

## SHORT COMMUNICATIONS

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### PREPARATION OF AVIAN MATERIAL RECOVERED FROM PELLETS AND AS PREY REMAINS

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Pellets and prey remains provide evidence of raptor food habits (Errington 1932, Glading et al. 1943, Collopy 1983, Marti 1987). Several researchers (Clark 1972, Longland 1985, Holt et al. 1987, Marti 1987) have addressed the "best" methods for preparing pellets to facilitate identification of contents. Because researchers have generally focused on mammal-eating raptors, methods for preparing mammalian skeletal remains prior to identification are well-defined; these techniques work equally well for avian skeletal material.

Feather material, often present in pellets and as prey remains, must be clean to be identified accurately. The cleaning process must expose original color, texture and shape of the feather. Feather material of different taxa will appear different during washing and drying, offering clues to identification. Useful techniques for handling pellets and prey remains, as well as suggestions for the preparation of avian material (feather or skeletal) prior to identification are presented below.

The dry method of pellet dissection has many advantages over other techniques (see Holt et al. 1987). No special equipment or solvent is required, and dry dissections can be accomplished in any clean and well-lighted work area. To begin, select a pellet and place it on a clean tray. Being careful not to further fragment bones or feathers, use dissection needles or forceps to gently break the pellet apart. If you meet resistance, work on another part of the pellet. Using a hand lens or dissecting microscope, separate feathers as you remove them from the pellet. In addition to whole feathers, save every bit of feather material that you find: a single barb might later provide positive identification of a prey item.

Prepare a cleaning solution by dissolving a small amount of a gentle soap (we use Ivory powder or liquid Dawn) in warm or hot tap water in a clean beaker, and add the feathers or bones to the solution. Hot water relaxes feathers and they regain their original shape. Using forceps, agitate the material in the soap solution to remove dirt and grease; when the water becomes cloudy or dirty, repeat the washing process. When changing the water, use a sieve or forceps to remove the feathers. To avoid mixing the samples, carefully clean the sieve or forceps between samples. Continue washing until the water is no longer discolored—at least two baths are generally required.

Soap film leaves a bluish or chalky cast to the feathers, and it is important to thoroughly rinse the feathers after washing. Several changes of clean, warm water may be required. When the rinse water clears, transfer the feathers to a paper towel to absorb most of the water.

To complete the cleaning process, the feathers must be dried and returned to a natural condition. Feathers not fluffed during the drying process will be clumped and misshapened when dry. Compressed air, electric fans, blow-driers, and hand driers will facilitate drying; alternatively, the feather material may be fluffed by hand. Compressed air will drive moisture out of a sample quickly, although the force associated with this source may disturb the structure of the feathers. Be cautious when first using compressed air on a sample; use short, soft bursts only. Large pennaceous feathers, such as remiges and rectrices, must carefully be blown parallel to the direction of the barbs, or the barbs will become disassociated, twisted and bent, and will not return to their original configuration. Long, downy barbs (for instance those of strigiform and falconiform birds) are susceptible to tangling, and compressed air should not be used for drying feathers from these groups. Instead, these feathers should be allowed to

air dry on paper towels and be fluffed individually by hand; hold each feather at the base of the rachis, and blow or fluff toward the tip of the feather. Small feathers can be tumbled and fluffed in a fine mesh screen basket by forcing compressed air through the screen. Clean the screen between samples.

When the recovered feathers are clean, dry, and have regained their original color and shape, they can be accurately identified. As the cleaning and drying process is mastered, the examiner will gain familiarity with feather characteristics offering clues to family, genus and species of origin. Identifications are accomplished through comparison with materials in a systematic or synoptic collection (Errington 1930, Marti 1987).

**RESUMEN.**—El análisis de presas remanentes y egagrópilas proveen información sobre los hábitos alimentarios de las rapaces. Nosotros recomendamos el método seco de disección de egagrópilas. Plumasy elementos del esqueleto recuperados de remanentes de presas o egagrópilas deben ser limpiados para ser identificados; estos pueden ser lavados en una solución de agua caliente con detergente suave aplicada en chorro. El material se debe agitar mientras se remoja y se lava repetidas veces. Luego, el material se enjuaga varias veces utilizando agua temperada y caliente, hasta que todo el jabón es removido. Tanto las plumas como los elementos del esqueleto son secados usando aire comprimido o secador. Las identificaciones del material desconocido son posibles al compararlos con especímenes de una colección sistemática o sinóptica.

[Traducción de Ivan Lazo]

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