



Latvijas Nacionālais
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RESTORATION OF VIDZEME MANOR VAKU BOOKS (17TH-19TH CENTURIES)

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The vaku books of Vidzeme manors, pastorates, and quota lands. These records contain information on the size and productivity of agricultural lands, the names and scale of peasant households, and the extent of dues, labour obligations, and other related matters.

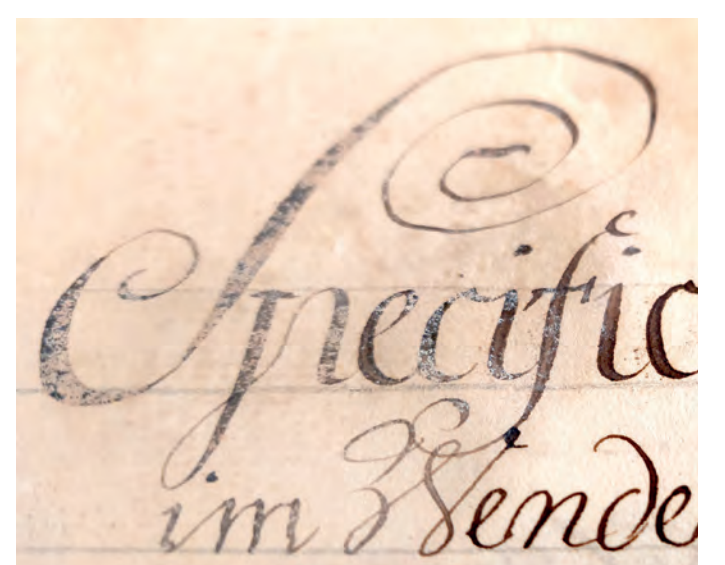
GENERAL DESCRIPTION

A total of 17 archival units (folders) were received for restoration, comprising 1,284 pages. In some folders, documents are sewn together, in others, they consist of bundles of folded double sheets. The documents are written with iron gall ink (identified using Fe²⁺ indicator paper).

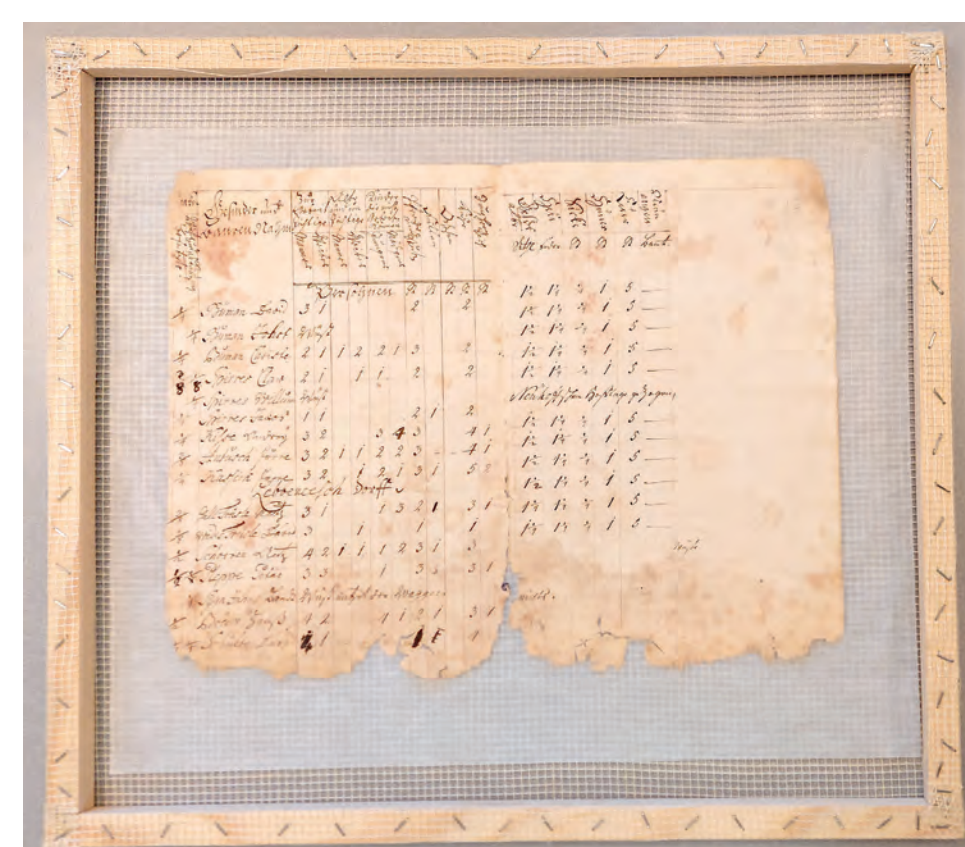
The documents were received in early 2024, but due to their volume, condition, and complexity, restoration only began in mid-2025. All documents exhibit similar types and degrees of damage, including particularly extensive microbiological deterioration. Microbiological testing was performed using *Liofilchem Contact Slide 2 (PCA + TTC + Neutralizing / Rose Bengal CAF agar + Neutralizing)*. Mold growth was observed on the contact slides, and in 2024 the documents were disinfected in an ethylene oxide chamber. A follow-up contact slide test showed no mold growth.



