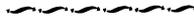


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TECHNIQUES

A new approach to measuring beetles was recently developed by me, based on observations of techniques used by mammalogists (craniometer). Using a Brinkmann two-axis stage as a specimen transport device, I had Spaulding Instruments of Pasadena, California, develop a potentiometer coupler to a Brinkmann-adapted micrometer head. The potentiometer is wired to a Spaulding Digital read-out box (x and y axis). The microscope (any will do) has an ocular cross-hair, and is mounted on a botanical scope swing-arm to allow room for the stage. The cross-hair aligns point A on the specimen, the digital read-out is "zeroed," the transport of the specimen to point B is viewed through the scope, and cross-hair alignment is set at B. Meanwhile, the potentiometer records electronically the movement of the micrometer head and relays the impulses to the digital device, recording the movement to 1/1000 of a millimeter. The reading can be taken by hand, keyed into a calculator, or transmitted to a computer via hook-up to an office terminal. The advantages of this system are repeatable results by multiple users (no ocular micrometer parallax problems), speed of measuring, resolution of measurements, and direct hook-up to a computer for immediate analysis of measurements.

-T. L. Erwin

