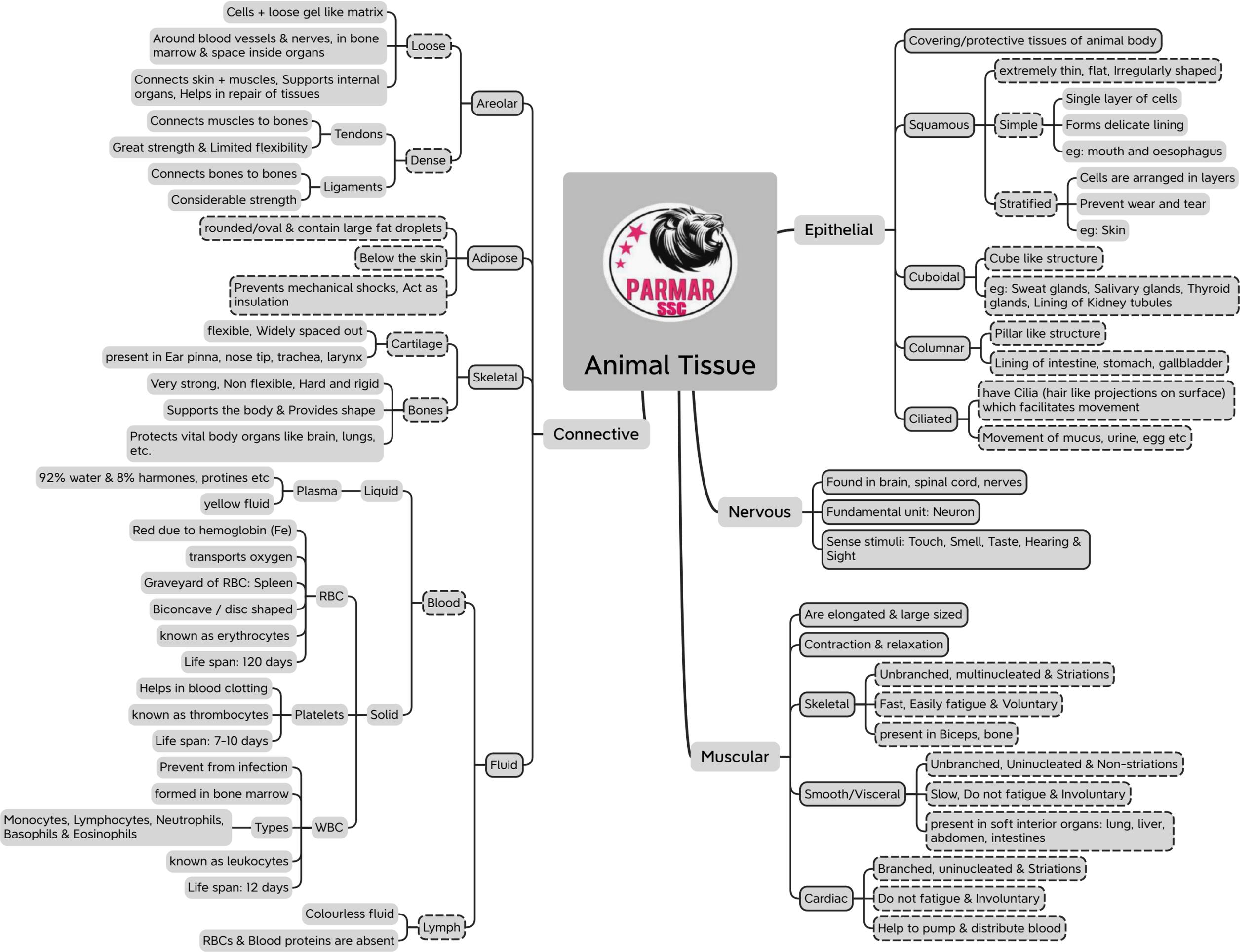




Animal Tissue





- Can be autotrophic/heterotrophic
- Cell wall maybe present/absent
- eg: Archaeobacteria, Eubacteria, Cynobacteria (Blue-green algae)

Monera

Prokaryotes

Eukaryotes

Unicellular

Protista

- Locomotion through appendages
- Cell wall is absent except Euglena
- can be Autotrophic/Heterotrophic
- eg: Unicellular algae, diatoms, protozoa

PHYLUM PROTOZOA

- mostly aquatic, solitary or colonial
- free living/parasitic/symbiotic

Paramecium

Cilia - hair-like structure
Helps in movement

Euglena

Flagellum - tail-like structure
Helps in movement

Amoeba

Pseudopod - false feet
Helps in movement

Multicellular except yeast

Cell wall is made up of complex sugar chitin

Lichen - Blue green algae + fungi

in symbiotic relationship
(benefit from each other)

