biology

- Handy Feet
- How is Babby Formed
- More on Hissing
- Face Blindness
- Yinrih urinary tract
- Improved yinrih head sprite
- silhouette
- Thoughts on racial phenotypes
- Another silhouette
- Climbing and leaping
- swole healers
- thoughts on childhood amnesia
- Picture of a Womb Nest
- More on torpor
- More on Incubators and Prenatal care
- On yeaning and nursing
- On yinrih blindness
- Yinrih Milk

Physical Description

Image

It's really hard for me to put into words what the yinrih are supposed to look like. A lot of this project has been about their ergonomics, and I have to know what their body is shaped like as well as the range of motion of their limbs, how good their gross and fine motor skills are, etc. in order to be able to come up with their tools.

Their head is essentially canine, with a wet nose, mesocephalic muzzle, and erect ears. Their ears are more motile than a dog's. They can tilt them forward such that the tips of the ears are pointed toward the direction they're looking. Their eyes are completely different than any terrestrial animal. They have normal-looking eyelids, but rather than eyeballs attached to ocular muscles they have patches made up of organic nanoantennas that couple with ambient EM radiation similar to a radio. These patches absorb almost all incoming light, making it appear as though a yinrih's eyes are coated in vantablack. It looks disturbingly like they have black holes where their eyes should be. Underneath their normal eyelids are a series of bandpass filter membranes that, to a human, look like colored reflective sunglasses or the shell of some iridescent beetle. They narrow the bandwidth of the incoming light. Between the bandpass membranes and signal processing in the brain, a yinrih can shift the spectrum they're seeing to get a better idea of what they're looking at. They can see a much wider range of wavelengths than humans, possibly all non-ionizing radiation, from basically DC to near UV.

Their torso is also mostly canine in appearance. Humans often mistake yinrih for medium to large dogs at a distance, although their limbs also suggest lemurs or baboons. It's their limbs I'm having the hardest time with. They walk on the palms of their paws like a lemur. Both their front and back limbs have the same range of motion as a human arm. The yinrih can't walk upright, however. One thing I have yet to determine are whether their hind feet are plantigrade or digitigrade. I want to maintain a largely canine appearance, but I also want them to be able to use their hind feet to manipulate objects.

They have six digits per paw. When their paws are planted on the ground, they have an inner thumb, four fingers, and an outer thumb. The first joint of each digit is hairless, as is the palm. This gives rise to one of their human nicknames of "dog possums". their digits and palms have pads, with the palmar pads of the forepaws being the major instance of sexual dimorphism. Males have a single full palmar pad, while females have several smaller pads surrounding a lactation patch. The lactation patch will start sweating milk when it comes in contact with saliva, usually from a kit licking it in an attempt to nurse. As an aside, clerics collect their own milk and use it like holy water.

The big "feature" of their paws is the writing claw. There's a musk gland located in each forepaw, with a duct leading to the tip of the claw on the digit next to the inner thumb (analogous to our index finger). The writing claw is shaped differently than the rest of the claws and acts like the nib of a fountain pen. The yinrihs' non sapient relatives use this writing claw to mark territory. They

excrete a blue-black ink that smells like petrichor. The yinrih evolve a written language out of this scent marking behavior. This allows them to preserve information across distance and time as soon as they achieve sapience. Even though they've only been sapient for about a hundred thousand years (which I believe is actually less time than modern humans have been around) they're able to gain spaceflight a mere five millennia after gaining sapience, and are at Kardashev level II by the time humans discover agriculture.

Their tail is prehensile. It is actually more like an elephant's trunk, being made of pure muscle rather than being an extension of their spine. They can easily hang from their tail, contributing to their human moniker of "dog possum". They often pull small carts behind them with a handle held in their tail.

As far as locomotion, they're built mostly for arboreal movement. They evolved in a tropical rain forest river basin that floods regularly. They spent the dry season equally on the ground and in trees, and would stay in the trees during the wet season. This arboreal lifestyle is why they have grabby paws and tail. It also means they take to zero gravity like a duck to water. While they normally have to walk on all fours on the ground, they can float in zero-G and use all five limbs to hold and manipulate things. There's a large population of spacers who choose to live permanently on orbital colonies with no gravity. The missionaries that find Earth depart from such a colony, and some of them have never set foot on a planet's surface before landing on Earth.

Regarding evolutionary history, their nonsapient ancestors had populations on either side of the river, with the southern population gaining sapience while the northern population remains irrational. These non sophont relatives are called "tree-dwellers". They're cute as babies but get violent as adults (not unlike chimps, actually). Humans have a very hard time telling the two species apart, leading to some off-putting situations when they see what look like sapient yinrih in zoos. The two species are similar enough that the yinrih use tree-dwellers for organ transplants and lab testing. There's even a faction of yinrih called the Atavists who regard sentience as a curse and want to return to being irrational animals. "Reject smart tree doggo, return to stupid tree doggo."

By the Palms that Nursed Me!

Image
The palms of the forepaws, demonstrating sexual dimorphism. Male is on the left; female is on the right. Both males and females have digital pads (on the fingers and thumbs). Males have a single palmar pad, while females have several smaller palmar pads that surround a lactation patch.

Females can excrete milk at any time when the tissue on the lactation patch is exposed to saliva. When nursing the saliva comes from a kit licking the palm. Clerics gather their own milk by licking their own palms and soaking the milk up with a sponge. The milk is wrung out of the sponge into a container and blessed. Blessed milk is usually sprinkled by means of an aspergillium which is held in the cleric's tail.

The proportions are pretty bad. The digits aren't that stubby, and I'm unsure about the length of the palm. All in all though I'd say it's pretty good given my unfamiliarity with digital drawing.

The Wrist and Writing Claw

Image

A dorsal view of the left forepaw, in color! Notice the discolored claw on the digit next to the inner thumb. That's the writing claw. It's supposed to be flatter and broader than the other claws, but I had a hard time making it look right.

