

Trace materials on footwear – Science or Ichnomancy?

The perils for interpretation of soil trace evidence.

Ruth M Morgan, Jessica Ainley, Kirstie Scott and Peter A Bull



Overview

Soils and sediments

Experimental studies

- Temporal
- Spatial

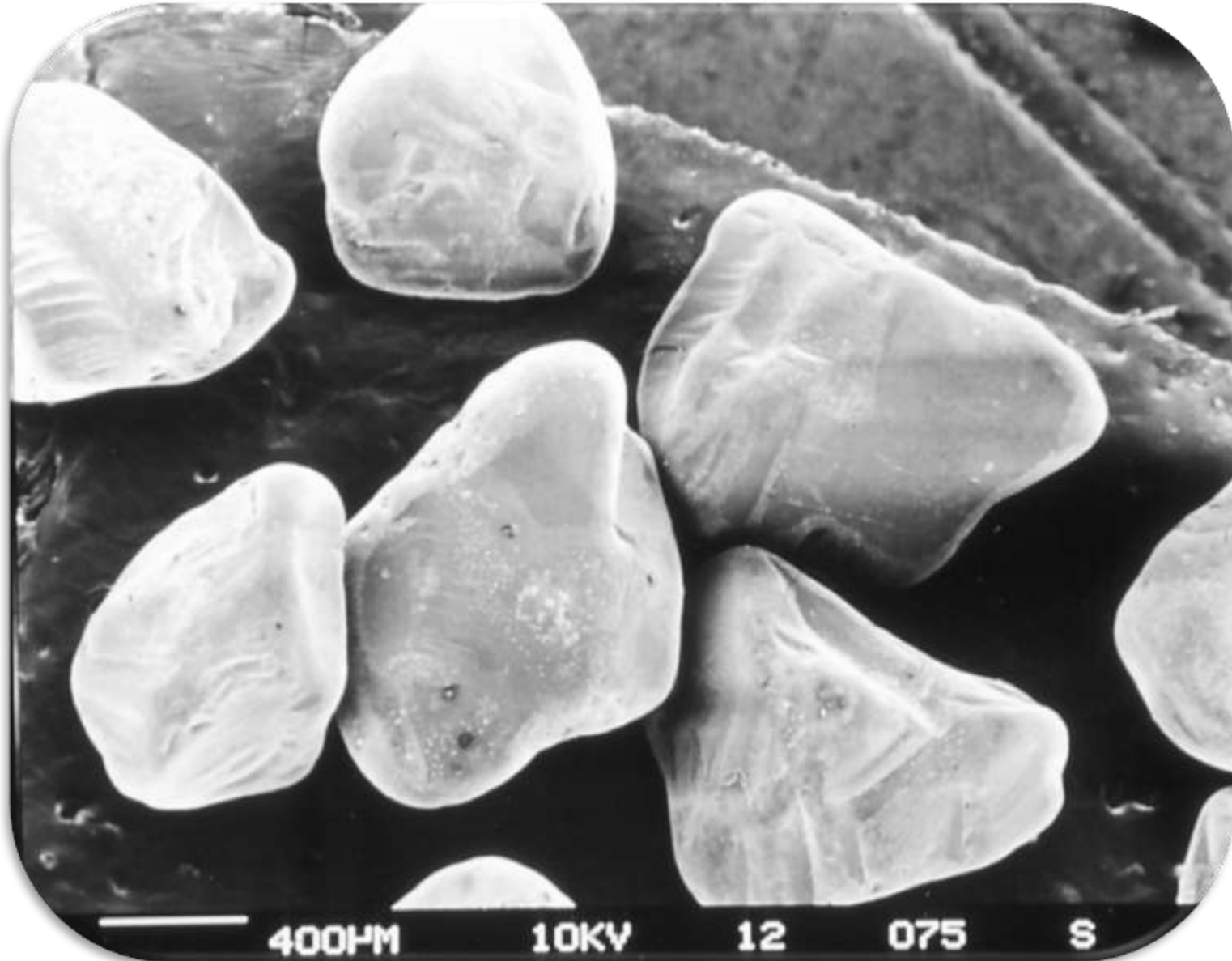
Soils and Sediments

Physical, chemical, biological

