

Scientific Understanding of 19-20C Tibetan Manuscript

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Fig.3 Map of Asia and Tibet in China (red area)

Introduction

A great number of Tibetan manuscripts are scattered and held in libraries, museums, and universities of the UK, China, German, etc., even though the exact number of this collection is not completely clear because no comprehensive survey has been performed yet.

So far, a large body of scientific research has been conducted on European paper [1], and little study on Islamic paper [2] and Chinese paper [3]. However, scientific evidence of Tibetan paper is almost completely lacking. Therefore, this research aims to explore the **material composition** and **paper durability** of Tibetan paper based on material collection in UCL ISH, as shown in Fig.1. These two properties for filling in the knowledge gap and preserving Tibetan paper are both necessary and urgent, particularly facing with such an amount of collections worldwide.

Methodology

Material Composition

- ✓ DP test, pH measurement, fibre identification and sizing analysis will be conducted by viscometer, pH meter, microscope, starch and protein test on 100 samples.

Paper Durability

- ✓ Accelerated ageing of 10-20 Tibetan papers under T/RH will be carried out to measure pH and DP.

Research Questions

- What is the **acidity** and **DP** values of Tibetan paper?
- How does **fibres** of Tibetan paper look like? Is there any **sizing**?
- How does Tibetan paper **degrade** under different conditions (temperature and relative humidity)?