The ink sac is located near the knuckle, with a duct leading to the point of the claw. These structures are homologous to musk glands in other animals in the yinrih's clade. As such, the ink is very fragrant. Humans compare it to the smell of rain (petrichor). There is a rumor among the yinrih that humans like to drink it. It's not true, although we do enjoy the smell. The ink is largely sterile, but it's still a bodily fluid, so drinking it is ill-advised. The fact that yinrih use a bodily excretion to write with causes some friction when yinrih try to live on Earth. Imagine peeing on a check. Using a writing utensil feels very unnatural to a yinrih, and the best compromise humans can come up with for the sake of hygiene is a thimble-like contrivance that fits over the writing claw and provides its own synthetic ink.

The first joint of the digits lacks fur. This, along with the yinrihs' prehensile tail, is why they're sometimes called "dog possums". Other nicknames include "monkey foxes" and "wolf lemurs". The skin of the paws is strongly pigmented, as you can see from the fingertips. It's more obvious with healers since they have no fur. Their paws and muzzle are covered in black splotches.

The word "yinrih" (pronounced /'jɪn.ɹə/ or /'jɪn.ɹi/ or /'jɪn.ɹɪ/) is an onomatopoeia of the Commonthroat word <odmGm> (yip, short high strong whine, huff, long high weak growl, huff) which means a person from the planet Yih. The word is analogous to the word "Terran" or "Earthling". Commonthroat uses a different word to refer to a member of the yinrih species. There is an English word, "cynoid", from Greek κύων (dog) -ειδής (shape), that can be used in more scientific contexts. It has the pleasant traits of being etymologically accurate and having that pulpy sci-fi flare. The yinrih don't mind any of these names, provided they're not deliberately derogatory. "We won't tell you how to speak your own language."

The yinrih refer to humans as <mJmj> (huff, long low strong grunt, huff, short low strong grunt), which is the best their vocal tract can replicate the English "human". The missionaries who land on Earth refer to humans as <f oDoDl mI> "our friends", and the human residents of the small Texas town they've decided to live in refer to the missionaries as "our little visitors from out of town."

Writing with the Writing Claw

Image
A yinrih's writing claw is shaped like the nib of a fountain pen, and acts more or less like one as well. However, while a fountain pen uses capillary action and gravity to cause a "controlled leak" to produce ink flow, a yinrih has voluntary control over the muscles in the ink sac. By contracting these muscles, and by gently pressing the tip of the claw against a writing surface, ink can flow out. This mechanism allows the writing claw to work in microgravity as well as planetside.

The Commonthroat word <FnA> (long low strong growl, chuff, long low weak whine) literally means "no ink" or "inkless" and is used like the English word "nerd". The idea is that nerds write a lot, and are thus constantly running out of their own ink. Since a yinrih's ink is a bodily fluid, it takes time to replenish itself.

The script is written from right to left. Yinrih are predominantly left-handed, especially when it comes to writing, although they have ink sacs in both forepaws.

Someone is inevitably going to ask how I did this blind. I have a magnifier attached to a monitor. I don't normally write by hand anymore, but this project has made me research fountain pens. I got some cheap calligraphy pens and a bottle of "blue-black" ink off of Amazon to do this. I was going to go the extra mile and add some scent to make it smell like petrichor, but the bottle of oil that advertised itself as smelling like rain ended up smelling like a generic air freshener. Maybe I should just buy pure geosmin instead. It'll just smell like dirt but that's closer to petrichor than the other stuff.

Bachelor's Mantle

Yet another possibly non-canon post.

A Bachelor's Mantle is an anatomical display structure present in male tree-dwellers who have reached adulthood but have yet to lay an egg. It's a mane of long, flowing hair that starts on the top of the head just ahead of the ears and continues down to the middle of the back, also draping over the shoulders and ending at the chest, giving the appearance of a cape or mantle.

Like display structures on Earth animals, it's used to communicate fitness to potential fellow sires and dams.

While very rare, a male yinrih can develop a bachelor's mantle. It's most commonly seen in monks who have forgone entering into a childermoot due to religious vows. Lodestar may or may not have one. It may be a sought-after trait among the Atavists. If the male ends up hatching pups, he sheds the mantle over time and it does not return.

If I end up making this canon, this means that spiky anime hair is indeed possible for at least some yinrih.

Front Paw Print (Female)

Image

Here's a left front paw print (female). The writing claw is straight, so it doesn't leave a mark on the ground. I might have to redesign the male forepaw pads, as a single large pad would make it hard to flex the thumbs.

Rear Paw Print

Image

Here's a left rear paw print (both genders). It's not too different from the forepaw, although the palm (sole) is slightly longer and there's a regular claw on the index finger analog. When walking bipedally the thumbs are perpendicular to the rest of the foot, and the four middle digits are spread further apart. If the ground is soft, the claws will be dug into the earth like cleats to maintain balance. The tail is also held pressed against the ground to act as a third contact point

---

This reminds me of identifying animal tracks when I was in Boy Scouts.

Front Paw Print (male)

Image

I think this is the new arrangement of palmar pads for male forepaws.

On another note, after doing tons of research into apes and monkeys (by which I mean reading Wikipedia articles and watching bunches of YouTube videos) I realize that comparing yinrih to possums is redundant as the features of possums I was borrowing (prehensile tail, furless digits, and carrying young on the back) are already present in monkeys, hence why I've settled on "monkey fox" as their nickname.

Thought on Yinrih Eyes

Just realized that because yinrih eyes are actually arrays of quarter wave dipole antennas that means they’re able to detect polarized light. But more importantly, you can prevent them from seeing light whose polarization is 90 degrees off from the orientation of their nantenna patches.

A Spacer Doing what Spacers Do

Image

...move and manipulate objects at the same time.

Here's another attempt at depicting how the yinrih are supposed to look. The proportions aren't very good, but the rear paws are supposed to be able to rotate like that. Their wrists and ankles are like ball joints, which helps them brachiate through the trees like a gibbon.

The tail is very thick and sinewy. It acts more like an elephant's trunk or an octopus's tentacle since it has no bones. It's supposed to be as long as the rest of the body, including the head.

The legs and back are more primate-like, with broader shoulders and thicker legs.

