

A microscopic view of moss cells, showing a grid of polygonal cells with thick, light-colored cell walls. The cells are filled with a pale greenish-yellow cytoplasm. Several cells contain dark, star-shaped chloroplasts with radiating internal structures. The overall appearance is that of a cross-section of a moss leaf or stem.

**Advanced Character and  
Creature sculpture**

**Moss Biddiscombe**

b020025n

# The Brief

A wide-angle landscape photograph showing a vast, flat, reddish-brown salt flat in the foreground. In the background, a large, rounded mountain with similar reddish-brown hues rises against a sky filled with white and grey clouds. The foreground shows some sparse, dry vegetation and a small flock of birds, possibly flamingos, wading in the shallow water of the salt flat.

## Biome 2 - Salt Flats

Extremely salty and deadly to other inhabitants of the planet, this biome offers life the chance to thrive if it can overcome the harsh chemical conditions present in the salt flats.

The water here is so salty it is redended by the pigments the leech from the rocks. Bare sun, dry heat, heavy chemicals and scarce food are just some of the challenges these animals need to overcome. Smaller insect-like animals thrive here by the billions and cause seasonal booms in the feeding habits of the local fauna.

# Research

## existing salt flats

### Famous Salt Flats Around the World

- **South America:** Salar de Uyuni (Bolivia, world's largest), Salar de Atacama (Chile), Salinas Grandes & Salar de Anzaco (Argentina)
- **North America:** Bonneville Salt Flats (USA), Badwater Basin & Devil's Golf Course (USA)
- **Africa:** Etosha Pan (Namibia), Makgadikgadi Pans (Botswana), Chott el Djerid (Tunisia)
- **Asia:** Namak Lake (Iran), Lut Desert (Iran), Great Rann of Kutch (India)
- **Australia:** Lake Eyre & Lake Araridius (Australia)

### How They Form

- Salt flats, or salt pans, form in arid regions where water from ancient lakes evaporates faster than it precipitates.
- Minerals, primarily salt, are left behind, creating a hard, white, crusty surface that reflects sunlight.

### Notable Features & Dangers

- **Mirror Effect:** When a thin layer of water covers the flat during the wet season, it creates a stunning mirror effect, especially at Salar de Uyuni.
- **Hidden Dangers:** The salt crust can conceal deep mud, making them dangerous to cross.



### salt flat living

<https://www.pbs.org/wnet/nature/andes-the-dragons-back-salt-flat-living/1792/>

### THE SCIENCE BEHIND THE LIFE AND TIMES OF THE EARTH'S SALT FLATS

<https://www.umass.edu/news/article/science-behind-life-and-times-salt-flats>

[https://en.wikipedia.org/wiki/Bonnieville\\_Salt\\_Flats](https://en.wikipedia.org/wiki/Bonnieville_Salt_Flats)

**Tree Species No. 1184**  
*Alphitonia*, Family *Celastraceae*

**Alphitonia** is a small, shrubby tree that is highly drought resistant and can survive for years without rainfall, creating a habitat for adaptation to arid life. It is also covered in white cottons and can excrete salt through its leaves. The leaves are green, but turn red when the tree is stressed. The flowers are white and the fruit is red.

**Common names:** Mediterranean saltbush, sepiolite, coast saltbush, western brack saltbush, van der Meer saltbush.

**Synonym:** *A. verticillata*.

**Distribution:** The most origin is unclear, some believe that in the past it was native to the Mediterranean and South Africa where it was introduced from North Africa. It has now been introduced to many tropical and subtropical regions.

**Ecology:** *A. verticillata* is best suited to Mediterranean climates, however it is a hardy species that is able to tolerate a variety of both environmental conditions.

**Height:** 1-2m

**Dispersal method:** height 10-20 cm, depending on environmental conditions.

**Origin:** Southern Africa

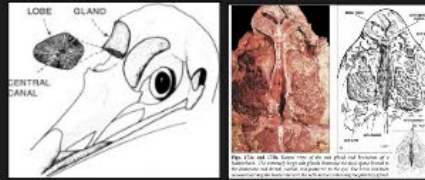
**Flowers:** *A. verticillata* has clusters of small flowers on different plants.

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Mediterranean salt flat speculative; the future is wild  
[https://the-future-is-wild.fandom.com/wiki/Mediterranean\\_Salt\\_Flat](https://the-future-is-wild.fandom.com/wiki/Mediterranean_Salt_Flat)



<https://www.pbs.org/wnet/nature/andes-the-dragons-back-salt-flat-living/1792/>

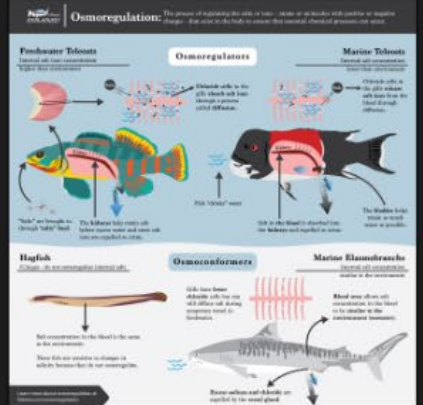


**Salinity:** The salt flats which contain them in an arid area are located in depressions, usually in the center of the flat. The salt flats are located in the center of the flat. The salt flats are located in the center of the flat. The salt flats are located in the center of the flat.

- ### Stages of Reverse Osmosis Systems
1. In pressure applied by the feed water against the semipermeable membrane.
  2. The pressure forces water molecules through the membrane, which is designed to allow only water to pass.
  3. Concentrate (salt, minerals, etc.) are rejected and remain on the pressurized side.
  4. The pure feed water that emerges on the other side is collected as clean, drinkable water.
  5. The remaining concentrated solution of minerals, known as brine or concentrate, is often flushed away.

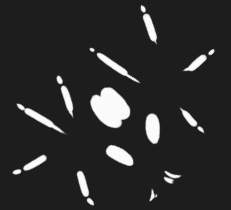


<https://www.pbs.org/wnet/nature/andes-the-dragons-back-salt-flat-living/1792/>



**Molecular pump study explores how brine shrimp thrive in high salinity**

The researchers who spent three years trying to locate some of the transport proteins are only partially understood. Previously known adaptive features include a light protective layer (lipopeptide) to avoid water loss and the increased retention of sodium (Na<sup>+</sup>) and chloride (Cl<sup>-</sup>) ions through specialized salt glands in the neck of larvae or the osmoregulatory epithelium of adults.



# Research

blood drinkers



water collectors



poisonous animals



herbivorous reptiles



small herbivores



animals that conserve water



# Initial ideation

## Potential ecological niches/ direction

1.

Herbivore, salt plane dwelling, land, doesn't process the salt well so gets water from succulents and plants (like red saltwart) that do

2.

hunter/ambush Predator: uses salt hydrolysis to form acidic liquids it uses to hunt smaller creatures on the salt flats/ to neutralise caught prey

2.b

toxic prey: uses salt hydrolysis to form acidic liquids it keeps in its body to poison any predator that hunts it, deterring predators for the future

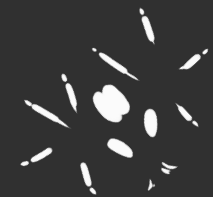
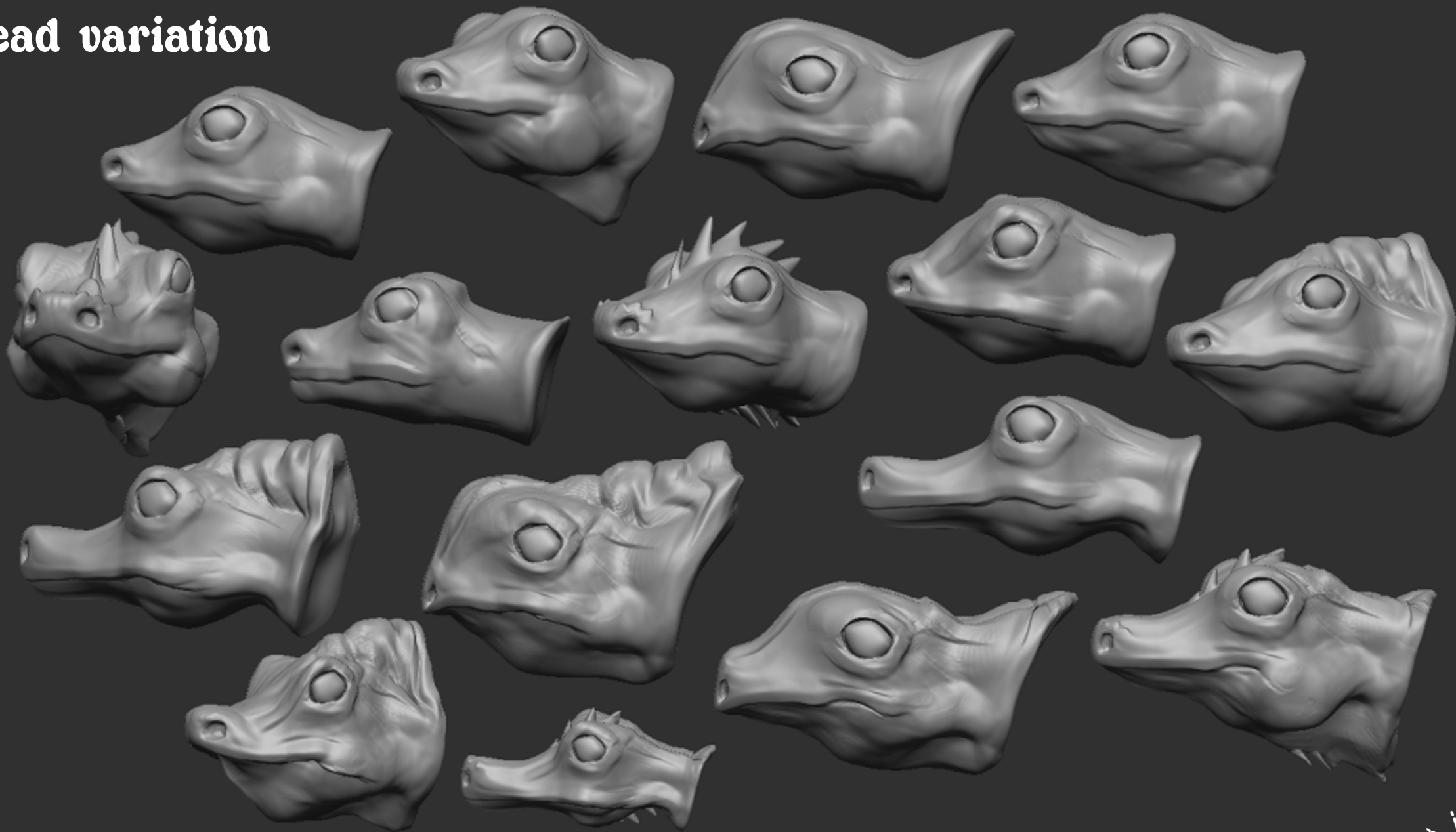
3.

