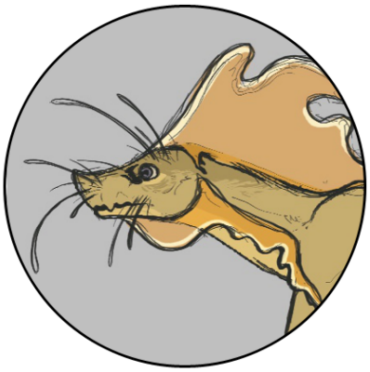
FRILLED KASULAM



- **Length:** 115cm
- **Height:** 52cm
- **Classification:** Wabl'o poba
- **Life expectancy:** 40 years
- **Diet:** Omnivore
- **World population:** Approx. 400,000

The kasulam are diverse in appearance and easy-going by nature. They share a close symbiotic relationship with the mukash, performing some of their manual day-to-day tasks in return for protection from the pinno' grath.

Physiology

Kasulam are long, slender-bodied animals. They are built for burrowing, habitually dig their own burrows, and have highly dexterous paws. The tail is around 1.5 times the length of the body.

The original "wild type" phenotype has beige skin, whiskers, and several fins: one on top of the head, one along the neck, one between the shoulder blades, and two - a spray of long 'scales' and a vane - at the tip of the tail.

Many other phenotypes exist due to reduced evolutionary pressure on the kasulam, leading to a number of colour, pattern, and fin type mutations to prevail, most of which enhance the animals' courtship dances. Kasulam skin can be yellow, white, red, pink, blue, mauve, green, or black.

See *Evolution / Genesis* for a full break-down of the colours, fin types, and patterns that have developed in this species.

Reproduction

They lay between 6 and 16 eggs per clutch and can have their first litter at 5 years of age. Their courtship involves members of both sexes dancing or displaying to one another, so they do not fight for the right to mate. For this reason, there is little sexual dimorphism between males and females, with both being frilled and brightly-coloured.

Intelligence

This species is not unintelligent; certainly they are capable of learning and speaking languages, and of using tools, and they are notably emotionally intelligent overall. However, kasulam are generally less vigilant than their living partners, the mukash, and are habitually less proactive in response to threats.

Some believe the kasulam to be less intelligent than some other species due to their lack of aggression, but the author suggests that this analysis may be more indicative of the judgement of the viewer, not the intelligence of the kasulam. They are curious and socially aware, which is indicative of intelligence.

Medical Conditions

The kasulam are overall quite a healthy species, but the following conditions are common enough to be worthy of note.

Sammamimoss Poisoning
Kasulam do not tend to forage leaves underwater, but they do dive into deep water to investigate underwater plants for fruit, seeds, or nuts, and it's not uncommon for one to brush against a sammamimoss. As these creatures' feathers are poisonous, this can put the kasulam in danger. The poison causes respiratory failure and paralysis.

This is a particular risk if the kasulam puts one of its foraged items in its mouth after touching a sammamimoss. Kasulam new to foraging underwater are taught not to snack while foraging and ideally not to eat their findings immediately after surfacing. This gives any poison the chance to be worn or washed off their claws.

In practice, sammamimoss tend to panic when touched, so usually a kasulam will know when it has touched one. As their feathers can detach, it is unwise for a kasulam to assume that they haven't touched a poisonous feather just because they didn't encounter a sammamimoss.

Carnivorous Fungus Infection
Tushma coins are the mushrooms of a carnivorous fungus. As kasulam are curious and are also prey animals, they often get scratches, scuffs, and grazes. Any open wound is vulnerable to infection if the kasulam touches an infected tushma.

Kasulam are most likely to encounter an infected tushma if they go in search of tushma eggs and are chased by an infected adult.

A similar story is true of scab caps, except that pinno’ grath are the most likely vector.

Geographical Distribution

Kasulam favour areas with deep, dry soil or naturally-occurring rock caves. They can live in a variety of terrains due to their broad range of phenotypes, which allows them to be camouflaged in most environments.

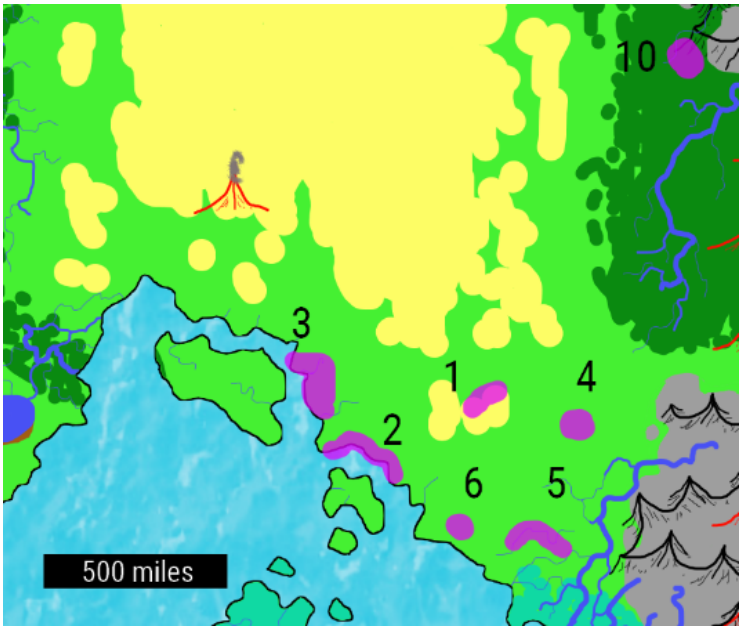
A side-effect of the wide variety of mutations is that many litters include youngsters who deviate from the ideal phenotype to survive in the environment in which they are born. For this reason, each generation must send some of its youngsters to other settlements. See *Travel / Transport* for further details.

The settlements keep in touch with the help of the [no name yet; whales.] These migratory animals migrate over Oplayn and share news with each settlement about the other settlements. The [whales] benefit from this as their migrations can be lonely, so checking in with the kasulam often provides welcome social time.

Settlements

Overall, the mukash appear to have more power and influence in kasulam-mukash tribes than the kasulam do, but the foundation of new settlements is one area in which the kasulam lead - generally by necessity.

They choose the locations of new settlements mostly by how well-camouflaged they will be, and the mukash fit in with their arrangements.



Subdesert/"Desert" Tribe (Tribe 1)
Common phenotypes: Wild-type and Yellow
The ancestral home of the kasulam. Most individuals who live here are of the wild type by colour and fin type. A few Yellows live here, but most choose to live in easier and more pleasant environments.

Ocean Tribe (Tribe 2)
Common phenotypes: Yellows, pink-eyed individuals, and blues; breakers.
300 miles south of the Desert tribe, the Ocean tribe was the first settlement established after the exodus of the Yellows from the desert. Nowadays Yellows have the option to move to the Gyrmlak Forest community, but as this is approximately 1,000 miles away and the coast offers Yellows plenty of caves to hide in, most choose to stay.

Coral Beach Super-tribe (Tribe 3)
Common phenotypes: Reds, yellows, pink-eyed individuals, blue, mauve, and green; breakers.
The most successful of the tribes in terms of sheer size, hence its status as a "super-tribe". The corals for which this tribe is named extend far enough inland that many members of the tribe do not actually live on the beach, however all of them live within the caves created by the table-corals. Pink-eyed individuals usually choose to live further inland to avoid having to see the sun sparkling on the sea, which can be painful for them to look at. Greens also live inland, where green foliage grows among the corals and allows them opportunities for camouflage.

Fernland Tribe (Tribe 4)
Common phenotypes: Green, red, yellow, and blue; striped and anopthalmics
The tribe is ideal for greens and, to a surprising extent, reds, depending on the quality of the eyesight of the predator. Stripes improve individuals' camouflage, so striped greens thrive in this tribe.

Yellows and blues are invariably born as a result of the presence of greens; blues tend to leave for the Blue tribe, while Yellows may stay, or may leave for the Coral Beach or Gyrmlak Forest tribes (the ones who stay usually do so because camouflage at Coral Beach is not ideal, and Gyrmlak Forest is around 1,000 miles away.)

Anopthalmics stay here because they are poorly suited for travel.

River Tribe (Tribe 5)
Common phenotypes: Blues, greens, yellows.
The river tribe was lauded as a haven for blue kasulam until the far-preferable Blue tribe was founded. As it was founded much earlier than the Blue tribe it remained rather than disbanded, and a number of blues continue to live there, as do greens. Both enjoy moderately good camouflage. The excellent food available in this area tends to be the deciding factor in encouraging kasulam to stay.

Yellows are usually born here due to the presence of greens; some stay, and some leave for Coral Beach or Gyrmlak Forest.

Blue Tribe (Tribe 6)
Common phenotypes: Blues, reds, mauves, and blue or white albinos; diluted and darkened; striped
The blue tribe was founded upon the discovery of the blue-tinged limestone in the area. This tribe has more individuals joining than leaving, and remains almost entirely made up of blue individuals, and as the blue gene doesn't mask any other genes, other colours rarely occur.

The red gene comes in in single doses, so the occasional red or mauve youngster is born. These tend to leave. The similarly recessive albino gene also occurs, either blue or non-blue; non-blue albinos usually turn yellow but are not true Yellows (see colour guide below). Pink-eyed individuals tend to dislike the glare of the blue/white limestone and leave.

The blue tribe is responsible for the beginnings of a dilution in the mukashs' symbolic gesture of painting oneself in blue clay to denote the bringing of shocking news. Living in this soil leads most to be covered in a thin or partial layer of it most of the time, and the mauves, reds, and white albinos tend to aid their camouflage by covering themselves in a layer of the soil. It also works as a sunscreen on particularly hot days.

Gyrmlak Forest Tribe / "Gyrmlak" tribe (Tribe 7)
Common phenotypes: Yellow, diluted or darkened; pink-eyed, striped
A young tribe that was founded when the [whales] notified the kasulam of the existence of the perfect biome for the yellows. The tribe lives in a forest of gyrmlak trees, which have large yellow leaves which create the perfect camouflage for yellow kasulam. As the leaves are large, a curled-up kasulam is around the same size and shape as a fallen

gyrmlak leaf, and the canopy provides excellent cover, preventing the ‘sparkle’ effect that pink-eyed kasulam find so difficult to tolerate in most forests.

🐳 Position in Ecosystem 🐳

Much like the mukash, the kasulam are prey animals. Their partnership with the mukash has allowed them to transcend the usual risks to a fairly effective degree and render them partly a dominant species, although they are not completely free of the dangers presented by some of the larger predators, including the pinno' grath.

The kasulam are omnivorous, and like to supplement their diet with insects, grubs, fish, eggs, and Kaleida's equivalent of small lizards and chicks.

[I'll add more detail here as I learn more about the ecosystem.]

Plants

Kasulam are omnivorous, and enjoy plants as a big portion of their diet. Some of the best food for kasulam comes from the plants in the fresh and salt water around them, so finding substantial amounts of vegetarian food usually involves a swim with a flint-blade and a diving pouch for storing their findings. [There will certainly be more plants to add here. Here's what I've got so far.]

