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NEURAL ACTIVITY RECORDED FROM SEGMENTAL GANGLIA AND THE VENTRAL NERVE CORD OF *Nereis virens*

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The neural network of *N. virens*, a polychaete marine clam worm, is cephalized into a brain region and a ventral nerve cord (VNC). Bundles of neurons (nerves) exiting and entering the VNC function as a link in the control of the periphery. Aggregations or collections of nerve cell bodies, called ganglia (singular; ganglion), lie within each serial body segment of these animals. This nervous system controls many of the regulatory and behavioral functions.

One function which *N.. virens* exhibits is vasomotion (the periodic increases and decreases in blood vessel diameter). Data which demonstrated vasomotion does exist was collected in a previous study (Monfils, unpublished data). If one can record neural (electrical) activity from these animals, this information could be analyzed along with visual data of vasomotor activity obtained simultaneously. This would be done in an attempt to more precisely determine the nature of neural control of vasomotion.

In order to accomplish this goal, a technique, applicable to this study, must be developed for recording neural activity. Recordings are made from either single or multiple cells in either the VNC or segmental ganglia. Single cell recordings are usually done either intracellularly (within the cell) or extracellularly (outside the cell) but those from a group of neurons can only be done extracellularly. The technique used for single-cell recordings typically employs a glass microelectrode, filled with a conducting medium, which is either inserted into the neuron(for intracellular), or apposed to the outside of a cell and held there via differential pressures (for extracellular). Tip diameters must be hollow and small enough (on the order of micrometers = 1/1,000 of a millimeter) so that the only contact made is between an individual cell and the microelectrode tip. This can only be accomplished by "pulling" a small diameter hollow glass tube into a very thin strand at the tip.

Once the ability to effectively measure neural activity has been accomplished, the next step will be to record neural and vasomotor activity simultaneously. Only then will a correlation of neural and vasomotor activity be able to be determined.