amphibian/ aquatic mammalian?: uses reverse osmosis to powerfully suction salt water through a membrane and filter out the salt, stays wet so the excess salt remains dissolved in the water and doesn't crystallize

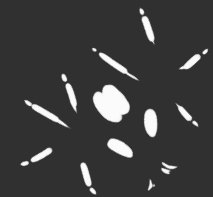
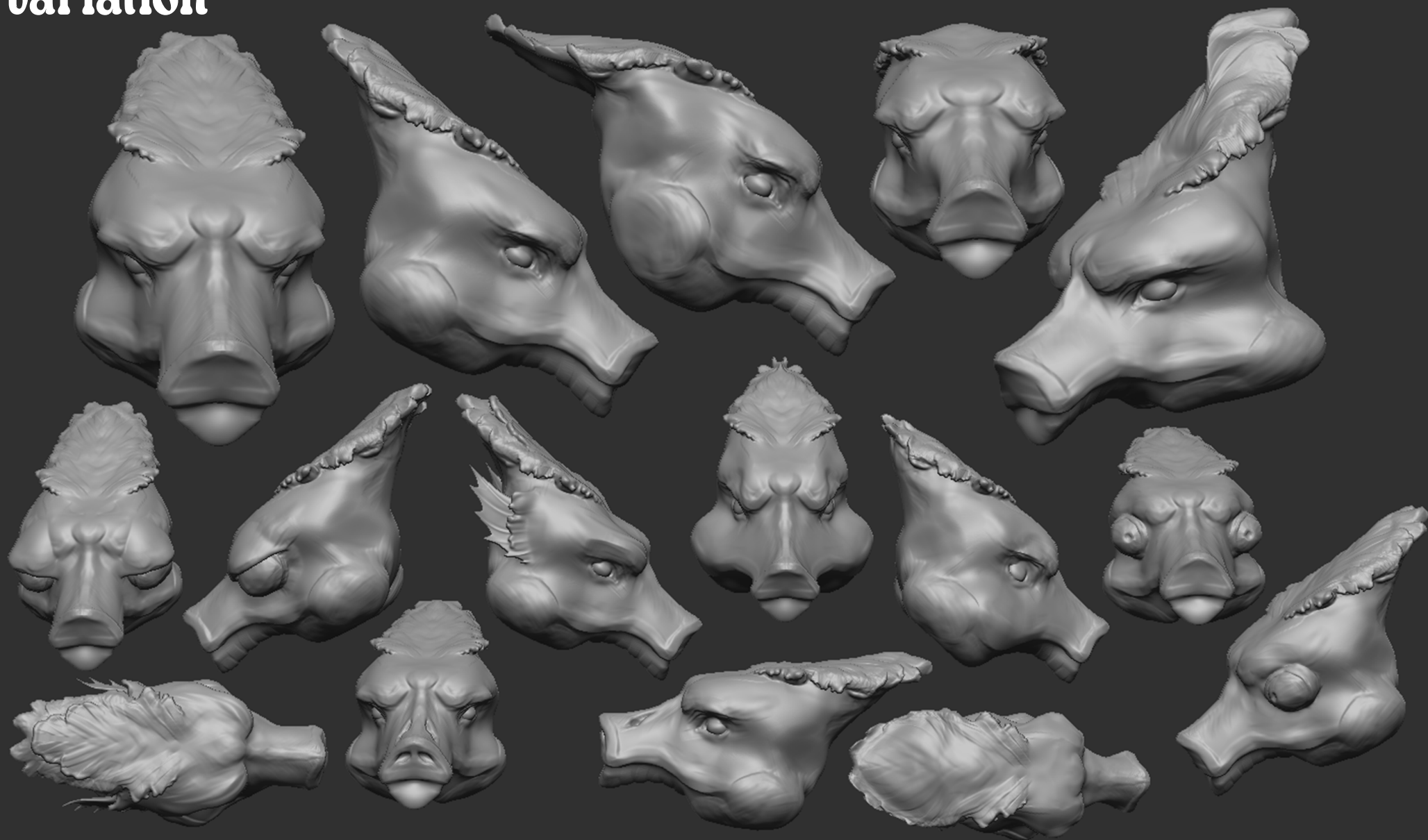




