

PREPARATION FOR MICROSTRUCTURE ANALYSIS OF FEATHERS IN SCANNING ELECTRON MICROSCOPY (SEM)

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Feather microstructures are used for taxon identification in Forensic investigations. Most biological samples need to go through several steps for SEM observation but feathers do not. However, cleaning is a critical part in preparation of feathers, especially when they come from old taxidermy preparations of collection specimens. We developed a protocol of feather preparation for SEM analysis. First, to clean off the bigger particles it is necessary a good air blow or even a soft brushing. Then, the barbs are cut and stored in 1.5mL microtubes. In a second cleaning step they are soaked in non-ionic detergent (Triton X-100) and distilled water in a 1:15 ratio, for at least 2 hours (overnight may be necessary for aquatic taxa), stirring it continuously. Then samples are rinsed at least three times in distilled water before dehydration in ethanol series starting at ethanol 70% and then in 100%, for 30 minutes in each. After that samples are air dried, cut in smaller pieces using a razor blade and mounted on stubs with double-faced carbon cello-tape. Finally, they are sputtered with gold for 2-3min before observation at 15kV and 15mm work distance. These simple procedures maintain microstructures clean and intact.