Fungi

Penicillin

Used in medicine
Alexander Fleming discovered Penicillin

Yeast

Used in bakery

Heterotrophic

Saprophytic: Decaying organic material as food

Parasitic: Dependent on protoplasm of a host organism for food

Multicellular

Cell wall present

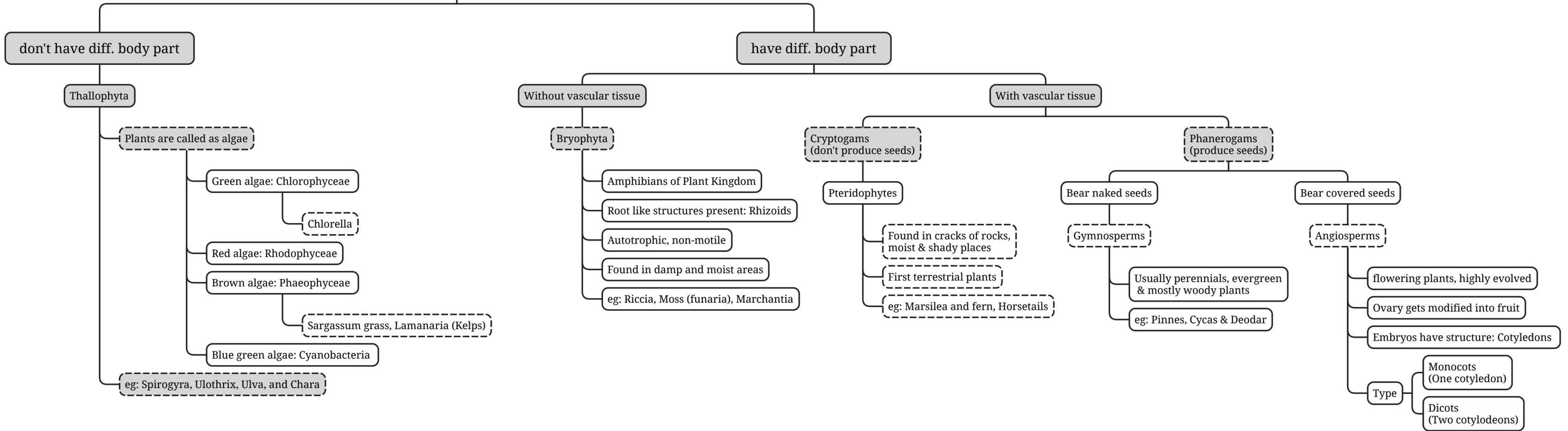
Plantae

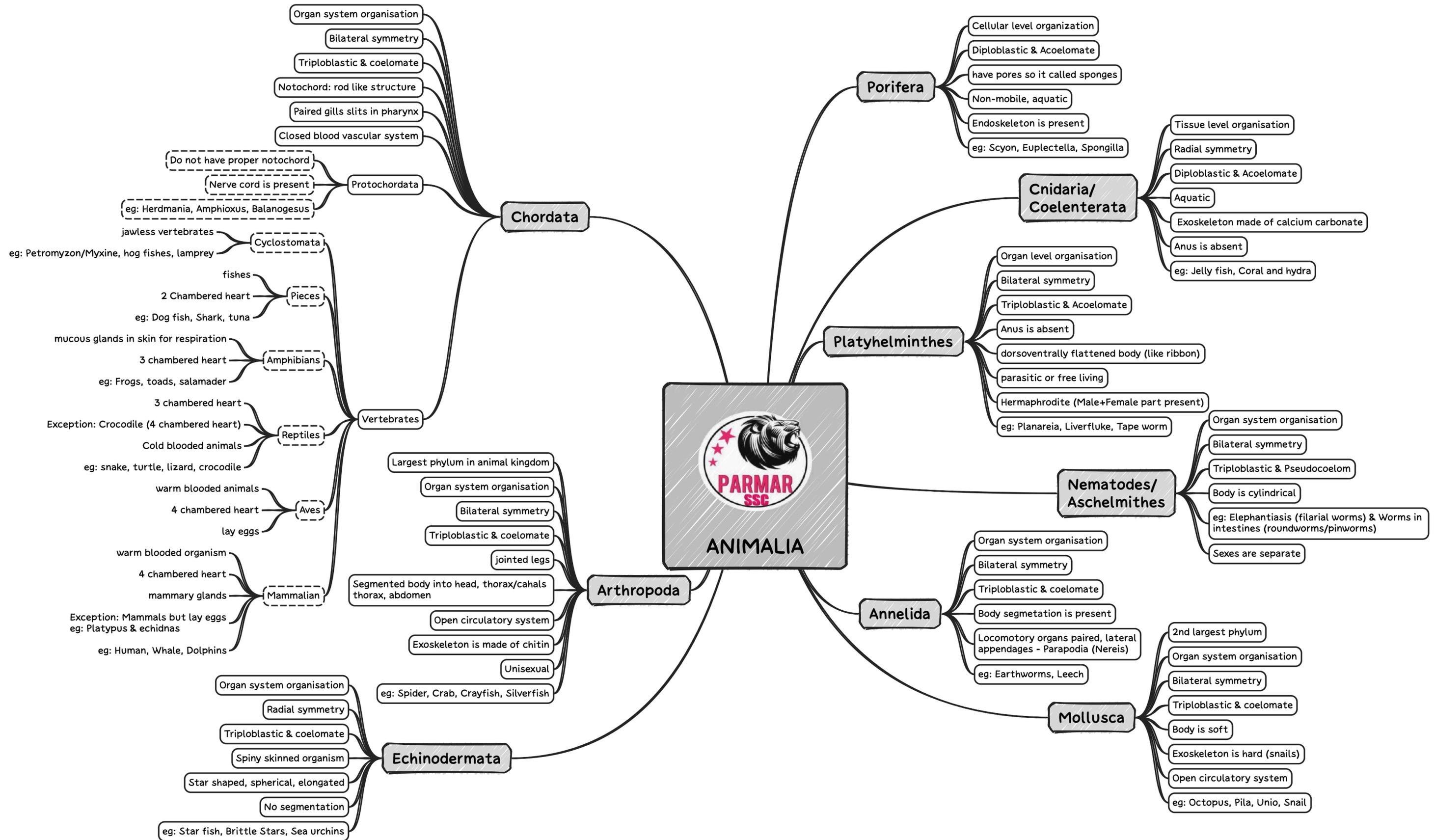
Cell wall absent

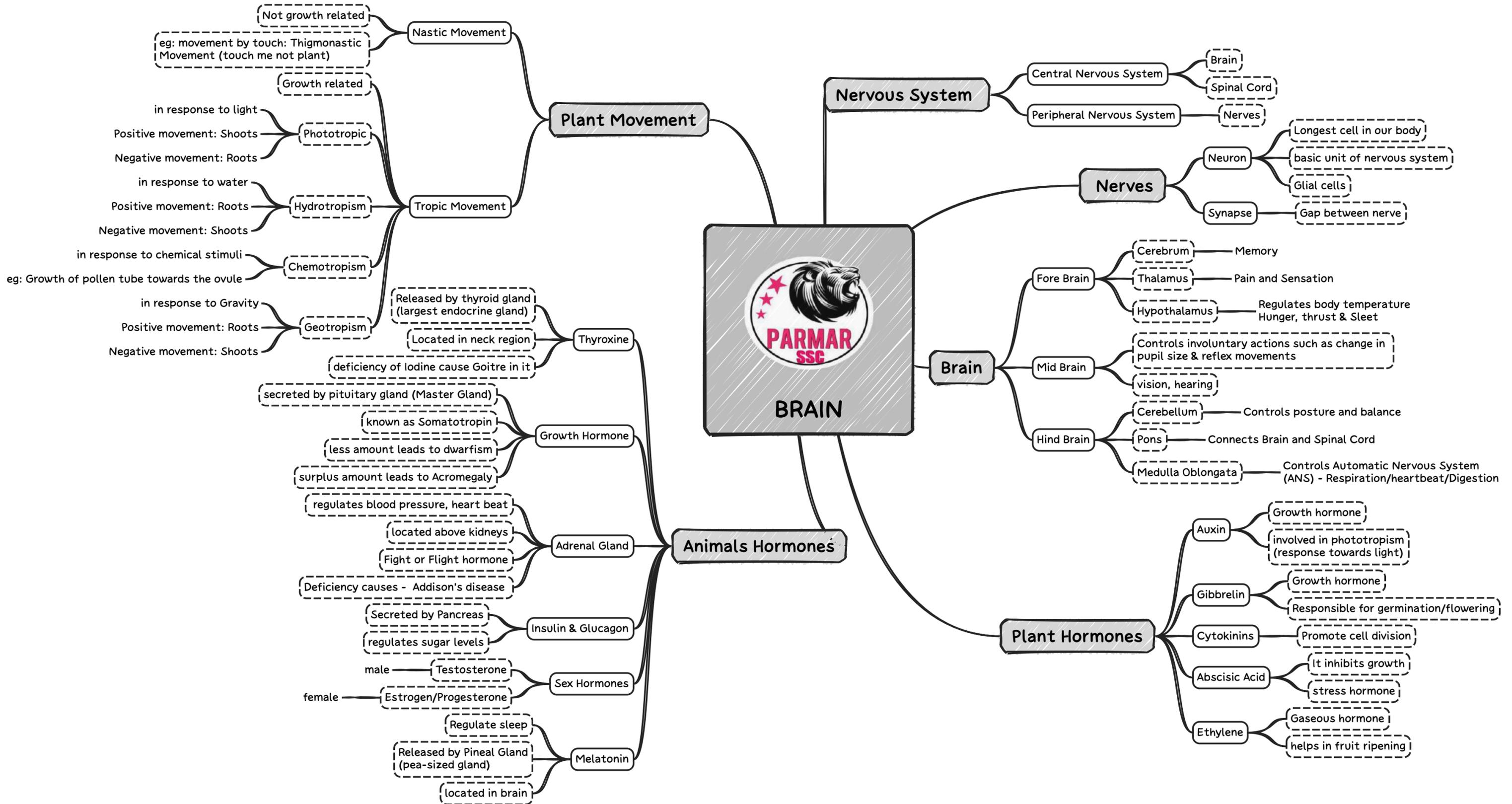
Animalia



PLANTAE









SEXUAL

ASEXUAL

involves two parents

in PLANT

Reproductive organ in plants: Flower

Male part called STAMEN

supports anther — Filament
produces pollen — Anther

Female part called PISTIL

sticky bulb that catches pollen — Stigma
passageway for grain — Style

holds the eggs awaiting fertilisation. Becomes the fruit — Ovary

Pollination

pollen grains reach stigma through

Anemophily - Wind
Hydrophily - Water
Antemophily - Insect

Male + female part = Bisexual/Monoecious

eg: Hibiscus, sunflower, rose, lily, tulip, tomato, chilli

Only Male or Female = Unisexual

eg: Papaya, cucumber, watermelon, musk melon, bitter guard

Male sex cells

produce from Testicle — Sperm

Female sex cells

produce from Ovary — Ovum

Menarche - Ovaries start to mature & produce eggs (age 11-12 yrs)

Menopause - natural decline in producing eggs (age 40-50yrs)

Gametogenesis > Insemination > Fertilisation > Zygote > Implantation > Gestation