I'm still undecided on how fluffy they are. I suspect it varies by population. I'm also still torn on whether the bachelor's mantle is a thing or not. The fellow in the picture has a bit of a ruff, but a full bachelor's mantle would look almost like a mix between a mane and a cape.

I'm also toying with the idea that they can knuckle walk while holding small objects in the forepaws. Normally the palms of the paws are in contact with the ground while walking.

The whiskers are more prominent on yinrih than on dogs or wolves, which is the chief contributor to the "fox" part of "monkey fox".

The Butt Brain

Yinrih have a *caudal ganglion*, which is a secondary brain located at the base of the tail whose original purpose was to control the tail, but which has evolved secondary functions as a sort of backup for the main brain. Yinrih can withstand head injuries that would render a human dead with no long term consequences as the main brain can rebuild itself from information stored in the caudal ganglion--a very useful feature if you fall on your noggin from a tree on a regular basis.

There's a neurological disorder caused by a partial severing of the connection between the two brains where the tail acts on its own accord.

Torpor

Every Yih week (12 days), Yinrih spend a full Yih day (a bit over 24 hours) in torpor. At no point are they unconscious, but they are sedate. The sensation is compared to the sedatives used in Human cataract surgery. They have delayed reaction time, dulled sensation, and a feeling of detachment, but can still follow simple commands.

Since pain perception is muted during torpor, some minor surgical procedures are conducted while the patient is torpid.

Yinrih exhibit a phenomenon similar to the unihemispherical slow wave sleep seen in birds and cetaceans, except the pattern involves not just the two hemispheres of the brain, but the caudal ganglion as well. During torpor, when one hemisphere of the main brain is "defragmenting" as it were, its corresponding functions are assumed by the caudal ganglion. Likewise, when parts of the caudal ganglion are unavailable, that part of the main brain has no backup.

Among tree dwellers and in primitive yinrih society, the dams go into torpor with their kits when they are very young. The sires all keep watch over the women and children, staggering their own torpor cycles so the moot is always protected. As the kits grow into pups, the dams start to stagger their own cycles so that there are always as many adults alert as possible.

In modern yinrih society things may work differently depending on culture. In more monochronic cultures such as most parts of the Allied Worlds, all the members of a community have a synchronized torpor cycle, with some exceptions for "night shifts". That makes scheduling events much easier. In more polychronic cultures such as Hearthside, several strategies can be found. Some cultures have a 3-day "weekend" during each 12-day week within which yinrih spend their torpor. An individual moot usually chooses a day within that period to be their torpor period. Other cultures more resemble the primitive strategy of every individual having their own cycle.

Torpor stories are spoken word audio media that can span a range of genres, from what we would call podcasts to fictional narratives to trivia about particular topics. More traditional communities make use of scripture and hagiographies. The goal of torpor stories is to create a mindset conducive to torpor. The stories are usually calming and pleasant, but also interesting enough to help the prospective torpid monkey fox to let go of his daily worries.

There are also specific prayers recited during torpor, which often involve breathing in time with each recitation.

(breathe in) May my soul be a mirror--
(breathe out) reflecting the Uncreated Light.

Coat Patterns

So here's what fur patterns have come up in the lore so far:

- solid black (Stormlight)
- solid red (Sunshine)
- red with black ears and black socks (Tod)
- assorted brown shades
* fawn with black mask (Sunshine's original coat color before I decided to make her red)
* liver (The as-yet-unnamed asteroid miner from *Table Manners*)
* tawny (Crystal)
- solid white (Lightray Lacktail)
- white with biscuit pointing (Iris)
- Blue (Lodestar, Graypelt)
- Piebald/bicolor (Pascal)

Pascal's coat pattern looks like the stereotypical Holstein cow, which you sometimes see on pitbulls. The black spots are too large to be considered spotted like a Dalmatian, and there aren't enough of them to be considered harlequin. They're also small enough that he doesn't look like a border collie.

I'm not sure what constitutes "Blue". It could be ticked black and white or it could be a solid diluted black. I'm imagining a solid smokey gray color for now.

Albinism likely also exists, and can be differentiated from white by the lack of pigment on the digits and palms. Since yinrih eyes don't depend on pigmented retina cells, albinism won't affect their vision.

Redpelts don't have white countershading, making them look slightly less vulpine.

Just a Yinrih Face I Guess

Image

Overbrooding Syndrome

Overbrooding syndrome is a psychological condition characterized by a hypertrophied parenting instinct. While it's stereotypically associated with female empty-nesters, it can manifest in either gender and occur at any age after reaching maturity.

Before First Contact, overbrooders simply bought an inadvisably large number of pets to fill the void left by their grown litter, or else complained to their grown pups that they never visit or call them. After discovering humans, however, overbrooders found a new outlet for their unhealthy obsession: adopted human children.

Overbrooders adopt from less scrupulous adoption agencies, usually several kids at a time. Most overbrooding yinrih are not very familiar with human needs, only that humans mature comparatively fast. All Focus governments, with the exception of, you guessed it, the Spacer Confederacy, have mechanisms in place to prevent overbrooders from sneaking into the system, but there are ways around this.

From the human kids' perspective, they have an effectively immortal helicopter parent. It's also hard for humans raised by overbrooders to integrate into human society. They often don't speak human language very well, and strange pidgins consisting of Commonthroat grammar on top of human phonology have been documented.

While overbrooders aren't actively abusive, they are almost always overprotective of their "furless pups." Their lack of knowledge about humans can lead to unfortunate cases of unintentional neglect. Children adopted by overbrooders almost always have trouble getting enough sleep, as their adoptive parents usually don't understand that it's both normal and necessary for humans to just turn off every night and reboot eight hours later.

Ironically, overbrooders who go the human route almost never have more than one "litter", as the grief at losing all their adopted children in a mere eight or nine decades sours them on adopting again.

The vast majority of yinrih seeking to adopt human children are much more well-informed, and are driven by a healthy concern for the welfare of otherwise unwanted, abandoned, or abused human kids. There are orders of Wayfarers who act as adoptive childermoots for human children, and do their best to give them as human an upbringing as a barrel of monkey foxes can possibly provide.