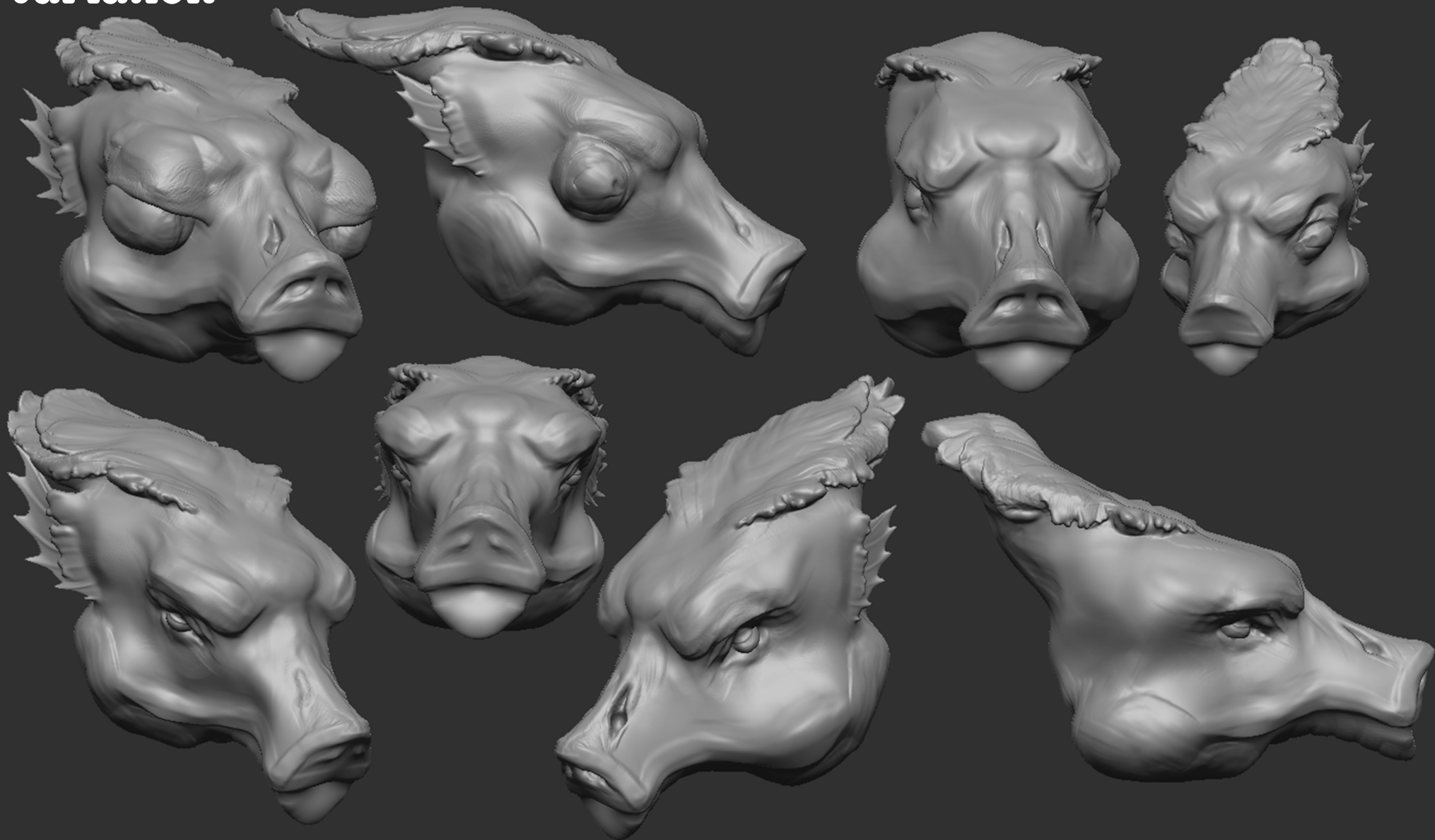
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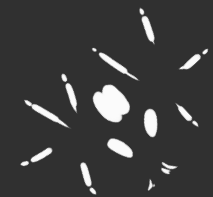
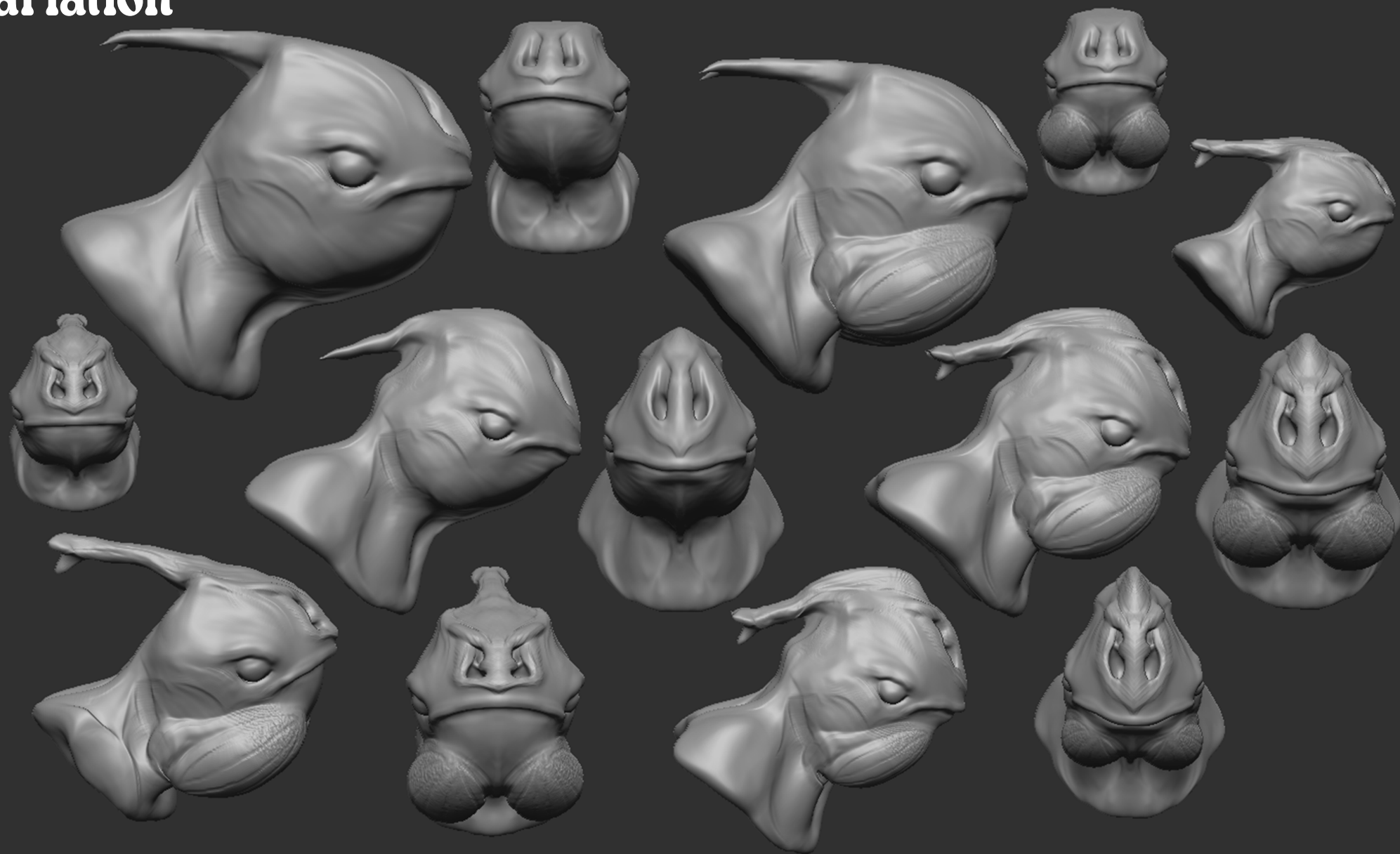
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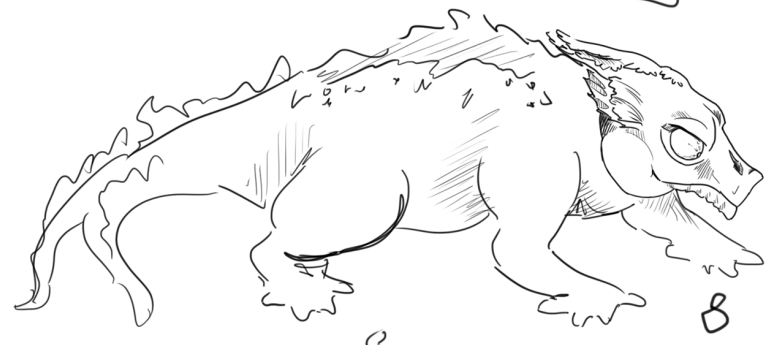
