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Handout on Handling Finds

1) During the Excavation

- In the case of delicate finds, it is essential to consult the restoration laboratory (Block recovery, transport protection, etc.)
- Finds recovered with wet soil (e.g. organics, amber, iron) must be handed over immediately to the restoration laboratory.

Preventive treatment and recovery of finds according to the guidelines of the Federal Office for the Protection of Monuments Austria, see "Standards for the Conservation Treatment of Archaeological Finds":
https://bda.gv.at/fileadmin/Medien/bda.gv.at/SERVICE_RECHT_DOWNLOAD/Standards_fuer_die_konservatorische_Behandlung_von_archaeologischen_Funden.pdf

In General:

Unearthing of finds:

- Avoid damage by excavation tools!
- Avoid complete surface uncovering (especially grave finds)!
- Do never uncover organic structures!
- The more fragile and complex the find, the less work should be done to unearthing it!

First treatments:

- Preservation of the substance of the finds from the first moment of viewing (during excavation) to the time of conservation and restoration.
- Protection from direct exposure to sunlight and uncontrolled drying out

Packaging:

- Maintenance of the climatic soil parameters
- Protection from damage; mechanical protection
- Ceramics, stone etc. dry storage: OPEN FIND BAGS!
- Organic finds, amber, wood, bones, antlers, ivory, etc.: vapour-proof packaging, protection against drying out CLOSED FIND BAGS!
- Packaging materials: PE plastic bags with clip closure, PE film, PE foams, PE boxes and tins, plastic fleeces, cellulose-free microfibre, unbleached cotton fabrics, stretch films, bubble wrap and plastic adhesive tapes (for block salvage; e.g. brown "parcel tape"), acid-free paper, kitchen roll, plaster bandages (stretch film between object and plaster!). No "green" paper towels, no toilet paper, newspaper (=chlorine bleached) or textiles as padding for metals!!!

Storage Conditions:

- Monitoring and maintenance of the recovered finds during storage until actual conservation and restoration.
- Prevention of mould, desiccation and other damage

Documentation is IMPORTANT, as any restoration and conservation work changes the state of preservation!

Ceramics

- Slow drying (in the shade) of the damp ceramic fragments; under no circumstances leave them in closed plastic bags!!
- Cleaning after recovery: Depending on the state of preservation, with appropriately soft brushes, dry or wet. ATTENTION to organic layers, cooking crusts and antique patching!!

Metals

- Gold and silver: Store in stable, pollutant-free containers with sufficient shock-absorbing backing (e.g. made of foamed PE or acid-free paper). Storage at uniform temperature
- Copper, copper alloys (bronze, brass etc.): Attention: organic material may be preserved on the surfaces! No rapid drying (material stresses can lead to cracks). Stable and gas-proof packaging (PE films, plastic containers).
- Iron: Block recovery, depending on stability. Caution: organic material may be preserved on the surfaces! If finds will be conserved immediately after their recovery, they can be packed with the damp surrounding soil (plastic wrap) and should be stored in a cool place, but only for a few days. If iron finds are only subjected to restoration at a later date, either the humidity or the oxygen content should be greatly reduced (humidity in the object should be below 18 %): through-drying of iron at 110°C for 1-2 hours (e.g. oven); then sealing in PE film with vacuum or nitrogen gassing.
  - Under no case iron finds should stew wet in the finds bags for a longer time!
  - Store at constant temperature and low humidity (<30%).
- Lead: Packaging in pollutant-free containers or films, avoidance of humidity.

Stone

- Recovery: securing for transport, controlled drying.
- No salvage possible: enclosure with good air circulation and without direct contact with the ground
- Controlled drying in the case of coloured frames or other surface designs, no sunlight
- Storage: frost-free and preferably constant climatic conditions

Wall painting and mosaic

- Protect exposed surfaces with wall painting and mosaic remains from drying out by using foils; no direct sunlight (damage due to UV radiation), slow drying.
- Recovery: Stabilise fragments with foil and plaster bandages, careful removal; in case of overlapping fragments: Block salvage, injection of adhesive solutions in case of lost bond between wall and plaster (synthetic resin dispersions, casein-alcohol mixture).
- Storage: sturdy plastic boxes, also in a bed of sand. Climate: low humidity and good ventilation (mould growth).