More Postures and Other Miscellany

Image
A portrait of a yinrih wearing HUD specs

Image
Yinrih walk on their hind feet by pressing the tail into the ground like a cane. The digits of rear paws are spread apart, the thumbs at right angles to the rest of the paw, and the claws are dug into the earth. Yinrih only walk this way when they're carrying something large that can't be managed with the tail and there's no cart or other tool to help them carry the object.

Image
Yinrih prefer to carry unwieldy objects in small carts pulled in their tail. Even larger carts can be used, and are attached to the puller by a yoke.

Image
Dams carry young kits on their back. The dam often rests her tail over the kits. This helps keep them upright, acts as a source of comfort, and allows the dam to better feel what their kits are up to, if they're fussy etc.

An Attempt at Depicting the Bachelor's Mantle

Image

Yinrih Foreleg

Image

I started this drawing only to find out I was out of my depth (literally, depth perception isn't my thing) so here's a random foreleg for ya. The writing claw looks a bit closer to how I picture it in my head. Also yinrih legs are thicker and more ape-like compared to canids.

Mule Punch

The great thing about having hands for feet is that you can punch someone and kick them at the same time.

Image

No deep lore here. Yinrih can mule kick, or is it mule punch?

Still Working on Anatomy

Image

I'm starting to finalize the look of their back legs. I think a more plantigrade stance makes sense. It makes them less canine but I think makes it more viable for them to use their rear paws for grasping.

Carrying the Tail

Image
From left to right, top to bottom:

The Dinosaur
The Husky
The Monkey
The Chameleon

How the tail is carried while walking might depend on culture and personal preference, or one style could be normal across the species. The "dinosaur" style at top left would probably be a rather rude way of walking when in a crowd since it takes up so much more room than the other stances. Yinrih may feel the same about people who do that as humans do about people who walk reeeealy sloooowly down the middle of the sidewalk, or maybe that's just me.

However the tail is carried while walking forward, it's normal for yinrih to sweep the tail across the ground from side to side like a white cane while walking backward to avoid tripping or treading on anything.

Geez it's after 7PM. I probably could have done this with stick figures and taken way less time. I'm finally drawing all four legs. Still tweaking the proportions of the hind legs and rear paws. I've been watching lots of videos of chimps and baboons to try and finalize how the legs will look and how the yinrih will walk.

Somewhat Realistic Sketch

Image
still not sure about their back legs. This pose definitely puts the "monkey" in "monkey fox".

On the Womb Nest and Kit Development

Oviposition in yinrih is a voluntary process. In tree dwellers and presapient yinrih it's triggered by geophagy (eating soil) which sets of a cascade of metabolic processes that results in egg formation. In modern yinrih, eating dirt is replaced by clean sanitary over the counter pills.

Yinrih egg-laying is a much more arduous process compared to oviparous Earth animals. Both males and females lay very large eggs, since the yolk needs to help grow not only the kits, but also the womb nest that forms around them. The laying process looks much more like a human giving live birth. It's painful and may last for hours. The ovary is destroyed in the process of oviposition and does not regrow. Yinrih musk (both ambient and ink) changes noticeably after the egg is laid, and different terms of address are used for pre- and post-egg males and females.

Modern yinrih place their eggs in an incubator. Incubators are famously sturdy. They're connected to a uninterruptable power supply, provide clean and filtered air to the womb nest within, contain a suite of sensors and monitors, are fireproof and submersible in up to 12 tailslengths of water, and can even withstand small arms fire. Overkill? Almost certainly. But that's what happens when you have two to six anxious fathers in charge of protecting the nest. Traditional yinrih gender roles put the sires on point for making sure the kits are yeaned healthy, and the modern incubator is the result of dozens of millennia of paternal instinct-driven technological advancement.

So-called "natural brooders" think incubation is excessive to the point of being harmful to the kits, and choose instead to keep the womb nest exposed to air in a cool dry place. Natural brooding is a very controversial movement akin to Terran antivaxxers. (The two ideas overlap significantly, as many cynoid vaccines are delivered in utero by the incubator automatically at specific points in the kits' development.)

The womb nest itself contains a simple heart and circulatory system, with a heavily vascularized dermal layer for gas exchange. A fair bit of kits' weight actually comes from absorbed gasses and not just the yolk.

The heart is located at the posterior end of the womb nest, and a large umbilical cord runs along the ventral interior carrying blood from the heart, with smaller cords branching off of it in a bus configuration to supply each kit individually. Each kit is incapsulated in an amniotic sac, with these sacs lining the walls on either side of the umbilical cord. This arrangement, with amnions along the walls and the "plumbing" running down the center, is what gives missionary womb ships their name.

In very large litters, the kit furthest from the heart receives fewer nutrients than closer kits, and becomes a runt. The kit closest to the heart gets well-fed, and grows very large. This is what

happened to Iris and Lodestar. Iris was the furthest kit in the nest, while Lodestar was closest to the heart.

It takes about 144 Yih days for kits to fully develop. The process of emerging from the womb nest is called "yeaning" in English. The word is also used for missionaries (or gel-heads) coming out of metabolic suspension.

The kits come out of the womb nest blind and immobile. Their eyes open and they start moving on their own after a few weeks. The dams take over once the kits emerge. Each dam carries a kit or two on her back, and lets them lap milk from her paws when they get hungry. Kits start eating solid food after about two years, at which point they are called "pups". Dams will continue carrying younger pups on their backs for a year or two longer.

Once the pups are weaned, parental responsibility becomes much more evenly divided between the two genders, with both sires and dams taking turns looking after pups. The exact form this takes can vary widely by culture and time period. Some communities have childermoot and litter living under one roof, while others have parents living singly, with pups rotating between households.

Both speaking and writing develop in tandem, with language progressing much like it does in humans. Kits start "scribbling" with their writing claw on any available surface, mimicking written marks made by their parents.

Some Tentative Body Proportions

Yinrih are about 200 cm long from the tip of the nose to the tip of the tail. The back is about 34 cm wide and they stand about 76 cm at the withers. The tail is slightly longer than the distance from the tip of the nose to the base of the tail, allowing them to comfortably bring objects wrapped in the tail up to the mouth and nose.

