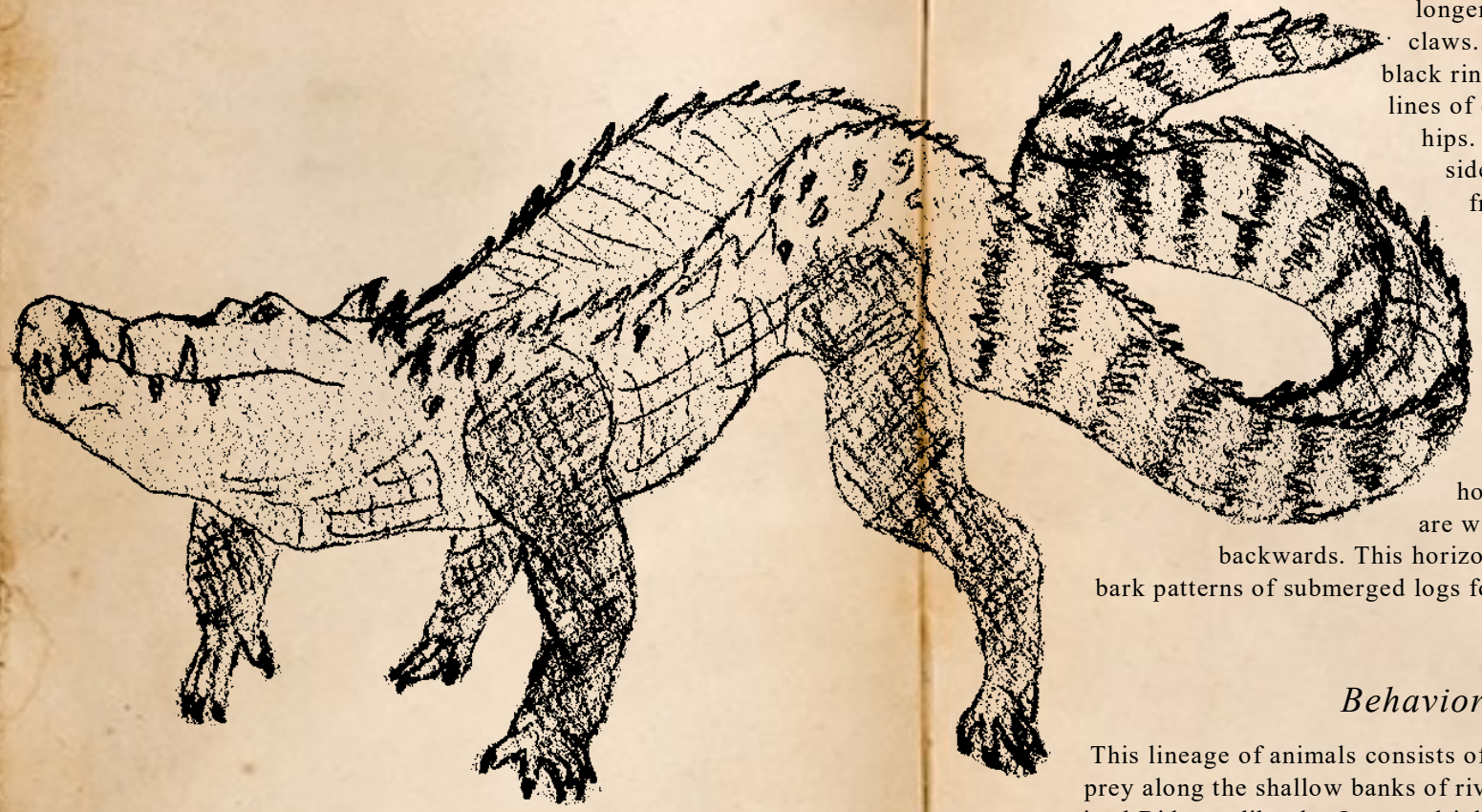
Freshwater Grutts are long, around 3 feet long, and relatively thin. Fin morphology consistent with other fishes; a short rounded caudal fin, long extended dorsal and anal fins, lost pelvic fin, and a rough trapezoidal pectoral fin. They have a large suction-like mouth, capable of siphoning large fragments of food from the riverbed. Colorwise, the scales are dark tan, with black highlights, and a whitish belly. The defining trait of Grutts is the thickened plate of bone, jutting from the upper lip, which curves upwards distally.