in HUMANS

Cervical cancer - by Human Papilloma Virus (HPV)

IVF (In vitro fertilisation)

fertility treatment where eggs are combined with the sperm outside the body in a lab

Methods of Sterilisation

surgically blocking fallopian tube — Tubectomy
surgically blocking Vas deferens — Vasectomy

Parthenogenesis

asexual reproduction in which of embryo occurred directly from egg without fertilis

eg: Honey bees, lizard

involves a single parent

BINARY FISSION

divides into two offsprings
Only for unicellular organisms

eg: Amoeba, Bacteria, Paramecium, Leishmania

MULTIPLE FISSION

divides into many offsprings
Only for unicellular organisms

eg: Plasmodium (Malarial parasite)

FRAGMENTATION

Breaks into half which is not fully develop & become a new one

only for simple multicellular organisms
eg: Spirogyra & sea anemone

BUDDING

Develops buds to be new one

only for simple multicellular organisms
eg: Hydra & yeast

REGENERATION

repairs or regenerates the missing part of body

only for simple multicellular organisms
eg: Planaria, Hydra & Rhizopus

SPORE FORMATION

Bob and stick like structures that releases spores

only for simple multicellular organisms
eg: Rhizopus

VEGETATIVE PROPAGATION

grow from a fragment or cutting of parent plants

CUTTING

stem or leaf is cut and planted into soil
eg: Rose plant, money plant, sugarcane plant, banana plant