The back and chest are wider than a dog's, and their rear feet are plantigrade. Their limbs are very muscular, optimized for strength rather than speed or endurance. Because Yih has 12% lower gravity compared to Earth, yinrih may not be as dense as you'd expect animals of their size to be.

Give this fellow a vulpine head and fur, and increase his size a fair bit, and you've got a yinrih more or less.

Image

AI-generated Image of Yinrih

Image

I refuse to call it art, but AI-generated images can be a good source of inspiration sometimes. This is the closest I've come to getting an AI image generator to depict the yinrih. There are some obvious discrepancies beyond the usual AI horror show. The eyes aren't correct, they should be pitch black, and the tail is neither long enough nor is it prehensile.

But this image has helped me nail down what the Commonthroat verb <PN> /long high weakening whine/ means. I glossed it as "to squat" or "to sit like a dog", but the yinrih are plantigrade, so their feet are shorter and their tibia and fibula (or analogous bones) are longer compared to canids.

In other news, I made some tiny tweaks to the second part of *First Contact*. The usual abbreviation of "please" in Morse is PSE not PLS, and the KX3 is not the kind of radio one would normally use to do satellite communication.

Chunky Monkey Foxes

Yinrih are arboreal animals. Their limbs are built to pull their weight against gravity and are naturally dense with musculature. This is a trait made obvious with healers since they have no fur.

The surface-dwellers of Sweetwater tend to have more body fat than other yinrih, an adaptation to their marine environment that allows them to swim more easily. This makes them more prone to obesity, especially when living off-world.

Calmwind, the IT admin from one of my stories, is either a Sweetwater immigrant or a descendent of the same, partially explaining his stoutness. IT, especially medical IT, can be stressful work, and he may be self-medicating with food.

Yinlet

Image

I drew this kit a long time ago but never shared it for some reason.

Handy Feet

Image
The rear paws are just as prehensile as the front paws. There's no sexual dimorphism present here. Both the males and females have several smaller palmar pads on the rear paws, and females have no lactation patches here.

The claws may contain iron, like the teeth of a rodent. In any case, they're very hard and very sharp, designed to dig into the hard wood of the steadtree.

A single paw (front or back) can support the entire body.

As with the front paws, the skin is strongly pigmented to compensate for the lack of fur.

Yinrih use their rear paws almost as much as their front paws for grasping and manipulation. In fact, their rear paws are more sensitive to account for the fact that they can't see what their manipulating. There's even a tactile alphabet for Commonthroat designed specifically to be read with the rear paws. One can rummage through a desk drawer and read labels on whatever oddments are inside without looking. I've chosen to represent this alphabet with braille, but I think it would be closer to Moon Type: using lines and other simple shapes rather than a matrix of dots.

So I just spent two hours drawing a single paw of a critter that only exists in my head, and wrote a bunch of lore about it, just to post it on a tiny message board... eh I suppose there are worse ways to spend my time.

I've taken some liberties in terms of biomechanics here. Looking at videos of chimps and gorillas, I see the tops of their hands are strongly callused due to knuckle walking. A dog's paw pads are also not very sensitive, although the tops of their toes and the area between the toes and pads is very sensitive. That's why they don't like having their feet touched. Also, claws and prehensile hands don't seem to mix. Arboreal animals seem to have one or the other. Flat nails seem to help the pads of the fingers with gripping, and claws can puncture the palms. But these are my critters, dang it!

I'm pretty much resigned to the fact I'll never get the proportions the way I want. My spatial reasoning skills are terrible. Just ask everyone I've ever lived with about how I use plastic food containers. I just pick the biggest one that will still fit in the fridge because the only way I'll know if the food will fit is by pouring it in the container. I can't "eyeball it".

How is Babby Formed

A yinrih family consists of an equal number of male sires and female dams that can range in size from two (one pair) to twelve (six pairs). The number of sires and the number of dams must be equal. The collective group of sires and dams may be referred to in English as a *childermoot* (I'm trying to stick to an Anglish translation convention when possible).

The relationship that the sires and dams have with each other varies widely depending on culture and the outlook of the individuals. Yinrih have no sex drive and do not feel romantically attracted to their fellow parents. Instead, the desire to beget young is more like a bird flying south for the winter. It's less emotional and more instinctual. Just like humans, though, they can ignore this instinct. Hearthkeepers are forbidden to enter into a childermoot. Their congregation is seen as their litter.

The yinrih's lack of eros is the source of much confusion among humans. One popular stereotype, driven by the fact that most yinrih visiting Earth are missionaries, is that all yinrih are either perfect models of chastity or uptight prudes, depending on the human you ask. You can no more praise a monkey fox for his chastity than you can say that a bald man has red hair. Human sex is utterly beyond the yinrih's ken, and wise yinrih refuse to comment on it.

Some humans who have never met yinrih assume them to be libertines based on their well-known absence of clothing. The yinrih aren't making a statement by going naked, it's just their nature. They have nothing to cover up in the first place, and having fur makes the protective function of clothing redundant.

Yinrih lack external sex organs, and both genders possess a cloaca. Humans often mistake all yinrih for females at first sight. Yinrih also have trouble telling human males and females apart. A more polite human will advise yinrih to look for an Adam's apple to tell the two genders apart. Yinrih usually show the pads of their front paws to clarify whether they're male (single palmar pad) or female (several small palmar pads with a lactation patch). Male yinrih are larger on average but that's hard to compare if you've only seen one.

Both males and females lay eggs. The eggs are placed in a nesting site together. This act of placing one's egg in the nest is the closest thing to a marriage vow the yinrih have. Once you do that, you're expected to remain in the childermoot until the pups reach adulthood. The phrase "You put your egg in this nest" means "you made your bed, now sleep in it."

Once the eggs are together, a membrane forms over the clutch. The eggshells melt, and the genetic material from all the sires and dams mingles into a soup, and zygotes form out of this soup. A yinrih's life is reckoned from the formation of the zygote. This might count as abiogenesis since there are no gametes, just biochemical goop. (this is based on the idea that embryonic development mirrors evolutionary history. Yinrih take the idea and run all the way home with it.)

