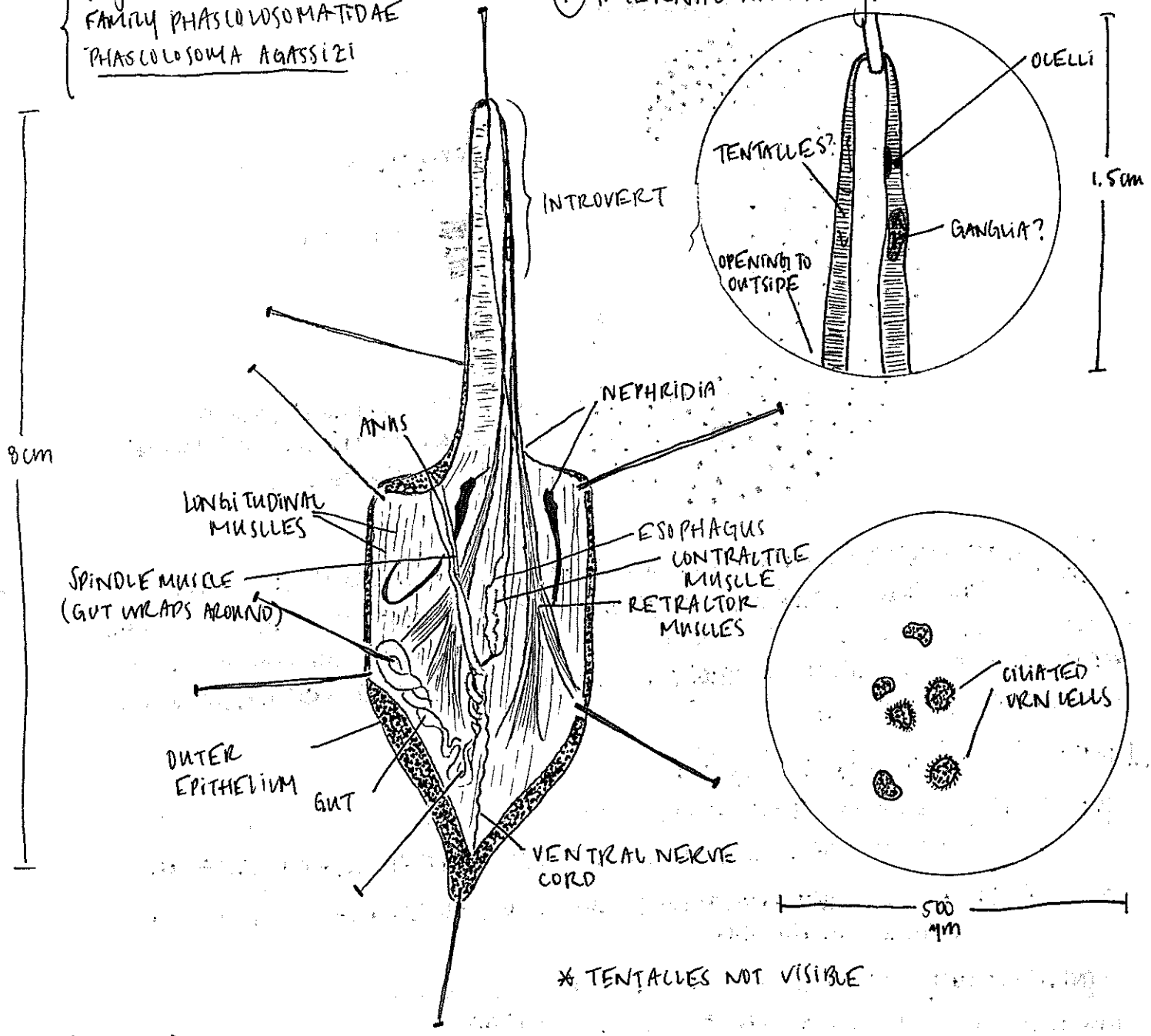
SIPUNCULANS: INTERNAL + EXTERNAL ANATOMY // 04.27.17