Transferability

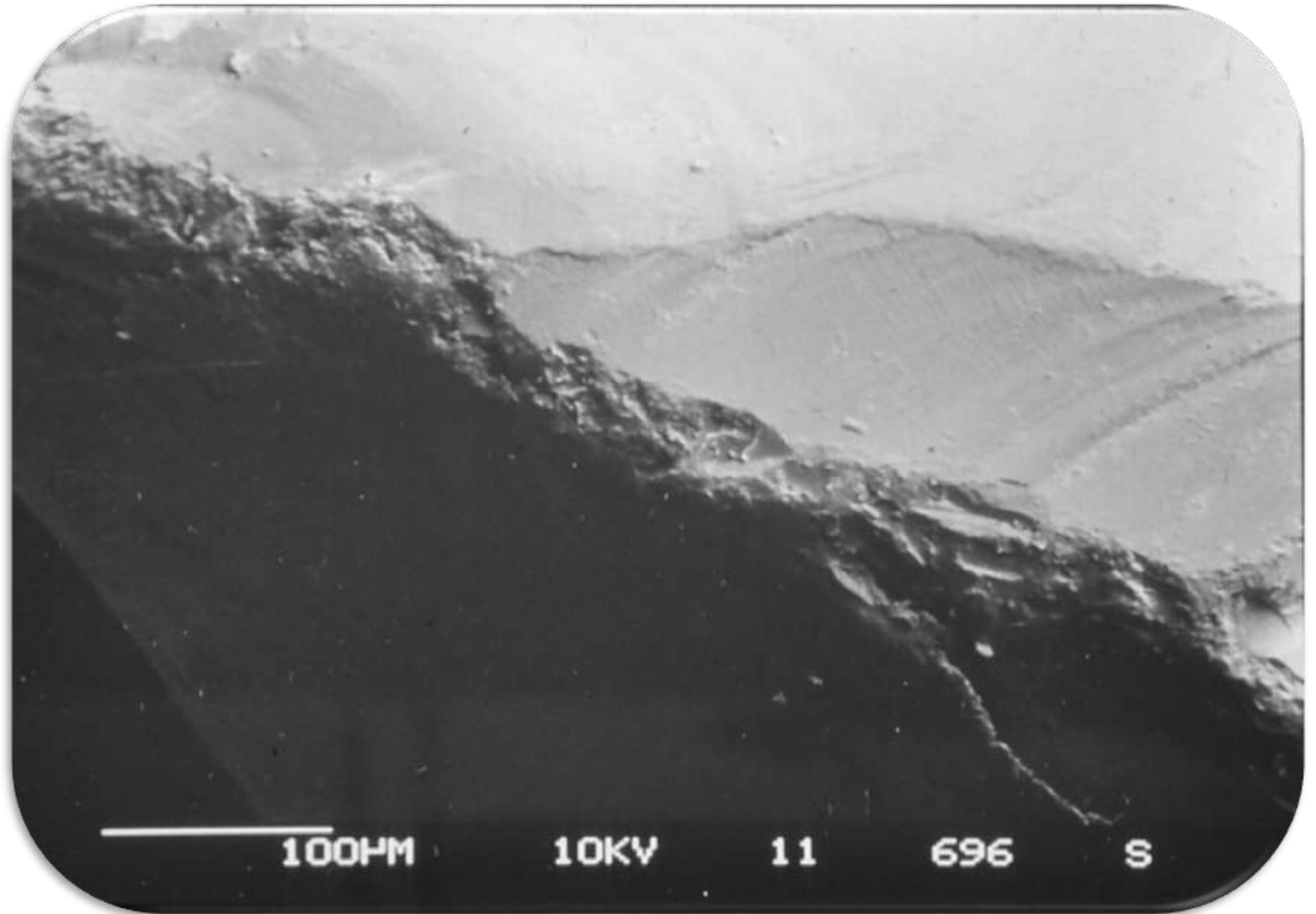


Quartz grain surface texture analysis



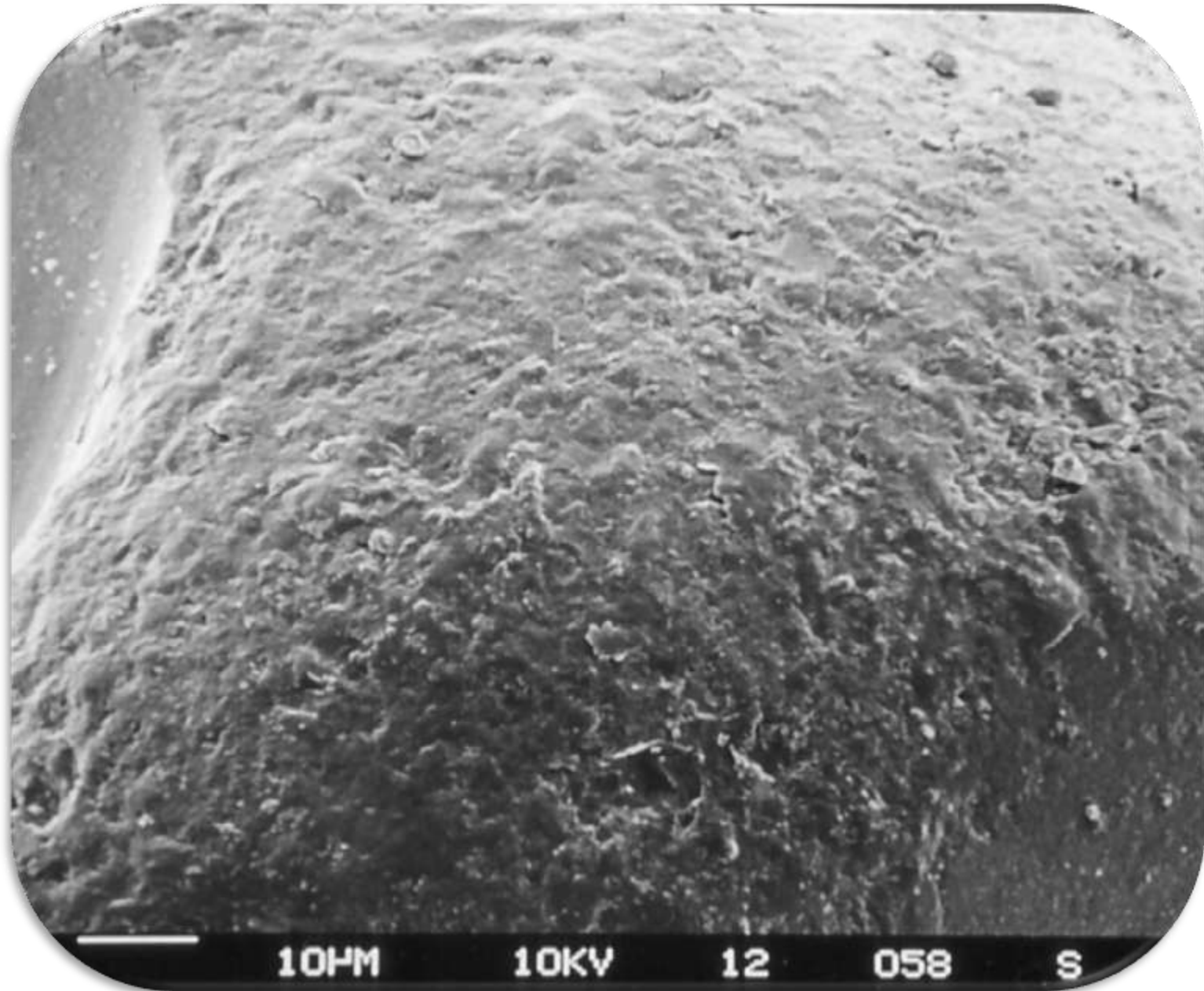