## *Behavior.*

This lineage of animals consists of opportunists, who hunt and scavenge for benthic invertebrates within rivers, using their nose plate as a shovel, shuffling through sediment on the riverbed for buried bits of food. The plate can also displace mud and silt, allowing Grutts to dig burrows in the side of riverbanks. These burrows are conical in shape, tapering to a point the further inland they progress, and generally form a shallow S-shape, with the highest point in the center. Gruttes will sleep within these tunnels, but they are used primarily for reproductive purposes. Once the breeding season commences, female Gruttes will release a pheromone to attract males, mating with several males and storing their sperm to fertilize her eggs. After mating, Gruttes lay their eggs in the deepest part of their burrows, shoveling silt back into its entrance to hide it, while still allowing the flow of water within. In order to decrease the odds of predators finding and eating their eggs, Gruttes will often dig several false burrows at other locations in the riverbank, disguising them poorly to draw away attention of potential predators. These false burrows often end up inhabited by other river inhabitants seeking shelter from the current or predators.

# Ekroan Licconean

*Rotadermis acumapulus*



## *Taxonomy.*

Descended from American alligator, Family — Alligatoridae

Lineage developed elongated legs, and erect stance, Family — Erecoxidae

Etymology: *Family:* Latin, erectus = upright/elevated/lofty + coxa = hip
*Genus:* Latin, rota = 'wheel' + dermus = skin
*Species:* Latin, acumen = sharp + scapulae = shoulder

## *Morphology.*

This Ekroan Licconean is a medium sized crocodilian, around 5 feet long, who preferentially live in large river deltas and swamps. Their bodies are thin with rotated



dorsal osteoderms; long legs, the hindlegs longer than the forelegs, with curled claws. Their tail is long, covered with black rings of scales, and fusing the two lines of osteoderms originating from the hips. Their snouts are on the thinner side, with snaggle teeth extending from both jaws, and a clump of spines above each shoulder blade. Primarily greyish-black, with hints of green in parts of their scales. The defining trait of the Ekroan Licconean are the rotated osteoderms along the hipline. These osteoderms have been rotated horizontally instead of vertically, are widest laterally and curve backwards. This horizontal pattern better mimics the bark patterns of submerged logs for species of Ekroan trees

## *Behavior.*

This lineage of animals consists of ambush predators, who hunt prey along the shallow banks of rivers. They will ambush medium-sized Bidents, like the Oruses, drinking along the riverbank, but also eat fish swimming in the river and hunt down smaller animals on the shore. Ambushing from underneath the water's surface remains the Licconean's preferred method of hunting, but they will pursue smaller animals onto land. Their long legs grant them more speed on land than their ancestors, which they use to chase medium-small sized herbivores and predators. Specimens can be found extending all the way to the ocean, but the Ekroan species in particular prefers freshwater over salt water. Licconeans find mates by creating deep vocalizations, to attract a partner. Females care for young in nests, closely guarding the clutch of around 20 eggs until they hatch.

# Sprig Striker

*Ramimicus protroculis*

## *Taxonomy.*

Descended from dragonflies, Order — Odonata

Lineage lost some/all adult flying forms, Family — Senfanidae

Etymology: *Family:* Latin, senex = ‘aged living things’ + infans = child
*Genus:* Latin, ramulus = a twig + mimicus= ‘one who imitates’
*Species:* Latin, protrudere = ‘to push out’ + oculare = eye

