

Additional instruments that can be useful for microdissection and microsurgery.

(These are my personal favorites).

1. Chisel forceps. In our lab these are custom made from Dumont #5 or #55 forceps that have become too bent or damaged to be re-sharpened for continued use in the finest dissections. I make these by cutting off the tips of the forceps and then honing the cut ends to make them as nearly flat and straight as possible. I then hone the outer portions of each side of the forceps, so that the new tips have the shape of chisels. The outer edges of each side of the chisel forceps are the ones that are beveled. The inner edges remain flat, so that they come together when closed.

I use wire cutters to trim off bent #5 forceps tips and then hone the forceps on a Hard Arkansas stone using mineral oil as the honing fluid. "Hard Arkansas" is the name given to one of the hardest types of sharpening stone, which has a fine surface. I usually have found them at stores that sell hardware or outdoor sporting goods.

I keep one set of specially marked chisel forceps in my dissection kit. I use them frequently for fine dissection steps which require breaking bone, cutting cartilage, and holding tissues that would tear if held by normal #5 forceps.

2. Sapphire knife. We get these from Western Precision Instruments, Inc.

The sapphire knife is a precision cutting instrument for use in ophthalmic, neurologic and plastic surgery research procedures. It provides a superb cut far exceeding that of a finely honed steel knife. Under magnification of the optical microscope, even the best steel blade appears saw-toothed with metal flakes loosely attached to the cutting edge. Such a blade will produce a rough cut and damage to tissue. In contrast, the blades of WPI's sapphire knife can be polished to a far greater smoothness (less than 0.05 μm RMS). An incision made by a sapphire knife results in significantly less damage than a conventional steel knife and no metal particles are left behind in the tissue, so wounds heal faster with less scarring.



500317 --- US\$49 Sapphire Knife Handle,
13 cm long, retractable, stainless steel



500313 --- US\$39 Sapphire Blade, single edge, 1 mm wide, 30°

(the 9600 series) fine iridectomy scissors.
Manufactured in France by Moria are available from Fine
(7). They are terribly expensive (>\$450 each), but
I have found that they are sharp right to a very fine point.
For ear dissection these are very helpful, so I keep a
pair. I have marked, "These cost >\$450 dollars!!" and use
them liberally.

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(either 2.5 mm or 3.5 mm), which are Item #s:
1000 and 1001, respectively from Biomedical Research Instruments,
which are useful for handling and transferring small pieces
of tissue such as otic sensory organs or sensory epithelia,
especially when they pass through an air-water interface where they
are held in place by surface tension forces and the

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