LAYERING

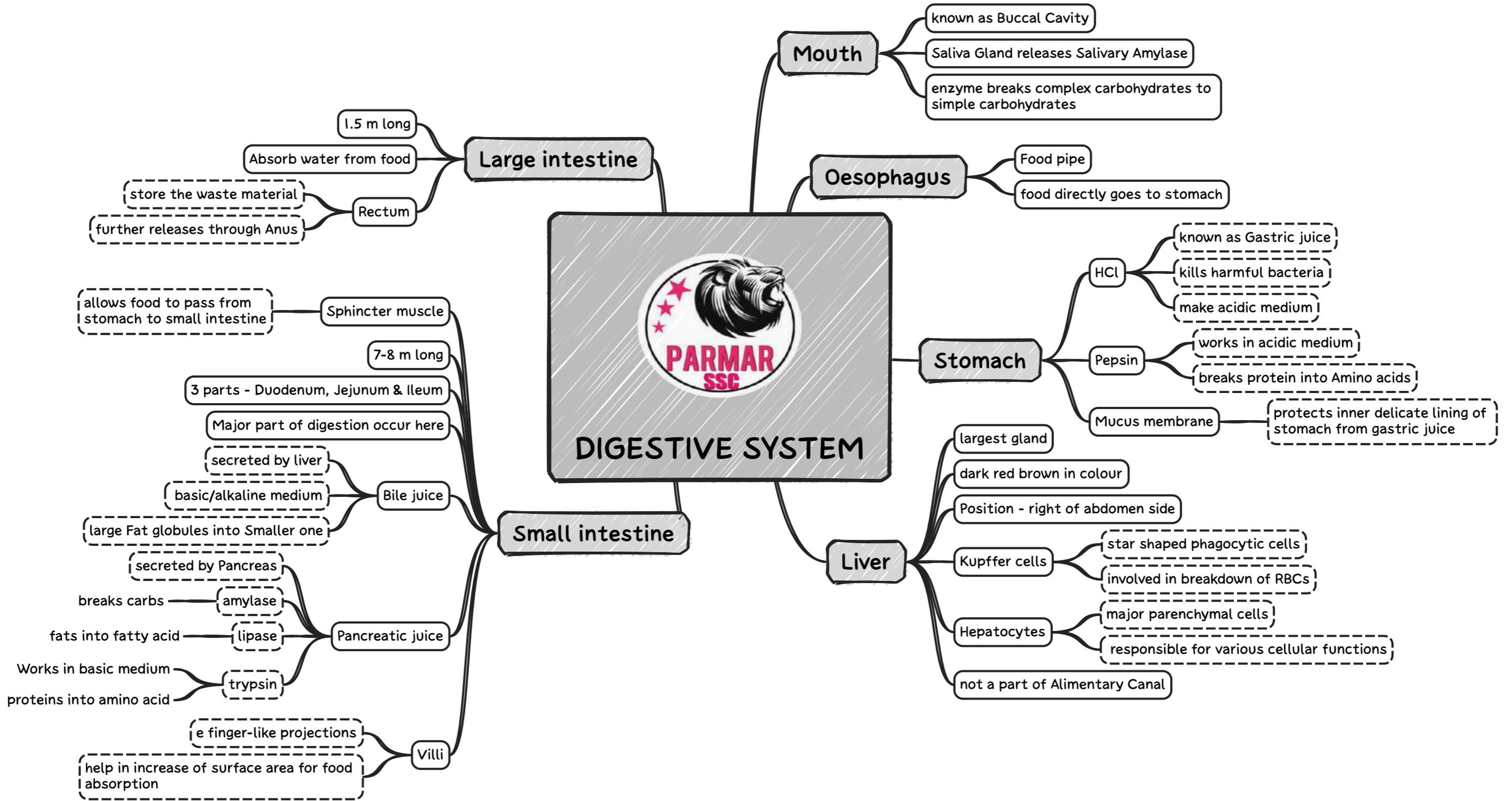
stem of the plant is bent to the ground and covered with soil
eg: Lemon, strawberry