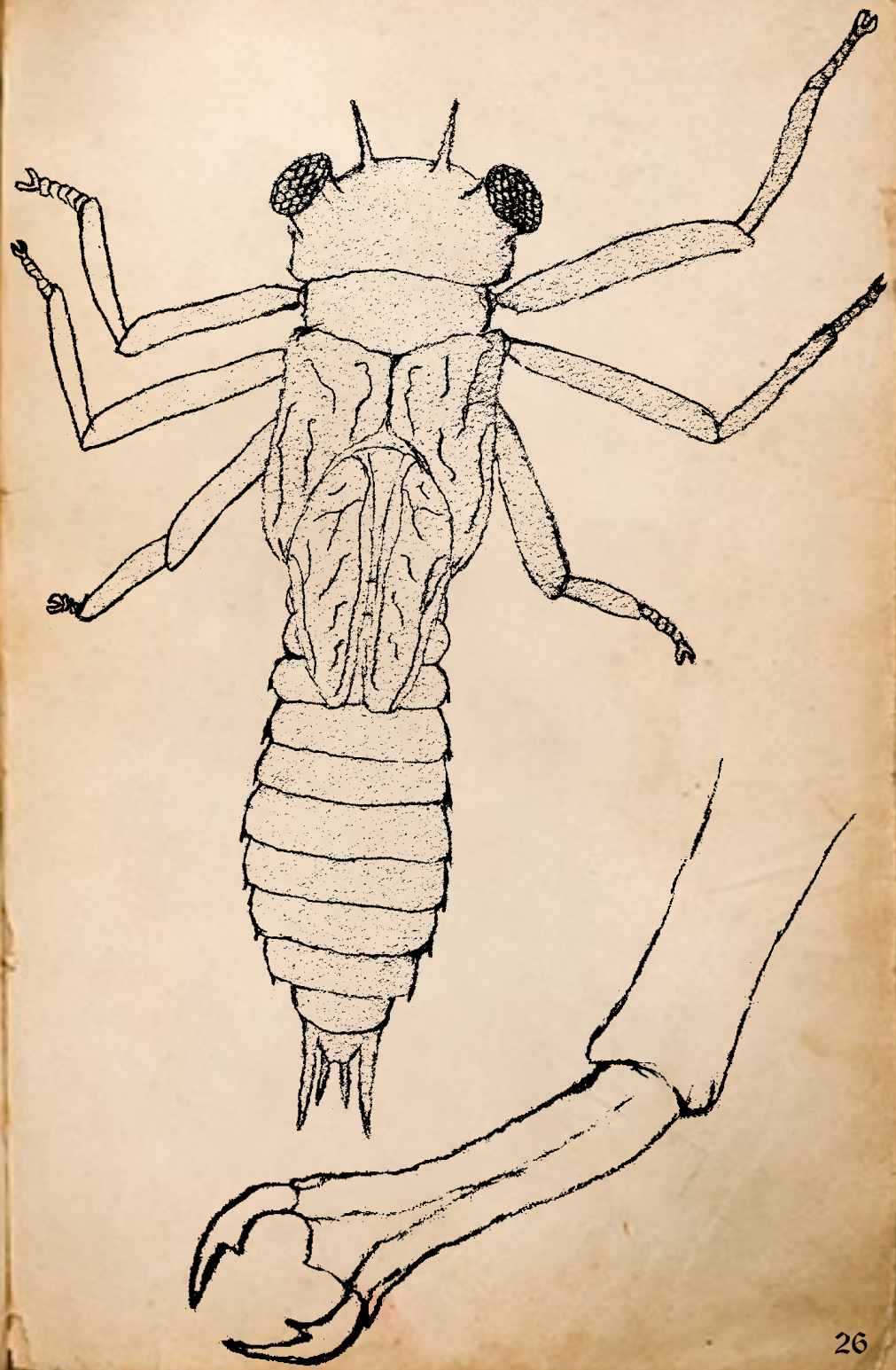
## *Morphology.*

Sprig Strikers are between 6 inches long, with thin sprawling legs and strong tarsal claws for gripping onto the substrate. They have a relatively large head compared to body size, with their eyes extended on short stalks, like the offshoots of a branch. Their thorax is thin, and their abdomen is symmetrical with the widest section of their body in the central thorax. Colors are primarily dark brown and black, contributing to their cryptic defense. The defining feature of the Strikers are their set of extendible mouthparts and mandibles. These mouthparts, composed of an expanded, hinged labium and mobile mandibles, remain folded under the head at rest. Once activated, they lunge forward extremely quickly, snatching unsuspecting prey items floating through the water nearby.

## *Behavior.*

This lineage of animals consists of aquatic ambush predators which feed on small fish, amphibians, and even some small mammals. Strikers are ambush predators who sit motionless on bits of branches protruding from underwater snags, preferably in moderately flowing water, between fast currents and eddies. The lifecycle of strikers differs between males and females. Females, who are much bigger than males, permanently remain in their aquatic form and can live for several years, disregarding predation . Males on the other hand are much smaller, often no more than 3 inches long, and their lifespan never exceeds a year. After maturing, male Strikers will search for and mate with female Strikers, before undergoing their final molt and returning to their ancestral winged form, although it possesses no remaining purpose. The males will survive for a few weeks, hunting other flying insects, before dying off themselves. After mating, female Strikers will lay a string of eggs underneath or inside the cracks of a large submerged log, abandoning them to hatch on their own.





