

**Going digital with morphometric data collection
on a Mac running OSX (and PCs, too).**

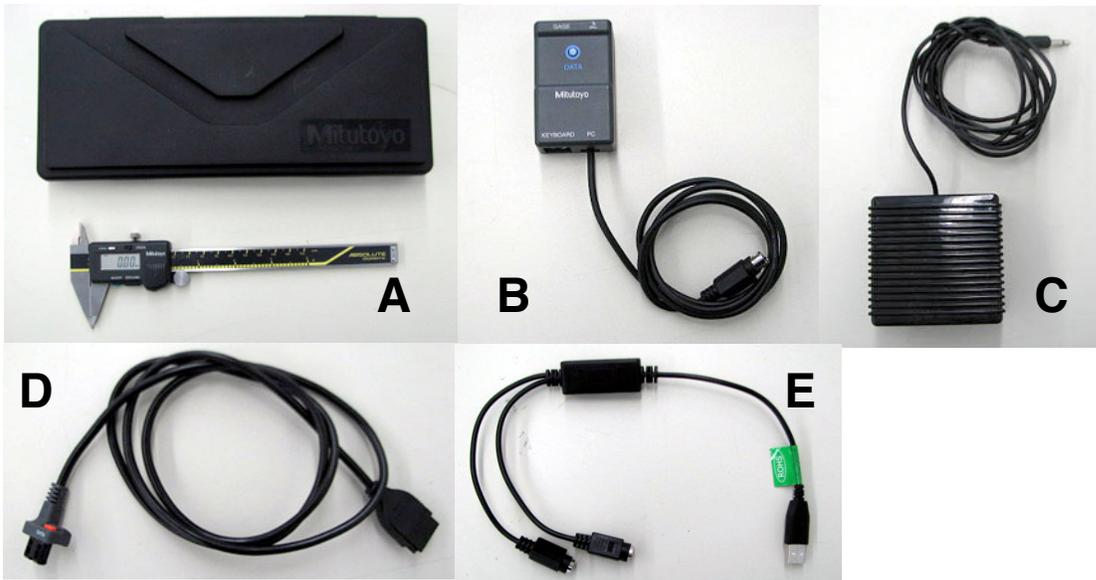
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We ordered most (A–D) of our digital caliper setup from Paleo-tech:

<http://www.paleo-tech.com/>

- (A) Mitutoyo digital pointed jaw caliper - \$266.00 plus Shipping (\$7.00) Order No. 573-221-10
- (B) Mitutoyo USB Input Tool- \$155.00 plus Shipping (\$5.00) Order No. 264-012.
- (C) Foot Pedal (USB Version *ONLY*) - \$65.00 plus Shipping (\$5.00) Order No. 937179T
- (D) 1 Meter Cable - \$35.00 (Part# 959149)
- (E) PS/2 to USB adapter - \$10-20 (e.g., StarTech Product ID: USBPS2PC).

Total cost: about \$550.



A connects to D, which connects to B, which connects to E, which connects to your computer. C is optional and plugs into B.

This setup can be plugged directly into a PC through a standard PS/2 (keyboard) port, and the input can be immediately captured in Excel or other programs- i.e., no additional software or drivers are needed. For Macs running OS X (and PC laptops without a PS/2 port) you will need a PS/2 to USB adaptor (E). Only some adaptor brands (e.g., Kinesis, StarTech) support the digital caliper signal, so you may need to test several to find one that works. Some brands will appear to work, but the signal gets scrambled so check to ensure that the reading on your computer screen matches that on the caliper display. Most electronics stores sell PS/2 to USB adaptors, and I ended up taking my caliper setup and computer there to find an adaptor that would interface with the system.

I use a database created in FileMaker Pro to manage specimen information, morphologic measurements, and genetic samples/sequences. The digital caliper signal can be read into FileMaker Pro, Microsoft Excel, and likely also into programs like Microsoft Access (although I haven't tried Access myself). Having a searchable database with visual representations of the measurements I take allows for greater ease of data collection, more flexibility in returning results, and better repeatability.

Other tips:

Although not necessary, the foot pedal allows faster data input (since you don't have to move your finger[s] to depress the input button on the caliper), greater accuracy (you're more likely to move the caliper jaws if you move your fingers), and reduces the risk of inadvertently overtightening the jaws on delicate specimens (e.g., shrew or bat skulls).

On smooth floors, the foot pedal has a tendency to slide around. I tape the cord to the floor right behind the pedal and also tape small pieces of ethafoam to the floor so they're snug against each side of the pedal. When traveling to other museums, I carry a few short pieces of duct tape and a few pieces of ethafoam for this (in addition to an extra caliper battery!).

The caliper slide will eventually gum up with sweat, dirt, etc. and the jaws will become harder to move. Use a Kimwipe or piece of cotton dampened with ethanol or isopropanol to clean the slide, then apply a bit of WD40 or similar lubricant with a Kimwipe.

For very small specimens, some of us have used a diamond file or emory board to sharpen the points. This is easiest when done under a dissecting scope. I've never heard of this affecting the accuracy.

Some airlines may not allow fine-pointed calipers in carry-on (many TSA employees have never seen them). I've had them approved for carry-on at one airport and then pulled out and transferred to checked baggage on a subsequent flight. Same itinerary, same airline.