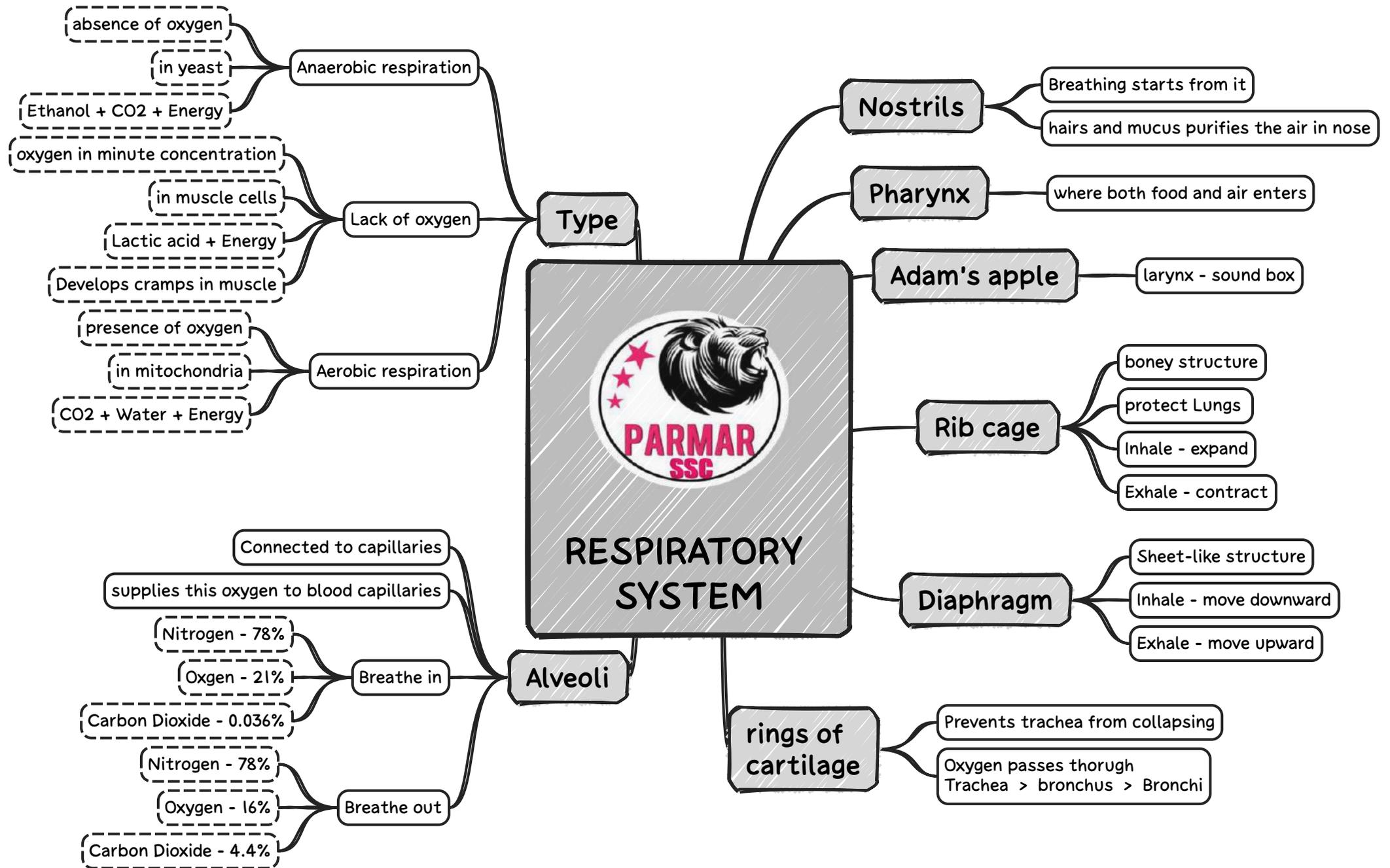
GRAFTING

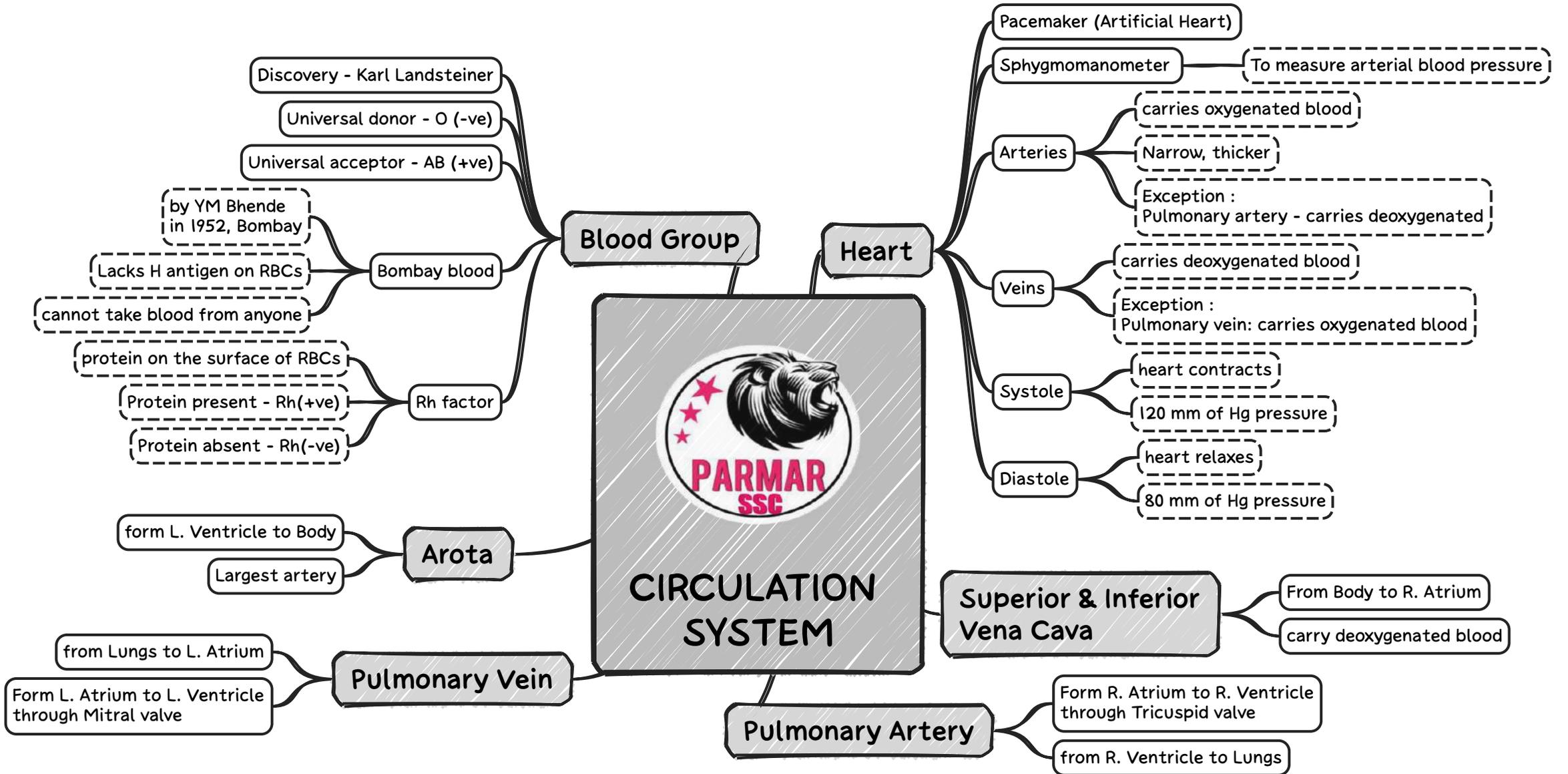
cutting from some other plant attached to the stem of a plant
eg: Rose plant

TISSUE CULTURE

Scientific artificial vegetative propagation
eg: Snake plant







Discovery - Karl Landsteiner
 Universal donor - O (-ve)
 Universal acceptor - AB (+ve)