# Drirus

*Pungrostrum lustrapexus*

## *Taxonomy.*

Descended from Sea Gulls, Family — Laridae

Lineage developed spring-like leg muscles to assist in vertical takeoff, Order — Versura

Lineage developed special feathers on legs to detect vibrations, Family — Depennidae

Etymology:

*Order:* Latin, vertere = to turn/bend + sural = calf

*Family:* Latin, deprimere = depress + pinna = feather

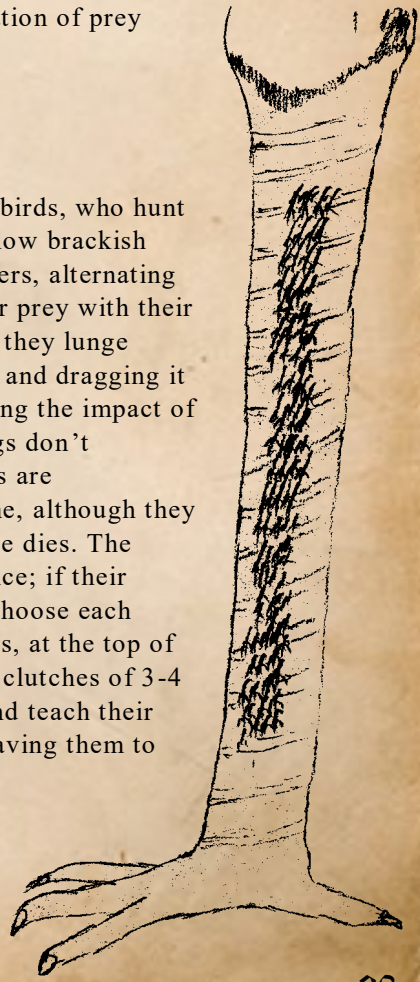
*Genus:* Latin, pungere = to prick/pierce' + rostrum = beak

*Species:* Latin, lustrare = 'to illuminate' + apex = point/tip



## *Morphology.*

Drirus are tall, the average specimen reaching 3-4 feet in height, with a wingspan of approximately 6 feet. Their grey body is thin and slender; with long legs, patterned with spiraling rings, wide wings, with large feather tips colored iridescent blackish blue, a long neck, and a long pointed beak. The defining trait of Drirus are the band of feathers which extend down the interior side of their tibias. The feathers in this belt are attached to special mechanoreceptors in the skin, and sensitive to vibrations in the environment. When standing in water and waiting for prey, these feathers allow the Drirus to distinguish the movements of fish and amphibians swimming within the brackish swamp water. Additionally, these feathers function excellently at determining the exact location of Thumpers, the Dirus' favorite prey, when actively hunting. The special feathers are sensitive enough to recognize the difference in feather displacement between upper and lower locations; which helps pinpoint the exact location of prey



## *Behavior.*

This lineage of animals consists of predatory birds, who hunt for aquatic and semi-aquatic prey within shallow brackish waters. Drirus hunt by wading in shallow waters, alternating through moving or standing, and searching for prey with their eyes and vibration sense. Once prey is found, they lunge forward impaling the creature with their beak and dragging it back to shore. Drirus are capable of suppressing the impact of the sensations their feathers relay, so their legs don't constantly send signals whilst in flight. Drirus are monogamous, only taking one partner at a time, although they will acquire a new partner if their current mate dies. The male and female perform a duet courtship dance; if their tempos and actions match up well, they will choose each other as partners. The parents build large nests, at the top of dead snags, in the middle of swamps, and lay clutches of 3-4 eggs. The mother and father will both raise and teach their chicks, until they are 5-months old, before leaving them to fend for themselves.

# Mottled Thumper

## *Manmersus rubevexion*

### *Taxonomy.*

Descended from tree frogs, Family — Hylia

Lineage developed structured eustachian tube to better select for sounds, Order — Costiculae

Lineage developed glottis flap to help modulate sound production, Superfamily — Glottidemoidea

Lineage developed deep call pulses to stun prey, Family — Pulsonidae

Etymology: *Order:* Latin, costa = ribbed + auricula = ear
*Superfamily:* Greek, glottis = 'mouthpiece of a pipe' + oidema = swell
*Family*: Latin, puls = push + son = sound
Genus: Latin, mansus = stay + merger = dip/punge
*Species:* Latin, ruber = red + vexillum = flag

### *Morphology.*

The Mottled Thumper is a large frog, between 6-8 inches long, with a thick stocky build and warty sides. Powerful hind legs, longer than the body when stretched straight, and an extended middle toe. Front legs thick and short compared to the hind legs. A wide head; V-shaped snout with a strong jaw for crunching small prey, large spherical eyes, partially embedded on top of the head, with red irises and black pupils. A large tympanum, or ear, just behind the eyes, lighter in color than the body. Mottled Thumpers are primarily mottled brown and dark green with red patches under its chin and a pale green belly with dark green speckling.