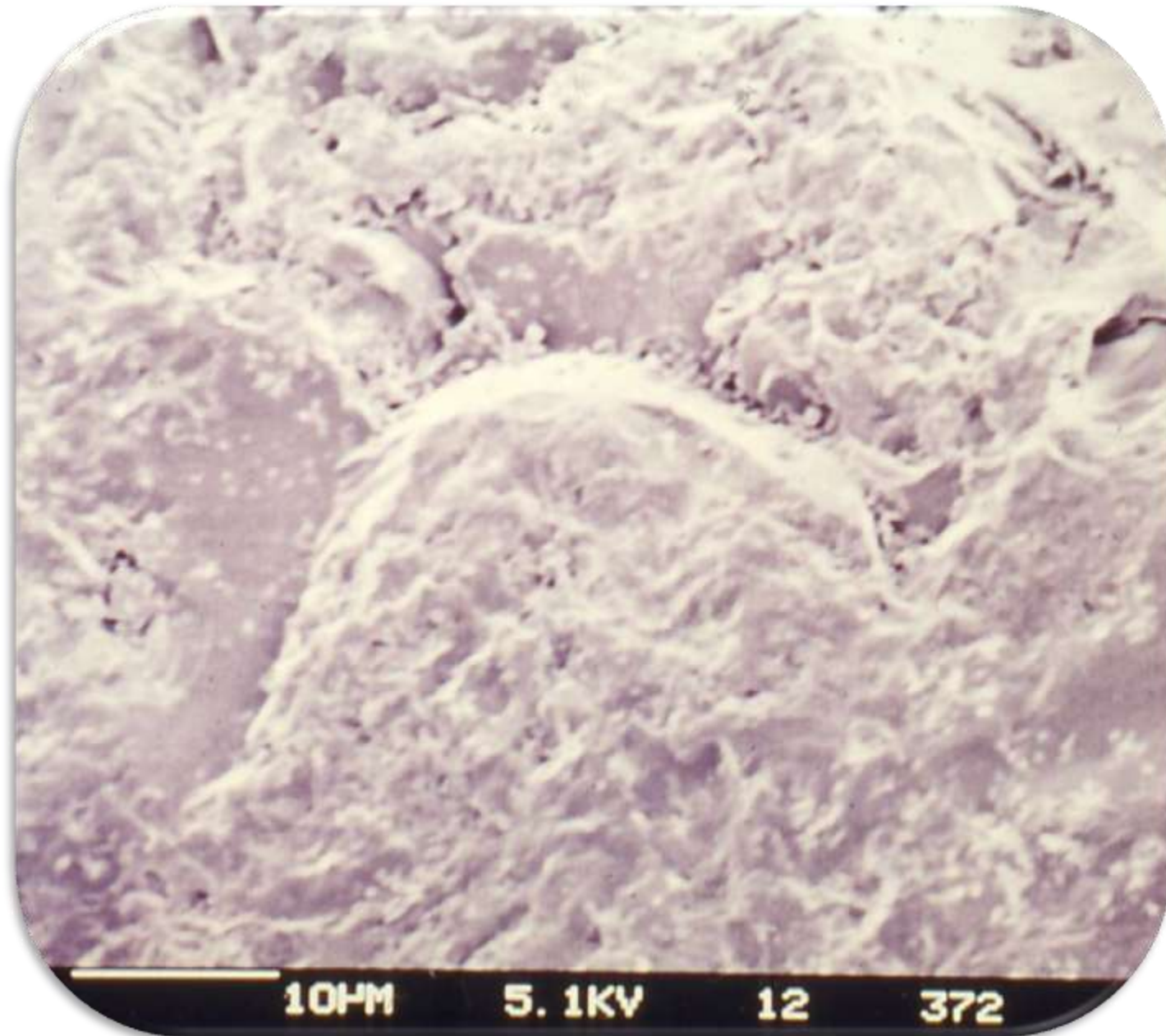




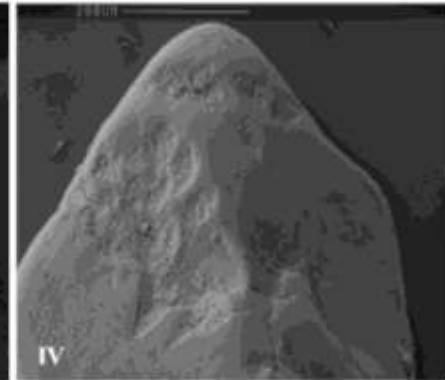
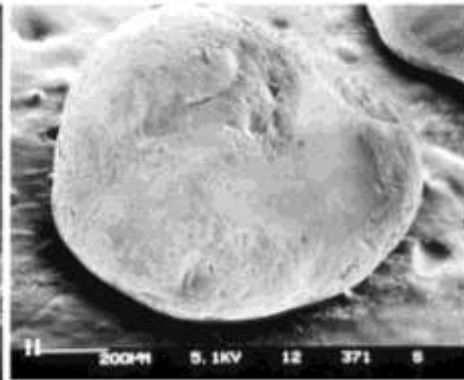
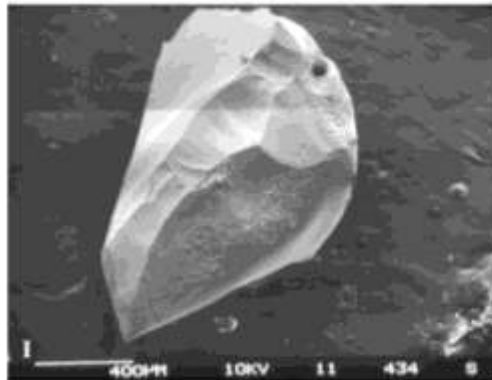