Bombay blood
 by YM Bhende in 1952, Bombay
 Lacks H antigen on RBCs
 cannot take blood from anyone

Rh factor
 protein on the surface of RBCs
 Protein present - Rh(+ve)
 Protein absent - Rh(-ve)

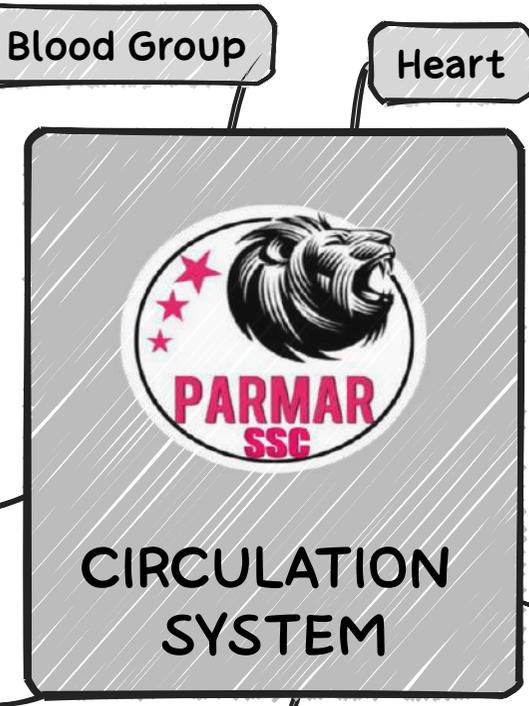
Aorta
 form L. Ventricle to Body
 Largest artery

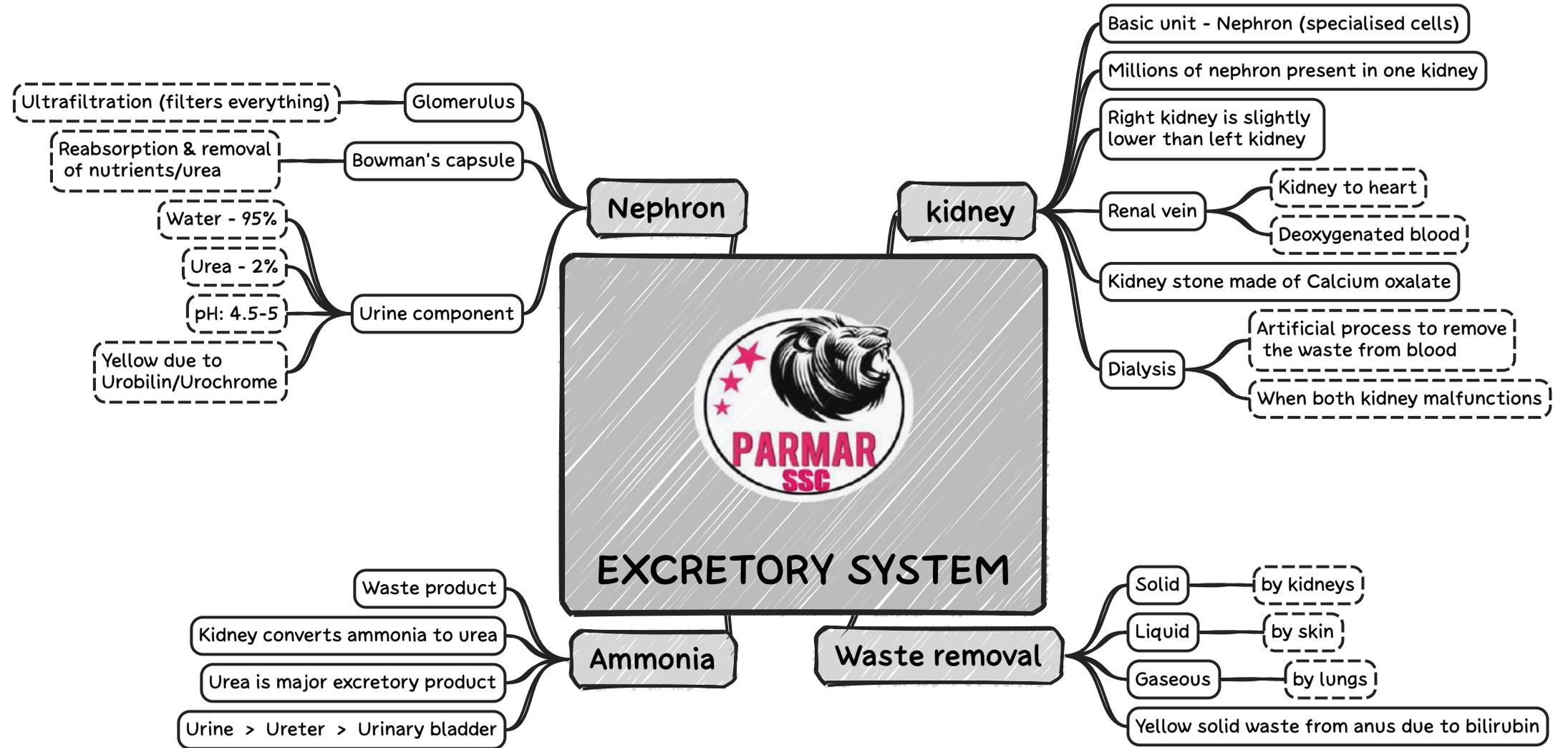
Pulmonary Vein
 from Lungs to L. Atrium
 Form L. Atrium to L. Ventricle through Mitral valve

Pulmonary Artery
 Form R. Atrium to R. Ventricle through Tricuspid valve
 from R. Ventricle to Lungs