Aqualorica
A succulent bush from sub-arid areas. its leaves become engorged with enough water to make them good for quenching a kasulam's thirst as well as food. Most kasulam can only tolerate its flavour in small quantities, but those living in dryer areas eat it often enough on account of its water content.

Ersh Trees
Tall, majestic trees that grow deep underwater and grow tall. Their fruits, known as ersh fruit, are large, soft, and float to the surface when they ripen enough to detach from a tree. As ersh trees usually grow too deep for a kasulam to comfortably dive to, usually they can only wait for the ripened fruits to bob to the surface.

Geminus ("Friendship Reed")
A reed that grows in the shallows of rivers and lakes and grows a pair of green cones at regular intervals on its stem. These are edible to the kasulam.

Gennaibus
This plant produces sporophytes - large, nutritious bulbs that release spores. The kasulam find them to be bland, but generous, eating.

Girass
Another underwater plant, which produces a single, large spike with many small fruits on it. Kasulam usually make several dives to gather enough fruits if they don't have a diving pouch.

Hilsuny
A spiral-shaped plant that grows in the desert. The inside of its stem can be eaten.

Kosmina
A thin-stemmed tree with succulent leaves, that the kasulam eat - but only in small quantities on account of its potent flavour.

Pirra-mid
Another underwater species, this is a short, bushy herb. The fruits of this plant are pyramid shaped. The fruits make good eating and are well worth a kasulam diving for.

SOS ("Spike Of Squares")
The fruit of this underwater plant is edible and grows tightly packed together in long, cuboid shapes. The stem is soft enough to cut, so usually kasulam will cut or bite it to release the whole head of fruits and bring it to the surface.

The name - especially in abbreviated form - has been adopted by the kasulam since the arrival of the offworlders, as the English-speaking humans found the name amusing.

Tassey ("Blue Circle Flower")
A large flower that grows under water in coastal areas, usually not far beneath the surface and easy to spot from a distance and reach. It produces hundreds of seeds in the centre of its ring of blue petals, and old seed heads are worth bringing to the surface to eat on the beach. Due to the small size of the seeds, while adults can eat them, they are more worthwhile for youngsters to eat. For this reason, mothers living in coastal areas often cut one loose and present it to their litters.

Yakulis
A fruit-bearing plant that grows underwater. Also known as “grab-fruit” on account of the kasulams’ need to swim to a depth, grab one, and return to the surface.

Fungi

[I have much more development of the fungi to do. The below are taxonomic Classes so are not specific enough to be particularly helpful here.]

Globbus
Some fungi in the globbus Class are extremely dainty with long stalks. Kasulam will sometimes bring a piece of bark or a leaf with these growing on it into the sunshine to dry them off, and then crush the dried mushrooms into meals where it can be mixed in.

Theamarga
A Class of lichens which include many edible species. These are usually only consumed for nutrition’s sake when nothing else is growing in the dry season as while they are edible, they are not delicious. They are best ‘enjoyed’ as a tea, which is rarely possible during a drought, so malnourished kasulam will sometimes scrape together a mouthful of theamarga to suck, chew, or eat.

Herbivores

Kasulam are not accomplished hunters. The best they can generally do is to hunt small, slow animals, those whose offspring instinctively become silent and still when threatened rather than bolting for cover, and eggs.

Maggorus Fry
Small species of maggorus, or the fry of larger species, hid in the silt and mud, and can be caught by kasulam if they reveal their position.

Tushma Eggs
Tushma are brightly-coloured, semi-aquatic animals. They are poisonous and too large for kasulam to hunt, but they lay eggs in large quantities on land. Their eggs are not poisonous, and they make good eating. A kasulam gathering tushma eggs must be quick and careful to avoid being chased and butted by a tushma, as the ill effects of this can be debilitating.

Sagragonno Eggs
The aquatic sagragonno lay long strings of eggs that are in high demand by many omnivores. If a kasulam can find them, they willingly take them.

Takaspra Eggs
Adult takaspra are no good for eating due to being poisonous, but kasulam enjoy their eggs if they can find them. The takaspra routinely disguise their eggs by laying them at the bases of trees before covering them in a protein that hardens and takes on a resemblance to bark, dead leaves, or disturbed dirt. Observant kasulam notice these features and check them for eggs.

Non-Apex Predators / Omnivores

[I'm sure I'll add more here as time goes on, but this is likely to remain a short list.]

Khoricru
Smaller species are relatively easy to catch on account of many khoricru having either no limbs, or small, weak limbs. They have feathers of many colours and textures, which are sometimes used in ritual kasulam jewellery.

As khoricru are adapted to hide in and on plants, they are often found incidentally while foraging.

Apex Predators

The kasulam have a few species to worry about in terms of being predated. Their youngsters are at greater risk on account of their naivete and often, their colours, which leave them conspicuous.

Khoricru
Bigger khoricru species present a threat to young kasulam. They lie in wait on plants with which they are camouflaged, and grab kasulam youngsters which they swallow whole. Their patience and excellent camouflage makes them hard to spot, and adult kasulam tend to keep a watchful eye on exploring youngsters to intervene in case of an ambush.

Pinno' grath
Pinno' grath come in many species, which themselves come in many shapes and sizes. On of these, the helicoid pinno' grath, is sapient and remains a predator, though the risk of somewhat reduced due to the kasulam being able to reason with them.

Some of the larger, non-sapient pinno' grath species are a threat to kasulam.

Invertebrates

[I've yet to work on my invertebrates, but the kasulam undoubtedly eat a lot of these. I'll come back another time to fill this part.]

Dominant Species

The kasulam share their world with several other sapient species.

Helicoid Pinno' Grath
This particular species of pinno' grath remains a predator to the kasulam, but is sapient enough to be reasoned with, with the right preparation and leverage. See *Pinno' grath Lore Bible* for further details.

Spade-Footed Mukash
The long-time companion species of the kasulam. They usually live in burrows that they develop together, with the kasulam doing the bulk of the work.

[Whales]
A large, flying species that migrates by air over much of the continent of Oplayn and beyond. They tend to stop by kasulam burrows to rest, eat, drink, and share news and gossip.

Bacteria, Viruses, and Other Pathogens

[I don't have any detailed information here yet.]

Artificial Life

The offworlders are well aware of the impact that obvious technology can have on primitive natives, however, biorobots are helpful in protecting Kaleida. For this reason, the various offworlder species have released biomimics that look like native animals or animals from their own worlds to do the necessary monitoring of Kaleida's environment as unobtrusively as possible.

Bionic Octopi
The ecosystem of the Stulls' home world includes a creature not dissimilar to the octopi of Earth. Like Earth's octopi, these creatures prefer the deep oceans and are adapted to live there. Bionic octopi are developed along similar lines to tolerate the intense pressure of the deep ocean.

As the depths of Kaleida's oceans are hard to monitor in person, these robots are deployed in great enough numbers to do so remotely and to send reports to the Stull, which are then shared with the rest of Kaleida's research team.

They are also programmed to remain well away from the hunting range of any species, kasulam included, to prevent them from being accidentally caught.

Drone Bats
The furry civilisation has their own equivalent of drones, which are far less conspicuous in a natural environment than the humans' drones, which by contrast are noisy and easily identified as non-living objects.

Drone bats hang in branches or grip tree trunks when not in use. They fly fast and high, and avoid predation through the use of echolocation. Their contribution to Kaleida's protection is to analyse the air and send the team reports about air quality, to take samples of leaves or bark from the tops of tall trees and individual insects to analyse them for toxins, and to take snapshots when required.

Quadruped Robots ("Robot Dogs")
Overall, the human civilisation is considered to have made the weakest contribution to Kaleida's robotic workforce. As such, the robot dogs are either maligned or ridiculed for their conspicuous nature, depending on the individual critic. Regardless, the robot dogs are deployed on occasion to explore suspicious activity on the ground. They are quick, adaptable to different land-based environments, and are big enough to pack all sorts of helpful technology.

The other civilisations may not like them, but their role as part of the team is hard to argue.

Pollution-Detecting Fishbots
As soft and moist as the ispep are, they cannot venture into water on their own planet without experiencing ill-effects. For this reason, their oceans and freshwater areas remained a mystery to them for much of their history. When they became able to build robots to explore those parts of their world for them, they discovered much - and invested greatly in their further development until they had designed an excellent robot for wet environments.

Fishbots swim alone in any environment that Kaleida's research team need them to. There are larger and smaller ones which carry different technology, store water or silt samples, monitor the tide and impact, the weather, and other influences on the movement of the water, and explore nooks and crannies inside carcasses, corals, and caves.

Spydars
When the kz-cutl reached a technological level where they became able to make their own robots, they modelled them on their own body shape, albeit smaller. Spydars do as their name suggests: they monitor and detect. Like the robot dogs they can crawl across any environment. Unlike the robot dogs, they can climb trees and rocks and venture into wetlands.

🚀 Technology 🚀

Kasulam technology is light to non-existent.

Technological Age

The kasulam have entered their stone age. However, they rarely if ever innovate new tools themselves, and instead make and use tools under the direction of the mukash.

That isn't to say they lack an understanding of what they are making; they understand it well, and the best kasulam companions use initiative in performing actions such as building fires for the burrow's evening meal.

Agriculture

The kasulam are hunter-gatherers, but in their recent history have found themselves coerced into entering their agricultural age, although they remain in the early stages.

Blue Light Hunting
The translucent leaves of the almaviva plant cast a blue-tinted light on the forest floor. Any red-coloured animals foraging underneath those plants look black under the blue light, making them easy to catch. Kasulam wait in ambush for these.

Kasulam do not plant almaviva plants to create blue areas so this counts as hunting rather than agriculture.

Fishing
They use condensation nets to catch fish wherever water is easy enough to come by that the condensation nets are redundant, in order to continue to develop their relationship with the pinno' grath, especially sick ones, and further stave off being hunted themselves. See *Healthcare and Medicine* for further details.

Language

Most kasulam are trilingual: they speak kasmaque (a unique language developed between themselves and the mukash), source (Kaleida's version of "common"), and pinno' grath.

Kasmaque
A language that draws heavily from Source, but is almost impossible to understand to Source mono-linguists due to its heavy dialect. The mukash and kasulam developed kasmaque together over thousands of years inside their burrows, so the only others who speak it are the few who take the time to learn to do so.

Pinno' grath
The pinno' grath have their own unique, albeit basic, language. Most kasulam learn it to the extent that they are moderately proficient or fluent in it, as a failure to communicate with a pinno' grath can be lethal. Pinno' grath rarely if ever bother to learn kasmaque, so kasulam are the ones to make the effort.

Source
A language spoken by most sociable, sapient species in the Oplayn continent. This is the language the kasulam speak to the [whales] in; kasulam and mukash will usually switch from kasmaque to source when talking in company.

Naming Conventions
Kasulam names are made up of a phoneme that almost invariably shows up in English as three letters, repeated twice, e.g., Toatoa. When talking about a particular kasulam it is acceptable to use the phoneme only once, e.g, Toa, as it will still be clear who you are talking about, but it's considered the norm to mostly refer to a kasulam by its full name. It is also considered somewhat informal to use the shortened version, so tribal leaders are usually called by their full name.

