

MICRO TOOLS

SEEKERS

Since Peter introduced me to glass seekers I now rarely use anything else.
When dissecting delicate insects, needles tend to “catch”, but the smooth end of a glass rod does not.

FINE NEEDLES

Entomological Pins (Anglian Lepidopterist Supplies)
HK1515

Acupuncture needles, 0.14 to 0.22mm E-Bay

Wooden Barbeque Sticks

Not Bamboo (they split) get Birchwood E-Bay
100mm Haematocrit tubes E-bay

YOU NEED

Superglue, or Araldite Rapid.

New Snapoff blade.

Wikinson Sword razor blades

Sharp scissors about 6 inches long to cut razor blades

A small pin hammer and small vice

Small pliers to hold pins

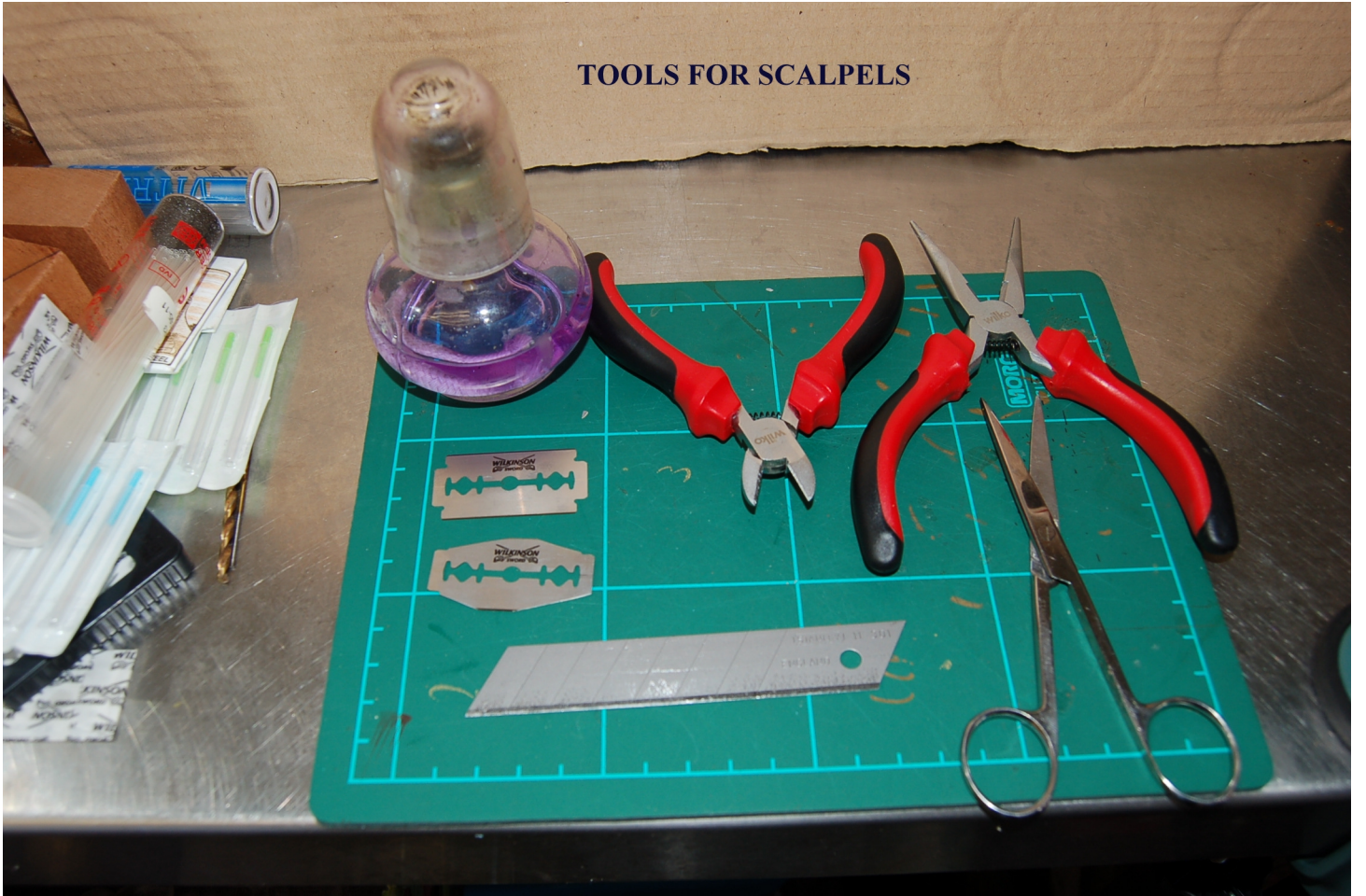
Small side cutters

2 small wooden blocks 25mmx30mmx40mm, a 1.2mm drill bit (Microbox from market stalls), a 3mm drill bit.