### *Behavior.*

This lineage of animals consists of semi-aquatic opportunists, who hunt for insects in and out of the water but would happily seize a small animal if given the opportunity. The defining trait of Thumpers is their hunting technique. Increased control over the sounds they produce allow Thumpers to produce short bursts of sound pulses, directing them to stun small insects or animals swimming underwater, before swallowing them. They are efficient hunters in the water, where sound travels faster, but significantly clumsier when moving around on land, and struggle with focusing their sonic pulses. During the mating season, males compete over isolated ponds of water within the interior of swampy lands by using their calls, which signal their presence to competitors by vibrating the pool's water. Occasionally, unfortunate individuals can drown after being successively stunned by many pulses of sound. The males who occupy the best ponds are chosen as preferential partners, and mate with the most females. The females will lay her eggs in the male's pond and the male will remain there, protecting the eggs until they hatch, both from predators and other cannibalistic males.

## *Taxonomy.*

Descended from hickory trees, Order — Fagales, Family — Juglandaceae

Lineage developed thick bark to combat dendrogast predation,
Order — Pachyphlales
Lineage developed mutation creating ‘bubbles’ within outer bark,
Family — Dermacoelaceae
Lineage developed symbiotic relationship with dwelling beetles,
Genus — Dendridomus

Etymology: *Order:* Greek, pachy = thick + phloe = tree bark
*Family:* Greek, derma = skin + coel = cavity
*Genus:* Greek, denro = tree + domos = house
*Species:* Greek, quini = ‘five each’ + folium = leaf

## *Morphology.*

Carrel trees are tall, over 80 feet tall, with a sprawling canopy and typical root system. Leaves are darker green, and arranged oppositely in compound groups, with a group of five leaves present at the tip of the stem. They have wide trunks with very thick textured outer bark which is dark grey in color and marred with ovular indents. The defining traits of Carrel trees are the ovular cavities which are formed in their bark. These cavities or Carrels can be anywhere from 1-3 inches thick although the biggest and smallest sizes are rare.

## *Behavior.*

This lineage of plants consists of deciduous trees specialized for growth in low-mid elevation forests in dry and moderately wet conditions. Carrel tree saplings grow quickly during their first five years, and slow down dramatically for a few years afterward, until they return to an average growth rate. Current hypotheses suggest this growth rate is a response to Dendrogast predation. The Carrel tree has formed a symbiotic relationship with predatory insects who live within their carrels, such as the Dwarf Dwelling Beetles. These beetles repel wood-boring pests, which benefits the tree.