Kasulam do not have surnames, but individuals may be specified in terms such as "Toatoa of the Ocean Tribe". This is dependent on context however, as many kasulam migrate from a tribe of origin to a more suitable one. See *Generational Travelling Companions* under *Social Dynamics* for more details.

"The Source"
This is the kasulams' term for Kaleida. Until the offworlders come and introduce them to their own name for the planet, the kasulam consider the world at large to be the source

of all life - or “the source”. Despite the offworlders’ introduction of the name “Kaleida”, the kasulam continue to call it The Source.

Written Language
So far, the kasulam only use pictographs, and only a few of them. They may draw these into sand or soil, or if they wish to make them more permanent, draw them in chalk onto stone walls or carve them into kura.

Energy Usage

No species on Kaleida has developed electricity. However, the kasulam make fires on occasion. As they do so much handiwork for the mukash, they tend to need plenty of calories, so cooking their food helps them to take in enough to work efficiently.

The Sciences

The kasulam cannot be accurately described as having any mastery of the sciences. Their skills are practical but do not rely to any great degree on STEM knowledge.

Sanitation

Kasulam eliminate away from their burrows.

Industry

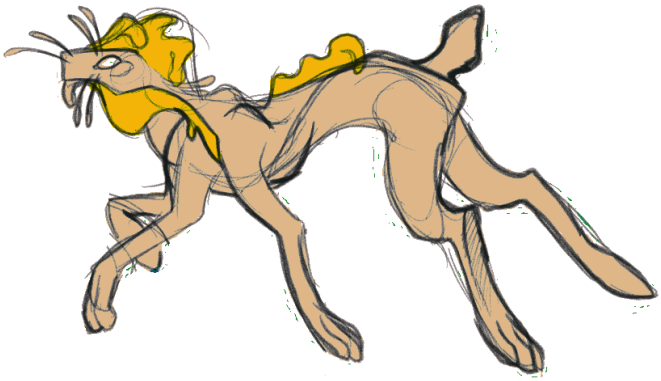
It is the kasulams’ industrious attitude that earned them their place beside the mukash. As such, they are industrious in making string, nets, and generating water.

History

Kasulam history is more tragic than their generally carefree attitude may suggest, and it is well worth a visitor being aware of the cultural significance of kasulam history. Their great phenotypical diversity means that some individuals from each generation of youngsters must choose between leaving their burrow of origin, or stay and risk predation or fail to find enough food to support themselves. As kasulam are socially aware, the choice to leave can be very painful for the youngster's family. New arrivals in a more suitable burrow can take a while to settle in.

For these reasons, the kasulam tend to opt for a "carry on regardless" and "appreciate what you have" attitude towards life, but family ties can be a sensitive issue.

Evolution / Genesis

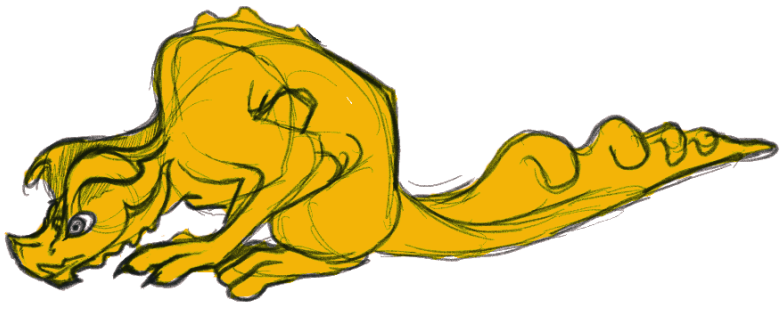


The Kasulam present in a wide variety of phenotypes. However, they are all members of the same species and are capable of interbreeding. In practice this gives them "Eevee syndrome". What follows is a list of the different phenotypes. Wherever no mutation is expressed the animal will show up as beige, which is referred to here as the 'wild' type. [Note: most of the images in this section are out of date and do not accurately represent the body shape of the kasulam.]

Colours

The Kasulams' colour genetics work as follows:

Yellow or White
This is one of the most common Kasulam colours; originally



kasulam presented as presenting yellow fins only, with beige bodies. This gene allows kasulam to retain carotinoids all over their skin, not just their fins, which turns them yellow. Individuals who have no access to carotinoids show up white instead.

The gene for carotinoid assimilation is dominant, and is expressed as *Ye*, while the absence of the gene is *ye*.

A Punnet square for this appears as follows:

Parent 1: two copies of Yellow gene

		Ye	Ye
Parent 2: two copies of Yellow gene	Ye	YeYe	YeYe
	Ye	YeYe	YeYe

Resulting offspring: 100% will be yellow or potentially yellow.

Parent 1: two copies of Yellow gene

		Ye	Ye
Parent 2: one copy of Yellow gene	Ye	YeYe	YeYe
	ye	Yeye	Yeye

Resulting offspring: 100% will be yellow or potentially yellow.

Parent 1: one copy of Yellow gene

		Ye	ye
Parent 2: one copy of Yellow gene	Ye	YeYe	Yeye
	ye	Yeye	yeye

Resulting offspring: 75% will be yellow or potentially yellow; 25% will be white

Parent 1: no copies of Yellow gene

		ye	ye
Parent 2: no copies of Yellow gene	ye	yeye	yeye
	ye	yeye	yeye

Resulting offspring: 100% will be white

Yellow animals are brighter than the desert sand so make an easy target for predators.

Blue
This gene produces structural blue, is recessive, and is expressed as *b*. Its absence, therefore, is expressed as *B*. However, the animal only appears blue if it lacks any Ye genes, is an albino*, or is anopthalmic.

*Blue-skinned albinos are possible, as blue colouration is not a pigment but a form of structural colouration.

A Punnet square for blue appears as follows:

Parent 1: two copies of blue gene

		b	b
Parent 2: two copies of blue gene	b	bbbb	bbbb
	b	bbbb	bbbb

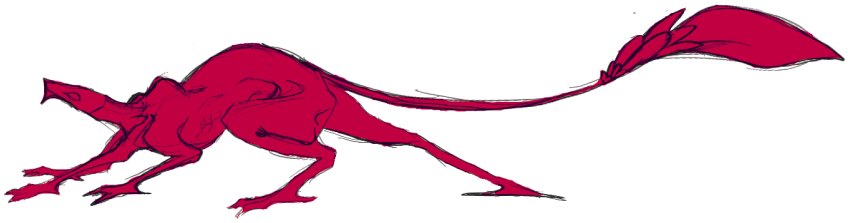
Resulting offspring: 100% will be blue.

Parent 1: one copy of blue gene

		b	B
Parent 2: two copies of blue gene	b	bbbb	bbBb
	b	bbbb	bbBb

Resulting offspring: 100% will be blue or wild.

Red, pink, or white



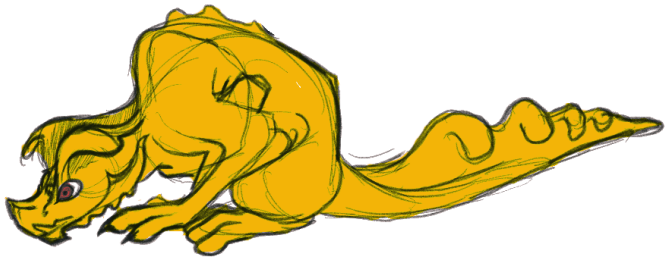
Of the kasulam who have access to carotinoids in their diet, some possess a gene that creates an enzyme that turns carotinoids (which are naturally yellow) red. The gene that does this is recessive, and is expressed as r.

A kasulam must have at least one copy of the yellow gene and two copies of the red gene to show up as red, while one with no copies of the yellow gene will be unable to produce carotinoids to synthesize into red carotinoids, and will therefore show as wild-type:

Parent 1: one copy of yellow gene (Yeye) and two copies of red (rr)

		Yer	yer
Parent 2: one copy of yellow gene (Yeye) and two copies of red (rr)	Yer	YeYerr	Yeyerr
	yer	Yeyerr	yeyerr

Resulting offspring: 75% red, pink, or white, 25% wild



Albino / "Pink eyed"

Albinism in kasulam is potentially confusing. A white-coloured animal may be a Yellow who has no access to carotinoids, or it may be a true albino. Albinos are capable of assimilating carotinoids into their skin, so may

be yellow. However, true albino kasulam have pink eyes. The gene for this is i.

Albino kasulam are photosensitive so often have impaired eyesight.

Blue albinos are also possible. This is because blue is the result of structural colouration, not pigmentation, so two copies of the i gene can combine with two copies of the b gene to create a pink-eyed blue.

The same is true for red, and (as will become apparent below) green. Albinos can therefore present in a wide variety of colours but will have pink eyes.

Green
Green is a composite colour, the combination of two doses of the blue gene (bb) with at least one dose of yellow (for the below Punnet square we will assume one copy only):

Parent 1: two copies of blue gene (bb) and one copy of yellow (Yeye)

Parent 2: two copies of blue gene (bb) and one copy of yellow (Yeye)

	bYe	bye
bYe	bbYeYe	bbYeye
bye	bbYeye	bbyeye

Resulting offspring: 75% green, 25% blue.

Black
Melanistic Kasulam exist in some parts of Kaleida. The gene for this is recessive, and expressed as *a*.

Parent 1: two copies of black gene (aa)

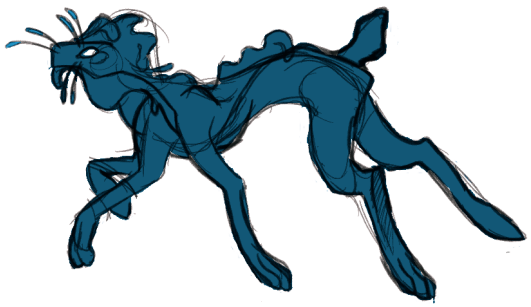
		a	a
Parent 2: two copies of black gene (a)	a	aa	aa
	a	aa	aa

Resulting offspring: 100% will be black.

Colour Modifiers

In addition to the above colours, kasulam are also subject to darkening and lightening effects.

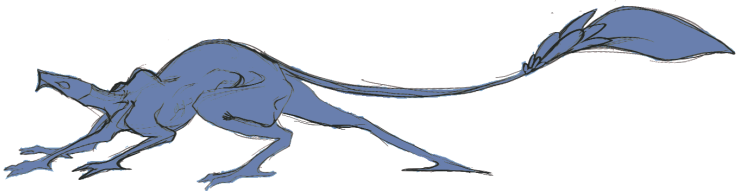
Darkening
Darkening - predictably - has a darkening effect on some colours, thereby dulling them and making them appear more 'natural', which in turn can aid camouflage. It is expressed as *D*. This is a semi-dominant gene: a Kasulam with one dose will be darker than one without, and one with two doses will be darker than an individual with just one dose.