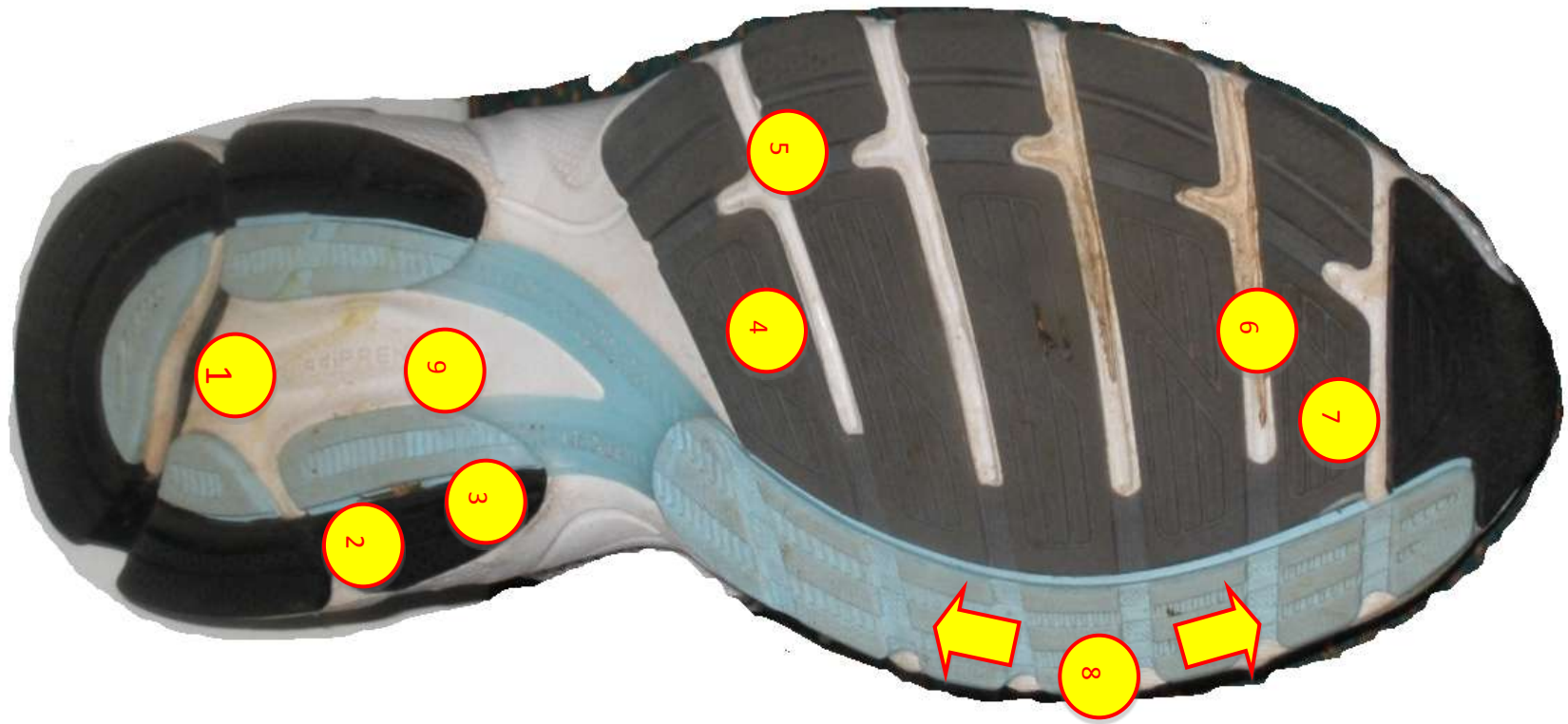


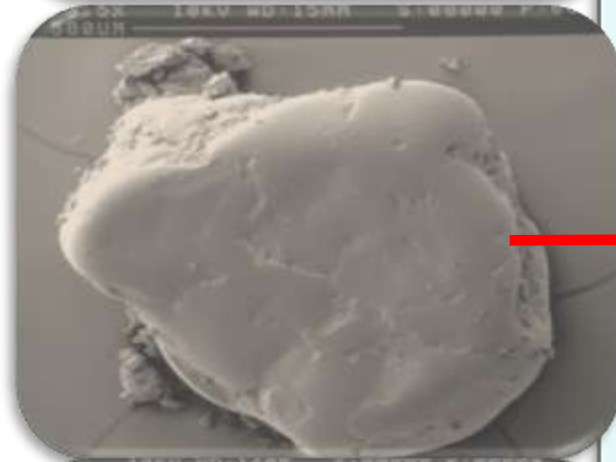


Forensically relevant classification system established
(Bull and Morgan 2006)

