

**National Museum of American History, Behring Center
Preservation Services
Conservation Report**

Object: Uterine Model with Fetus, 12 weeks
Collection: Medical Sciences
Acc. # 1986.0478.
Date: July 20, 1999
Cat. #: 1986.0478.04
Treated By: Richard Barden

DESCRIPTION

Papier-mâché anatomical model of a uterus during pregnancy. In this model the fetus is approximately 12 weeks old. The model depicts the uterus, ovaries, fallopian tubes, fimbriated extremity of the tubes, the upper and lower broad ligaments, the round ligament, an artery, and veins. The exterior of the uterus is painted a shade of pink overall, with the arteries and veins painted in detail on top of the pink. The front of the uterus has an opening so that the fetus can be seen. Covering the opening and attached to the interior top surface is a translucent film that allows the interior to be seen without opening the model.

The central section of the model opens into two parts to reveal the interior of the uterus with the fetus and surrounding membranes. The section that lifts open is hinged at its top center. A pin and sleeve at the bottom center secures alignment of the two sections when the model is closed.

Dimensions Overall: Closed 3 5/8"(H) x 6.5"(L) x 1 13/16"(D).
Open 5 1/8"(H) x 6.5"(L) x 2 5/8"(D)

ULTRAVIOLET LIGHT ANALYSIS

The model was examined under longwave and shortwave ultraviolet light. Under longwave examination, the artifact had a white fluorescence that was slightly more pronounced on the main section of the model than the fallopian tubes and extremities of the model. This fluorescence was similar to the fluorescence of gum mastic or rabbit skin glue.

Shortwave examination of the model revealed an uneven dull green fluorescence similar to a natural resin or a glue such as rabbit skin or sturgeon. The translucent film also fluoresced a dull yellow color. Ultraviolet examination was inconclusive in identifying this material.

CONSTRUCTION

The main body appears to be fabricated from a light tan-gray paperboard that seems partially or fully saturated with a glossy material. Directly on the paperboard is a pink base coat that is the ground for the painted anatomical details. Blue and red painted lines upon the pink ground represent arteries and veins of the uterus. On top of the paint layers are remnants of a clear varnish layer. This model appears to be constructed in the same manner as the other uteri in this grouping. The body's main construction could be determined by examining Uterus 1986.0478.02, which has

more of its structure revealed through its losses.

CONDITION

There have been no previous restoration or conservation treatments of this artifact.

Structure

Overall the artifact appears stable in that no structural components are loose or separating. But the translucent film that covers the opening in the front of the uterus has completely separated from the body.

Surface

The entire exterior surface is covered with ingrained dirt. There is a crackle pattern overall with numerous areas of lifting and flaking paint and varnish. This pattern is especially prominent on both the front and back exterior main section. The original varnish has almost completely flaked off with only remnants remaining. Some of these remnants have darkened or yellowed slightly.

The interior is very clean by comparison to the exterior. The interior colors are bright and clear, and the anatomical details are crisp and well defined. The colors on the exterior are worn and faded, and the anatomical details less distinct.

TREATMENT

Purpose of Treatment

To prepare for display in the showcase exhibition, *Artificial Anatomy: Papier Mâché Anatomical Models*.

Treatment Proposal

1. Remove or reduce dirt and grime using mild organic solvents or the gentlest mechanical means necessary.
2. Consolidate and set down the lifting and flaking paint and varnish using a light-fast, reversible adhesive and gentle mechanical methods.
3. Secure in its original configuration the translucent film to the interior of the top of the model using an appropriately strong, reversible adhesive.
4. Apply a protective, clear, light-fast, reversible varnish to the exterior of the model.

Treatment Report

1. The following solvents were tested to determine the best method for removing or reducing the surface dirt: room temperature distilled water; distilled ice water; spittle; ethanol; ethanol:distilled water 1:1; acetone; acetone:ethanol 1:1; petroleum benzine; and toluene. Distilled ice water, room-temperature distilled water, and spittle were the best solvents for cleaning. Cotton swabs wetted with these solvents removed the dirt.
2. Distilled water, gelatin, or hide glue were used to consolidate the lifting and flaking areas. A heated spatula (120_C) was used to soften the lifted areas and to assist in setting down the flakes. Water was used to set down the thinnest areas. Gelatin was used for thicker, heavier sections. A little hide glue was used to adhere the thickest sections in

place.

3. The translucent film was adhered in its original configuration using gelatin applied with a brush.

4. A 12.5% solution of Soluvar Matte Picture Varnish¹ in petroleum benzine was applied by brush to the entire exterior of the model.

PHOTODOCUMENTATION

Color slides were taken before and after treatment.

¹Liquitex Soluvar Matte Picture Varnish, 12.5% in petroleum benzine, manufactured by Binney & Smith Inc. Easton, PA, 18044