It affects the various colours as follows:

- yellow becomes olive
- blue becomes dull slate
- red becomes russet

- white is unaffected
- green becomes sage
- black is unaffected
- cloaked becomes darker grey

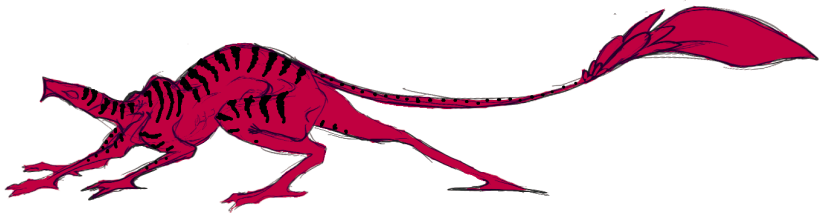


Dilution
In contrast to darkening, a kasulam with two copies of the recessive dilution gene (*il*) will appear either brighter or washed out. Any black markings will also be fainter.

Patterning

In addition to the above range of colours, kasulam are also subject to a few patterns.

Mottled
A few styles of patterning occur in the Kasulam community, the most common of which is the dominant gene for mottling (Mo). This gene produces exactly that - a mottled effect - with white showing through the individual's base colour.



Striping
Another relatively common form of camouflage patterning is stripes. These are small, black, and are most effective in Fernland. The gene for it is *St*.

As St is generated with black pigment, the dilution gene can wash it out and turn the individual's stripes a darkish grey.

A brown variant of striping exists in the form of a recessive modifier labelled *c*, for 'cinnamon'.

Translucence
Arguably not a colour, this gene has nevertheless proved helpful in the promotion of Kasulam survival. It is expressed in the flaps of a Kasulam's skin, so is the most effective in heavily-frilled individuals. The skin is translucent enough to blue the individual's outline, which is highly effective in preventing predation.

The gene is denoted by the letters *tr*.

Pied
This is a unique form of patterning for the Kasulam. Instead of creating areas of black or white like the other patterns, it interrupts the composite colours of green and red, so that patches of the base yellow or white show through. As a result it is possible to have the following pied individuals:

- red and white
- red and yellow
- green and white
- green and yellow

All of the above may have mottling, stripes, translucence, or pink eyes. The piebald pattern is caused by the dominant *Pd* gene.

In practice, pieballing serves to create a different ventral colour to the individual's dorsal colour, including on the hidden or underside portions of their fins. This allows individuals to be camouflaged for most of the time and to open their fins to display to others when they raise their fins.

Anopthalmia
This is not a pattern, but the absence of eyes, the gene for which is not uncommon among Kasulam populations. This gene is denoted by *Wh*. It is dominant, and prevents the Kasulam from developing eyes (although some have vestigial eyes). They are also often profoundly deaf and have white skin.

The existence of this phenotype is interesting: the Kasulam and Mukash are both prone to taking responsibility for their sick and infirm, and they make no exception for their deafmute community. This is what allows anopthalmic individuals to survive. Indeed, the Kasulam have developed a language based on touch - tactile signing - which they teach all members of their community.

When approaching an anopthalmic individual, a sighted/hearing individual will blow on or near to them, to announce their arrival. Anopthalmic Kasulam quickly learn to recognise others by scent, and are generally known to have rich lives.

Fins

The wild type kasulam has a crest on its head, a fin between its shoulder blades, a pair of fins along its neck, a tail vane, and a set of scale-like growths at the base of the vane.

The following images illustrate the shape and style of the wild type kasulam fins, highlighted in green. Other details such as unhighlighted fins or tail lengths may or may not be correct.

Wild Type

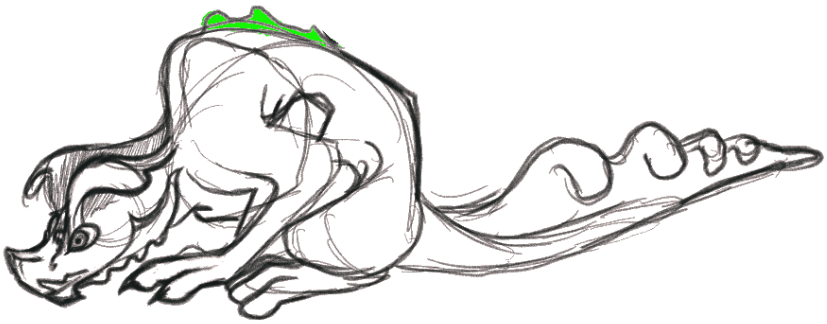
Crest

Dominant trait labelled Cr. The absence of a crest is cr. Kasulams cannot fold their crest down, and use it to attract a mate. As they cannot conceal this fin, living outside of the burrow is dangerous. This trait is one of the risk-factors that prompted the kasulam to begin cohabitation with the mukash.

Note that the short tail of the animal in this picture is inaccurate; all kasulam have long tails. The same is true for the midback fin.

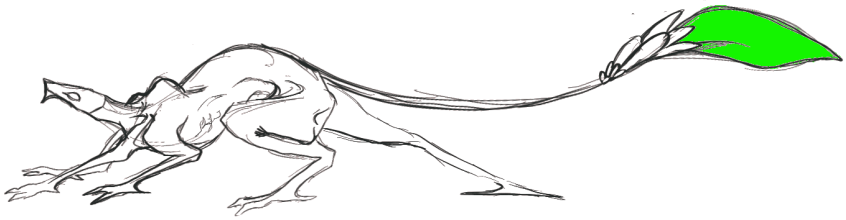
Highback

Wild type kasulam have a small fin between their shoulders. It is usually concealed, until the animal arches its back, when it becomes visible. Kasulam use this as a mating display, and the usually hidden nature of the fin helps prevent its bright colour from being noticed by predators.



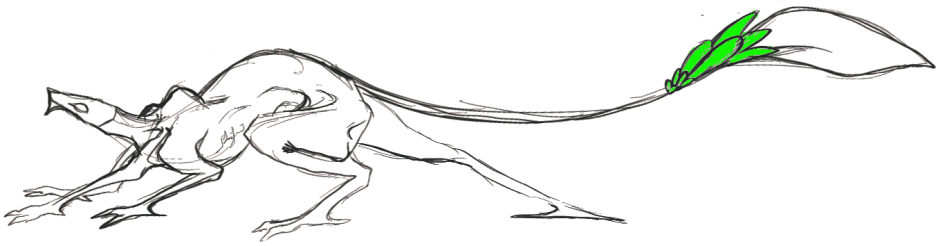
The genetic label for this characteristic is Hb.

Ruff
This is a semi wild type characteristic, labelled Rf. It is regionally adaptive as, for kasulam who live in warmer, wetter climates, the ruff aids temperature regulation. Unfortunately the ruff is also prone to being colourful, which increases the risk of the animal being spotted by predators. In areas where this gene is less adaptive, the species' early cooperative relationship with the mukah probably allowed this gene to persist.



Vane
Another dominant gene marked Vn, the tail vane appears in wild type kasulam. It may or may not be combined with the scaletale (see below) and assists with cooling and with feeding, by sensing the movement of small crustaceans or flowing plants underwater.

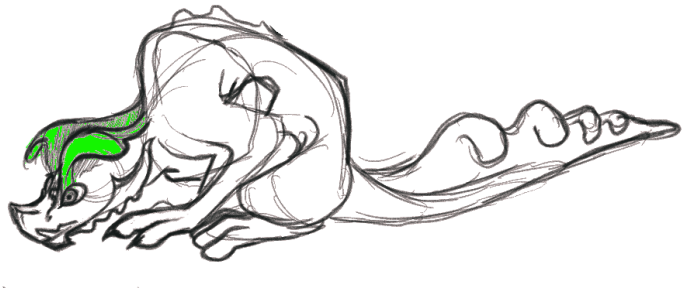
Scaletail
Labelled Sc, the scaletail is another semi-adaptive that presented in many wild type kasulam, and a good number of modern ones. With this gene, the base of the tail vane sprouts an array of scale-like projections which are usually brightly coloured, and which the animals use as a mating display. The display is thought to convey the animal's survival prowess despite being conspicuous.



This is another adaptation that heightened the kasulams' need for a partnership with the mukash, and the mukash may be responsible for the kasulam still having this gene.

Fin Mutations

Since the kasulam formed a consistent partnership with the mukash in which they allowed them to live in their burrows, the kasulam have been under reduced evolutionary pressure to conform to the wild type. A number of mutations in fin type have occurred throughout the centuries, and these are the ones that have been noted:



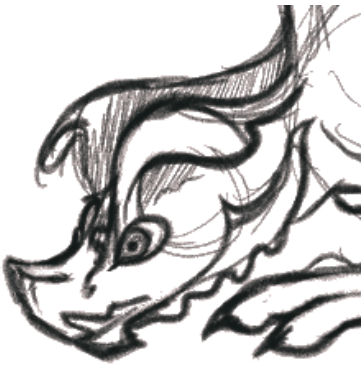
Big Brow
An unusual fin mutation as it is dominant (Br), this appears to be a mutation of the wild type crest. However, it can occur in conjunction with the crest, so either it is genetically independant or has mutated enough to allow for the presence of both.

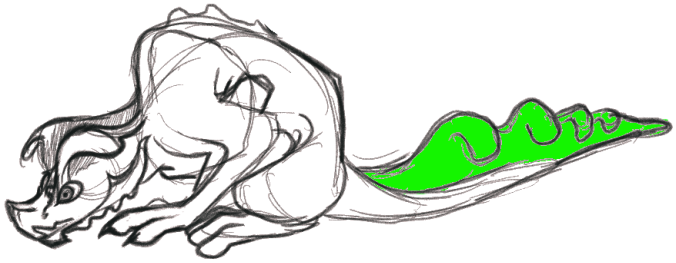
The big brow is a double-edged sword for the kasulam. It obscures the individual's vision of the canopy or sky above, so increases the risk of an ambush from that direction. For albinistic individuals who experience photosensitivity, this fin acts as a sunshield and protects their eyes. As the mukash have light-sensitive eye patches on their occipital antennae, they are uniquely equipped to spot threats from above.

Midback
The recessive midback gene (mb) is a mutation of the highback gene. Kasulam with a midback fin cannot hide the fin so are at greater risk of predation.

Smoothface

At some time in the kasulams' history, a strain arose that lacked antennae. The gene responsible for that strain was named sm. Kasulam use their antennae to feel their way through their underground. Those without antennae benefit from spending as much time as possible above ground in the case of a predatory attack, or to live in caves and fissures that allow light in.





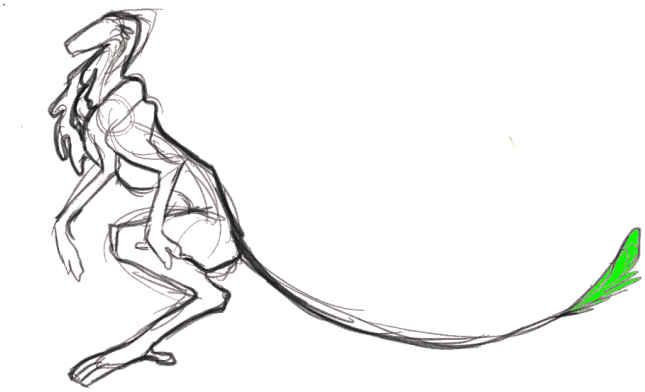
Breaker

This is the name given to a style of dorsal fin that occurs a long way back on the kasulam's spine - along its tail, and is named after the small waves that break on the shore. Tails with breaker fins tend to develop more muscle and become thicker and heavier, and make the animal less nimble. However, they can make effective camouflage depending on the animal's colour and environment, and they can assist with heat-loss.