Small fine blowlamp or spirit lamp

Cutting board

TOOLS FOR SCALPELS



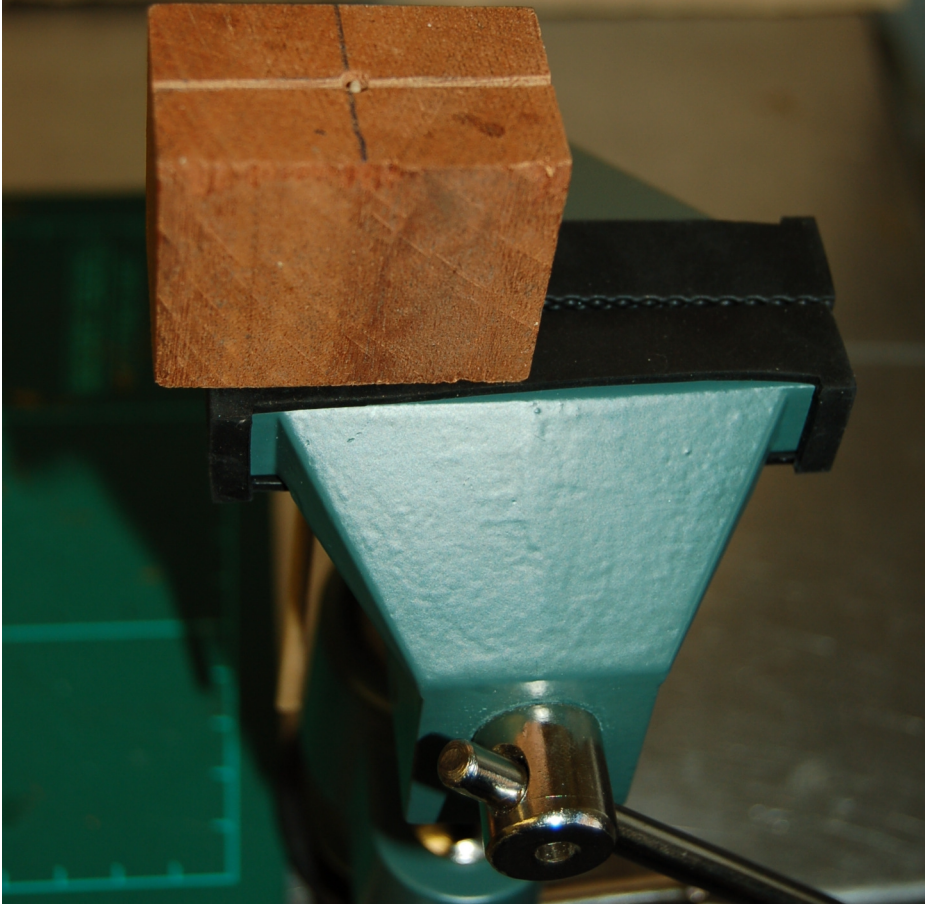
TOOLS FOR SEEKERS AND NEEDLES



TOOLS FOR DRILLING AND CUTTING STICKS



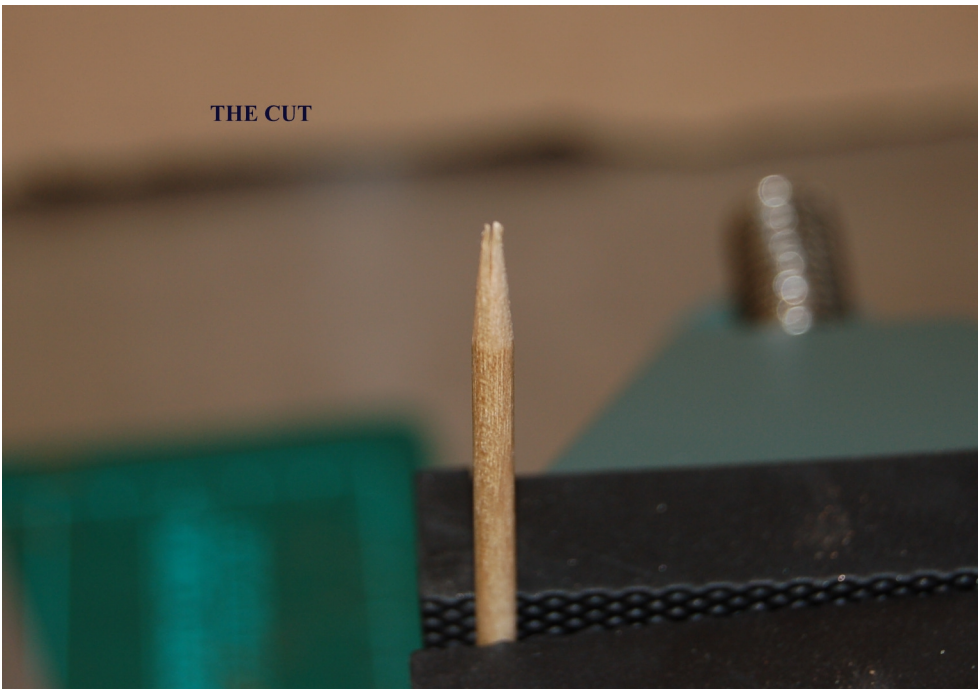
BLOCK WITH TAPERED STICK



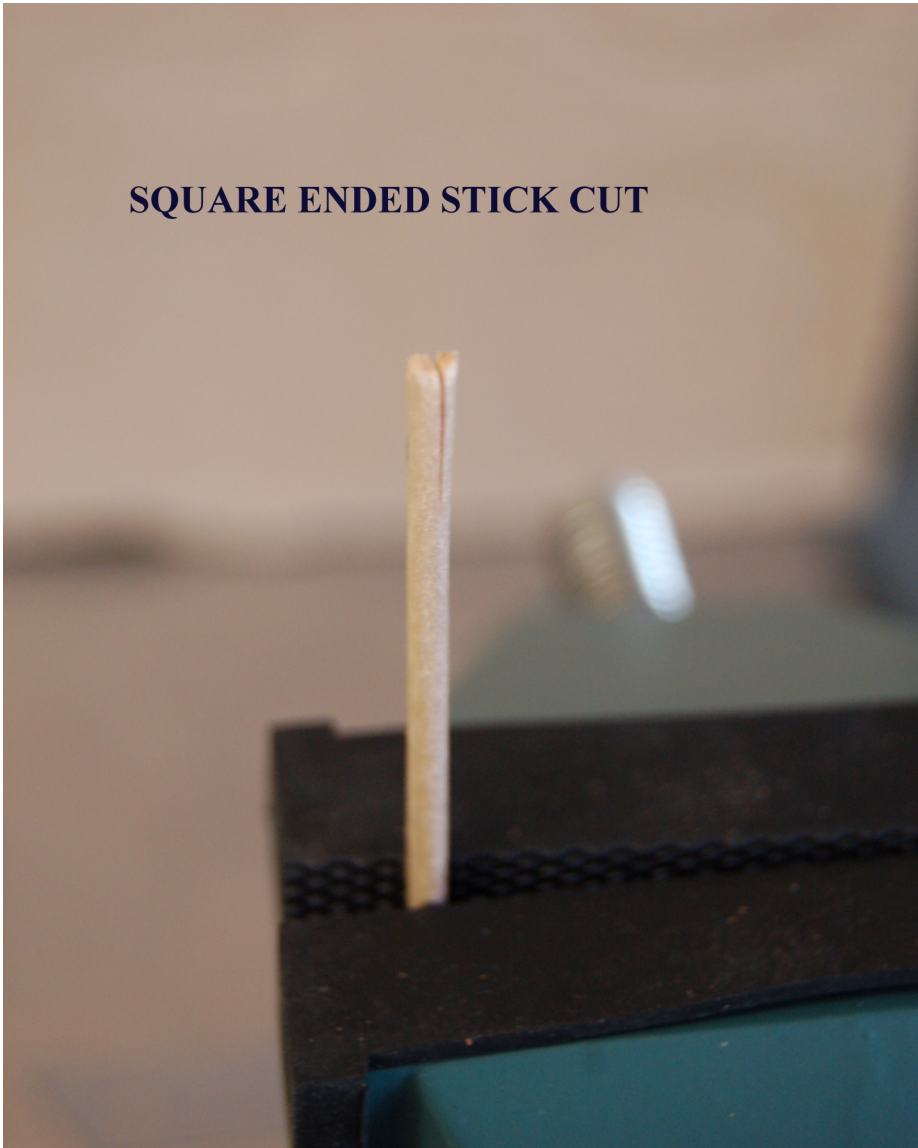
SNAPOFF BLADE PUSHED INTO SLOT



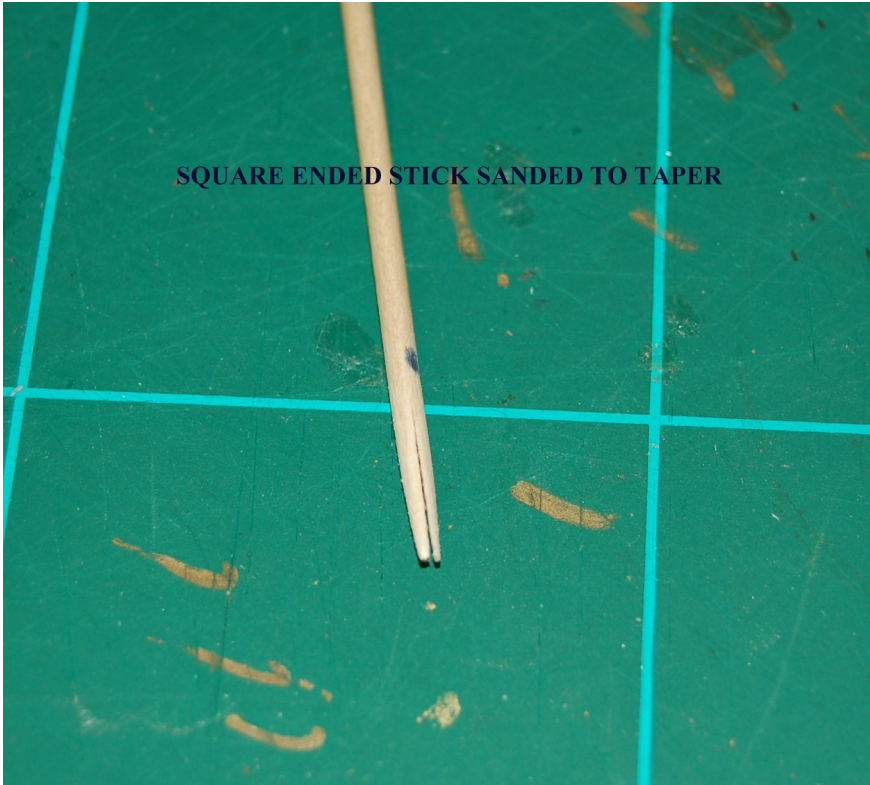
THE CUT



SQUARE ENDED STICK CUT



SQUARE ENDED STICK SANDED TO TAPER



TRIANGLE CUT FROM RAZOR BLADE



BLADE SUPERGUED INTO STICK

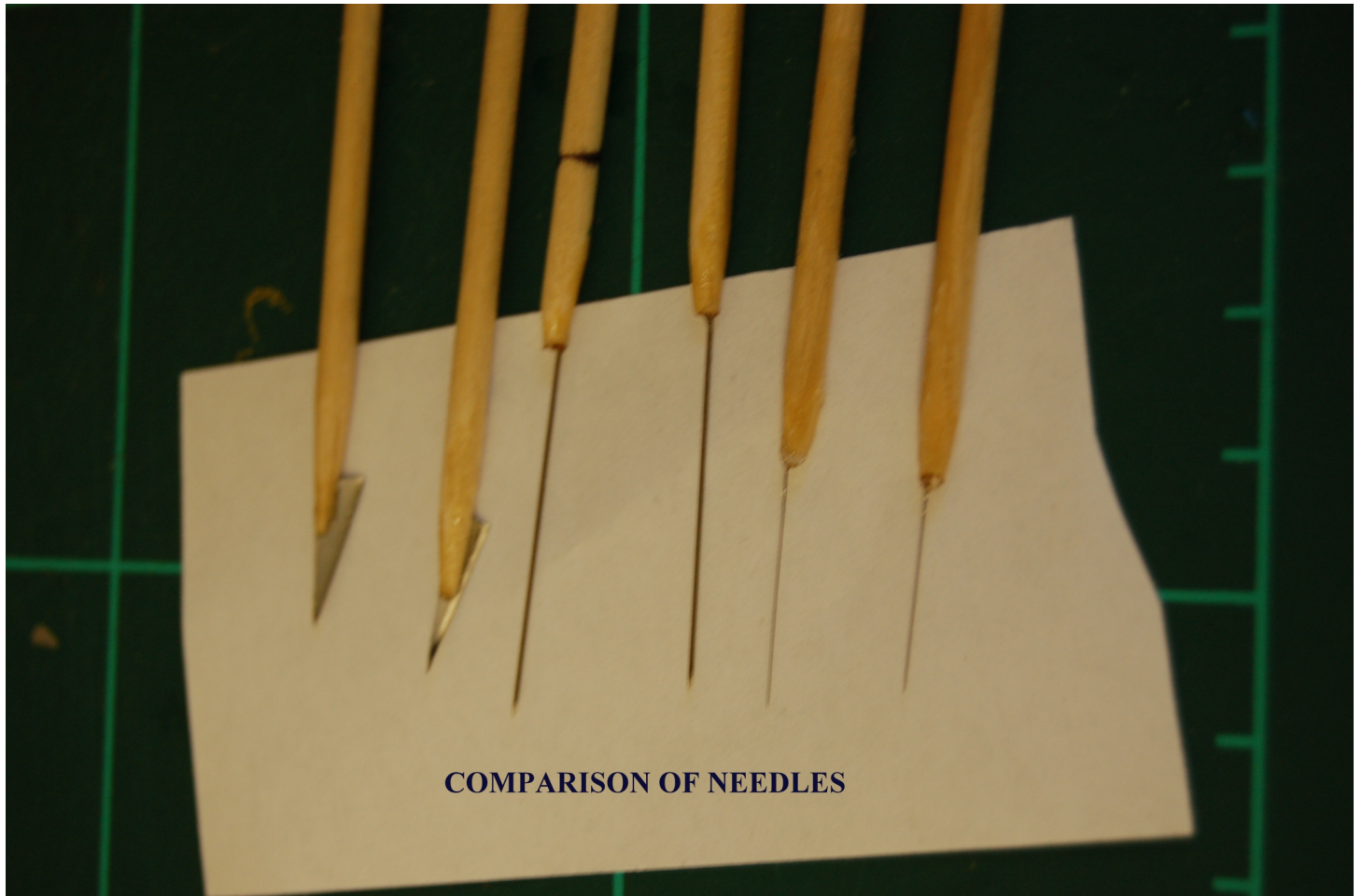


ACUPUNCTURE NEEDLES IN DRILLED STICK WITH ARALEDITE



CAPILARY TUBES DRAWN IN FLAME





HOW TO.

SCALPELS AND NEEDLES.

MAKING THE BLOCKS

Mark the centre of each block, one diagonally, one horizontally

In the diagonally centered block, drill a 1.2mm hole right through, mark one side as top. From the bottom drill a 3mm hole 25mm deep using the 1.2mm hole, leaving about 10mm to carry on as 1.2mm. (Block No 1)