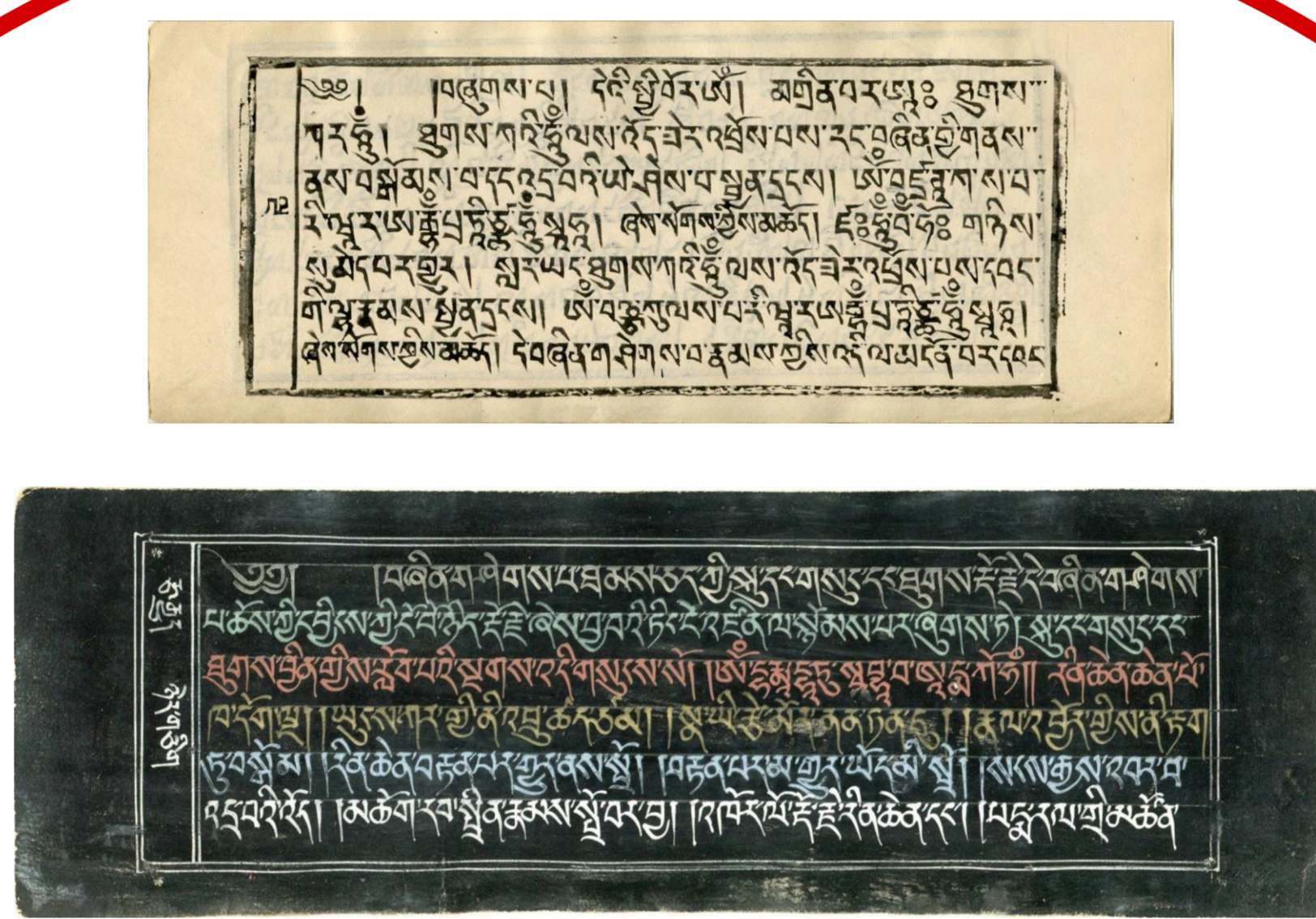


Fig. 1 Material collection of Tibetan paper in UCL ISH

Expected Outcomes

- **Fibre identification:** Fibre of Tibetan paper is thin and long with vertical striations (Fig.2).
- **Sizing test:** To figure out whether starch or protein sizing was used during Tibetan papermaking.
- **pH measurement:** To understand that Tibetan paper is acidic, neutral or alkaline and its pH uncertainty.
- **DP identification:** Uncertainty of DP is possibly more than 10-20% due to Tibetan paper inhomogeneity.
- **Ageing:** Kinetics analysis of accelerated degradation of Tibetan paper (degradation rate, activation energy).

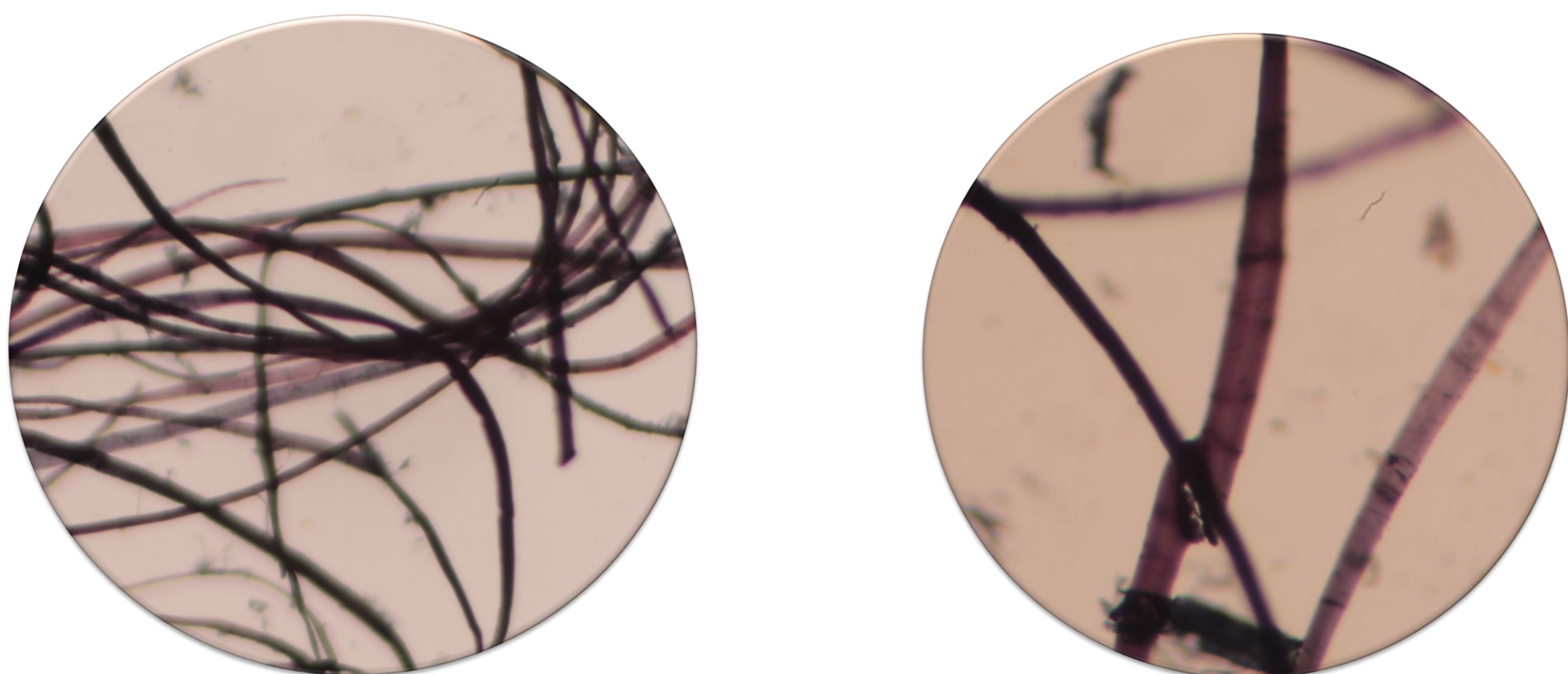


Fig. 2 Fibre identification of Tibetan paper in UCL ISH
Long, thin, ribbon-like fibre
Vertical striations, Hemp-like fibre

Reference

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