

SPECIAL METHODS OF ACID PREPARATION

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“Slab preparations” are preparations in which a three-dimensional specimen is embedded in a flat slab of plastic so that the curator will be free to view the specimen from both the top and the sides. For “slab preparations”, the fossils are positioned face up, and then set up at the bottom of a foil-paper box. The plastic is poured onto the fossil and into the bottom of the box to form the slab. This specimen is AMNH FF 19091, a ray of the species *Rhinobatos beurleni*. The prismatic calcified cartilage of this ray was consolidated with thin cyanoacrylate glue.



“Simultaneous preparations” involve the simultaneous acid preparation of both sides of a fossil fish, which are embedded onto either side of a thin sheet of plastic. One side of a “simultaneous preparation” is set up much like a “slab preparation” at the bottom of a shallow box of foil paper. Three or four ball bearings are set up on the edges of the fossil to act as spacers. A thin sheet of plastic is poured onto the part, submerging the ball bearings. Then the counterpart is set into the plastic upon the ball bearings. AMNH 19002 is a specimen of *Notelops brama*.



“Hotdog” preparations are fish-shaped simultaneous preparations designed as exhibition specimens. Three or four ball bearings are glued to the part of a fossil fish. The perimeter of the specimen is outlined with a thick bead of silicone caulk, save a narrow pour hole at the nose of the specimen. The counterpart is then set upon ball bearings. The completed preparation looks not unlike a hot dog leaking mustard. The plastic is poured into the pour hole and allowed to set. AMNH FF 19225 is a specimen of *Rhacolepis buccalis*.



“Lacks operculum preparations” are acid preparations of the gill skeleton generated by sacrificing the operculum of a fossil fish. AMNH FF 19034L, a *Vinctifer comptoni*, was the first “lacks operculum preparation”. It was generated accidentally when a skull dropped away from an operculum that was embedded in the plastic box of a standard Romaldo-technique preparation. Subsequently, I learned to duplicate this result by destroying the operculum with an air scribe, then giving the head a single short round of acid preparation.



“Half & Half preparations” are one logical consequence of “lacks operculum preparations”. Once the gill skeleton is exposed in a “lacks-operculum preparation”, that skeleton can be embedded and prepared from the reverse side. The gill skeleton, rather than the operculum, forms the basis of the preparation. AMNH 19113L demonstrates a *Vinctifer comptoni* with the gill skeleton deployed for filter feeding, thus resolving the problem of how these large fish made their living with only a few, tiny teeth.