Making a Worm Pick

From Cold Spring Harbor Laboratories *C. elegans* Course 2007

Cut a 1-inch segment from the spool of platinum wire (thick or thin). Insert a little less than a quarter of the wire fragment into a short-nosed glass pipette. Hold the pipette tip over the flame of a burner and melt the glass around the wire (Fig. 1). Hold the wire horizontal with pliers or tweezers.

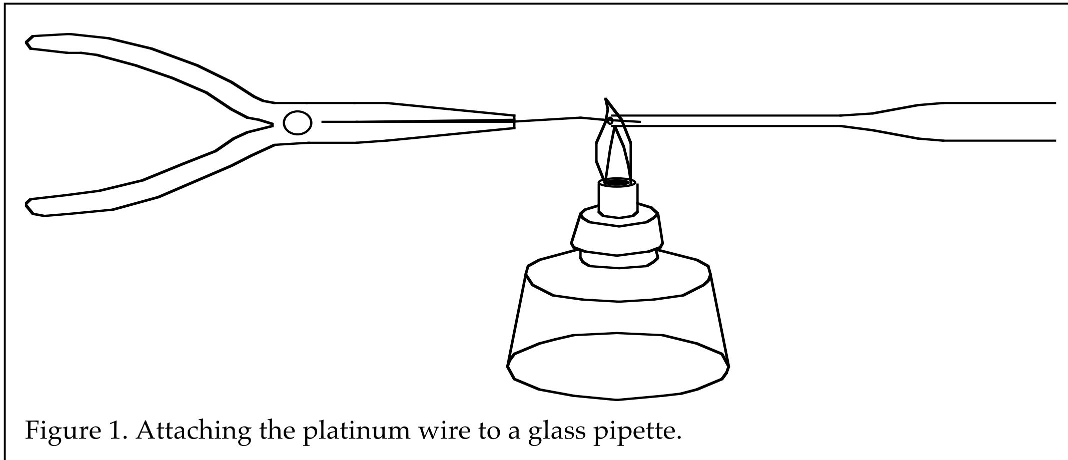

Figure 1. Attaching the platinum wire to a glass pipette.

Next, flatten the tip of the wire into a disc. Grab about a millimeter of the tip of the wire with a pair of jeweler's pliers. Squeeze with all your might. If you haven't much might, place the nose of the pliers on the bench and tap the tip of the pliers with a heavy metal object like the handle of a pair of scissors. This will flatten the wire into a spoon shape at the end (Fig. 2). Bend the pick so that it is angled as shown in Figure 2.

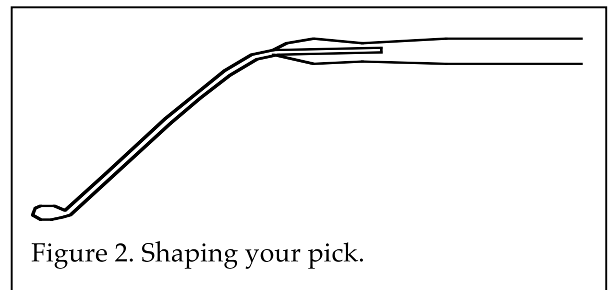

Figure 2. Shaping your pick.

Morimoto lab addition:

NOTE: Make sure you label your pick! It is very easy to lose it in the worm room and people will ‘adopt’ picks that look abandoned. Going along with that, please do not use someone else’s pick without their permission!

Picking Worms

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C. elegans eat bacteria. In the laboratory we use a crippled strain of *E. coli*, called OP50, that has a uracil auxotrophy, the auxotrophy causes the bacterial lawn to be thinner and stickier than wild type *E. coli*. The reduced bacterial growth allows one to see the worms on the surface of the plate easily and the bacteria are sticky enough to pick the worms up on the pick. The only manual skill one needs to perform *C. elegans* genetics is to move worms from one plate to another.

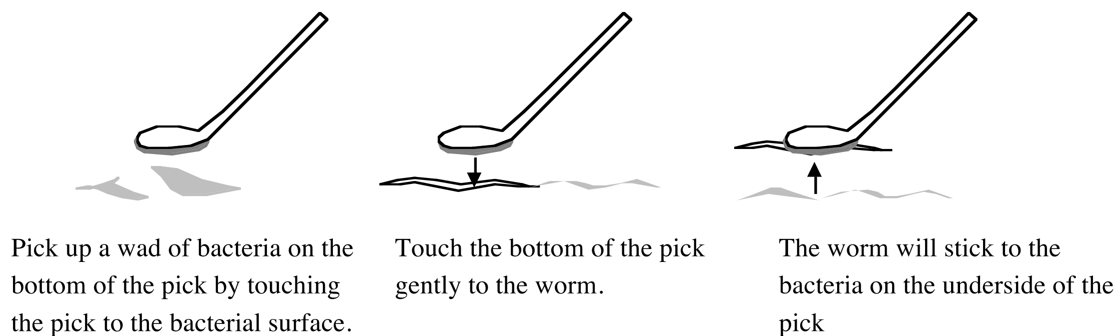
Place your plate of worms under the microscope.

Sterilize your pick in a flame (alcohol burner). Let it cool a couple of seconds.

Remove the lid of the plate.

Use the flattened tip of your worm pick to pick up a worm. Worms are not scooped up on the top surface of the flattened tip of the wire but are rather adhered to the bottom surface of the pick by a layer of sticky bacteria (Figure 3).

Figure 3. Moving worms



Close the lid of your plate and fetch a fresh plate from the stack. Open the lid and focus the microscope on the surface of the plate. Place the worm onto the surface of the plate by touching the worm gently to the agar. If the worm doesn't adhere to the plate, a gentle wiping motion can usually dislodge the worm. Try NOT to break the surface of the agar. If the worms find a break in the agar they will burrow into the agar. Soon all of the worms will be inside the agar and you will not be able to pick worms off the plate.

NOTE: When cloning (or singling) worms, be sure to carefully check that an L1 or egg was not carried with the individual, because then the resultant population arises from two non-identical individuals. This is probably the most common mistake of a beginning worm geneticist.

NOTE: Label the plates on the base or side but not the lid since the lid may get separated from the plate.