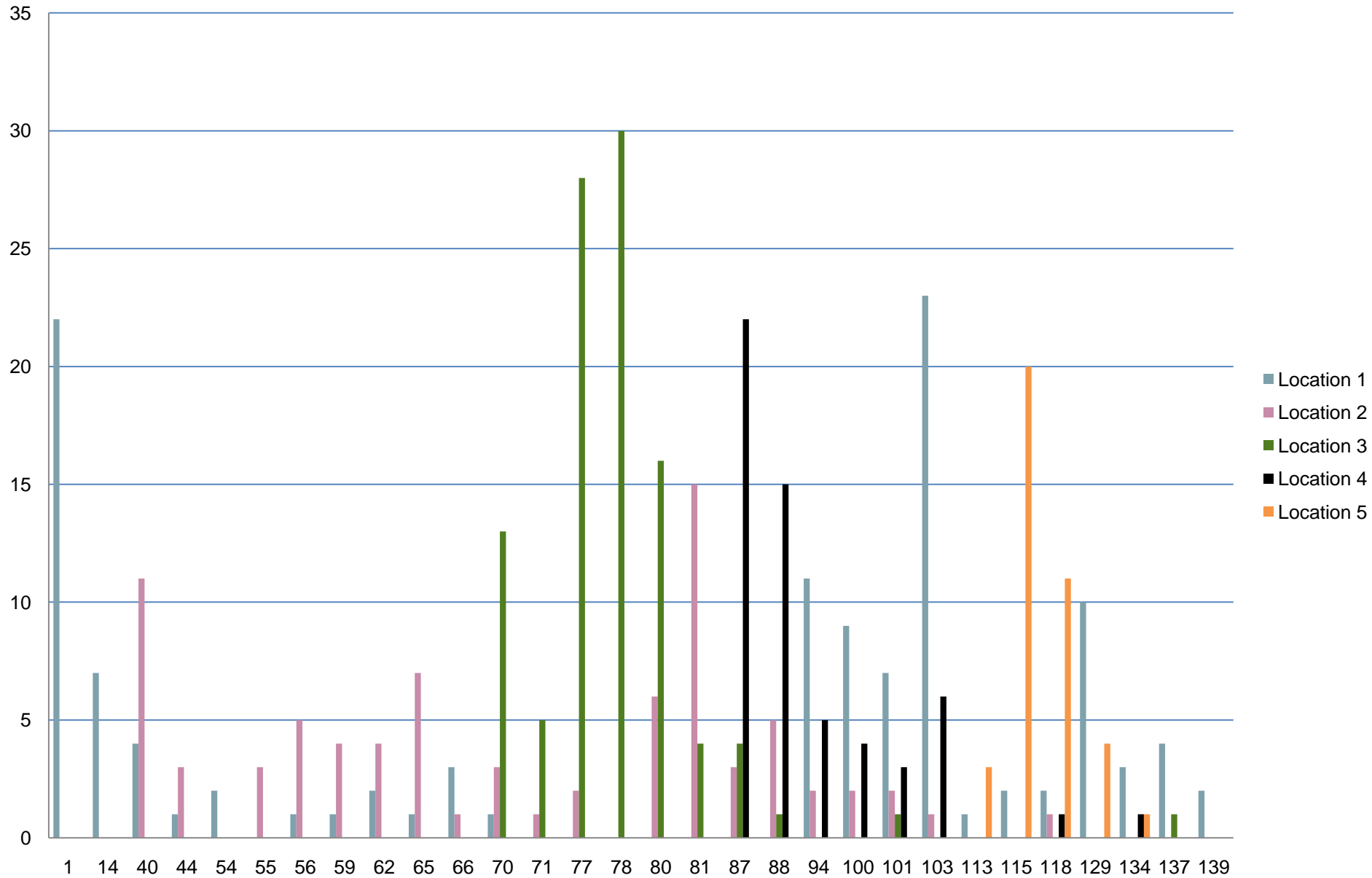


Temporal considerations