PHYLUM ANNELIDA > "Sipuncula"
FAMILY PHASCOLOSOMATIDAE
PHASCOLOSOMA AGASSIZI

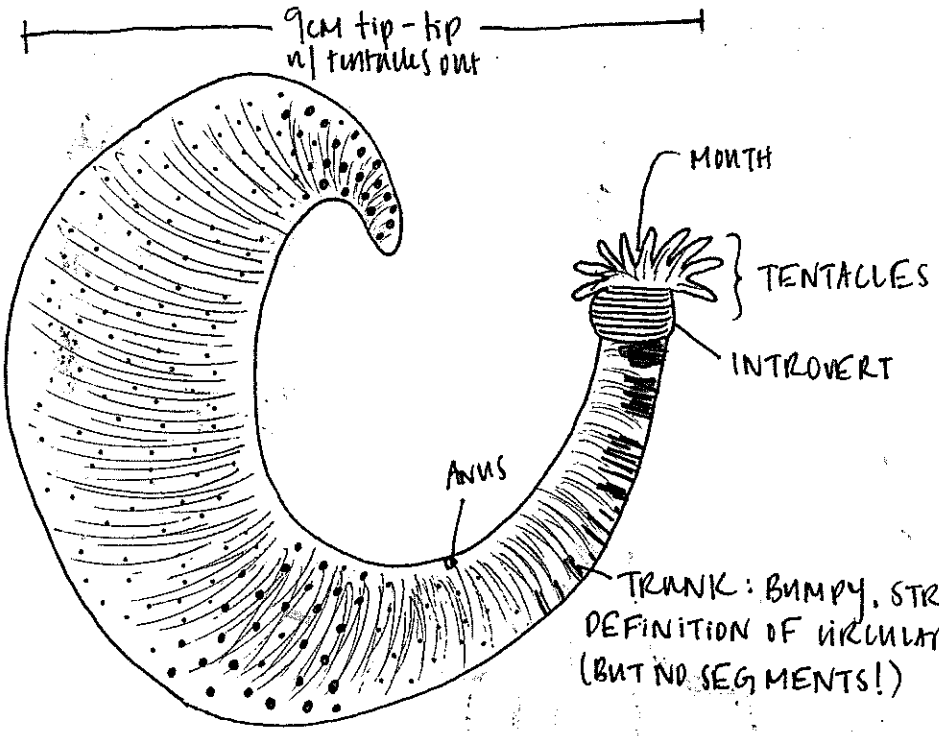
① INTERNAL ANATOMY:



* TENTACLES NOT VISIBLE

NOTES: We anesthesized the peanut worm in $MgCl_2$, then cut posterior → anteriorly, slightly ventrally to the dorsal anus. The body wall of the organism was tough, almost like leather; it was challenging to cut it gingerly. Coelomic fluid flowed out of the body readily once the first incision was made - unfortunately, it had all dissipated before we realized we needed to look at it under the compound scope. Thus, we looked at another group's. Their fluid prep was teeming with ciliated vrn cells (drawn above). As we continued our dissection, the worm contracted its muscles, especially its spindle muscle, which made for a wiggly intestine. It was impossible to push the tentacles / other soft bits out of the introvert.

(II) EXTERNAL ANATOMY:



NOTES: * MOVEMENT + BEHAVIOR: IT TOOK A LONG TIME TO ACQUIRE THIS VIEW! AFTER SEEING THE INTROVERT/TENTACLES EXTENDED, IT'S CLEAR AS TO WHY IT WAS SO CHALLENGING TO PUSH THESE STRUCTURES OUT DURING THE DISSECTION. THE WORM DID NOT MOVE AROUND IN THE BOWL/UNDER A DISH WHEN PRESENTED W ONE, EVEN AFTER A COUPLE HOURS.

(III) FUNCTIONS OF STRUCTURES:

TENTACLES: TRAP PARTICLES FROM SURROUNDING H_2O OR ARE PRESSED INTO SUBSTRATE TO TRAP MUD + DETRITUS → FEEDING + RESPIRATION

INTROVERT: CONTAINS HEAD + MOUTH PARTS (TENTACLES, GANGLION, ETC), SENSORY + FEEDING IN FUNCTION

SPINDLE MUSCLE: GUT WRAPS AROUND; KEEPS FROM TANGLING

NEPHRIDIA: ION REGULATION AND HOLD GAMETES

LONGITUDINAL + CIRCULATORY MUSCLES: CONTROL HYDROSTATIC PRESSURE; CONTRACTION OF WHICH WILL EVERT INTROVERT

RETRACTOR MUSCLES: DRAW INTROVERT BACK INTO TRUNK

COMPENSATORY SAC/CONTRACTILE MUSCLE: CONTRACTION OF DRIVES FLUID INTO TENTACLES, BRINGING ABOUT THEIR EXTENSION.

URN CELLS: ARISE FROM PERITONEAL LINING; COLLECT SOLID WASTES + EVENTUALLY DEPOSIT THEM IN THE BODY WALL OR EXIT VIA NEPHRIDIAL SYSTEM