The structure that forms over the clutch is called a _womb nest_. It's very much like an external

uterus. Each developing kit lies within its own amnion. The arrangement of these amnions is what gives interstellar womb ships their name. Gestation time is TBD, but all the kits hatch together. There's no concept of the firstborn. The whole litter is considered to be the same age (which, as stated above, is reckoned from when the zygote forms rather than when they hatch.)

The process of giving names is culturally dependent, but usually the kits are given names while still in utero. The content of Commonthroat names does not indicate gender, but Commonthroat uses gendered name suffixes. Pious yinrih names have something to do with light, but other names are also common. Some names I've given to figures in the lore: Sunshine, Rainbow, Lodestar, stormlight (lightning), ringlight (sunlight reflected off of yih's ring on summer nights).

Commonthroat does not use fixed surnames. An individual may have several different surnames depending on the group he's with at the moment. A surname is usually a physical description (Stormlight Blackpelt) the location they're from (Sunshine of Hearthside), an occupation (Rainbow Hearthkeeper).

Yinrih will take a human-pronounceable name when working or living among humans. If they're lucky, there may be an English name that's close to the original. The cleric leading the crew of the _Dewfall_ is named Rainbow but goes by Iris in English. Some names are just calques. Stormlight originally wants to pick a "normal" English name but is encouraged to simply translate the original because it sounds cool in English (It's actually a rather bland name in Commonthroat.) Sunshine is not unknown as a name in English, so it's also simply left as is. Lodestar is in a similar boat as Stormlight. The other two yinrih crewing the _Dewfall_ don't have easily translatable names. The one named Steadfast Friend is given the name Tod by the human who offers him lodging because he looks like a fox. Ringlight is also named by the human he lives with, in this case it's Pascal, for reasons too complex to dive into here since this section is already too long.

But let's get back to how yinrih beget young. Kits come out of the womb nest blind, and their eyes open after a few weeks. They are referred to as "kits" until they start eating solid food, at which point they are called "pups" or "puppies". Even though there's no special relationship among the parents, sires and dams are just as attached to their pups as human parents are to their children, if not more so. The nature of yinrih reproduction means that "accident" babies are unheard of. If you have children, it's because you want children. This means that a lot of human social problems surrounding child rearing are unthinkable to a yinrih. There's no shortage of yinrih who want to adopt human children upon hearing about said social problems, as the 18 or so years required to raise a human child from infancy is a comparatively trivial time span for a yinrih. Humans raised by yinrih is a whole can of worms I won't get into in this post.

I haven't decided on things like the age of sexual maturity or the age range at which yinrih strike out on their own. I don't think it will be 10 times as long as a human childhood, but it'll probably be at least as long. Once the litter is raised, the sires' and dams' commitment to the childermoot ends and they are free to disperse. Some stay together as empty nesters, others go off and do their own thing. It's another cultural thing. The relationship with their children is lifelong, however.

Some things I haven't decided, and would love others to comment on, are how this reproductive strategy effects things like lineage and extended family, the length of time to rear a litter, and whether it would be considered acceptable for two litter mates to enter into a childermoot together

given they're more genetically diverse.

A childermoot consisting of a single male-female pair, while viable, is frowned upon in many cultures. Many paws make light work, after all. There is a movement after First Contact called "humanism" that tries to mimic the human family, with a single pair rearing one or two pups (litter size is proportional to the number of contributing parents, with replacement rate taken into account.) An emphasis is placed on a strong relationship between the sire and dam. But again, no eros means no romance, and it ends up more like a smaller version of the group of friends forming a childermoot. The movement is regarded by many, including many humans, as unnatural. It may be how human families work, but it's not how yinrih families work.

More on Hissing

Hisses have some paralinguistic functions similar to human sibilants. They can be used to silence someone. Some cultures use hisses as an attention-getter, but the Commonthroat-speaking world uses a yip for that instead. A soft trilled hiss is used to catch the attention of small animals like forest flyers, similar to using /pspspspsps/ to catch the attention of cats. It's thought to mimic the dry stridulating sounds made by the insects they eat.

In several places I've described yinrih hesses as sounding like an angry goose. Humans find the sound somewhat comical paired with the yinrih's typical anemic vocalizations. A hissing yinrih sounds like he's trying and failing to be threatening

Since hisses do not carry tone, the YPA shall use the number 0 in the tone position when describing hisses. It remains to be seen whether hiss semivowels can occur alongside hiss vowels, though they likely can. I'm fairly sure they can occur in both onset and coda positions.

Face Blindness

Idea: Yinrih may have a hard time recognizing one another by sight, preferring odor as the principle means of identification. Humans, on the other hand, are great at picking up visual patterns and can recognize yinrih at a distance.

May not be canon though.

Yinrih urinary tract

Per this one and only source I bothered to check while googling, a dog's bladder can hold 44 mL of urine per pound of body weight. If we extrapolate that to yinrih, who weigh 50 to 80 lb on average, that means yinrih can hold 2.2 to 3.5 L of urine.

Yinrih may have two bladders. One is connected to the cloaca as expected. The other, which is called the antebladder by me just now, drains into the bladder proper. The purpose of the antebladder is to delay the onset of the desire to urinate, especially during torpor.

Improved yinrih head sprite

Image

Now the HUD specs are shiny!

silhouette

Image

I remember reading somewhere that the key to good character design is to have a distinctive and readable outline. So here's an attempt at a yinrih's silhouette.

Thoughts on racial phenotypes

> *Visions1 wrote: 2025-07-21T15:03:32+00:00* So are there any planets that get cold?

Moonlitter (rather its moons) and PT can get cold. Outlander distinguishes bodies that can be fully climate controlled via Science™ and those that can be terraformed but have a more natural range of climates. Most of the moons are small enough for global weather manipulation to make things tolerable, though perhaps a bit nippy, and it's here that fluff may have developed to cope. This means that Pascal, Lodestar, and Iris may be a bit floofier than Tod (Welkinsdeader) Sunshine (Hearthsider) and Stormlight (Sweetwater surface dweller). It's still up in the air though. Stormlight will likely be a bit chunkier than the others given I've settled on higher body fat being a trait of SW's surface dwellers.