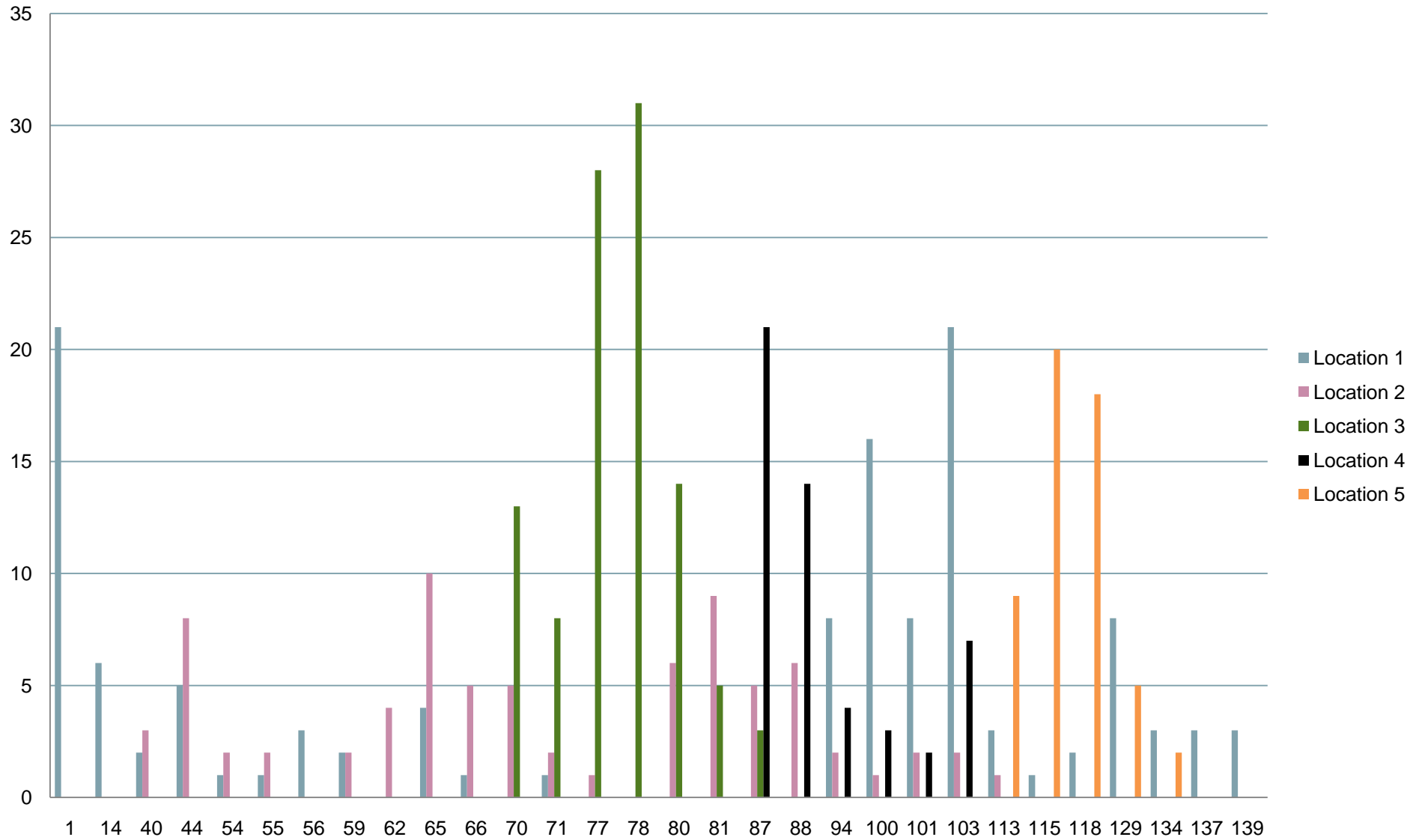




Left shoe

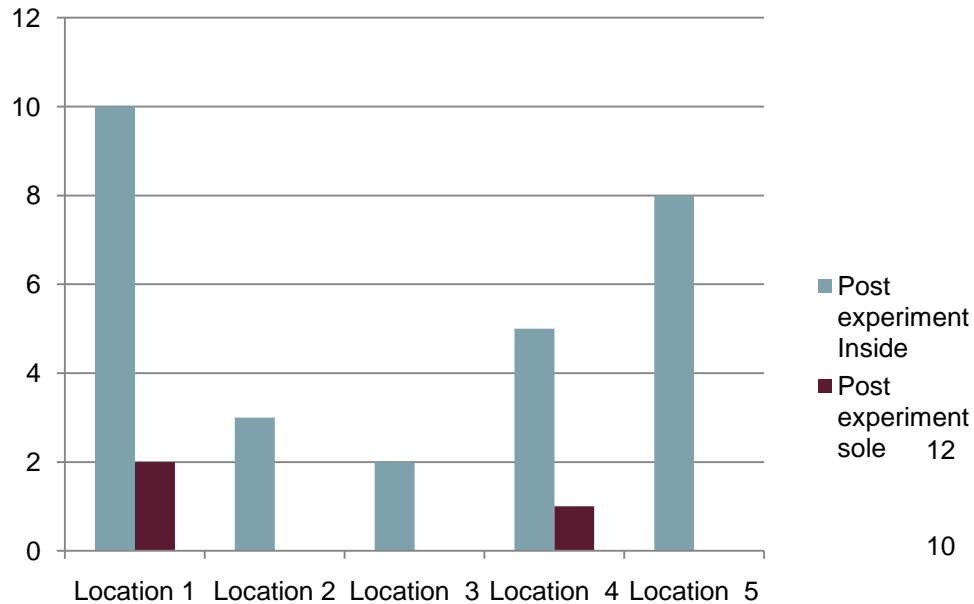