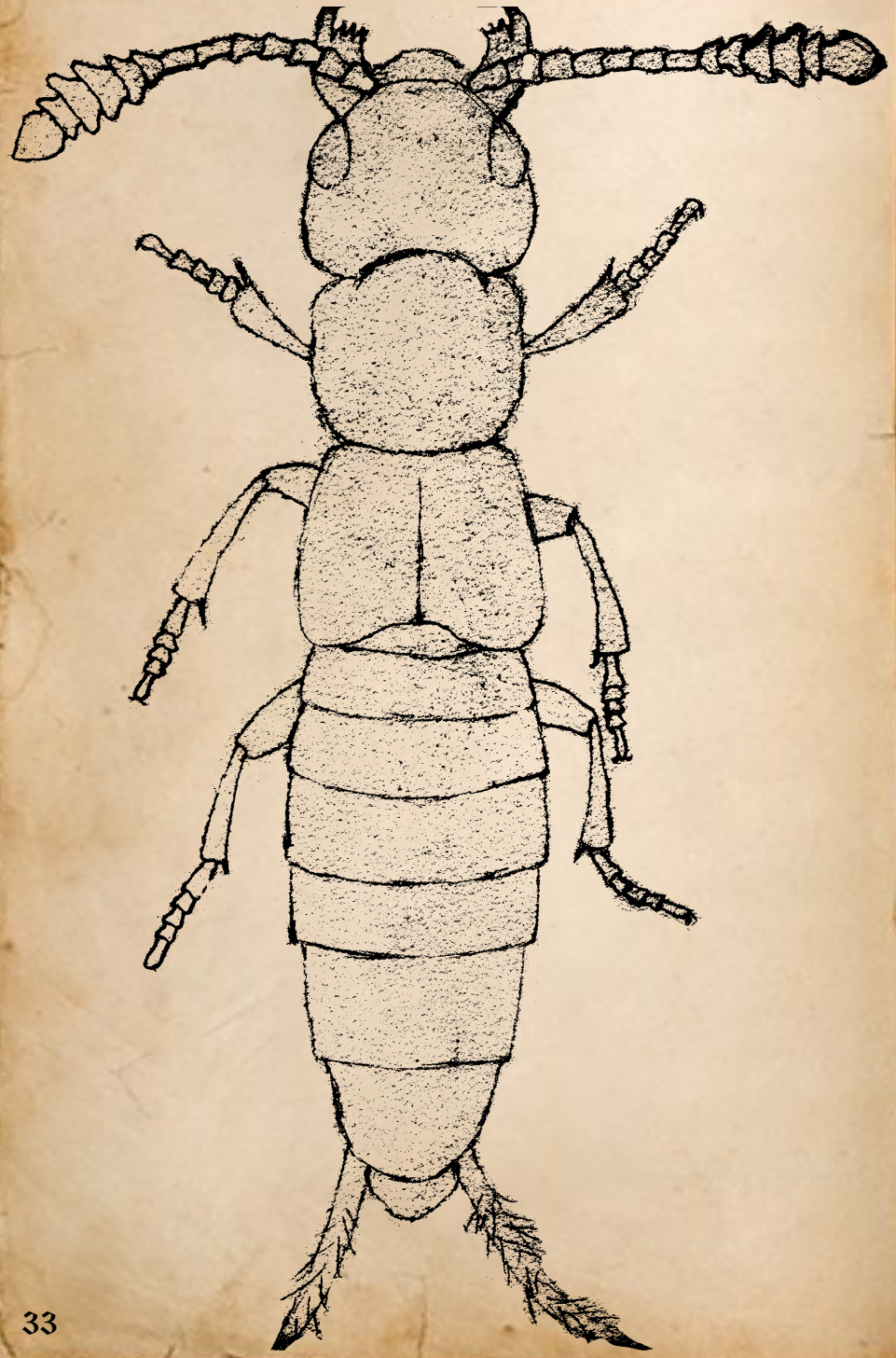


# Carrel Tree

*Dendridomus quinfolia*

# Dwarf Dwelling Beetle

*Microputabitis venariculus*





## *Taxonomy.*

Descended from Rove beetles, Order — Coleoptera, Family— Staphylinidae

Lineage developed lobed antennae, Family — Plictenidae
Lineage developed increased cerci length, Tribe — Relonpilius
Lineage developed reduced size, Genus — Microputabitis

Etymology: *Family:* Latin, plic = bend + antenna = sailyard/pole
*Tribe:* Latin, retro = back/behind + longus = long + pilus = hair
*Genus: Latin,* micro = small + puteus = pit + habito = dwell
Species: Latin, venari = to hunt + cuniculus = burrow/tunnel

## *Morphology.*

These beetles are small, less than half an inch long, and solid matte black, with short legs and spined tibiae. They are long and thin, with strongly lobed antennae and thick, extending mandibles. A squarish half-elytral case, indented at the bottom, with folded wings inside. The defining trait of Dwarf Dwelling beetles are their elongated abdominal cerci, which sense the area behind them while traversing and exiting tunnels.

## *Behavior.*

This lineage of animals consists of predatory beetles who hunt the wood-boring larvae of other insects. Dweller beetles hunt prey by tracking the scent of defensive compounds, produced in tree sap, which is excreted to flush pests out. Once arrival at an infected tree, they search for the exposed tunnels of wood-boring beetle larvae. If necessary, they can enlarge the entrance with their mandibles, before delving into the larval tunnels to find and eat any larvae inside. Their specialized cerci are used to sense behind them as they are backing out of tunnels and can notice if the exterior of the tunnel is safe. Dwarf dwelling beetles specifically have developed a symbiotic relationship with Carrel trees. Dwarf dwelling beetles will take up residence in the cavities of the carrel tree's bark, which provides protection from the elements and predators. In return, the presence of the dwelling beetles discourages wood-boring beetles from selecting carrel trees as a host for their eggs. Unfortunate wood-boring larvae that do find themselves within a carrel tree rarely make it to adulthood. During mating season, female dwarf dwelling beetles will preferentially choose and defend bark cavities which are close to the tree's phloem and as enclosed as possible. Males follow pheromone trails to these occupied bark cavities and attempt to forcibly enter the carrel. Males who successfully overwhelm the female and enter the cavity will mate with the female. The females lay their eggs inside of these cavities, where they will remain until they hatch the following spring.