The breaker fin is denoted as br.

Soft tail

The soft tail (so) is a mutation of the scaletail. It performs a similar role and has similar risks. It can occur with the vane.

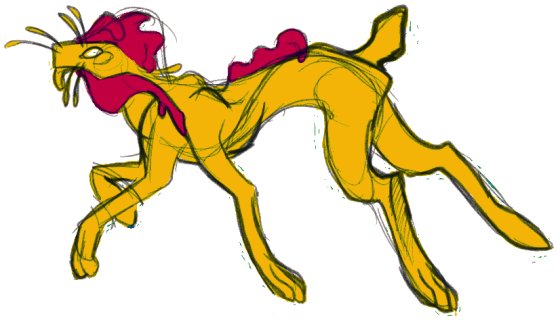


Fin Colours

Kasulam fins are sometimes the same colour as the overall animal, sometimes different, and usually the colour is based on yellow: yellow, red (which is enzymatically-altered yellow,) and green (which is yellow semi-hidden underneath structural blue).

The wild type invariably has yellow fins.

Self vs. Motley



Some mutated kasulam are ‘self’ coloured - that is, the same colour all over. Others are ‘motley’ coloured - the body is one colour and the fins are another.

Examples include greenfin, where the animal produces structural blue only in their fins and not on the body. Redfin works similarly, where the enzymatic red is limited to the fins.

Darkfin also occurs in kasulam populations. In this motley variety, the animal produces the darkened effect only in its fins.

There is also a blackfin variety, where the animal produces melanin in just their fins. Blackfins can have bodies in any colour, but cannot be pink-eyed, as this comes from the albino gene, which prevents them from creating the melanin that produces the black fin.

Timeline

Throughout the kasulams' history they have come under greater, and less, evolutionary pressure. The lessening in pressure, courtesy of the mukash, allowed the kasulam to breed more prolifically, which both provided the potential for mutations to occur and supported the survival of individuals with mutations.

Some of those mutations were phenotypical, so as the mutated individuals gained the protection of the mukash and contributed their genes to the kasulam community, this species' standard appearance began to vary.

Earlier mutations were purely for fin type. More recently, mutations in the skin colour of individuals' entire bodies began to appear, which added too much pressure to the kasulam and mukashs' survival strategies for the mukash to support. This led to the different-coloured kasulam seeking other terrains where they would be better camouflaged.

In the current day, kasulam phenotype varies widely and they tend to have a final say on the locations of new burrows, with the mukash following their lead.

Sheltering the Athmook - 2 million years ago
The ancestors of the kasulam spend their days around athmook populations, which are quick to sound the alarm about predators. This allows the kasulam to fully focus on their mating dances with the athmook keeping watch for danger.

Some kasulam begin to shelter in the athmook burrows instead of their own when danger strikes, if they are closer - and they often are, as the kasulam were prepared to venture a distance from their own burrows to share company with the athmook.

Some athmook are more receptive to this than others, and the kasulam gradually begin to favour friendlier athmook.

Occasionally, travelling or lost athmook who are familiar with, and receptive to, the kasulam shelter in their burrows. They quickly discover that sharing a burrow is easier than digging a new one. They add to the kasulams' burrows by digging extra tunnels, usually extra exit points to avoid getting cornered when predators attack. Some kasulam object, but the ones who accept these adjustments thrive more than the objectors as they have the survival advantage of a rear exit.

The integration of the two communities becomes more frequent over the millenia. Athmook begin to actively seek out cohabitation situations with the kasulam, and kasulam communities welcome their new in-house security system.

Era of Fin Mutations

The above cooperative relationship lessened the evolutionary pressure on the kasulam, and individuals with mutations that affected their ability to camouflage began to survive for long enough to pass on their genes. As the kasulam already selected mates based on courtship dances, fin mutations were seen as attractive and improved the mutated individual's chances of breeding.

Crest Mutation - 50,000 years ago
The Crest mutation begins to show up in kasulam populations. Unlike the highback fin it is impossible for affected individuals to hide, making them more conspicuous. Affected individuals seek out athmook (which are quickly becoming the mukash by this time) populations for safety.

Scaletail Mutation - 43,000 years ago
A mutation develops that creates a spray of long 'scales' at the base of the tail vane.

Ruff Mutation - 20,000 years ago
The ruff mutation begins to appear. While this mutation also increases the kasulam's need for the mukashs' protection, it also aids heat-regulation.

Era of Independence

For a short period (at least, in evolutionary terms) a mutation spread through kasulam populations that both improved their ability to camouflage, and appealed to potential mates. This is called the Motley mutation.

Motley Mutation - 11,000 years ago
Kasulam begin to appear with the ‘motley’ pattern. While the body of a motley kasulam remains wild-type beige, its fins grow black instead of yellow. This assists with camouflage, and kasulam numbers slowly begin to increase.

Translucency Mutation - 8,000 years ago
An individual develops a mutation that renders its fins translucent. This further encourages survival, particularly of motley individuals, by helping them blend into their surroundings. Kasulam numbers increase at a faster rate.

Enough kasulam are born during this time that they establish new burrows. The mukash population does not grow at the same rate due to their slower breeding rate.

The increase in kasulam numbers increases the numbers of their main predator, the pinno’ grath.

<u>The Driving Back Era</u>

Two new mutations occur among the kasulam which inhibit their survival. The cohabitation relationship with the mukash is widely known about, even among independent kasulam, so they send their mutated individuals to mukash-kasulam burrows for extra protection.

Smoothface Mutation - 6,000 years ago
Kasulam begin to show the smoothface mutation. Smoothface kasulam have a disadvantage in navigating their burrows in the dark, which is lethal during predator attacks.

Big Brow Mutation - 1,000 years ago
A mutation of the crest phenotype develops, which is known as ‘big brow’. Two grow instead of one which form a pair of flaps, one over each eye, preventing the affected kasulam from seeing threats approaching from above.

Pinno’ grath attempt to hunt around burrows, and an evolutionary arms race begins between the two cooperative species and the pinno’ grath. As the mukash are well

equipped to evade them most of the time, the pinno' grath become more creative in their hunting efforts.

The Weaver Era

This is the era the kasulam are in, in their current day, and the era they are most famous for. The arms race between the mukash and pinno' grath took an interesting turn when the mukash made a deal with the pinno' grath.

The deal originated at the edge of one of Kaleida's desserts, in a mukash-kasulam burrow. Water was typically hard to come by, and the mukash often found that the most abundant source of water was dew. They designed a device to capture this dew each morning, and began to enjoy enough water for the whole burrow, the kasulam included.

The system, which involved weaving nets, required better dexterity than the mukash have, so the kasulam wove the nets.

So successful was this water-harvesting effort that the burrows were able to harvest more than the burrow needed, and offered the pinno' grath a water allowance in return for avoiding hunting their burrows. Many pinno' grath accepted this offer, and news spread from one burrow to the next about the successful deal and the weaving techniques that allowed it.

This led to an overall increase in the population of the kasulam, which in turn prompted more mutations. Several mutations occurred during this era that could not have occurred before the water deal, as they would have made the affected kasulam too conspicuous from too far away.

Birth of the First Yellow - 800 years ago
This mutation occurs for the first time in a kasulam burrow at the edge of one of Oplayn's deserts. The gene that allows kasulam to assimilate carotinoids in their fins allows this to occur all over the individual's body. Yellow is moderately well camouflaged in the desert but less than ideal.

The first Yellow successfully procreates, as do several of her children and grandchildren, so 30 years later there are 68 Yellows.

First Exodus of the Yellows - 770 years ago
A number of the Yellow kasulam, keen to find somewhere better to live, leave to scout for a better habitat. Through a process of trial and error, a few end up on the coast, forming the Ocean tribe, where they find that they can dive into the shallows and hide among the yellow sea-flowers if needed. Food is plentiful, as is ready-made shelter in the form of caves. They like it and settle there.

Birth of the First Enzymatic Red - 720 years ago
The Ocean tribe Yellows breed well and produce many offspring, who form further burrows/occupy caves nearby along the coast. A few decades later the first enzymatic Red is born. They are poorly camouflaged but benefit from the safety of the shadowy caves or the dimming effect of the sea-water on their colour.

In time the Reds find Coral Beach and the corals that occur further inland. The corals are not as red as the red kasulam, but provide an improvement for those seeking camouflage.

One creature they are seen by while living out their lives on the corals is the migrating [whales]. They learn one anothers' languages and develop a friendship. Over the months and years the [whales] get to know them well and give the Desert, Ocean, and Coral Beach tribes updates on one another. In this way, the Desert tribe learns that the Yellow scouts found somewhere to live and are healthy and happy.

Birth of the Albinistic Mitochondrial Eve - 653 years ago
An albino is born to the Desert tribe. She suffers under the harsh sun. When the [whales] visit they learn of her plight and suggest that she move to one of the Ocean or Coral Beach burrows.

One [whale] chaperones her there, to guide her. The [whale] suggests during a break that they make a rhyme to serve as a verbal map for the journey, and she agrees. She survives the journey and becomes the mother of all the pink-eyed kasulam in the current day.

Birth of the First Blue - 643 years ago
A member of the Desert tribe produces a blue hatchling. The [whale] who guided the albino tells the blue the guiding rhyme once it becomes an adult, and the youngster takes the journey.

Blue's Arrival - 636 years ago
The blue youngster survives the journey and joins the Ocean tribe cluster, where it contributes to the gene pool.

Birth of the First Green - 605 years ago
Greens begin to appear in the Ocean population as the blue gene spreads throughout the population and resurfaces in individuals with two copies plus Yellow.

Note: by this time in kasulam history, albinos are beginning to become moderately common in the Ocean and Coral Beach tribes, with yellow, red, blue, or green skin and pink eyes. They usually remain in their tribe of origin and do not risk travelling.

Birth of the First Midback - 598 years ago
A kasulam hatches in the Coral Beach tribe with a dorsal frill further down its back than that of most individuals. It is particularly eye-catching during courtship dances so successfully passes on its genes.

Birth of the First Mauve - 488 years ago
As the blue gene spreads from the Ocean tribe to the Coral Beach tribe, individuals arise with both two copies of blue and two copies of red. The first mauves are accommodated into the tribe and given extra care to help them survive, as the Coral Beach population has no idea where to send them to, which may be better for their survival.

Foundation of Fernland Tribe - 433 years ago
The Ocean and Coral Beach tribes becomes over-populated due to the number of immigrants to the group and the good survival rate. To prevent starvation they arrange an exodus by talking with the [whales] and send a number of individuals forth to a new location suggested by the [whales]. While the greens seem to be good candidates for this, they don't make up a huge portion of the population so other colours, including reds, go.