Superior & Inferior Vena Cava
 From Body to R. Atrium
 carry deoxygenated blood

Heart
 Pacemaker (Artificial Heart)
 Sphygmomanometer - To measure arterial blood pressure
Arteries
 carries oxygenated blood
 Narrow, thicker
 Exception: Pulmonary artery - carries deoxygenated
Veins
 carries deoxygenated blood
 Exception: Pulmonary vein: carries oxygenated blood
Systole
 heart contracts
 120 mm of Hg pressure
Diastole
 heart relaxes
 80 mm of Hg pressure





Ultrafiltration (filters everything)

Glomerulus

Reabsorption & removal of nutrients/urea

Bowman's capsule

Water - 95%

Urea - 2%

pH: 4.5-5

Urine component

Yellow due to Urobilin/Urochrome

kidney

Basic unit - Nephron (specialised cells)

Millions of nephron present in one kidney

Right kidney is slightly lower than left kidney

Renal vein

Kidney to heart

Deoxygenated blood

Kidney stone made of Calcium oxalate

Dialysis

Artificial process to remove the waste from blood

When both kidney malfunctions

Ammonia

Waste product

Kidney converts ammonia to urea

Urea is major excretory product

Urine > Ureter > Urinary bladder

Waste removal

Solid

by kidneys

Liquid

by skin

Gaseous

by lungs

Yellow solid waste from anus due to bilirubin

EXCRETORY SYSTEM





DISEASES

- Prokaryotes, Unicellular and living entity
- genetic material is called genophore (bacterial DNA)
- Divides on its own
- Parasitic/Saprophytic
- Antibiotics used to treat
- Death due to plague known as - Black Death
- 1897-1906 - 12 Million death in India
- Caused by - Yersinia pestis
- Affects skin
- Also known as Hansen's Disease
- Caused by: Mycobacterium leprae
- Clostridium tetani
- Diphtheria
- Affects respiratory tract
- Affects reproductive organs
- Streptococcus pneumoniae
- Salmonella typhi
- Widal Test
- Transferred through animals
- Caused by - Mycobacterium tuberculosis
- Mainly attack lungs
- Commonly referred as White Plague
- Vaccine - BCG (Bacillus Calmette-Guerin)
- Caused by: Vibrio cholera
- It is a water borne disease
- Death due to cholera known as - Blue Death
- Staphylococcus bacteria

Bacteria

- Protozoa - plasmodium
- Carrier - female Anopheles mosquito
- Treatment - Quinine (found in bark of cinchona tree)
- Detection - VIVAX TEST
- Malaria Day - 25th April
- Protozoa - Trypanosoma
- Carrier - Tse Tse flies
- Protozoa - Leishmania
- Carrier - Sandfly

Protozoa

Fungi

- Baldness
- Athlete's foot
- Ring worm
- Skin disease - Scabies
- Asthma

GENETIC DISORDERS

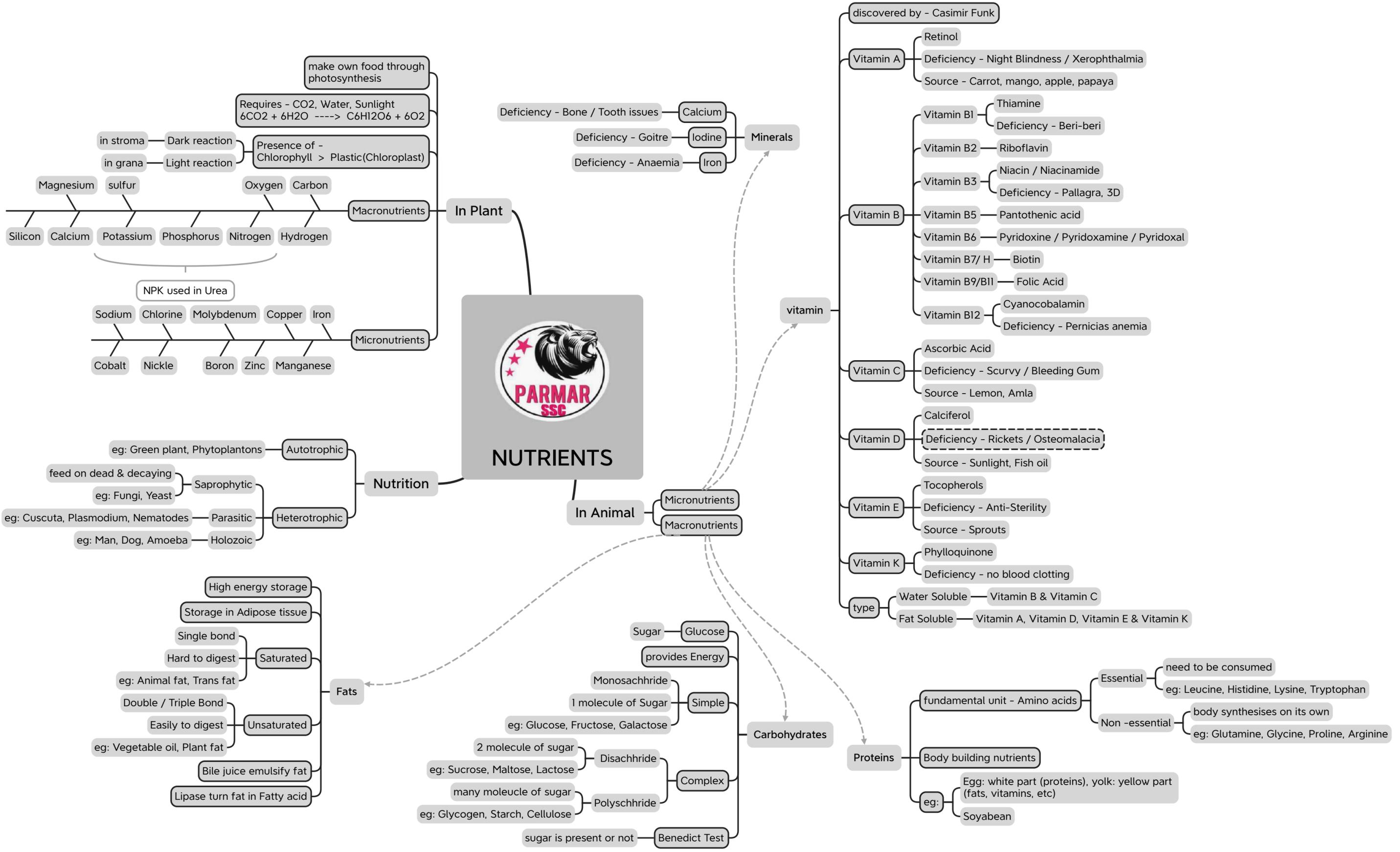
- caused due to gene malfunction (meiosis)
- Down Syndrome
- Thalassemia
- Sickle Cell Anaemia
- Colour blindness
- Turner's Syndrome - X-chromosome is missing, seen only in female
- Albinism
- Angelman Syndrome
- Klienfelter Syndrome - Presence of an extra copy of X-chromosome in males

