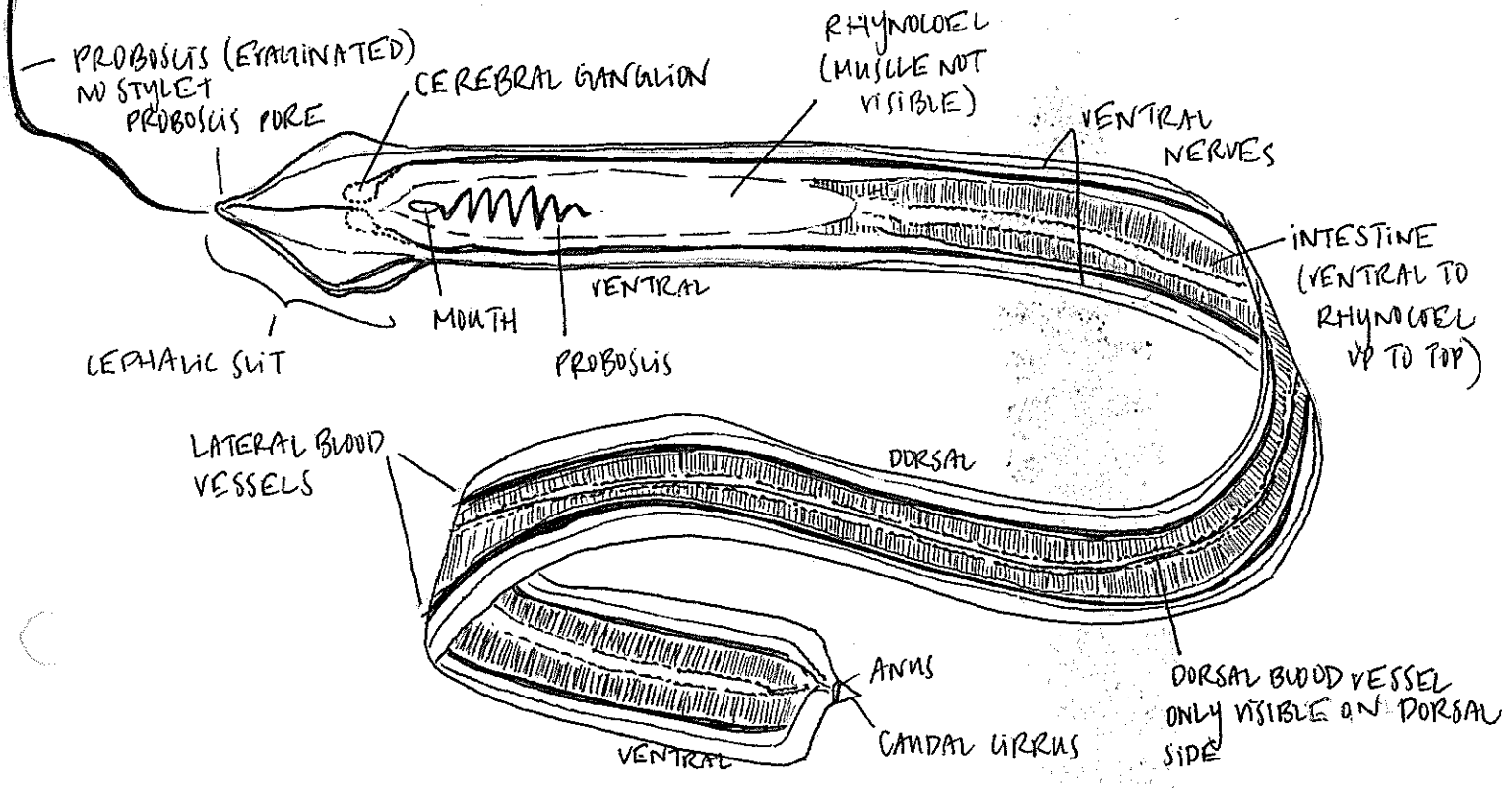
PHYLUM NEMERTEA: RIBBON WORMS! // 04.18.17

- PHYLUM NEMERTEA
- CLASS ANOPLA
- ORDER HETERONEMERTEA
- CEREBRATULUS SP.