Hearthside isn't much like Venus. It's an eyeball planet with the Nightless Desert around the substellar point and a green belt around the terminator. The dark side I haven't developed much. It's possible that the dark side is cold and that darksiders are fluffy with regular ears while daysiders have the big ears but less hair.

Sweetwater, Yih, and Newhome have a range of climates similar to Earth (well SW is mostly ocean but it probably has cold poles). I need to research how a tidally locked planet would work climate-wise. The stereotype is that the day side is always sweltering and the night side is frozen, but I think I read somewhere that there would be airflow from the night to the day side. There may be a perpetual thermal low over the Nightless Desert, causing air from the night side to advect cooler temps over to the day side.

Another silhouette

Image

Here's a spacer.

Climbing and leaping

If endurance running and throwing things accurately are the quintessential human sports, perhaps climbing and leaping are the quintessential yinrih sports.

swole healers

If you look at pictures of furless chimpanzees, you'll notice that they're very muscular. I assume this is related to their arboreal lifestyle. They need to be strong enough to climb trees.

I think this means healers like Sunshine will look swole, not because she's stronger, but because other yinrih have fur covering their muscular build.

thoughts on childhood amnesia

Wondering if childhood amnesia is a thing, or amnesia generally. For now it is since I included it in the latest part of First Contact (the second narrator is the pup from the first part who sprayed juice on Lightray's chest), and the second part of the story is him recalling an early memory, implying he can't remember anything earlier.

Picture of a Womb Nest

Image

A yinrih womb nest, a highly derived egg-sac with its own simple heart and circulatory system. A central bus artery feeds oxygenated blood to the kits, and returning veins pass through a semi-permeable dermal layer to allow for gas exchange. The arrangement of kits in the womb nest is what gives womb ships their name, as suspension capsules are arranged in a similar manner.

More on torpor

I'm pretty sure yinrih get tired just like humans do, after mental stress or physical exertion. They may or may not go into torpor after such events. I've already established (via Doug from the Multiverse inn) that semi-spontaneous torpor is a possible reaction to strong emotion or overstimulation, either positive or negative.

Yinrih 'naps' are more lying down in a quiet place, still fully aware. They may even close their eyes, which is not typical during torpor.

During torpor, yinrih can follow simple instructions, and may even perform routine tasks like going to the bathroom to relieve themselves, operating simple mechanisms like light switches or thermostats, and so on. One can technically hold a conversation with a torpid yinrih, though their responses are slow and usually mumbled. They will remember such conversations after returning to alertness.

Torpid yinrih are less guarded in speech, not unlike some behaviors exhibited during drunkenness. *In torpore varitas*. To lock oneself away during torpor is seen by some as suspicious, as the torpid yinrih may wish to keep information concealed that could otherwise be elicited in this less careful state.

More on Incubators and Prenatal care

A womb nest incubator consists of an inner capsule into which the male and female eggs are placed. The capsule is transparent to allow visual inspection of the nest's exterior. The capsule sits atop a suspension system to cushion the womb nest against sudden movements. The capsule and suspension are encased in a ruggedized outer chassis that also contains a number of other components.

Chief among these is a redundant power supply, accepting both external power and a backup power source, likely a star lantern. There is a two-step air filtration system. The first step processes air going from the environment to the chassis interior, and the second step filters this air in turn before venting it into the inner capsule. Waste gases exchanged by the nest's vascularized dermis are expelled into the chassis and subject to monitoring by the incubator. Medicine and vaccines are typically delivered via aerosol through the ventilation system.

When the dermis is fully developed, a cannula is connected from the nest's interior cavity to a port on the inner capsule. This allows exploratory inspection and prenatal surgery by a healer piloting a micro mech. There is traditionally one such inspection shortly before the kits are yeaned, and it is here where in many cultures kits receive their names. At this point their coats are developed, and they are near or at their birth weight. Names are often given based on their behavior in utero during this inspection. Some may be more alert than others, responding to the pill-sized mote of light outside their amniotic sac by turning their head or reaching out with a paw*. Kits that respond this way are traditionally thought to be destined for holiness.

In addition to the expected systems monitoring the vital signs of the developing kits and the womb nest itself, there are environmental sensors to detect ambient temperature and air pressure. If the ambient pressure drops suddenly, for example due to a hull breach on an orbital colony, the exterior ventilation will be sealed and the air supplied to the inner capsule will divert to an on-board emergency supply.

The outer chassis is famously sturdy. It is shielded against radiation and hard vacuum (again to accommodate spacers) and can withstand the crushing pressures of the deep ocean (to accommodate Sweetwater's benthic cities.) It can even withstand small arms fire.

The reason why incubators are built to withstand everything short of quasiluminal munitions has to do with paternal instinct. The incubator is usually kept in the home and monitored remotely by a healer. During the kits' gestation, the sires are compelled by instinct to protect their nest, to the point of forgetting to eat. Their only waking thought is "THESE ARE THE ONLY CHILDREN I WILL EVER HAVE; I MUST PROTECT MY BABIES!"

Sires will respond aggressively to other males approaching their nest, which is one of the reasons why the medical profession is dominated by women. Women who are not part of the childermoot can examine the nest without getting eviscerated at the claws of up to six overprotective fathers. This aggression is at its height when a sire is in close proximity to his nest, but he will remain more or less irascible throughout his kits' gestation, to the point that paternity leave is legally mandated in most jurisdictions.

---

*This is a tentative retcon, as I previously said the kits are born blind.

Addendum:

Since yinrih only have one litter in their lifetime, incubators are rarely purchased outright. Small communities such as a lighthouse may have incubators that they loan to expecting childermoots, or they may be rented or loaned by a healthcare organization, private company, or government entity.

The inner capsule is discarded after use, and the chassis is cleaned and inspected between uses.