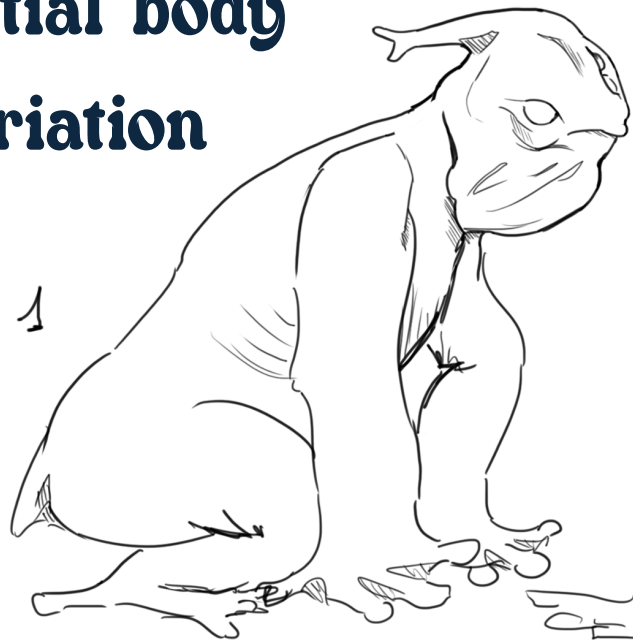
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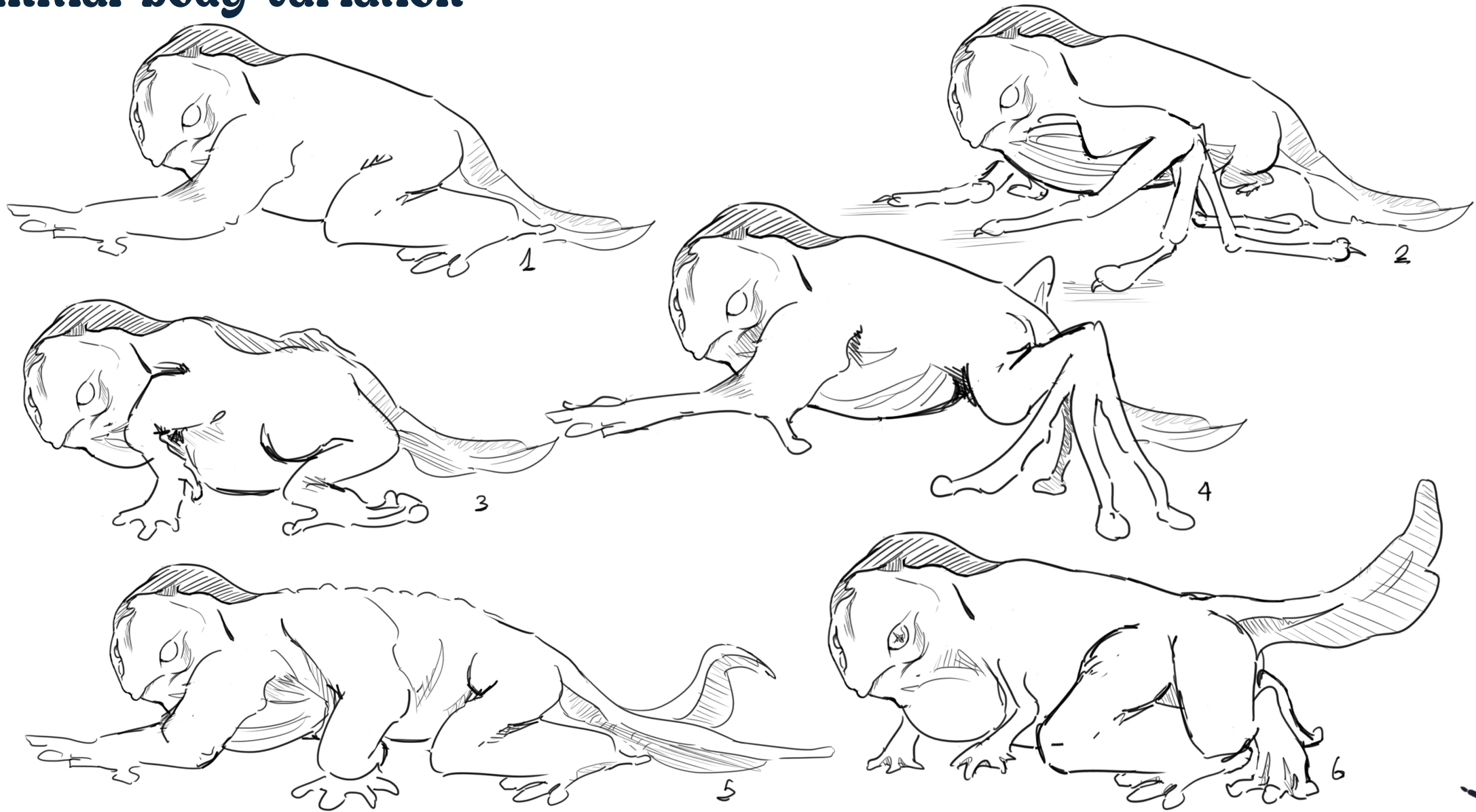
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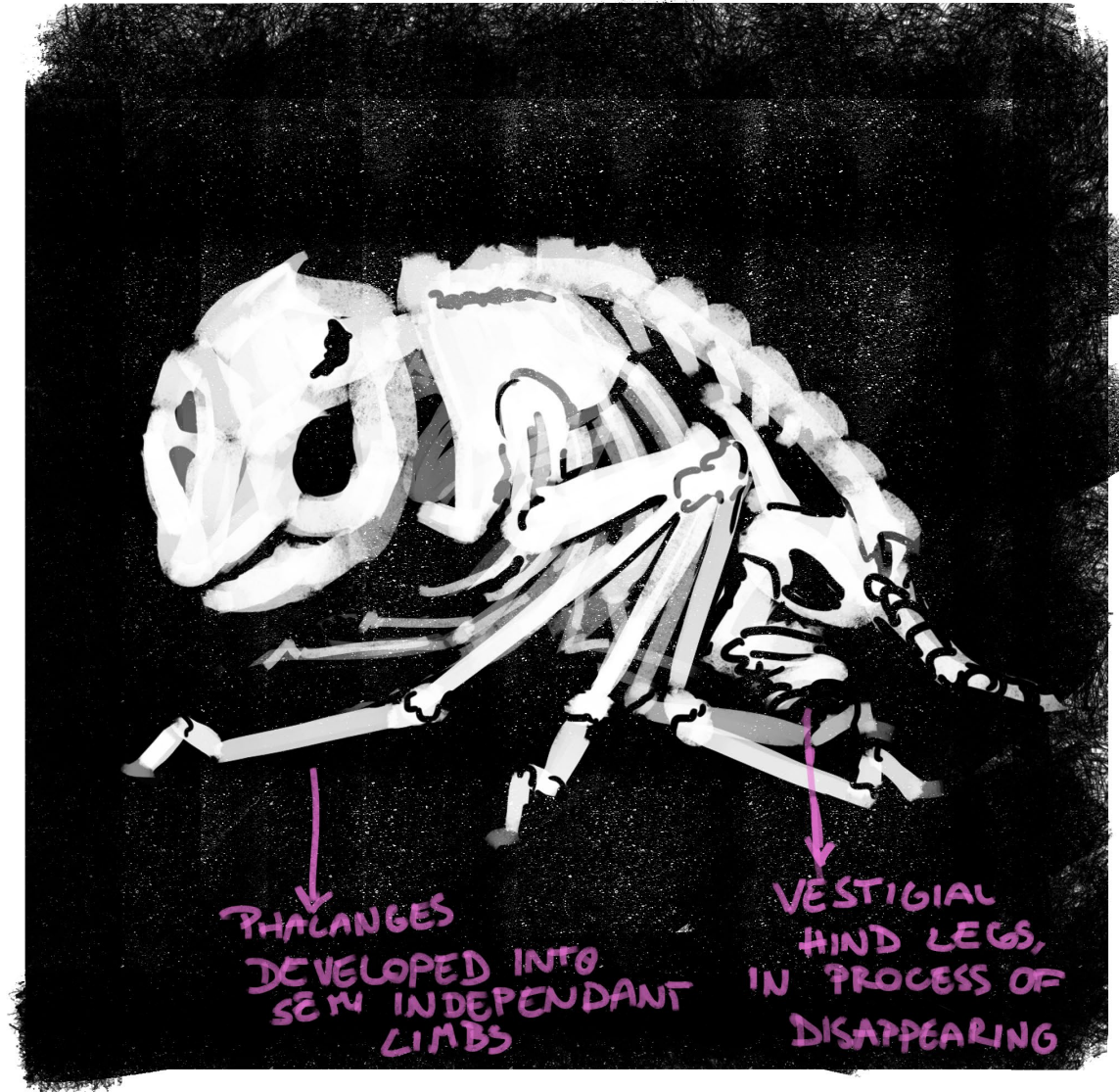
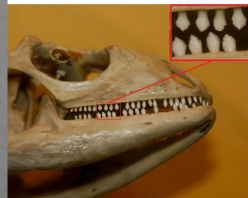
# Initial body variation