1., 2. Sheet deterioration



3.,4. Mold residue removal before / after



5.-10. Sheet wet treatment between mesh screen frames

RESTORATION PROCESS

Deterioration description:

Paper is partially degraded, soft, and extremely fragile. Some sheets have flaking fragments and cannot be handled without supportive tools. The paper is covered with a thin layer of dirt and mold residue. Stains of various sizes and colors are caused by mold, water and ink seepage. Brittleness, fading, corrosion of iron gall ink and cracking in thicker ink areas are present. Tears in paper, folded fragments, material loss, yellowing are also observed. The most serious issue is the combination of mold related brittleness and the corrosive effects of iron gall ink, forming a complex set of damages. A two-stage treatment process involving wet treatment and sheet consolidation is planned for these documents.

Pre-treatment:

Gentle dry cleaning is performed on suction cleaning table using soft brush, scalpel, and eraser crumbs on the more stable parts of the sheets.

Wet treatment:

Ink solubility is tested with water and a 30/70 water ethanol solution. Sheet spraying with the 30/70 water ethanol solution, immersion in a filtered water bath, calcium phytate solution, and finally calcium hydroxide solution (average pH 8.5). Surface spraying on both sides with a 0.3% – 0.4% gelatin adhesive solution. Sheet drying between layers of non-woven polyester and cardboard, without pressure.

Wet treatment process adaptation:

Due to the need for extended wet treatment, custom screens were created – a wooden frame covered with mesh. Between two such screens and Bondina layers fragmented parts of the sheets are held in place, greatly facilitating the wet treatment process.



