

# Field Conservation of Bone

Comparison of Consolidants

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# A Good Consolidant Should...

- Adhere properly and impregnate well
- Be both strong and flexible
- Be non-toxic
- Have both short and long term reversibility
- Not affect the colour of bone
- Have high concentration in low viscosity

# Acryloid B-72

- Comes in pellets dissolved in solvent
- Spreads easily and penetrates quickly
- Dries quickly, and is stable
- Can make bone brittle
- Difficult to apply to cancellous bone by brushing on the consolidant
- Dries to a glossy finish on cortical bone

# Acrysol WS-24

- Very small particle size allows for good penetration of fragmented bone
- Is non-toxic and the pH is close to neutral
- Good for damp to dry material
- Prevents cracking and spalling
- Penetrates well on cortical bone
- Can be mostly removed with acetone

## But the down side...

- Only penetrates cancellous bone well during emersion, which takes significantly longer to dry
- Difficult to reverse with porous materials
- More than one coat will leave cortical bone with a semi-glossy finish, and cancellous bone with a glossy finish

# Butvar B-98

- Powdered form
- Adds strength, but still flexible
- Stable with good aging characteristics
- Dries translucent
- Light
- Soluble in several solvents

# However...

- Brushing this on cancellous bone will cause damage
- This was the only drawback noted by Kres and Lovell in their comparison of consolidants

# Rhoplex AC-33

- Liquid acrylic resin
- Can be diluted with a number of solvents
- Colourless
- Durable and stable
- Can be used on saturated bone



# But on the other hand...

- Has a pH of 9.6
- Leaves excess solution on bone surface
- Good coverage hard to obtain
- Leaves a glossy or semi-glossy finish on bone
- If used too concentrated it can crack and exfoliate bone

# In Conclusion

- For wet bone in the field, Rhoplex AC-33
- For dry bone, Butvar B-98

# Further Reading

- Johnson, Jessica S. 1994. *Consolidation of Archaeological Bone: A Conservation Perspective*. *Journal of Field Archaeology* 21:221-233.
- Kres, Leah A. and Lovell, Nancy C. 1995. *A Comparison of Consolidants for Archaeological Bone*. *Journal of Field Archaeology* 22:508-515.

# Further Reading Con't

- Sease, Catherine. 1992. *A Conservation Manual for the Field Archaeologist. Archaeological Research Tools No. 4.* Los Angeles: University of California, Institute of Archaeology.
- Stone, Tammy T., Dickel, David N., Doran Glen H. 1990. *The Preservation and Conservation of Waterlogged Bone from the Windover Site, Florida: A comparison of Methods.* *Journal of Field Archaeology* 17: 177-186