Classification

- Acute disease - diseases that last for a short period of time eg: fever, cold, cough
- Chronic diseases - diseases that last for a long period of time eg: Diabetes, TB, elephantiasis (filaria)
- COMMUNICABLE - diseases that spread from one person to another eg: AIDS, cold, chicken pox, COVID infectious diseases
- NON-COMMUNICABLE - diseases that cannot spread from contact non-infectious diseases eg: diabetes, arthritis, glaucoma, polio
- Pandemic - Sudden an intention cases across several countries, continents, or the world
- Epidemic - Sudden increase in cases spreading through a large population
- Endemic - These disease are constantly present in a population or region with relatively low spread

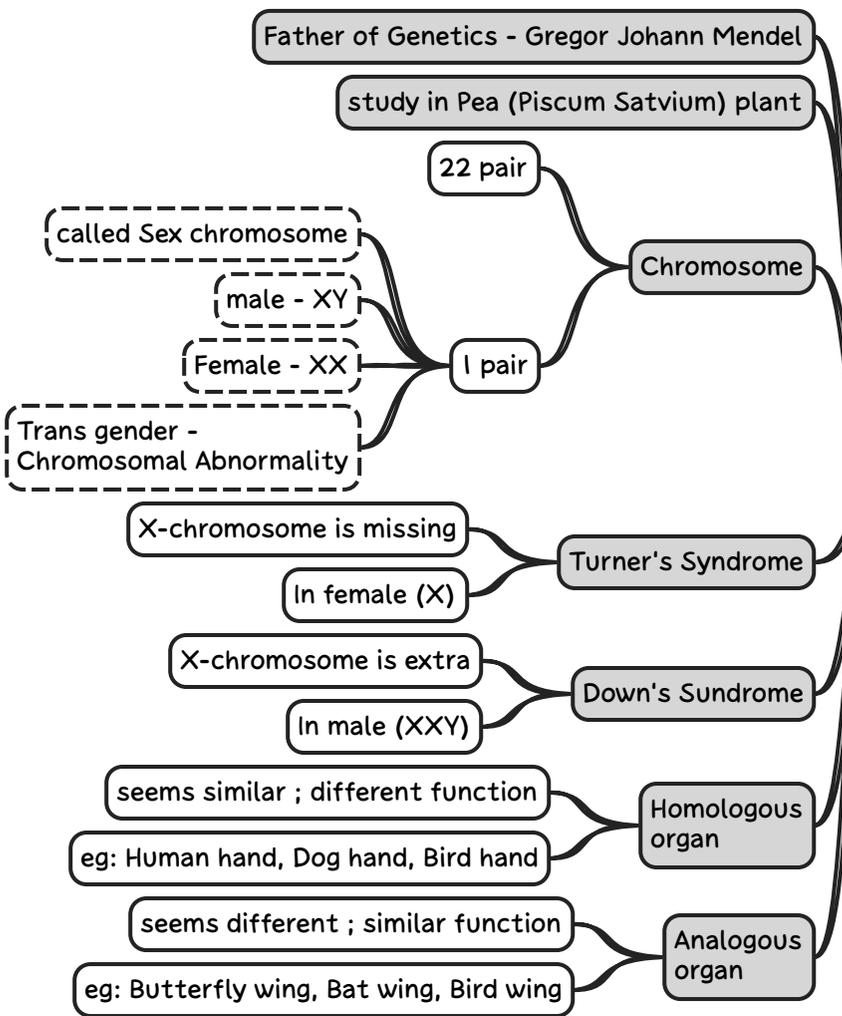
VIRUS

- genetic material encoded in a protein envelope known as Capsid (DNA, RNA)
- behave as Non-living outside
- Become active after getting a host
- cannot be treated with antibiotics
- affects liver
- Hepatitis A: Transmission through food
- Hepatitis B: Sexually transmitted through bodily fluids
- Hepatitis C: Transmitted when in contact with infected blood
- India's first indigenous Hepatitis-A vaccine: Havisure
- mainly affects liver
- affects the parotid salivary glands
- Virus - Poliomyelitis virus - Entovirus
- eradicated from India, as declared in 2023
- affects the nervous system
- 1st polio vaccine - by Dr. Jonas Salk
- Inactivated (killed) polio vaccine (IPV) - by Dr. John Salk
- Live attenuated (weakened) oral polio vaccine (OPV) - by Dr. Albert Sabin
- affects the cervix region in women
- Virus - Human Papillomavirus
- Detected through - Smear Test
- carrier - female Aedes aegypti mosquito
- sexually-transmitted diseases
- virus - HIV (Human Immunodeficiency Virus) - Retrovirus
- death - due to weak immune system
- method of transmission - sexual contact, blood transfusions, from mother to baby
- test - ELISA Test (Enzyme-linked Immunosorbent Assay)
- AIDS DAY - 1st Dec
- Measles
- Influenza
- Swine flu - H1N1
- Rabies
- Bird flu - H5N1
- Small pox - eradicated in 1979 last case in Somalia (Africa)





Genetics



Tooth

