ABSTRACT:
SHEET PLASTINATION OF BRAIN SLICES.

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Plastinated sheet specimens are highly desirable. Biodur polyester P-35 impregnated slices of the brain yield specimens with high anatomic detail. The brain must be well-fixed in a 10-20% formaldehyde solution. The brain is flushed in running tap water, bisected, and then sliced into 4 mm sections on a meat slicer. Moist filter paper is placed on the cut surface of the brain to support each resulting slice. Each slide with filter paper is placed onto a grid and the grids are stacked. The stack is flushed in running tap water then stored in distilled water in the refrigerator over night. In the morning they are submerged in cold acetone (-20°C) for dehydration via the freeze substitution method. One acetone bath is sufficient for the slices if an adequate fluid/tissue ratio is used. After 2 to 4 days in the acetone, the slices (on the grids) are submerged into the cold (5°C) polymer mixture (P-35/A-9, 100/2 parts) for 24 hours and then placed in a new polymer mixture for 24 hours. Next the specimens are impregnated at room temperature in a new polymer mix with the impregnation chamber darkened. Vacuum is increased hourly and finally stabilized at 20mm Hg and left at this vacuum overnight. Two sets of double glass plate units are composed by mating a 1/4" tempered glass plate with a single strength regular glass plate before they are used to make a chamber for casting the plastinated brain slice. A brain slice is placed on the thinner glass of one of the double glass plate units. A 6mm gasket is placed around the perimeter except for the top of the double gasket with the thin glass facing the specimen. Fold-back clamps are used to hold the mold together and the gasket in place. The mold is stood upright and filled with polymer mix. The unit is allowed to stand for 30 minutes in the dark to allow any bubbles to rise. Curing is initiated with a UV-light and then completed in a 45°C oven for 5 days. After cooling to room temperature, the mold is dismantled. The slides are then sawed to the desired size and the glass plates cleaned.