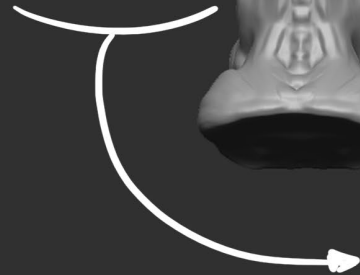
# Initial body variation



# Base idea



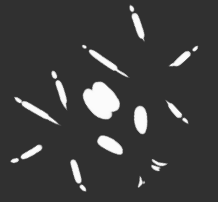
# Initial sculpt



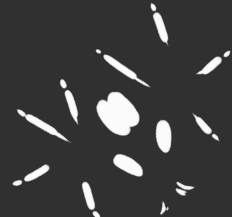
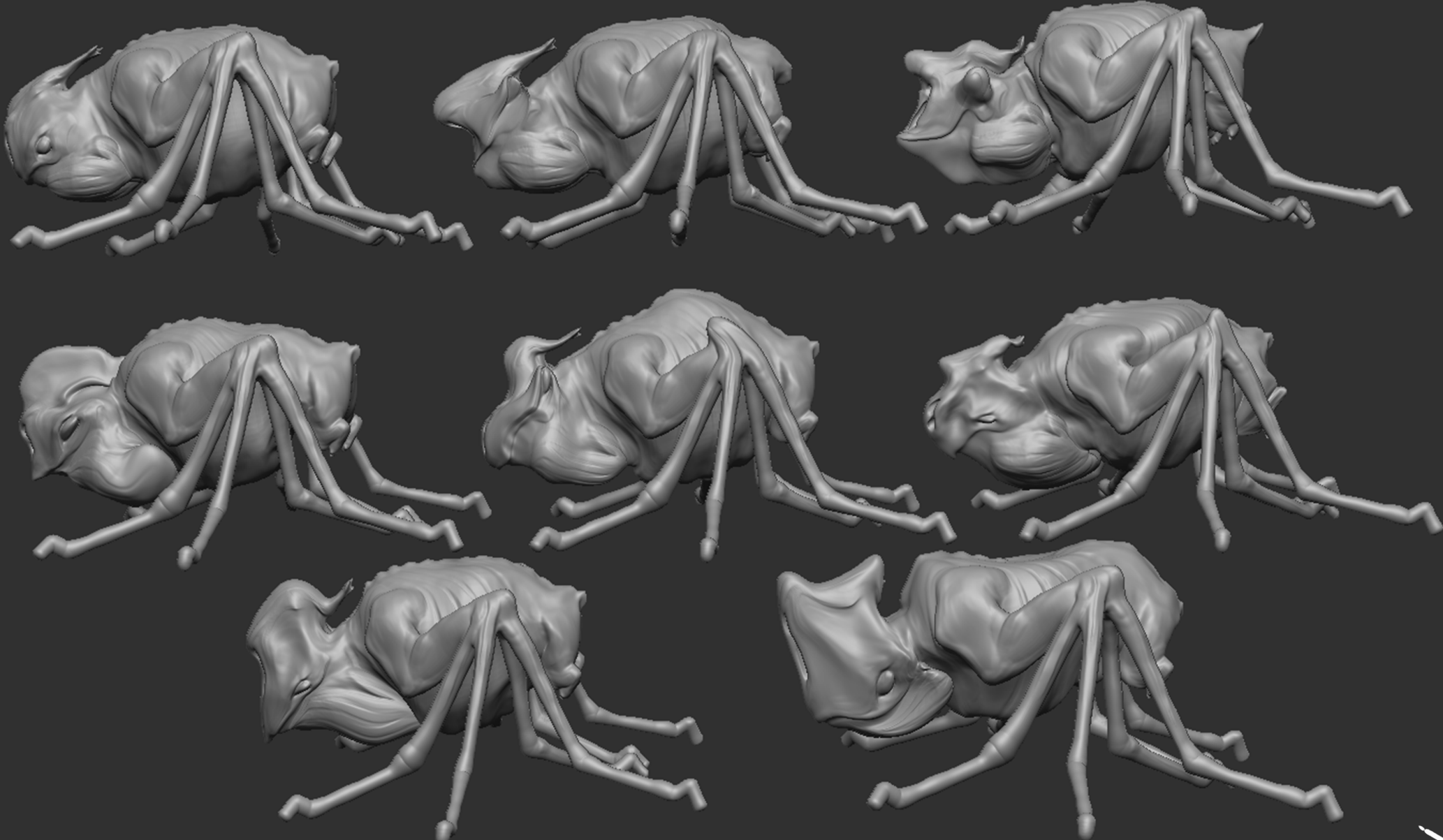
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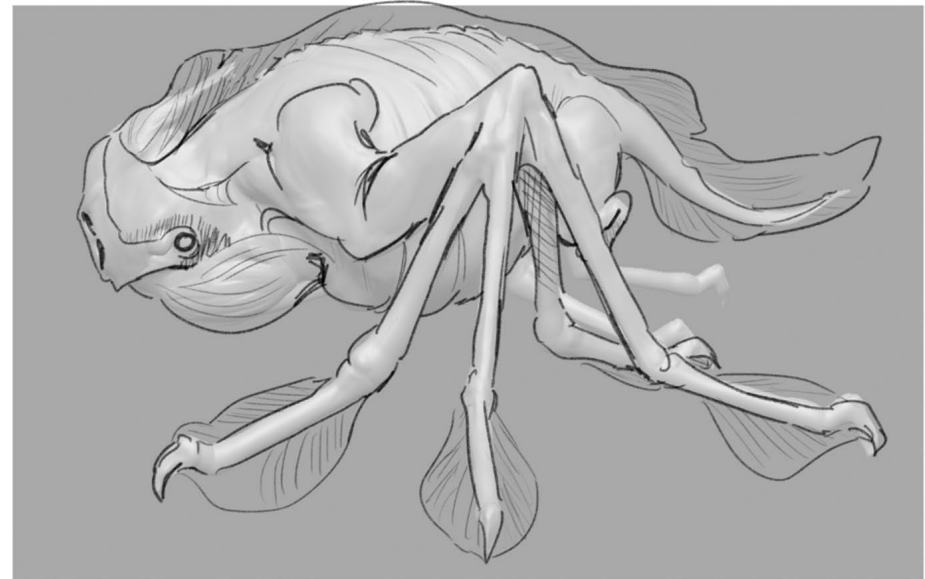
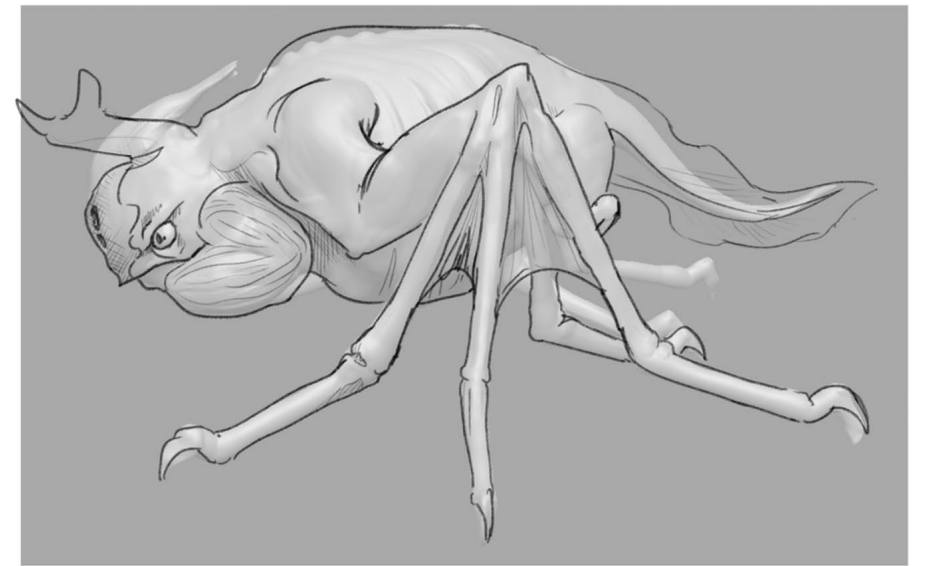
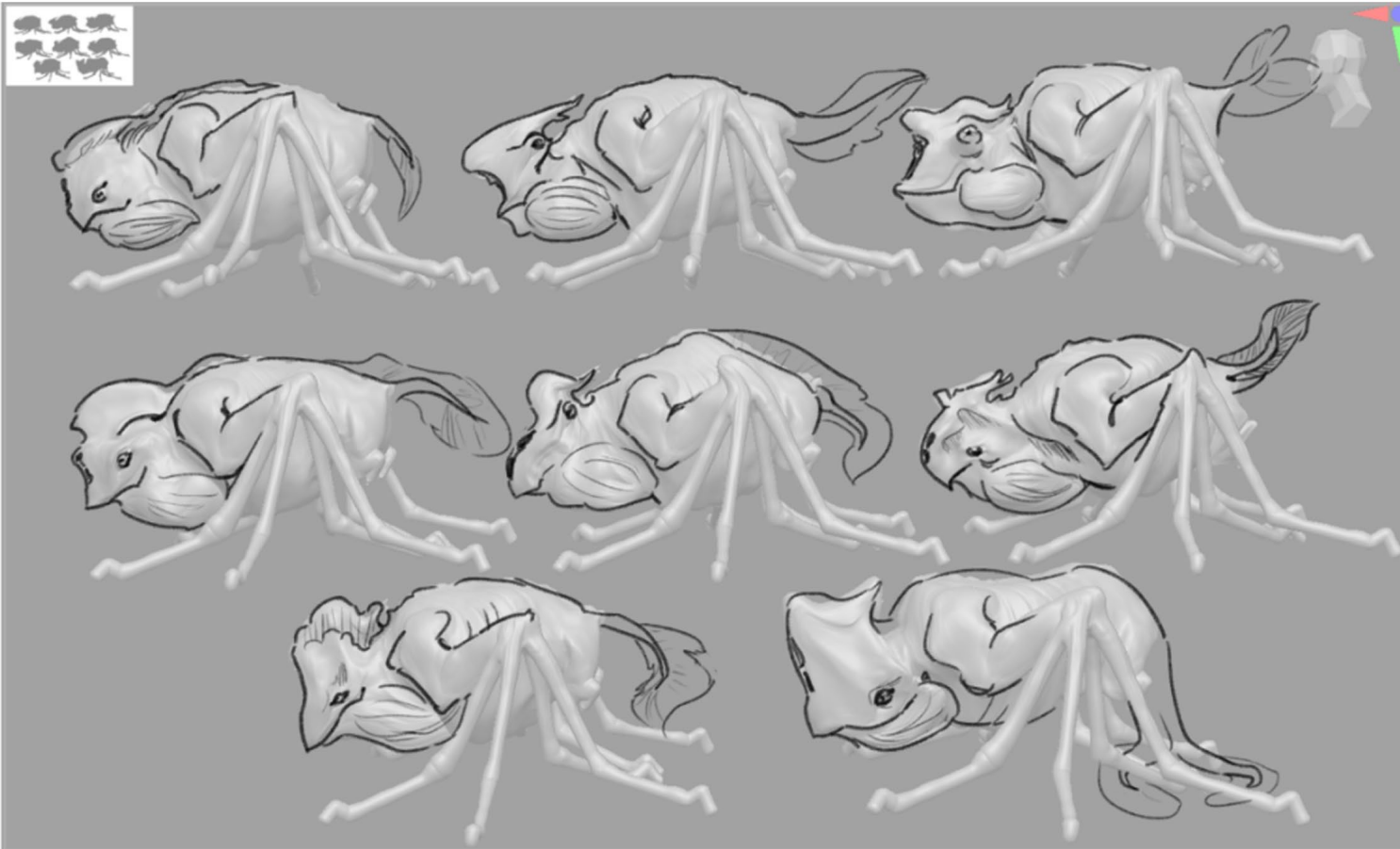
SEMI-FINAL