Among the individuals that go there, the reds survive better than expected. (This is due to red looking similar to green, for many predators.) While not many Yellows went to the Fernlands, Yellow hatchlings start showing up wherever a red breeds with a non-red. They are too conspicuous and return to the Coral Beach and Ocean tribes.

Albinos - individuals of yellow, red, and green with pink eyes - begin to show up in the community, leading to the beginnings of a cultural belief that a tribe is fully settled when the first pink-eyed individual is born.

Birth of the First Striped - 370 years ago
A hatchling is born in the Fernlands tribe with stripes along its back. This youngster enjoys better camouflage among the grasses while learning to hunt and gather, reaches maturity, and successfully breeds.

Within a few generations the Striped gene becomes common. The [whales] notice that this. As Striped is a dominant gene, they notice that most children develop stripes. They conclude that red kasulam from other tribes may do well to migrate to the Fernlands, so that if and when they have children they don't have to break up the family and go through the resulting heartbreak, as at least 50% will come out striped and be able to stay. They pass this message on to the other tribes containing reds.

A number of individuals do as the [whales] suggest. However, as blue is a recessive gene, several individuals who travel to the Fernlands have one copy of it. As they interbreed with the native Fernlanders, blue individuals start to be born.

Foundation of River Tribe - 320 years ago
A small core of blues live in the Fernlands by this time, but they are aware they are disadvantaged in terms of their camouflage. They discuss leaving but lack a clear direction to travel in.

Once again the [whales] make a suggestion: that they find a home among the rivers and lakes to the west. There is fresh water there and while the camouflage will not be perfect, being among water which looks blue from a distance will be a small improvement.

In time the blues become dissatisfied enough with life in the Fernlands to make the journey. They settle in a location with plentiful food both along the riverside and in the nearby patches of rainforest, and this is enough to convince them to found a new tribe despite the negligible positive effects of living near water as blues. They found the River Tribe.

Yellows Born to River Tribe - 310 years ago
Yellow kasulam are born in the River tribe despite none being sent there. They have difficulty feeding and generally surviving, so some decide to travel to the Ocean and

Coral Beach communities, via a stop-over with the Fernlands tribe, where they believe they will be able to live with relative ease.

Birth of First Breaker - 256 years ago
A youngster is born with a large dorsal frill, now known as a breaker frill, on the ventral side of its tail. Her fin is large and mono-coloured, so has a detrimental to her camouflage attempts, so she decides to migrate. The tribe and [whales] discuss her best options, which they decide is the Ocean tribe.

She accepts this decision and travels there. She survives, and joins the tribe.

Foundation of the Blue Tribe - 231 years ago
The Coral Beach super-tribe continues to expand, forming multiple smaller tribes. One expedition for suitable new land results in the discovery of an area rich in blue soil. The scouts return with this information, and the kasulam and [whales] spread information about it, with a view to encouraging any blues who are struggling to survive due to poor camouflage, to go there.

Most of the new arrivals are from the Coral Beach and Ocean communities.

Within the next few years, the [whales] assist further by spreading news of the Blue Tribe to the Fernland tribe.

Within the next few years, pink-eyed blues start to be born into the Blue Tribe, and they are offered the option to remain where they can be well-camouflaged, or return to their ancestral home of the Coral Beach or Ocean tribes where they will not have to tolerate the glare of the blue soil.

Darkening Gene Recognised - 199 years ago
Members of the Coral Beach super-tribe had been aware for an unspecified amount of time that individuals with darker colours would occasionally be born, but it was only at this point in their history that this was consciously recognised by the wider kasulam community. This had little practical impact as the darkened kasulam usually had options to camouflage themselves in shadows or darker landscapes, but as the gene spread it began to influence the decisions of kasulam who faced the choice of leaving or remaining in their tribes of origin.

Birth of the First Soft Tail - 176 years ago
A mutation of the scaletail gene arises when a River Tribe hatchling leaves the egg with no tail vane and mutated ‘scales’. He grows up experiencing little in the way of disadvantages, and contributes to the gene pool, spreading his soft tail genes along the way.

Birth of the First Dilute - 152 years ago
A clear change in skin tone is noticed among some individuals in the Blue Tribe. However, this has relatively little effect on their survival as the blue soil is richer blue in some places than others, allowing the diluted blues to forage in the less-blue, paler limestone. As their survival is not seriously impacted, they do not migrate away.

Birth of the First Anopthalmic Kasulam - 130 years ago
A mother in the Fernland tribe hatches a son who lacks eyes and is later confirmed to be profoundly deaf. She names him Dewdew. The community is unsure what to do with Dewdew so they keep him in their burrows, bring him food, and attend to his cleanliness themselves. His tribe is supportive, but they cannot help but consider him a tragedy.

Dewdew’s tribe discover ways to communicate with him, such as blowing on him to announce their presence and avoid startling him, and some develop more detailed strategies to communicate with him, based on touch. They slowly form a language, and Dewdew actively contributes to this.

Dewdew Sires His First Litter - 122 years ago
Dewdew succeeds in breeding, and along with his mate, produces a clutch of 11 eggs. 5 of these are born as anopthalmics, and 4 survive to adulthood. They too are taught, and contribute to the development of, the touch-language.

Discovery of Gyrmlak Forest/”Yellows’ Paradise” - 98 years ago
A [whale] who had recently travelled off the traditional course while migrating meets with the Ocean tribe to talk and rest. During this refreshment visit, a discussion begins about the difficulties faced by the Yellows. They explain that while living in coastal areas is the most ideal possible location for them (as they can forage underwater where fields of yellow flowers grow, thereby foraging under camouflage), they find it problematic that the only place they can camouflage is under water.

The [whale] describes a location it saw while off-course: a section of rainforest made up entirely of yellow-leafed trees, and suggests that it may be worth visiting as a potential new tribal spot for Yellows.

A group of Yellows decides to risk the journey. They travel there with direct guidance from the [whale], and find the location. It is perfect for them, and they stay. As the location is so ideal for Yellows, the [whale] agrees to pass the word on to the other kasulam tribes in any way it can.

Yellow Exodus to Gyrmlak Forest - 94 years ago
As news spreads of the Gyrmlak Forest tribe, Yellows, Darkened Yellows, Striped Yellows, and Pink-Eyed Yellows migrate there to join the initial burrow and form their own tribes. Pink-Eyed individuals find that the large leaves of the gyrmlak trees reduce the amount of 'sparkle' they have to tolerate from wooded areas with smaller leaves.

Integration of Anopthalmics - 88 years ago
While this cannot be attributed to any specific year, it is around this period that Dewdew's descendants become numerous enough that the presence of anopthalmia in their community becomes normalised enough for them to no longer be seen as a tragedy. Touch-signing becomes a complex language in itself, and all members of the Fernland tribe learn it, to ensure that everybody can communicate with the anopthalmics.

While this helps the anopthalmics live as full and rich a life as possible, they remain poorly suited to travel so remain in the Fernland tribe.

Visitation - 5 years ago
The Committee aliens arrive.

Changes in Standards of Living

As the kasulams' society is very diverse, changes in standards of living have generally affected only specific communities, not the species as a whole.

Anopthalmics
These deaf-blind kasulam need a great deal of care from the seeing and hearing kasulam community. This prompted all involved parties to look for ways to make that care more efficient.

Between them, the anopthalmics and their closest carers developed a tough-signing language, and each anopthalmic has a small number of close carers who take them out of the burrow to help enrich their life. All members of the burrow learn touch-signing so the anopthalmics can talk with anybody they like. Indeed, given their two pairs of forelimbs, they can converse with a group of up to 5.

More fundamental to this is the culturally held attitude towards anopthalmics. While it is easy to see them as a tragedy, members of the community pulled together to ensure that the anopthalmics felt like kasulam, not victims. While the reality of their situation is that they still require a lot of support, they are also included in day to day activities to the point that they get to develop their social skills. Most become string makers and weavers.

Blues and Yellows
Some skin colours blend into the surrounding environment better than others. Blue and yellow kasulam struggle more than most other colours to find a suitable environment. The discovery of the copper oxide-rich (and therefore blue) limestone soil and the predominantly yellow Gyrmlak Forest. These locations offered a significant improvement in ease of camouflage, and therefore standard of living, for the kasulam.

Coral Beach Super-tribe
After the austerity of the desert, the Ocean tribe (and subsequently, the Coral Beach tribe) enjoyed the extra access to water and food that came with living on the coast. The mukash and kasulam already had a strategy for boiling water, so if fresh water couldn't be found, they boiled salt water.

Mesh Tents
Some observers may notice that the idea of smooth-faces avoiding the dangers of dark burrows by sleeping in tents doesn't quite add up: the smooth-face still cannot see when inside a tent at night, the moon and stars may not provide enough light to mitigate this, and the desert night is cold enough that the warmth of the burrow would be preferable.

As such, the tents provide little help to smooth-faces in particular.

The true purpose of the mesh-tents is to collect condensation. For this reason, the mesh-tents are an unusual example of a change in standard of living that affect all kasulam - and their mukash burrow-mates. At dawn, every member of the burrow is awoken to bring their water to be boiled and drunk together as tea.

Disasters

The kasulam have experienced few wide-scale disasters. Diseases tend not to spread beyond one tribe. The occasional drought or flood has occurred, but they recovered from them all and they are not remembered clearly by the current generation.

Ongoing Infant Mortality
When the kasulam started developing mutations, especially colour mutations, they became conspicuous targets for their predators. Since the various mutations showed up they have found alternative locations to live in which has mostly staunched the onslaught of predation, but the problem will never go away entirely.

While a mother's youngsters are small, they are vulnerable due to their lack of experience in avoiding predators. When they grow old enough, those who are poorly camouflaged must leave, and the journey to a more suitable environment is itself very dangerous. Every migration ends in losses, and on some years, most of the youngsters do not make it.

Discoveries

The discoveries listed below relate to the kasulams' discoveries of useful plants.

Darrama Fern
This is a very soft fern that kasulam use as nesting material and for water-collection purposes wherever building air wells is not possible.

Gyrmlak Tree
Kasulam hold a special place in their hearts for the gyrmlak tree. Yellow kasulam have great difficulty finding an environment in which they are well-camouflaged, and for this reason mortality rates for yellows is high. Pink-eyed yellows struggle even more due to their photosensitivity.

Gyrmlak forests provide the perfect environment for yellows to live, as their leaves are a similar shade of yellow. The large size of the leaves also provides less 'twinkle' through the canopy, which pink-eyed kasulam find difficult to tolerate.

For more information about the cultural position that gyrmlak trees occupy in kasulam culture, see the *Culture* section of the *Gyrmlak Tree Lore Bible*.

Kura
Kasulam use these ball-shaped succulents as signage by carving into them. See *Art* for more details.

Marra Tree
This is a tall tree with high branches that the kasulam use for anchoring their condensation nets when they can't find anything else. It's not the easiest source of net hooks but offers a valuable source of them in an otherwise often-barren environment.

Sheyack
See *Travel / Transport* for details.