In the horizontally centered block drill a 3mm hole all the way through. Then cut a slot lengthwise through the hole about 10-12mm deep with a hacksaw. (Block No 2)

So the end of the stick does not get in the way when using they need to be tapered. It is not easy to cut a slot in a tapered stick and impossible to drill a hole in the top of one. So they are both best done on square ended sticks. To drill the 1.2mm hole in a stick, push the square end into the block until it stops, I find it easier to mount the drill bit in my bench drill then push the block and stick together over the bit, a small piece of tape around the bit will tell you when you have drilled far enough

The taper can be done afterwards as I do it on a grindstone, if you do not have one then medium sandpaper is ok.

The scalpel blades can be cut from a Wilkinson Sword razor blade, I keep a diamond file to sharpen my scissors. The scalpel blades always curl when cut, they can be straightened using tweezers under a stereo microscope after they are glued into their stick with Superglue.

Push the stick through the Block No 2. until it is level with top of block, push the snapoff blade into the slot made by the hacksaw at the same time cutting a slot in the stick.

Needles can be cut to length and glued in the 1.2mm hole in the stick. Entomological pins can be stuck with superglue.

For acupuncture needles I think there is something coating them that superglue does not like so I use Araldite Rapid instead.

To make glass 'seekers' take a 100mm tube and move the centre towards the flame gradually, keeping outward pressure on each end, as soon as your fingers start to move apart pull the tube away from the flame, keep pulling until the two halves separate. When they have separated put the fine tip back in the flame and immediately pull it out and that should leave a fine ball end to the seeker. Sometimes they do not pull straight and end up curved, they can be very useful.

If you have 75mm tubes they are not long enough to make two seekers, the best way for those is to hold one end in your fingers and the other end with a pair of pliers, this is the hot end. If the short end has a nice taper, save it, it can be 'welded' in the flame to another piece of tube that may have broken.

AS ALWAYS WITH ME THIS IS WORK IN PROGRESS, ALL COMMENTS WELCOME. AJ.

Email me for a copy of this, it is about 18MB with the pictures, if you want it without pictures that is ok.

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