# Intermediary sculpt variation



# Intermediary variation



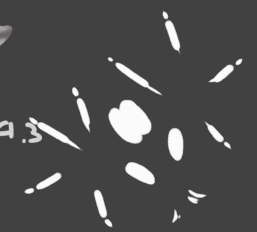
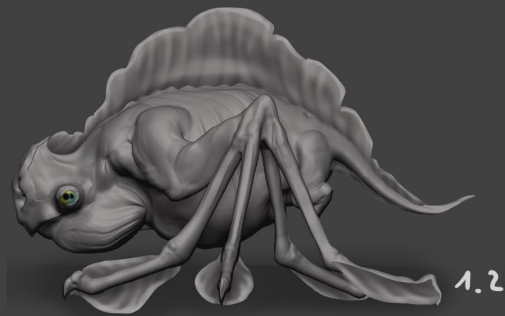
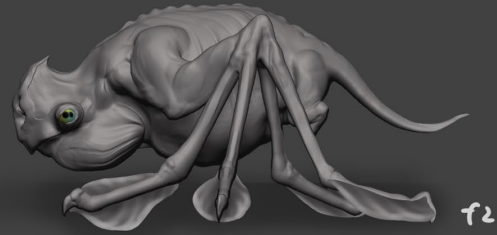
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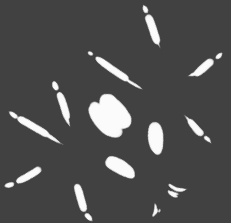
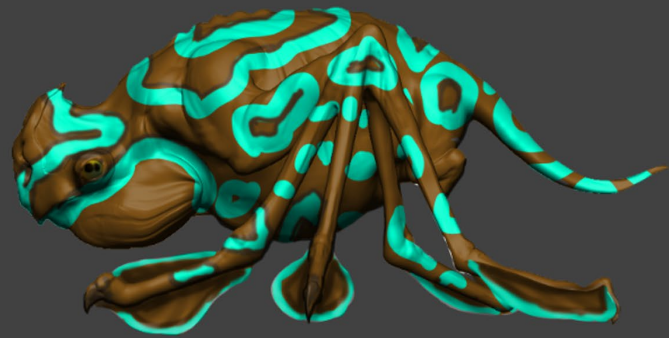
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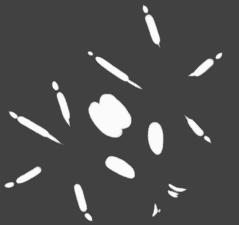
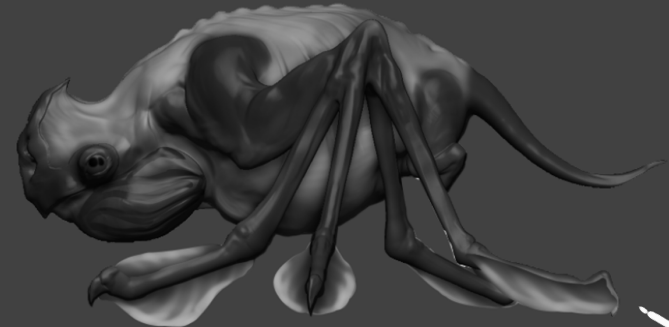
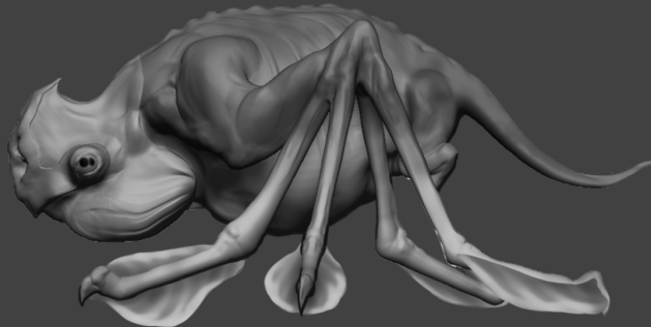
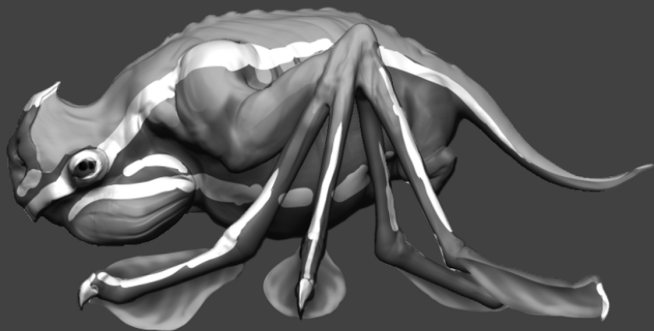
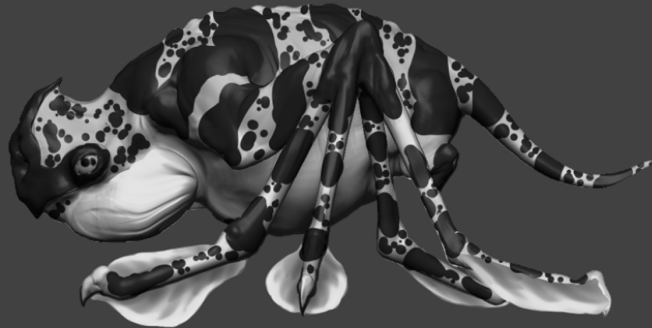
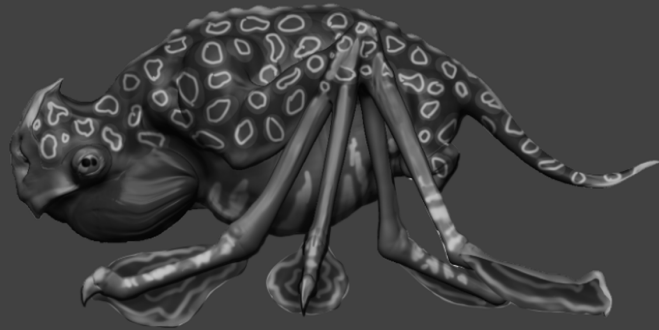
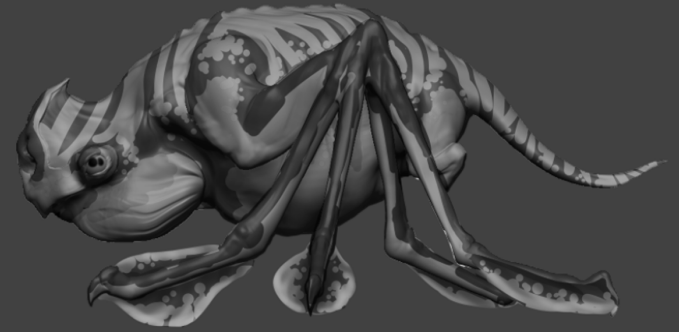
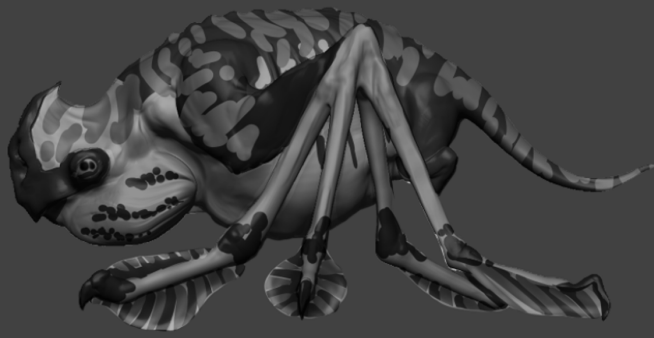
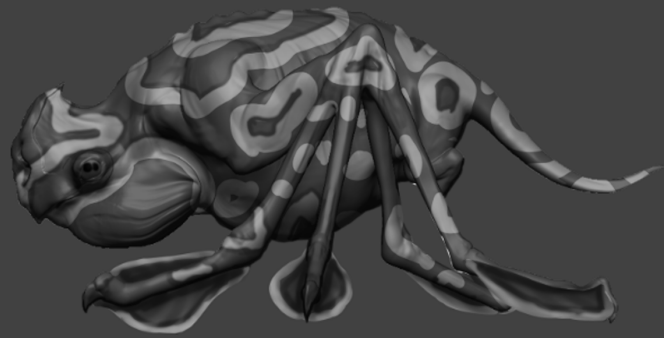
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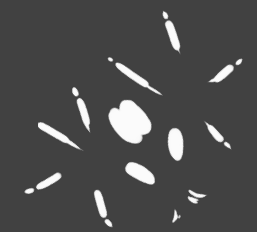
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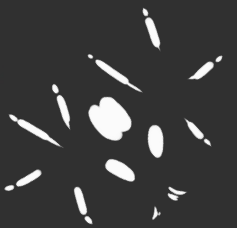
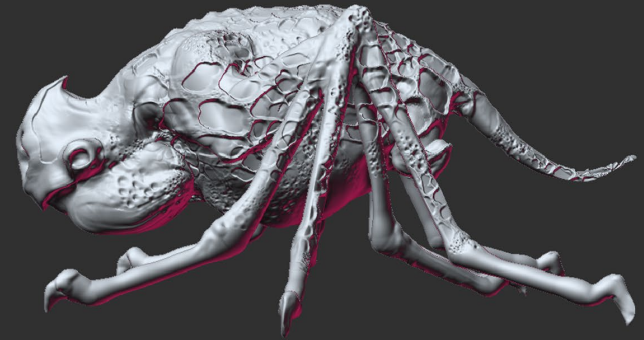
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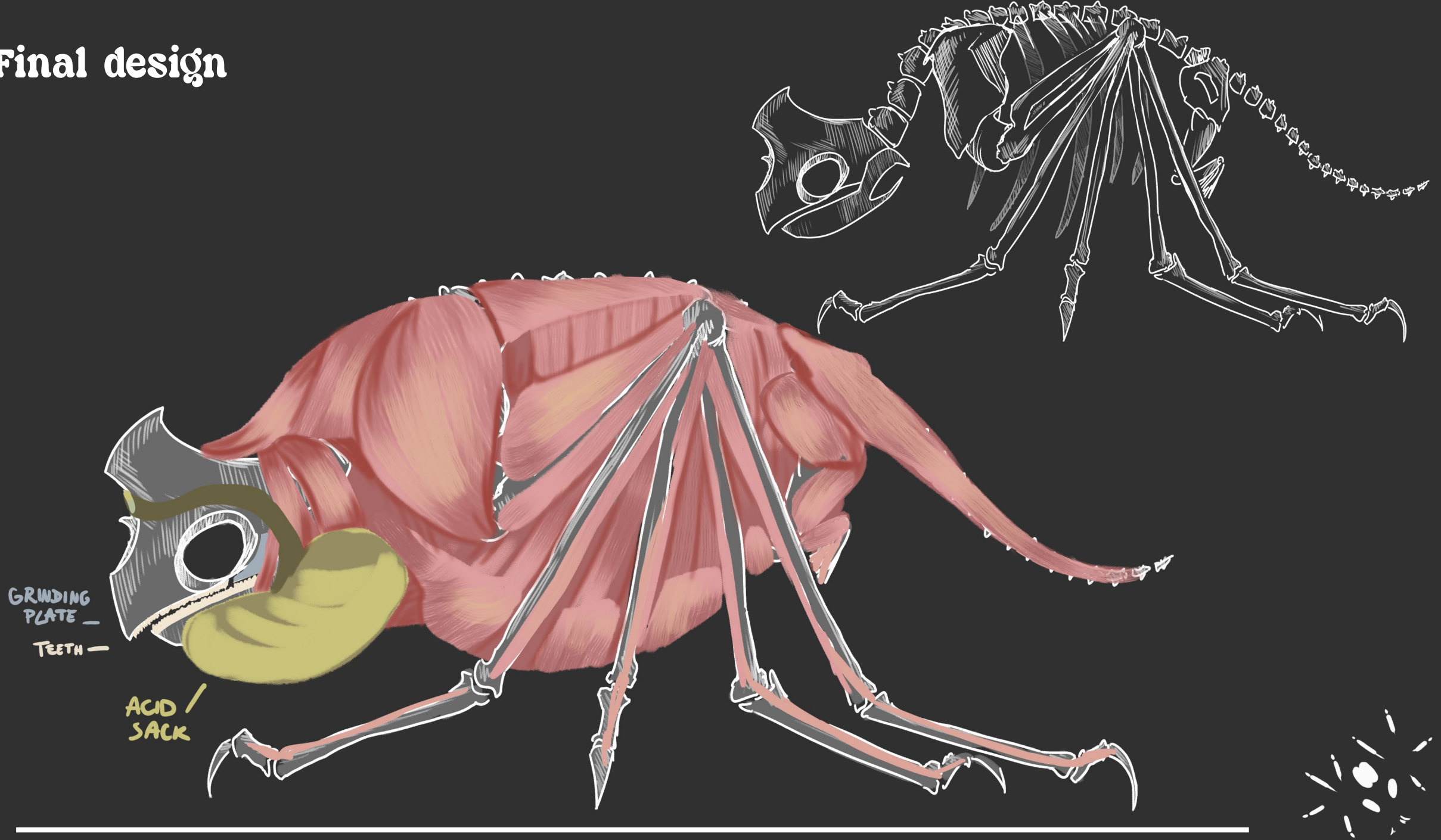
# Colour variation