Inventions

While the mukash have historically provided the direction for most innovations made in kasulam-mukash burrows, the kasulam are capable of innovating too. Given the primitive nature of their society, most inventions are simple items such as nets, bridges, hammocks, and herbal remedies.

Blades
The kasulam and mukash have yet to refine iron for use, but they can and do use sharp stones such as flint. These come in particularly useful for the kasulam, who take them on dives to cut underwater fruiting and seeding plants to bring them to the surface.

Mesh Tents
These were invented by the mukash, but are built by, and appear in, mukash-kasulam tribes. See *Changes in Standards of Living* for more details.

Net Pouches
After the development of nets, the kasulam who dove for fruits, nuts, and seeds realised that they could use small nets to hold their catch. Since then, diving pouches have been popular.

Nations Founded

There are no kasulam nations, only tribes. See *Settlements* for more details.

Social Movements

Kasulam have a strong social network and strive to be cooperative and agreeable. Because of this, the majority of kasulam take a keen awareness of the benefits of making tribal life comfortable for those who have extra, or different, needs.

Disability Awareness
The kasulam benefit greatly from disability awareness. On a day to day basis an individual's colour can put them at a survival disadvantage, and pink-eyed individuals can be too photosensitive to survive easily in some settings.

Anopthalmic individuals are notable for requiring heavy support to survive, but by the time they appeared, the kasulam and mukash were both used to supporting burrow members with disabilities, so took on the challenge. As a result, the anopthalmic kasulam are well integrated with the overall group.

Sex, Sexuality, and Gender
Kasulam approach these issues similarly to the mukash, perhaps as a result of their close relationship with one another. The main difference between the two is the number of offspring in the average kasulam litter (6-16 for the kasulam compared to 2-4 for the mukash), which makes motherhood much more of a challenge for kasulam mothers.

Male kasulam offer a certain amount of support to the mothers of their offspring, and this helps the mother to avoid putting undue pressure on the rest of the tribe. Helpful fathers tend to return to the same mother to breed again the following season, although this doesn't particularly translate to a concept of monogamy.

Trade Routes

The kasulam do not have any trade routes.

Wars and Alliances

Kaleidan society isn't advanced enough to have nations, so any wars and alliances would inevitably be small and localised.

The kasulam are more prone to allying than warring. See *Social Dynamics* for more details.

 **Culture** 

As a highly sociable species, the kasulam have a rich culture marked with comforts and distractions, messages, and the strengthening of social bonds.

Food

Food is embedded deeply in kasulam culture.

Ersh Fruit Paste
These fruits are big and only tend to come to a kasulam's attention when fully ripe, perhaps ovr-ripe. Because of this, by the time a kasulam finds an ersh fruit it's usually started to ferment. Fermented ersh fruit paste is eaten as an alcoholic snack. See *Plants* under *Position in Ecosystem* for more details.

Friendship Reed
This is a reed that produces pairs of green, edible cones at regular points on its stem. If a pair of kasulam are in each others' company and they happen across one, they have a small tradition of picking both sides of a pair and eating one each.

This comes from a lesson taught to youngsters to share with their siblings as part of the effort to teach them to be agreeable to one another.

Tea
Desert kasulam start their day by boiling some of the water collected during the night and using it to brew tea. [I've still to identify what plants they use to make tea.]

Tushma Eggs
These can be eaten raw or cooked.

Fish [This won't actually be 'fish' because Kaleida doesn't have fish. I'll write something more suitable here soon.]
Coast-dwelling kasulam use their nets to catch food from the ocean, as do those who live beside rivers. These are notable because they have more contact with pinno' grath, and build relationships with them as they either teach them to fish, or fish for them.

Kasulam who predominantly eat these small animals are usually white, as they do not get many carotinoids in their diets.

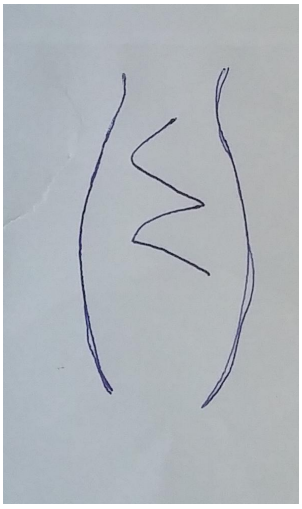
Welcome-the-rain Stew
The wet season is considered cold by kasulam standards, and when it comes they find ways to keep warm while celebrating the arrival of the rain. One of those ways is by gathering together to make and eat welcome-the-rain stew, which is made with insects, desert waxlobe (a type of mushroom), vegetation, and spices.

Art

Kasulam like to make art, and most of their art exists for a practical reason, such as to pass on a message or to process grief.

Carved Kura
Kura carvings are made to communicate messages to other kasulam and to sapients of other species, e.g., “find the Coral Beach Super-tribe ahead”, “Warning: pinno’ grath lair”. Some are more detailed than others.

Cave Stinkhorn, Stylised
This is low-brow art at best. Many kasulam know of the cave stinkhorn fungus, which grows in sheltered places where blood has fallen or scraps of meat have not been cleared away. In addition to its unpleasant substrate, it creates the smell of rotting meat to attract insects (see *Cave Stinkhorn Lore Bible* for further details).



Some kasulam - often younger or less emotionally mature ones - will draw the symbol on the right to say that somebody is dirty or unkempt. The sign can have a weightier meaning, and it has been used to exclude unwanted group members for being judged to be “unclean”.

Mementoes
Kasulam who are preparing to see their friends and family off on a migration will often make an item of jewellery for them to wear, to remember them by. Much artistry goes into these, and older kasulam who have sent more youngsters on their way can become very adept at making these. See *Clothing* for more details.

Religion and Spirituality

At this point in their history, the kasulam have a vague concept of spirituality and the supernatural. As yet, no particular gods or goddesses have coalesced.

Healing
The kasulams' medical skills are in their infancy. There is little a kasulam medic can offer to a sick individual, so often a healer uses placebo medicines and procedures. For this reason, many placebo services on offer carry a sense of spirituality, of re-attuning to nature, and drawing vitality from the Source (see below for more details).

Luck
Kasulam are often superstitious about luck, given their vulnerability to predators. [To be worked on further]

The Source
The name the kasulam use for Kaleida as a whole; "the source of all life".

Slavery

It must be stated that the mukash-kasulam relationship is not one of master and slave. Both species are interdependent on one another.

Clothing

Kasulam do not wear clothes, but they do adorn themselves and are not averse to wearing technology provided by the offworlders.

Mementoes
Young kasulam who decide to leave their tribes of origin are often gifted wearable items and adornments by their friends, mothers, and siblings made from feathers, shells, insect carapaces, and dyed, braided or woven string. These include:

- anadems
- bridles
- chokers

- harnesses
- leg bands
- pendants
- piercings

These are made from permanent materials (i.e., flowers and clays are not used as these can rot or fade), and items that will compromise the individual's survival, such as loops that might catch on a branch when a kasulam is running from a predator, are ideally avoided. It is not unheard of for a kasulam to be gifted a memento that does exactly this; proactive youngsters will often refashion dangerous mementoes to be worn more safely.

Translation Devices
Soon after the invasion, all sentient kaleida natives, including the kasulam, were gifted with translation devices. These devices work with many different languages, host AI that account well for context and tone of voice, and are robust enough to rarely require maintenance. Most are worn as a pendant around the neck.

Magic

Since there is no magic on Kaleida, there is nothing to say here.

Special Events

Some events happen in most kasulams' lives.

Hatching
Every tribe knows who has eggs and roughly when they're due to hatch. Even in the enormous Coral Beach Super-tribe the kasulam who live close to the mother are aware of her mother-to-be status.

Hatching is celebrated by bringing food for both mother and hatchlings. Toys and trinkets such as feathers, sticks, and shells are brought to amuse the hatchlings, and the mother is brought sheaves of darrama to freshen up her nest.

The Choosing
Every youngster whose colour doesn't allow them to camouflage with their environment faces the choice between remaining in their tribe of origin and taking their chances, or

leaving for a more suitable new tribe. There are few enough tribes that most leavers have only one viable tribe to travel to.

Once a youngster has chosen, they go through a period of time in which they are taught the route, prepared for safe travel in a group, take time to make mementoes for their siblings, and say their goodbyes. These goodbyes are often emotional, and travellers are often given mementoes by their mothers, friends who they will leave behind, and siblings who will be travelling in a different direction.

Burial
[To be worked on]

Festivals

Perhaps it is unsurprising that the sociable kasulam celebrate a number of festivals.

Migration's End
This celebration falls half-way between a personal and a community-wide event, and might loosely be described as a festival. When a batch of youngsters arrives they are greeted, given food, water, and a place to rest.

Depending on the circumstances of their arrival, a feast may be prepared to celebrate their arrival and to give them a chance to meet all of the members of their new tribe, or they may be provided with care to overcome any major traumas from their journey. Many groups of youngsters arrive with stories of having lost members of their group.

Welcoming of the Rains
The area where the kasulam live is prone to dry and wet seasons. When the first rains come, the kasulam celebrate it. A cool breeze accompanies the rains which the kasulam find cold, so they often celebrate by gathering together and making a special stew called Welcome-the-rain stew.

Sport

The kasulam tend to be busy enough that sport isn't a major part of their world. However, they do play a few simple games with shells and stones, and those who live close to water sometimes swim for pleasure.

Social Dynamics

Kasulam have a number of standard social groups which each resonate with them.

Cooperative Relationships
As stated elsewhere in this profile, the kasulam have a close relationship with their fellow digging specialists, the mukash. Most kasulam burrows have a number of mukash living among them.

Generational Travelling Companions
Many of the kasulam in any given tribe will have migrated there in order to live in an environment where they can be camouflaged. Travel is dangerous for kasulam, especially young ones, and they migrate in groups wherever possible. The bonds that form during these travels usually last a lifetime.

Mother-Offspring
The offspring who do not migrate away remain with their mothers for life. As mothers provide most or all of the care of a new generation, almost all kasulam feel a closer bond to their mothers than their fathers, although most are aware of who their father is. This makes most kasulam burrows matriarchal in nature.

Pairing
Pairing for the sake of sexual reproduction is fairly short-term, and kasulam do not form permanent couples as humans and many other species understand the concept. Despite this, the father of a litter will often help out to an extent (although older siblings of the litter will also likely help), and pairs who have mated in the past will often retain a sense of warmth and familiarity between them. It's unusual, though not unheard of, for a couple to mate for multiple years.

Predator-Prey
The kasulams' most notable predator is the also-sapient pinno' grath. With the mukashs' help, the kasulam have striven to reposition themselves as benefactors to the pinno' grath in order to avoid them being considered food. This has been mostly successful.

Tribes by Colour
There are 7 major kasulam tribes, each in a unique environment. The kasulam, which hatch in a range of colours, chose these locations because they were able to camouflage themselves there. Each generation, kasulam who are born the 'wrong' colour for their environment relocate to a more appropriate tribe. See *Settlements* for more details.