① STRUCTURE



* BODY PINKISH / CLEAR EPIDERMIS

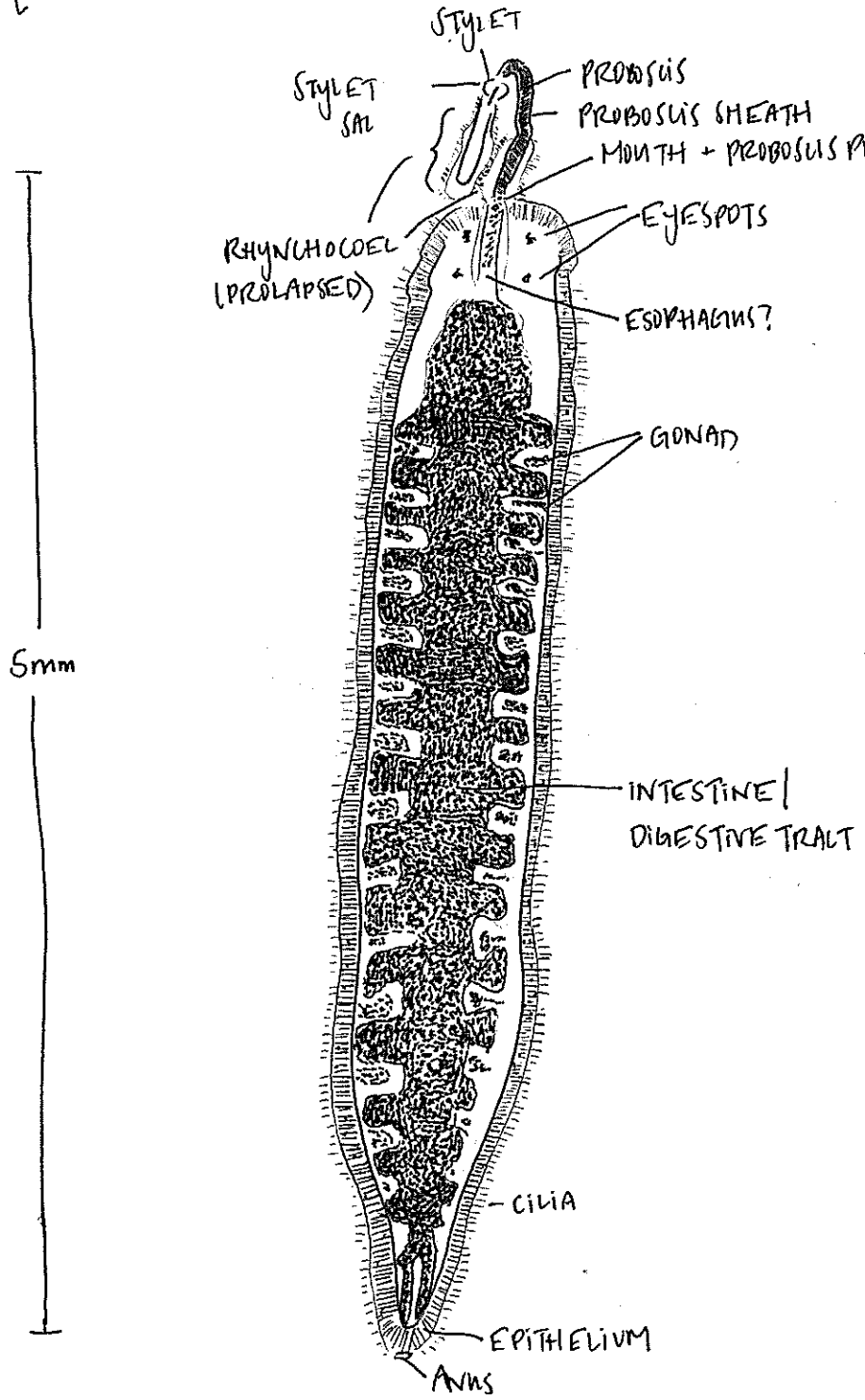
9 CM
TIP TO TAIL, UNCURLED

NOTES:

* MOVEMENT: Though this worm is dorso-ventrally flattened, it swims with this axis facing up (on its side). Much like this group's name implies, they look like a ribbon while in motion. Even after adding a considerable amount of $MgCl_2$ to anesthetize this organism, it continued to flap around. To observe more of its internal structures, I squished it between two microscope slides. Doing so made the worm angry, and it shot its proboscis out at me (pictured above). I could not see any cilia on this organism, and I thus hypothesize that the majority of its movement is muscle-dependent (described below in section (II): MOVEMENT.

* FUNCTIONS OF STRUCTURES: Proboscis for capturing prey; ganglia for interpreting sensory information; rhynchocoel for storing proboscis and musculature for ejecting + protracting it; intestine for digestion; blood vessels for oxygen delivery; cephalic slits for sensing

PHYLUM NEMERTEA
CLASS ENOPLA (HOPLONEMERTEA)
TETRASTEMMA SP.

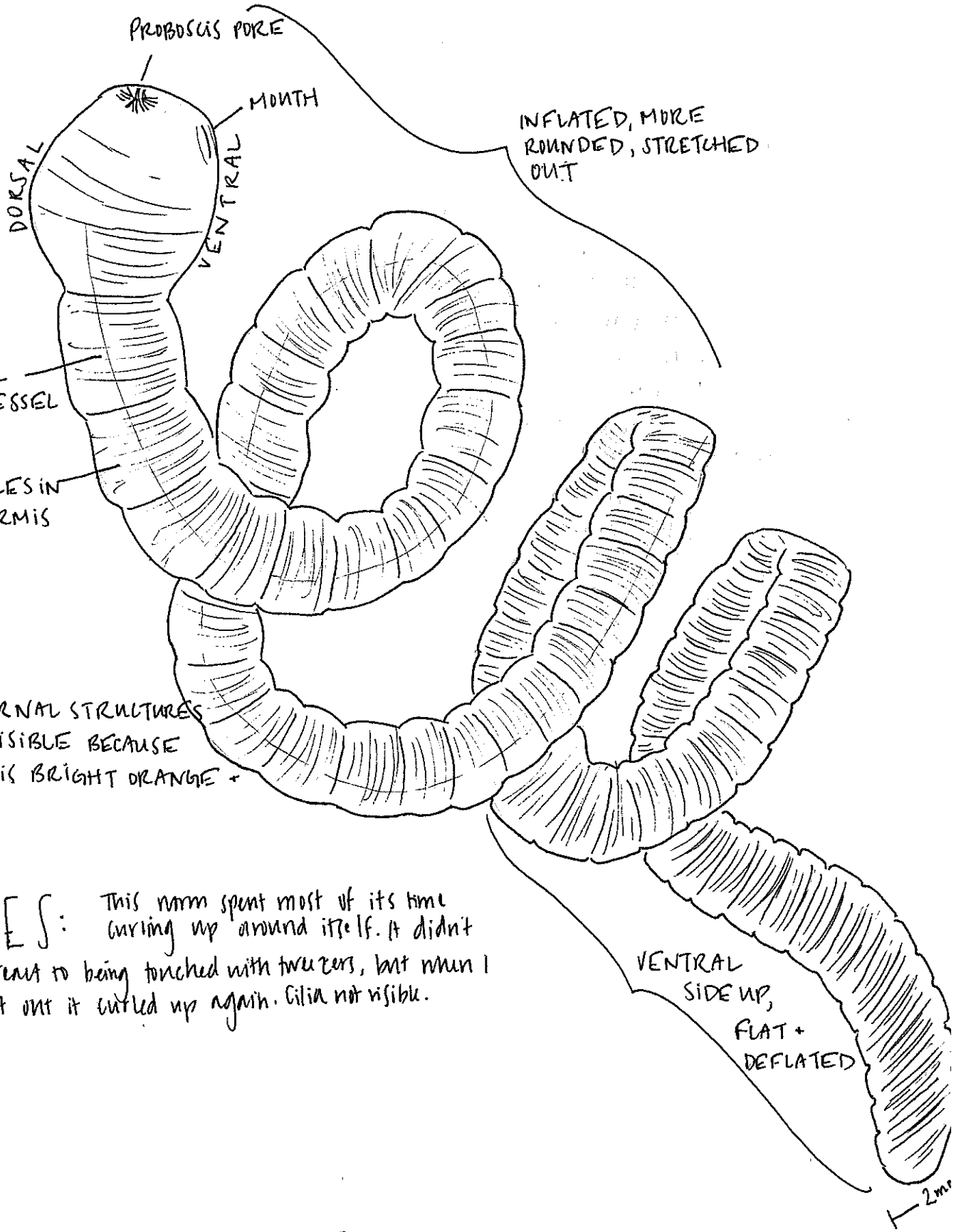


* COLLECTED FROM GUTTER OUTSIDE OUTFLOW CREEK

* WAS NOT ABLE TO WATCH MOVE; SO SMALL THAT MINUTE AMOUNT OF $MgCl_2$ MADE IT STOP MOVING

NOTES: I was able to visualize very little of the internal structure of this organism or its movement. To see the detail of the stylet and proboscis better, I mounted this worm on a slide and pushed down gently on the coverslip; the pressure caused the proboscis to prolapse. Its cilia were present, and I hypothesize they greatly aid in locomotion, provided how small it's body is. This group of nemerteans has a stylet attached to the end of its proboscis. The function of the stylet is to penetrate the epithelium of the prey and deliver a paralytic venom.

PHYLUM NEMERTEA
CLASS ANOPLA
ORDER PALAEONEMERTEA
TUBULANUS POLYMORPHUS