# Texture variation



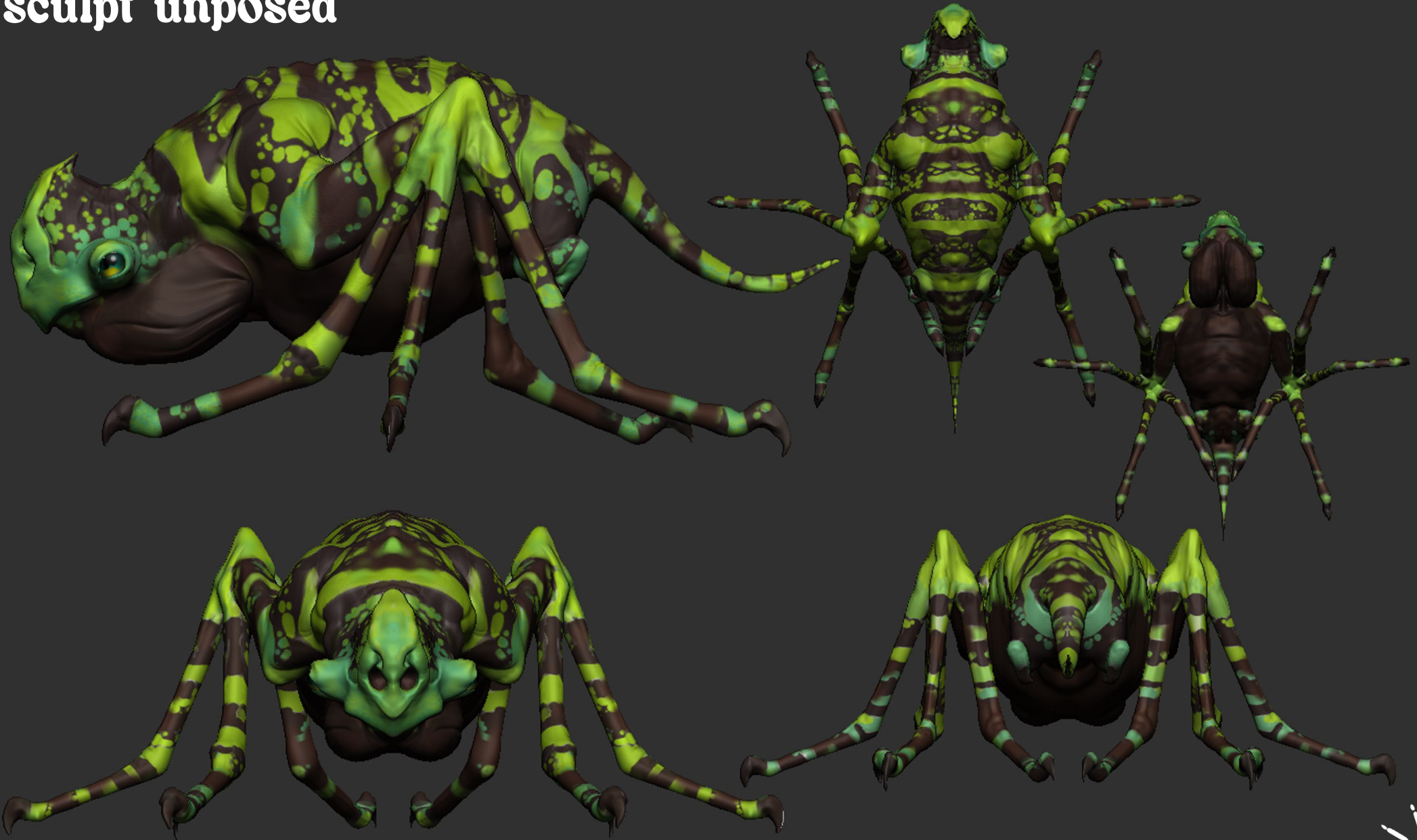
# Final design



Final design



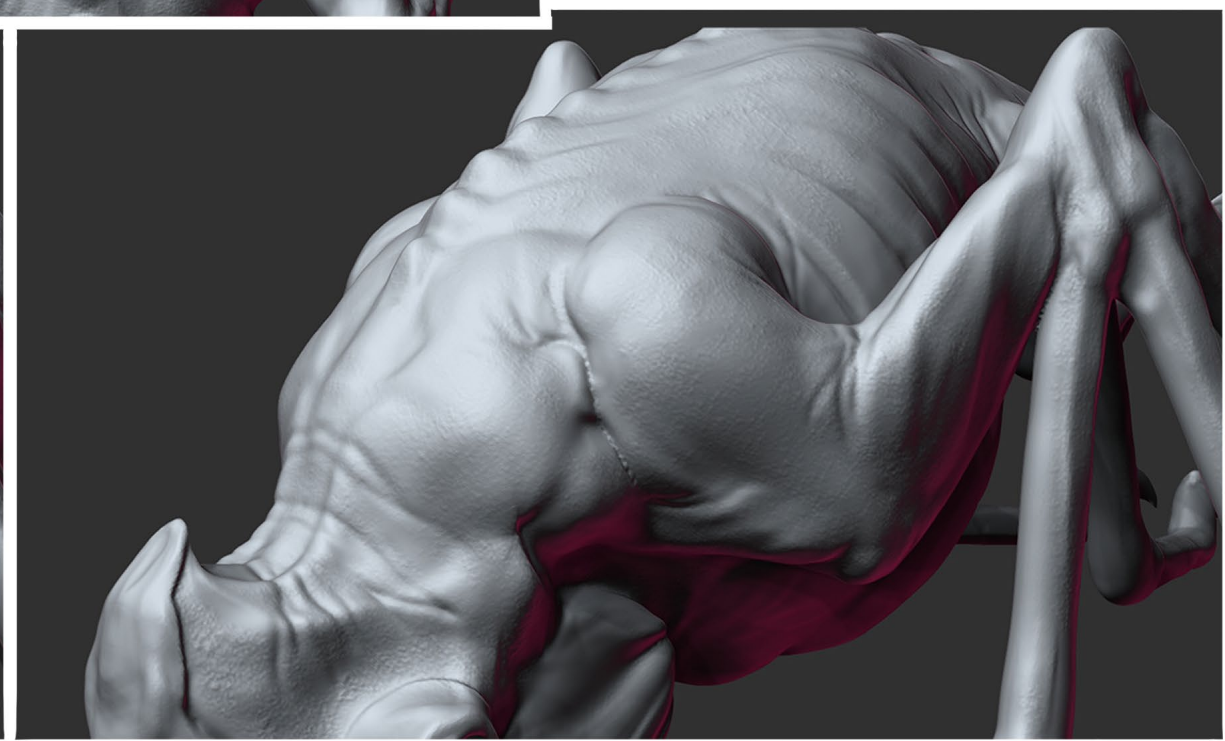
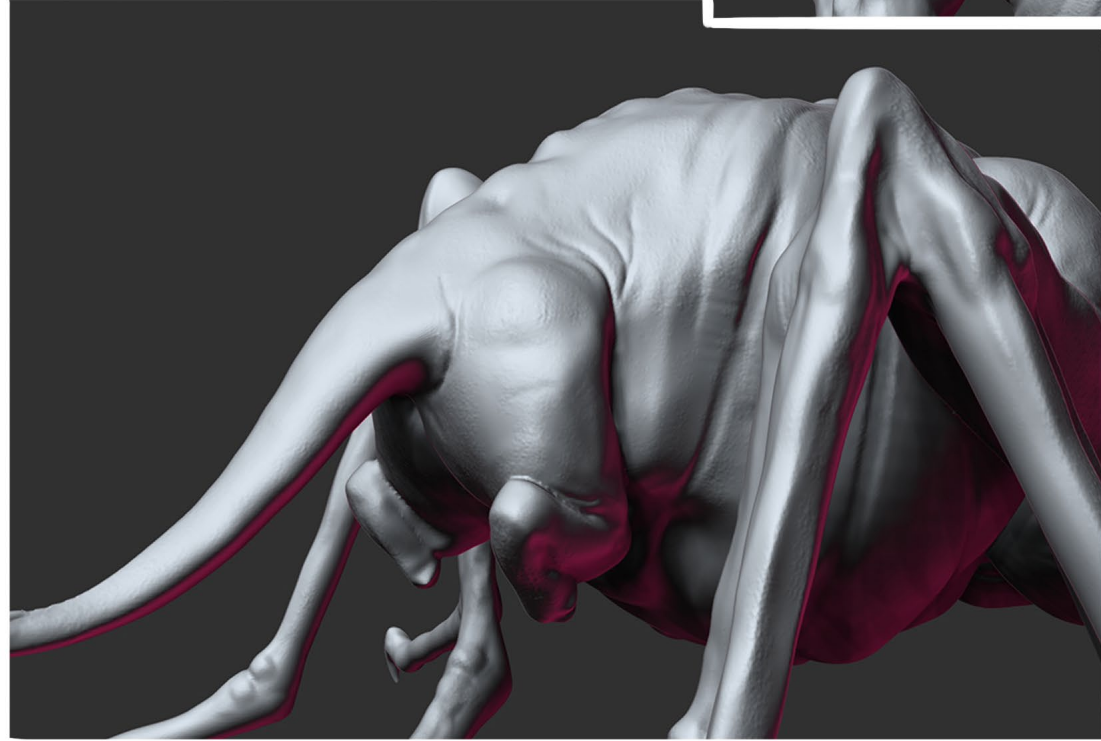
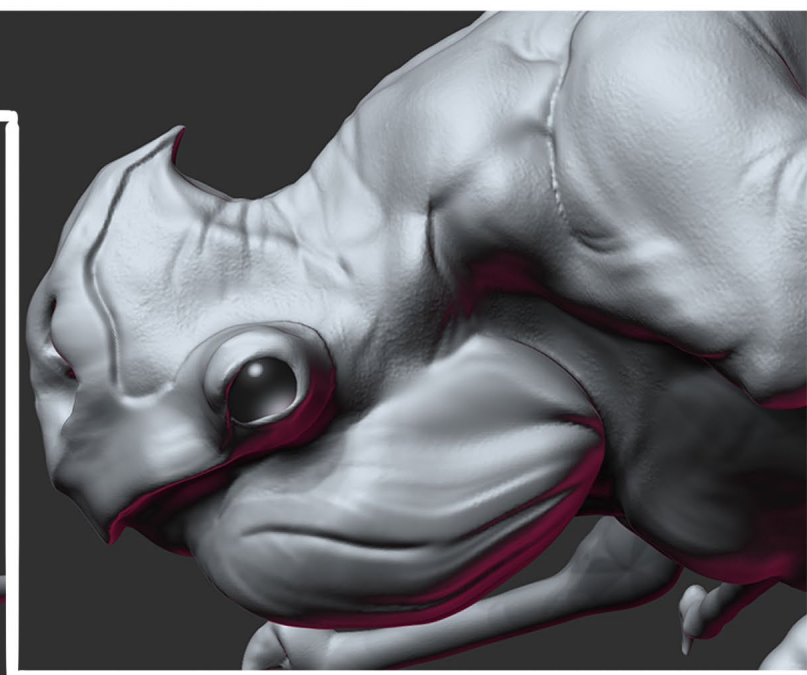
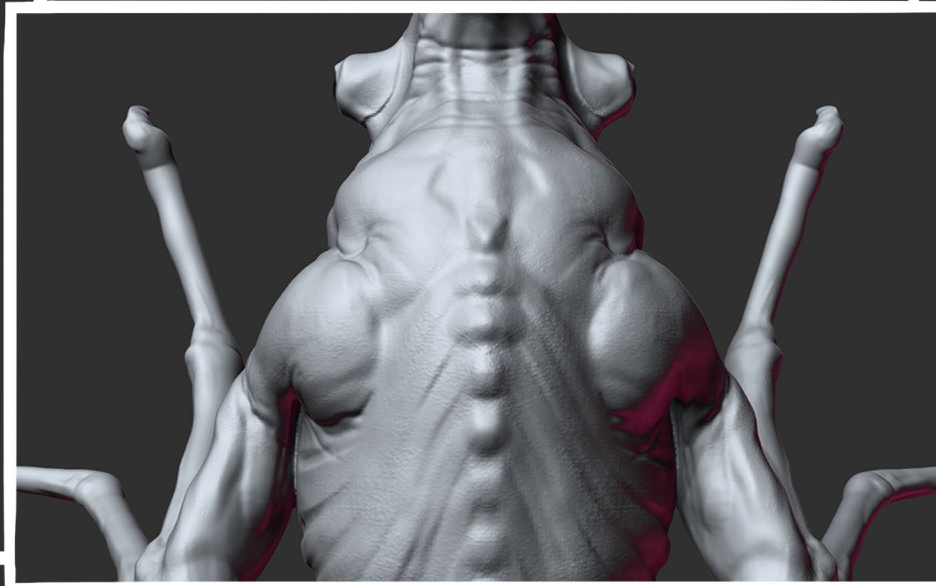
# Final sculpt unposed



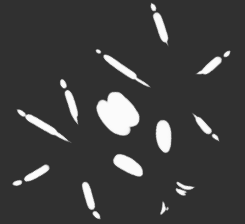
**Final sculpt**



# Details



# Head



# Male vs Female

No CREST &  
TAIL MEMBRANES

LARGER  
OVIPOSITORY

♀



♂

COLOURED  
CREST & TAIL  
MEMBRANE → MATE  
ATTRACTION

SMALLER - EXTERNAL  
FERTILIZATION