Sexuality and Romance

Male and female kasulam dance at one another to choose a mate; neither sex fights for the right to mate, and mates are selected by their ability to mirror their partner's dance or to impress with new or interesting dance moves.

After mating, the pair separate and the female lays her eggs in a chamber of the burrow. They hatch after 40 days.

Child-Rearing

The mother is the only parent by default, but the male will keep an eye on her and offer help if she needs it. Young kasulam need approximately 3 years of care before they become independent enough to no longer rely on their mother.

Kasulam females are old enough to have a litter by the age of 5 years, when they are fully grown, although most wait until they are 7.

Pairing Up For Safety
Kasulam litters can be quite large and are usually far bigger than two. However, once the youngsters are old enough to explore unsupervised for any length of time they are taught to remain in pairs so as to watch out for one another.

Many mothers use friendship reeds to teach their youngsters the pleasure of sharing food with a friend. See *Plants* under *Position in Ecosystem* for further details.

Adult kasulam tend to take this habit into adulthood, although they only do it periodically. Most have no problem foraging or hunting alone.

 Politics 

Kasulam politics tends to be mild due to their strong sense of community, and because as a culture they are more aware of the loss of their loved ones than of the possibility of conquest or of establishing new burrows.

However, in recent times they have founded several new burrows. This has been for practical reasons, to take advantage of environments rich in the colours of their youngsters and to help ensure the survival of their children via camouflage. For example, the youngest burrow, the Gyrmlak Tribe, is an ideal place for yellow youngsters to go.

The politics between the kasulam and their main sapient predators, the pinno' grath, are also important to them. They cannot hope to fight and win, so instead they focus on building relationships with them and providing services that render them indispensable. See *Economics* for further details.

Government / Leadership Style(s)

Each tribe is led by a leader. Kasulam gender roles have a small impact on the probability that any given leader will be male or female, and nonbinary kasulam would be considered viable leaders.

There are slightly more male leaders than female, on account of the females being by far the primary carers of their offspring. However, youngsters grow up quickly and are considered independent after 3 years, and most tribes are small enough for a mother to administer without undue strain - or to get help from an assistant, a common measure by new mothers. The current leaders are as follows:

Beebee
Tribe: Ocean
A blue male with a breaker fin holds the position of leader of the Ocean Tribe. His name is Beebee and he is elderly, though still mentally very capable. He is considering stepping down from this role due to difficulties in reaching the Sunset Cathedra.

Fyefye
Tribe: River

Fyefye is a middle aged female green. She has had three litters made up mostly of blues and yellows; her blue children have mostly remained in the River Tribe with her while her yellow children moved on, mostly to either the Coral Beach Super-tribe or Gyrmlak Forest.

Her older blue children are grown up and provide her with support, including the care of her youngest litter whenever she has to be away from them, such as during Sunset Cathedra councils.

Iauiau and Zinzin
Tribe: Coral Beach Super-tribe
This tribe is run by two cousins. One, Iauiau, is a middle-aged adult pink-eyed male, while the other, Zinzin, also middle-aged, is a pink-eyed yellow female with a breaker fin.

Zinzin migrated from the Fernland Tribe and is the full sister of the current leader.

Sometimes both attend Sunset Cathedra councils, sometimes only one does.

Kookoo
Tribe: Blue
A young adult male albino who sometimes presents as white, sometimes as yellow depending on his diet, and who sometimes makes use of the blue soil of the area when appearing outside in public in order to camouflage himself. This gives him a reputation as somewhat dramatic as usually his announcements are not particularly noteworthy, as would be expected of this tight-knit community. His habit of doing so is slowly being adopted by the other non-blues of the tribe, although this is still seen as a play for drama.

Kookoo and a mauve female have raised a number of litters together.

Liilii
Tribe: Desert
The Desert Tribe is run by a wild-type female entering old age, named Liilii. She is known for being able to make difficult decisions quickly and for her attitude of austerity. It is clear when watching her, however, that she cares for her tribe.

The leadership position of this particular tribe is an esteemed one on account of the difficulties of living there and its position as the cradle of kasulam civilisation.

Piepie
Tribe: Fernland
A striped, middle-aged, green male named Piepie leads the Fernland tribe. He is the full brother to Zinzin, a co-leader of the Coral Beach Super-tribe.

Sunsun

Tribe: Gyrmlak Forest
The young Gyrmlak Forest tribe is led by a young adult female yellow. Her name is Sunsun. A recently appointed leader, she is still learning and tends to appreciate input from the other tribal leaders, both kasulam and otherwise, when she meets them at the Sunset Cathedra.

Utopian / Dystopian Qualities

On a meta-level, the kasulam are intended to provide colour to Kaleida and as such contribute to the utopian-ness of the world (ie., its aesthetic beauty). However, creating a multicoloured race plausibly led to the rather more dystopian situation of parents having to say goodbye to any offspring who cannot camouflage themselves in the same environment as their parents.

Moral Tone

No particular moral tone is intended on a meta-level with the kasulam.

Military and Law

Kasulam are rarely warlike, and their society is not advanced enough to have a legal or judicial system. Most tribes have a tribal leader who will decree laws, rules, and guidelines for the tribe, but these depend on the leader. Usually the nearest a kasulam community has to laws is an arrangement for a certain pool of .

Punishment
On the rare occasion that a kasulam behaves badly enough to warrant action - say, injuring or killing another sapient - then they are banished from their community. It must be understood however, that this is rare to the point of being all but unprecedented among kasulam.

💲 Economy 💲

The sociable nature of the kasulam leads them to interact much, often in a productive way, with each other and other species.

Finance

The kasulam do not have a currency but they often barter with others, usually with foraged items or labour.

Business

The kasulam arguably have a few deals going with other species.

Cooperative Cohabitation With Mukash
The kasulam do most of the digging and perform any tasks around the burrow that require dexterous fingers, while the mukash extend or improve upon the burrows to satisfy their generally more proactive attitude towards danger and warn the community of approaching danger. See *Timeline* for full details.

Medical Care to Pinno' Grath
The kasulam provide pinno' grath infected with carnivorous mushrooms a place to stay, a supply of food, and whatever treatments they can offer, in return for immunity from being the pinno' graths' prey. As these infections put entire communities of pinno' grath at risk, this care usually earns the pinno' grath tribal leader's goodwill. See *Healthcare and Medicine* for further details.

Water to Pinno' Grath
This is arguably more the mukashs' deal with the pinno' grath, but given the closeness between the kasulam and mukash, the kasulam often help to provide this water.

Education

Kasulam are mostly taught how to forage, hunt, keep their burrow clean, to interact agreeably with the rest of their community, and to weave, by their mother. Other kasulam will occasionally help out with this, but most of the responsibility lies with the mother.

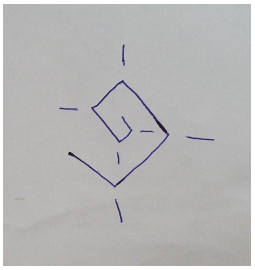
Healthcare and Medicine

The unthreatening nature of the kasulam, combined with their desire to care for other members of the community and understanding of the impact of disability make them effective, or at least sympathetic, healers.

Medical technology is in its infancy on Kaleida to such a degree that the kasulam, like other sapient species, have little to offer but natural remedies and a pleasant bedside manner.

Carnivorous Mushrooms
Certain fungi, such as the scab cap, tushma coin, and skin star, are carnivorous and can be deeply unpleasant at best, and deadly at worst, to infected individuals. (See the Scab Cap, Tushma Coin, and Skin Star Lore Bibles for further details) Predator species tend to be more prone to infection than non-predator species, with pinno' grath being one of the worst-affected.

There is little in the way of treatment available on Kaleida beyond quarantining the infected individual and providing care until they either succumb to the infection or pull through. The kasulam, along with the mukash, took advantage of this when they moved beyond the desert and found themselves interacting with the pinno' grath more often. They offered convalescence space and fish deliveries to sick pinno' grath in order to improve their relationships with them, and in most cases this had the desired effect. Most pinno' grath who had been sheltered ceased hunting mukash or kasulam - although usually only from that particular tribe.



Quarantine Burrows
Most kasulam burrows include a separate, or semi-separate, burrow for quarantine purposes. They are more likely to be occupied by a pinno' grath than a kasulam, as stated above. Quarantine burrows are routinely marked with a stylised spiral based on the sheyack plant.

Theamarga Lichen
A type of lichen that has psychedelic properties. The kasulam use this to make a tea which they drink as part of a spiritual journey. [This deserves more information.]

Shelter

Kasulam are natural diggers and prefer to live in burrows. Most kasulam communities host a number of mukash. This arrangement is mutually beneficial: see *Business* for further details.

Coral Beach "Burrow"
The Coral Beach community is somewhat radical in its approach to shelter. The corals overlap to create many dozens of recesses that serve as caves. While these were more shallow and far less customisable than traditional burrows, the kasulam found the area much more inviting than the desert from which they had come, and settled there anyway.

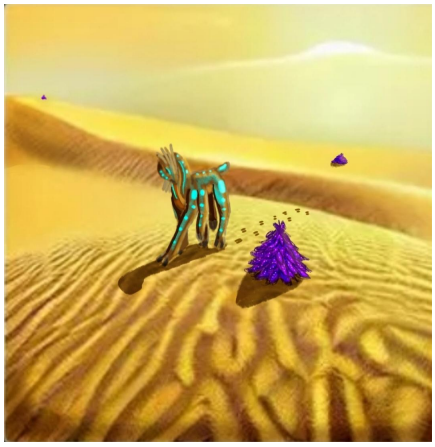
When the mukash settled with them they suggested a number of changes to improve the inhabitants' safety. This included log-and-rope bridges, steps and stairs, swings with hooks, screens, and hammocks.

In the current day, the Coral Beach "burrow" is a maze of dead-ends, circuits, and routes to domestic areas.

Quarantine
The kasulam are still at risk of predation by pinno' grath. One of their sources of leverage in preventing the pinno' grath from hunting them is to care for pinno' grath stricken with carnivorous fungus infections. Most established kasulam burrows include a separate (or barely interconnected) quarantine area where sick pinno' grath are invited to stay until their infection passes. See *Healthcare and Medicine* for more details.

Travel / Transport

Kasulam are short-distance migrators as a result of the relatively recent evolutionary changes they have undergone. Aside from this, kasulam sometimes travel across the desert.



Desert Travel
Desert travel is dangerous, so the kasulam use every technique and resource available to them. This includes using the sheyack plant as a navigational tool as it grows in the desert along often-travelled routes. Kasulam play a part in dispersing their spores.

The presence of a sheyack can be a positive sign that the kasulam is on the right path, but predators may use them to locate travelling kasulam. See the *Sheyack Lore Bible* for further details.

Generational Migrations
The wide range of colours in the kasulam palette (see *Evolution / Genesis* for the full range) means that in each new generation there are youngsters who will not camouflage well with their native environment. A few stay with their tribe of origin but most leave when they grow old enough. Travel can be dangerous, but usually a number of individuals can travel together for safety's sake. Mukash may or may not travel with the young kasulam group.

Credits

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~Hayley, The Character Consultancy