# Edulae

*Fronfilium partumetas*

## *Taxonomy.*

Descended from common rat (rodentia).

Lineage developed enhanced scent capabilities, Order — Euryrhisa
Lineage developed ability to better digest grasses and plants,
Family — Folsacidae
Lineage developed modified whiskers and ears, Genus — Fronspeina

Etymology: *Order:* Greek, eury = broad/wide + rhis = nose
*Family:* Latin, folia = leaf + sacchus = bag
*Genus:* Latin, frons = forehead + filum = thread
*Species:* Latin, partum = meadow + metere = 'to reap/mow'

## *Morphology.*

Edulae are small, the average specimen reaching around 1-1.5 feet long, with light brown fur, marked with white dashed specks. They have powerful legs intended for quick bursts of sprinting, and a short black tail. A long thin head compared to body size; Small triangular ears facing outwards, large eyes above a patch of thin black fur, a wide flattened nose with string-like lateral lobes, and whiskers which extend from the cheeks and upper forehead. The defining trait of Edulae are their extended range of whiskers and rotated ears. These modifications complement their powerful sense of smell to help avoid predators. The whiskers on top of their head help them distinguish the direction of the wind while their ears are slightly rotated to hear behind them better.

## *Behavior.*

This lineage of animals consists of small herbivores who dig burrows in the ground. *E*dulae munch on small herbaceous plants in the undergrowth of forests and clearings, while monitoring their surroundings for predators. Edulae possess an instinctual habit of rotating themselves towards the direction of the wind while eating, which ensures they will smell anything wafting from that direction; they actively shift positions as the direction of the wind changes. If a predator manages approach from downwind, their ears will often notice the sounds of movement, and the Edulae will sprint upwind, as the direction they determined most relatively safe. They dig extensive burrows underground with many passages and rooms. Edulae form large families, of up to two dozen individuals, and reproduce rapidly with large litters of kits. They are not particularly picky about mates.

# Ebony Khurise

*Socinidus inodivola*

## *Taxonomy.*

Descended from Corvids, Family — Corvidae

Lineage developed exclusive carnivory, Order — Rhyncraga
Lineage developed reduced body feathers, Family — Nucorpidae

Etymology: *Order:* Greek, rhynco = beak + rhag = tear/rend
*Family:* Latin, nud = naked + corpor = body
*Genus* Latin, socius = group + nidus = nest
*Species:* Latin, inodiare = 'make loathsome' + volare = fly

## *Morphology.*

Khurise are between 2-3 feet tall with a wide wingspan, just under 6 feet. They have a bare domed head, black eyes, and a sharp pointed beak, greyish-tan in color. Primarily dark brown, with shiny black feathers intermixed; a black, lightly feathered neck, and grey downy legs. Their feet are bare, light grey in color, and tipped with sharp talons. The defining trait of Khurise are the reduced body feathers on their legs and head which help them stay hygienic when scavenging.

## *Behavior.*

This lineage of animals consists of opportunistic scavengers and predators who search the deserts and scrublands for small dying or injured prey animals. Ebony Khurise glide on updrafts above the scrublands, deserts, and forests, using their enhanced eyesight and sense of smell, searching for injured animals or carcasses. Khurise are often seen flying in groups of 3-4, scanning the surface of the land. When a potential source of food is found, the successful Khurise will call its brethren and they will all descend. If the food source is a carcass, the Khurise will immediately dig in, provided the surroundings are safe. If the source of interest is an injured animal, the Khurise will harass the creature, tiring it out, or if small enough, attack it directly as a flock. They are proficient at utilizing pack tactics, tormenting animals larger than themselves, and often use strategies to hunt different prey.



Ebony Khurise are monogamous, but they sleep and nest together in large flocks. A colony of Khurise will establish a nesting site on the side of cliffs and claim the area surrounding it as their territory. Young chicks are raised for a relatively long period of time and taught how to hunt by their parents. Often, young Khurise will find mates among the other children in the colony, but they also leave . Young males will leave their birth colony and join an adjacent colony searching for a suitable mate.