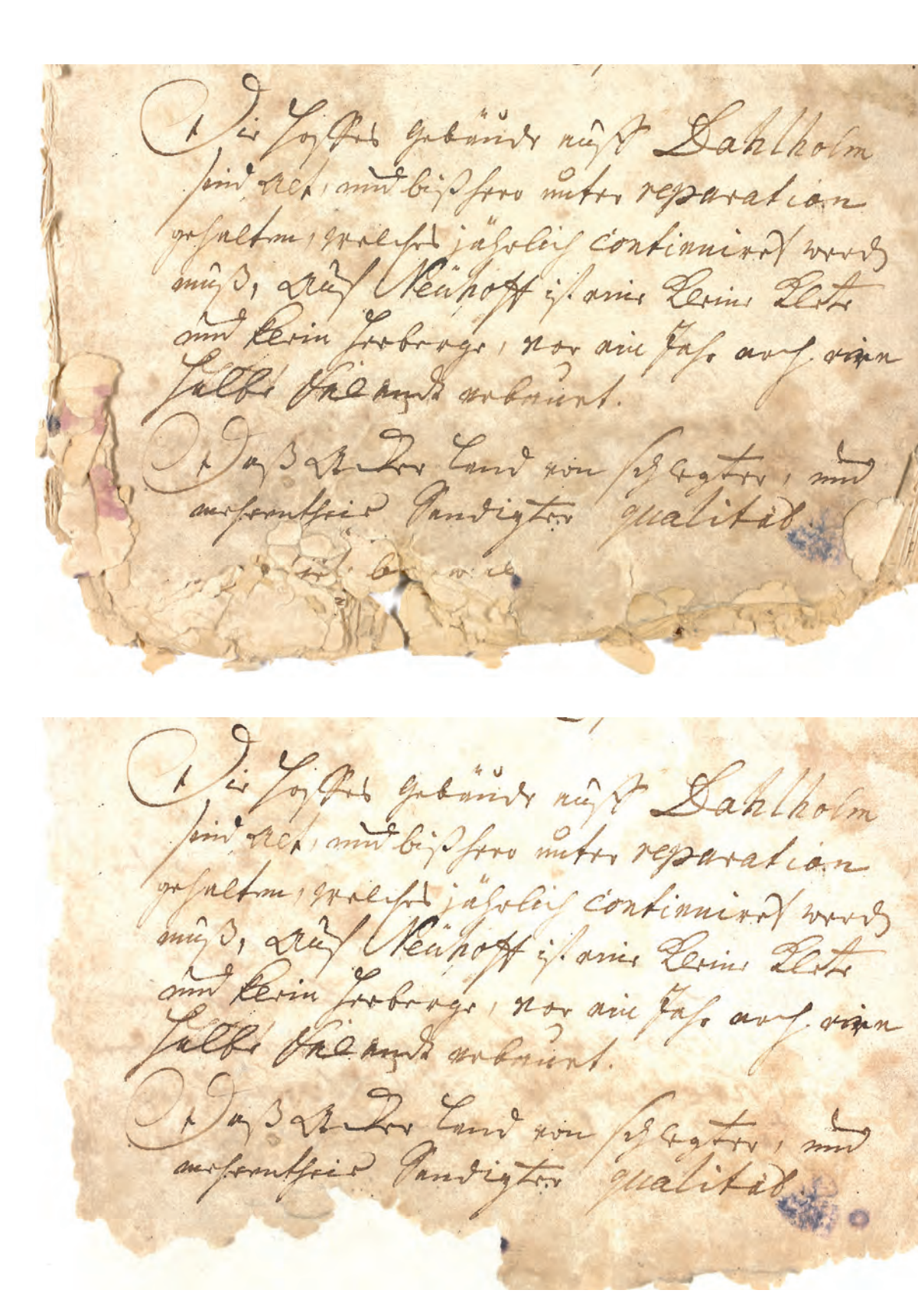
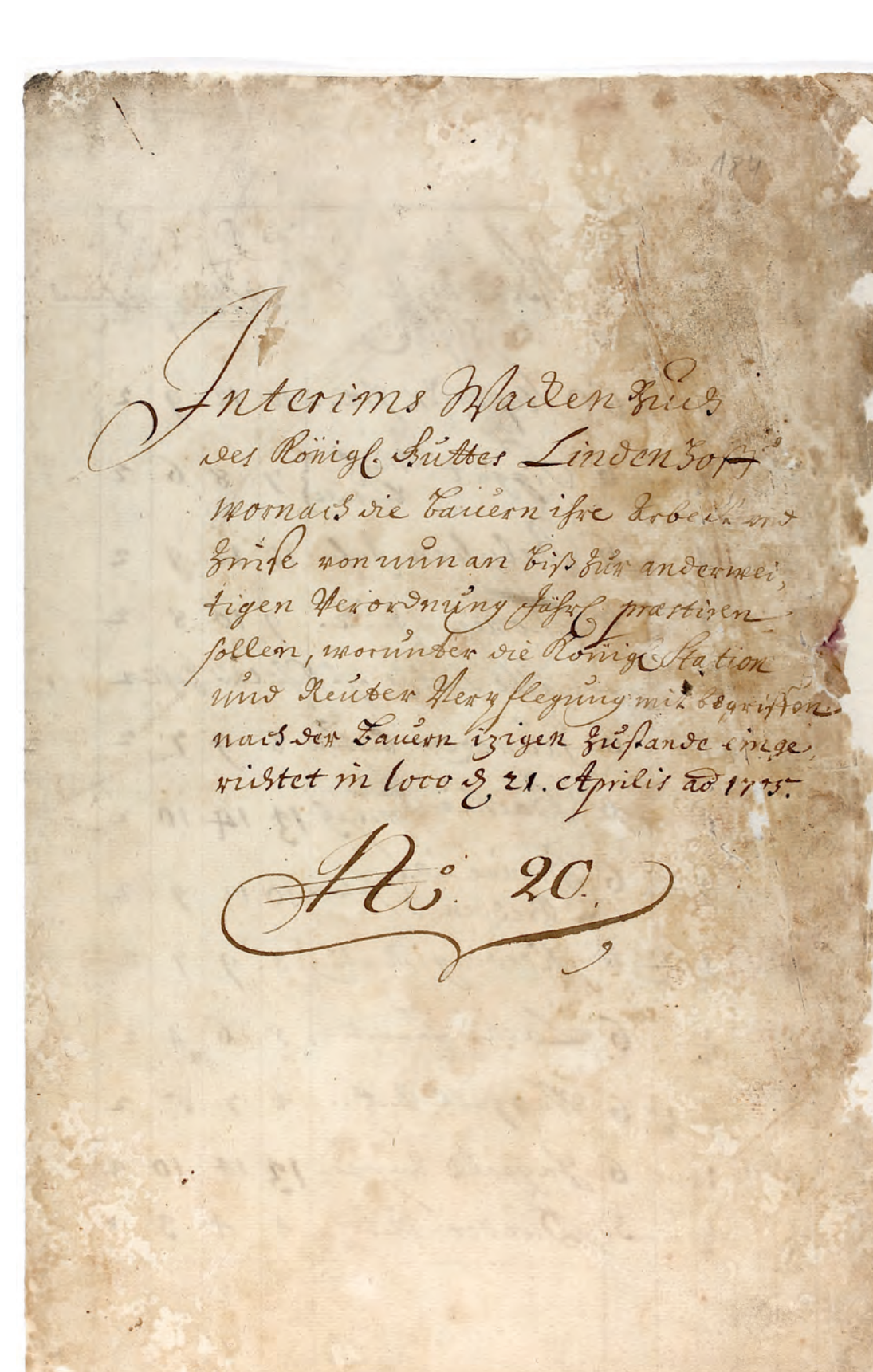
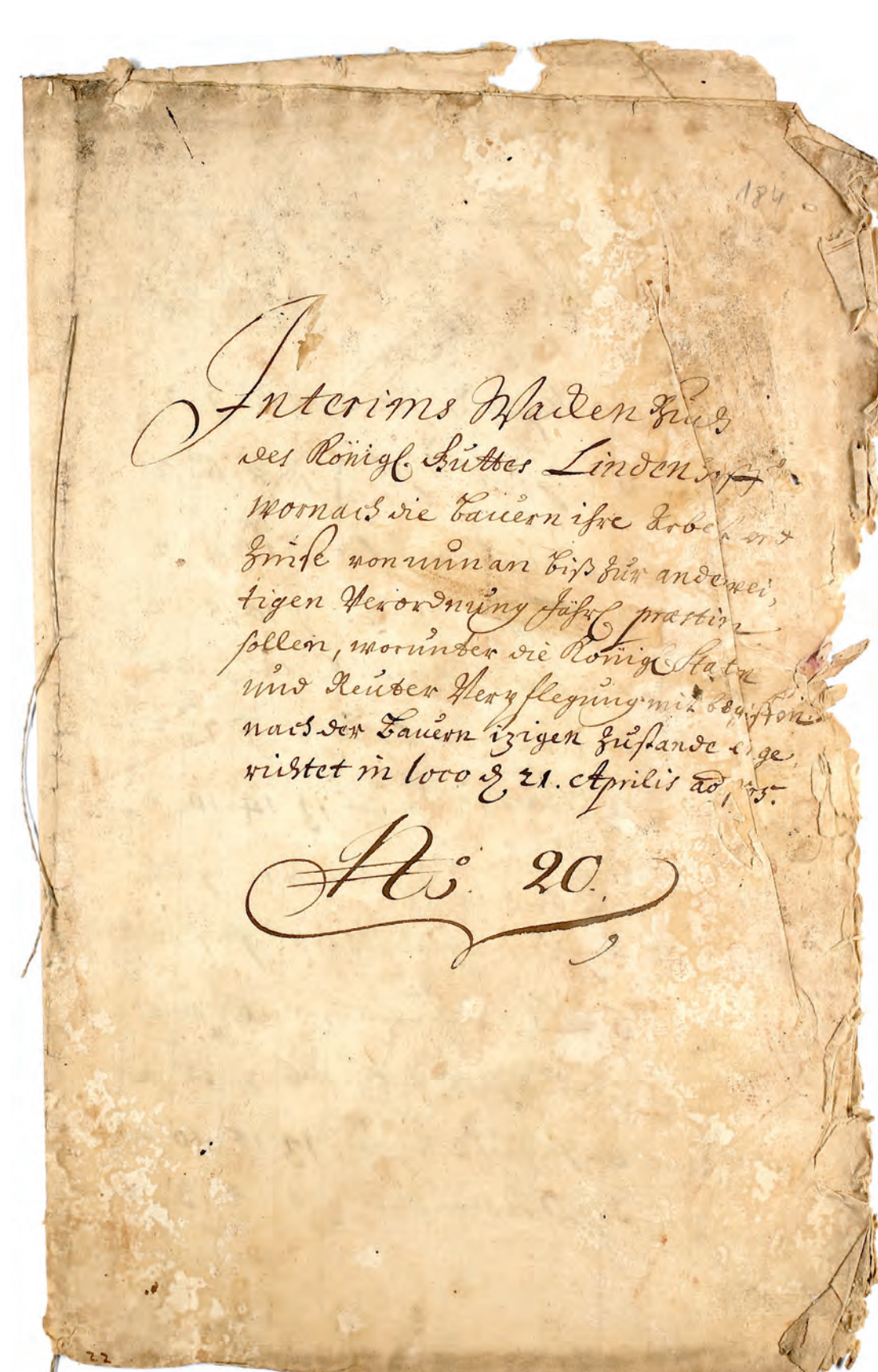
11.-14. Sheet consolidation process

Sheet consolidation:

Dried pages are re-wetted with the 30/70 water ethanol solution and a 1.2% Tylose MH300 solution. Losses are filled with Japanese paper Hosokawa Elfenbein 39 g/m², tears are reinforced, and overall sheet stabilization is performed with Tengujo 5 g/m² and 13% wheat starch paste. Sheets are pressed and dried between layers of non-woven polyester and cardboard in a press. The excess Japanese paper is cut to the original sheet size, and the original order of pages and sewing is renewed.

BEFORE AND AFTER

This work is in progress, so far 103 out of 1284 sheets have been consolidated.



15., 16. LV_LNA_LVVA_F7172_4_117, 1. sheet before and after restoration

17., 18. LV_LNA_LVVA_F7172_4_117, 184. sheet before and after restoration

19., 20. LV_LNA_LVVA_F7172_4_156, 2. sheet fragment before and after restoration