Organic soil finds

Recognition of organic materials, features:

- Unusual earth discolouration, indication of material that has already completely passed away (pseudomorphosis). Documentation of shape, direction, spatial extent, etc.
- "unnatural" structure, e.g. when illuminated from the side: can be caused by past fabric when the weave structure is still visible.
- Accumulations of "grains", etc.: Can indicate old plants (seeds) or grain.

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Initial treatment:

- Recovery in block or with volatile binders (cyclododecane)
- Maintaining the humidity of the material after removal! Appropriate airtight plastic packaging materials
- Attention: Mould formation! Possibly spray on ethanol/alcohol 96%
- Metal findings: Preservation of corrosion layers
- Storage at 4 °C (avoid mould growth)
- Wood: packed airtight or floating in water
- Salt finds: no change in humidity!
- Ice finds: keep temperature below freezing point!
- Dry textiles: stabilisation & recovery; storage protected from light and dust, cool at 50% rel. humidity; monitoring until restoration: microbial activity!

Amber

- Maintain humidity of the material (pack airtight with surrounding soil material) Do not allow to dry out!!!
- Packaging in stable containers, shock-absorbing pads
- UV protection: dark storage
- Cool storage

Send freshly excavated finds IMMEDIATELY to the laboratory. Do not wash!

- Storage: airtight packaging (without chlorine or sulphur oxide); room climate: constant temperatures of 17-25 °C; relative humidity of 40-50%;

Bone, antler, ivory, horn, glass

- Finds made of ivory or bone must be brought to the conservation laboratory in a wet state. Drying too quickly causes cracks and deformations. Even more corroded glass must be kept humid!
- Preserve humidity of the material in the object until conservation (shrinkage and cracks in bones, flaking of corrosion layers in glass).
- Packaging: strong, airtight containers
- Dark and cool storage
- Attention Mould formation possible!
- Storage: The optimal storage of ivory, bone, horn, antler and glass finds is at 18°C and a relative humidity of 55%.

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2) Before restoration

- Incoming objects must be discussed in advance with the head of the restoration department: Urgency, financing, questions, documentation, procedure after restoration
- The measure number, find or inventory number as well as the object identification must always be written on the find label!
- When the finds are handed over to the laboratory, a reliable finds list (also digital) must always be enclosed.

3) During restoration

- If new questions arise during the restoration, such as the unexpected discovery and uncovering of organic remains, the excavation director is informed immediately so that further steps can be taken, e.g. for scientific investigations.

4) After restoration

- When drawing and photographing metal objects, they may only be touched with gloves (protection for the object: hand perspiration contains harmful salts and sulphur; protection of one's own health: restored objects may be coated with harmful substances).
- To fix the restored objects during photographic documentation, do not use plasticine or other plasticine masses (contain pollutants and harmful fats). Museum wax is suitable for this purpose (http://www.cwaller.de) or Tecero-Wachs 30201 white (http://www.deffner-johann.de).
- After documentation, the objects must be optimally packaged again with acid- and pollutant-free materials for long-term storage. Optimal storage and regular monitoring ensure the long-term preservation of the restored finds.
  It may be necessary to return delicate finds to the laboratory for professional packaging, e.g. especially in the case of iron finds: Sealing in nitrogen/vacuum with special foil.

5) Exhibition:

- If objects are to be exhibited after restoration, restoration specialists should be consulted during the planning of the exhibition to ensure optimal climatic conditions (e.g. no temperature fluctuations, optimal rel. humidity, lighting) and pollutant-free materials in the vitrines.
- Annual monitoring of finds in external permanent exhibitions, such as in Aguntum, Fließ, Lavant, etc.

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