# Scrubland Lullite

*Bucaspicus pallinigrum*

## *Taxonomy.*

Descended from Iguanids, Family — Iguanidae

Lineage developed endosymbiosis with algae, Order — Phycopula
Lineage developed flattened shield-like body, Family — Dorscutidae

Etymology: *Order:* Latin, phycos = seaweed + copul = bond
*Family:* Latin, dors = back + scut = shield
*Genus:* Latin, bucca = cheek + spica = 'ear of grain'/point
*Species:* Latin, palliare = 'to cover'/cloak + niger = black



## *Morphology.*

The scrubland Lullite is a large lizard, the average specimen reaching 4-5 feet long from head to tail tip, although its tail is especially long, often greater than 2 feet. They have a wide plate-like body plan with a dorso-ventrally flattened back and sprawling leg span. A pointed head; with imbedded eyes, spiny eyebrow ridge, a large cheek spike, and chin spines. Lullite's also have powerful gripping claws and underdeveloped venom glands. Their scales are greenish in color due to endosymbiotic algae, tannish osteoderms are embedded in their skin, and loose spines run along the dorsal ridge of their tail. This order of reptiles are easily recognizable, due to the endosymbiont algae living in their scales, which assist in crypsis and provide limited nutrients to the organism. The Scrubland Lullite's defining trait is its shield-like flattened body shape which helps deter predation from flying predators, via blurring body shape and preventing easy grappling. This plate is textured, forming peaks and valleys across its surface. The Scrubland Luttite has a linear row of peaks anteriorly and a V-shaped range of peaks posteriorly.

## *Behavior.*

This lineage of animals consists of herbivorous reptiles who have developed endosymbiosis with photosynthetic algae. The Scrubland Lullite lives in scrubland, spending its days sitting in exposed places and moving around through the desert shrubs. Although it can acquire energy from its photosynthetic endosymbionts, this energy is insufficient to sustain the Lullite's daily activities. The energy from photosynthesis would only allow the Lullite to completely sustain itself while sunbathing in a state of torpor. The Scrubland Lullite will supplement its 'diet of light' by consuming leafy vegetation from shrubs, and large insects, which stumble across its path. Lullite's create nests in large crags and crevices, in the walls of canyons and ravines, which they access by climbing with their powerful claws. They are very slow in the mornings, requiring time to warm up in the sun, but maintain a slow movement speed through the day, maintaining a low metabolic rate. During mating season, males will compete for females by posturing with other males. They will threaten other males by opening their mouths and flashing their black throats at each other. Males who can show the most area of black have an advantage over the others. Additionally, males have competitions of stamina, where they sprint side by side. Males who last longer, better showcase their prowess to the females and are more likely to be picked as a mate.

# Sand Diver

*Sabunata rubrekroa*

## *Taxonomy.*

Descended from centipedes, Order — Chilopoda

Lineage developed flattened legs, Family — Poderesidae
Lineage developed strengthened dorso-ventral musculature,
Tribe — Stimytenini

Etymology: *Family*: Greek, pod = foot + eressein = 'to row'
*Tribe:* Greek, stich = row/line + myo = muscle + ten = stretch
*Genus:* Greek, sabulum = coarse sand + natare = 'to swim'
*Species:* Greek, rubrum = red + Ekroa = 'the region where found'

## *Morphology.*

Sand Divers are large compared to their relatives, between 6-12 inches, with a long thin body plan. They are orangish-tan in color with two legs per body segment, large thickened forcipules, moderately sized antennae, an extended cephalic shield, and a pair of hind legs, perpendicular to the other legs. Internally, they have strengthened extrinsic muscles between the segments of their body. These muscles allow Sand Divers to move more easily through the sand by using dorso-ventral undulations. The defining trait of Sand Divers are their flattened paddle-like legs, used for swimming through the sands. The flattened legs allow Sand Divers to 'swim' under the surface of the sand by flexing their body and pushing with their legs.

## *Behavior.*

This lineage of animals consists of ambush predators, who burrow through sand and prey on large insects and small rodents. When the Sand Divers find a trail of pheromones or interesting scent in the air, they move closer to the sand's surface and curl up in a bent, half-moon like shape. When a prey item moves close to their mouths, the Sand Divers will thrust themselves forward with their paddle legs, and the special hind-most legs, injecting their prey with venom. After successfully seizing their prey, the Sand Diver eats their prey on the surface. Although, if a predator or competitor appears, the Sand Diver will pull their prey underneath the sand and continue eating or simply store it until the aboveground animal loses interest. Female Sand Divers are larger than their male counterparts and will consume the male after mating with him.



Once her eggs are fertilized and ready to lay, she hunts one last meal and buries herself in the sand underneath some shrubbery. The female uses her body, creating a cavity of air in which she lays her eggs, remaining buried there until her eggs hatch. She cares for her young until they reach 2-3 inches in length and then abandons them.