After yeaning, the empty womb nest may be disposed of, or the stem cells or blood within may be harvested in case of future need by one or more of the pups. In certain atavist communities the nest is eaten by the childermoot or just the sires (who haven't been eating properly the last five months), mimicking a behavior seen in tree dwellers.

The incubator also serves as a crib analog for the first few weeks of the kits' lives when they're not mobile. Once they start moving the incubator is returned.

On yeaning and nursing

Yeaning is initiated when the womb-nest’s heart stops pumping. This isn't immediately sensed by the kits as their own hearts pick up some of the slack, but the increased load on their hearts tells them it's time to go. This doesn't happen to all the kits simultaneously. The largest or most active kit is usually the initiator. Using their claws they pierce their amniotic sac and then the outer dermis of the womb-nest itself. If they weren't moved to act by the heart stopping, the massive increase in light pouring in through the rent in the dermis made by the first little trailblazer is usually enough stimulation to get the others stirring.

Not all litters have an obvious runt, but most large ones will. The runt is often the last to emerge, hence why the Commonthroat word for runt literally means "little last one". They frequently need a bit of help from one of their dads. Whether and to what extent this help is given is subject to much debate in the medical community and superstitions and traditions abound. On one end of the spectrum, some say that a sire should completely remove the runt from his or her amniotic sac manually. On the other end, some say that fighting their own way out helps build the runt's weak musculature, stimulates their less robust heart and lungs to work harder, or it just builds character. Many split the difference and pierce the amniotic sac and let the kit do the rest. Which sire gets to do this is also subject to cultural particulars. Some say the youngest sire should do it, others the oldest, still others say that if one of the sires was himself a runt he should do it.

Among Sweetwater's surface dwellers, it's a common superstition that the runt (or any kit that dawdles in their amniotic sac and needs to be coaxed out) has an affinity for water and will make a good sailor. Around Moonlitter, this same phenomenon is interpreted as the kit being destined for interstellar mission work.

Smaller yinrih, often runts, are prized for their ability to negotiate tight passages. This is most relevant to the Farspeakers and their secular inheritors.

Meanwhile, the first kit to emerge has their own cultural associations. Some say they have a strong desire to witness Creation and are destined to become research monks. If they are female, it is said by some that their desire to bask in the light shows they will one day become a hearthkeeper. If male, their vigor and strength will push them to a career in law enforcement or the military, or in more pious enclaves, to the Knights of the Sun.

The sires are traditionally the first to handle the kits, the culmination of moths of diligence and protection. After toweling them off, they'll get passed around from dad to dad, getting a quick nuzzle and sniff before being handed off to the dams to be nursed for the first time. First Nursing is also steeped in tradition. The sires usually eat a huge meal and then go into torpor, both of which were in short supply during the kits' gestation.

The dams get to bond with their kits as they nurse for the first time. When nursing, the dam will lie on her back with one or two kits resting on her belly. She will cup the kit's head in her forepaw, and the kit will start licking her lactation patch. Saliva stimulates lactation. This can be the dam's or the

kit's. If the kit proves particularly fussy the dam will initiate lactation by licking her paw herself. The scent of the milk is usually enough to get the kit to start licking.

As mentioned several times before, adult yinrih don't tolerate physical contact, but kits and younger pups often receive affection from their sires and dams. During nursing a dam will often stroke the kit's head and back with her thumb. This aids digestion. Just like humans, kits will sometimes spit up.

The image of a dam cradling a nursing kit's head in her paw is the quintessential symbol of motherhood cross-culturally, and has given rise to the mild oath "By the palms that nursed me!" or just "palms!"

On yinrih blindness

> *Glenn wrote: 2025-10-14T10:46:22+00:00* I have tried to picture this setup, and I wanted to ask how the inner capsule and outer chassis are arranged: is the chassis flush with the capsule, or is there a space between the two that parents and doctors can fit into to access the capsule? I initially thought it was the former, but if the chassis is shielded again vacuum or water pressure, it seems as though it would likely be opaque, which would remove the advantage of making the inner capsule transparent if the chassis blocked direct access to it.

Edit: This was actually meant for your response in the random ideas thread. I'll leave this since it's relevant and respond to the above when I'm not running on 4 hours of sleep.

Yinrih don't rely so heavily on vision compared to humans, so blindness isn't as debilitating. It's still a disability, but not as severe. I've mentioned that sighted yinrih use tactile writing to an extent, and haptic output is common, like the tailstone safe in the latest part of First Contact. Even a healthy yinrih probably has poorer acuity compared to a human. Not so much that they'd fail a human driver's test, and not so bad that reading print is hampered , but enough to make printed materials tend toward slightly larger sizes.

They also don't lose any social skills thanks to nonverbal communication relying more on odor. Body language still exists for immediate responses, which is where ear and whisker movement come in, but tone of voice can largely fill in the gaps. Eye contact may or may not be relevant, probably to some degree but not to the same level as humans.

Conversely, anosmia is socially crippling for yinrih but not so much for humans. Taillessness also presents mobility challenges as can be seen with Lightray.

Basically, disability is to some degree relative to the place and time one finds oneself in. I'm sure there were plenty of dyslexic vikings that did well for themselves.

Yinrih Milk

Image
Here's a spacer's canteen filled with yinrih milk. Their milk and their ink have similar origins, which is why the milk is blue, and why it is sweated from the palms of the forepaws. It doesn't have the earthy rain smell that ink has.

The milk has very strong antimicrobial properties to compensate for the fact that it's secreted from a surface in constant contact with the ground. Milk production is stimulated by exposing the palms to saliva. Kits lick their dams' paws to nurse. The "on-demand" nature of milk production is an adaptation to prevent dams from losing their grip when climbing, since constantly sweating milk or sweating based on a cycle would make for slippery paws at inopportune times.

Hearthkeepers collect their own milk by licking their paws and soaking the milk up with a sponge, then wringing the milk out into a container. The milk is then blessed and used like holy water. Hearthkeepers often sprinkle blessed milk via an aspergillum held in the tail.

The phrase "By the palms that nursed me!" means something like "oh wow" or "holy crap".