* MOST INTERNAL STRUCTURES ARE NOT VISIBLE BECAUSE THE WORM IS BRIGHT ORANGE + OPAQUE.

NOTES: This worm spent most of its time curling up around itself. It didn't seem to react to being touched with tweezers, but when I stretched it out it curled up again. Cilia not visible.

(II) MOVEMENT: ① Nemerteans are ciliated and secrete a mucus, which allows them to locomote with less friction. Small organisms can move solely by ciliar beating, while larger organisms must also use their musculature. ② Like other worms, they contain longitudinal and circular muscles. To move, they must contract their circular muscles — which thrusts them forward — then simultaneously relax their circular muscles and contract the longitudinal muscles, which will pull the body of the worm along.

(III) MUSCULATURE: TO GET LONG AND THIN: the worm must contract its circular muscles. TO GET SHORT AND THICK: the worm must contract its longitudinal muscles.

(IV) CARNIVORY: FED A NEREIS TO PARANEMERTES PEREGRINA: We placed several of each prey and predator into a shallow ~.5m x .5m dish. When presented with a Nereis (which we had to direct toward the predator with a stick), one Paranemertes was entirely uninterested in the snack option, and simply passed underneath it. However, another sensed its presence, wound up, and aggressively shot its proboscis at the mid section of the Nereis. What ensued was a rather violent worm-brawl, where the Nereis desperately tried to rid its body of the Paranemertes' grasp. To do so, the Nereis flapped its body around, but the Paranemertes wrapped its body around the Nereis tightly. For reference, the predator was ~1/4 of the size of its prey. Ultimately, the ribbon worm effectively paralyzed the annelid. We did not watch to see the Paranemertes ingest the Nereis.