Right Shoe

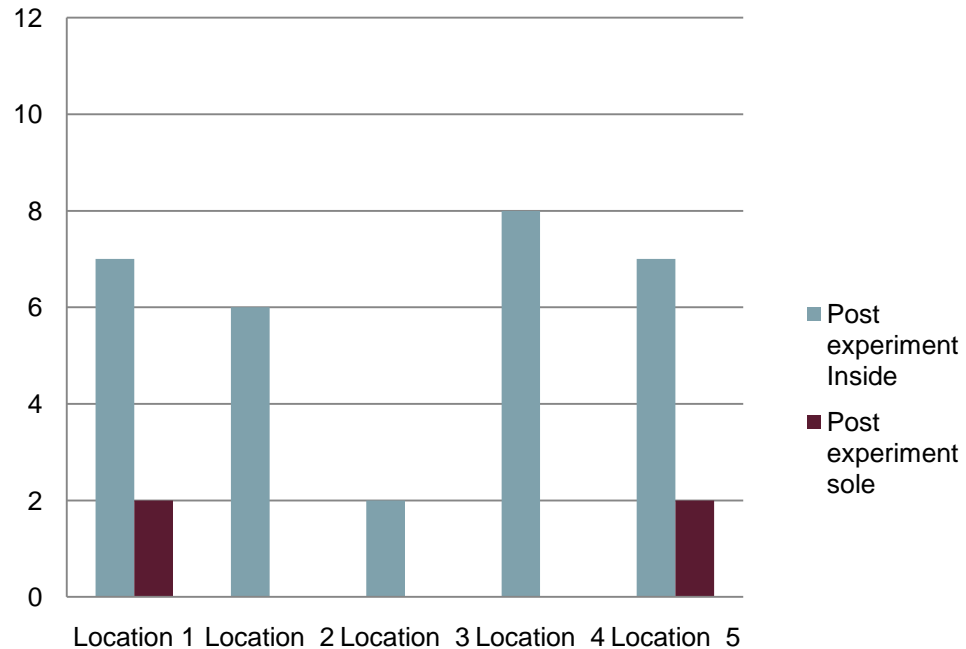


After 140 days....

Left Shoe

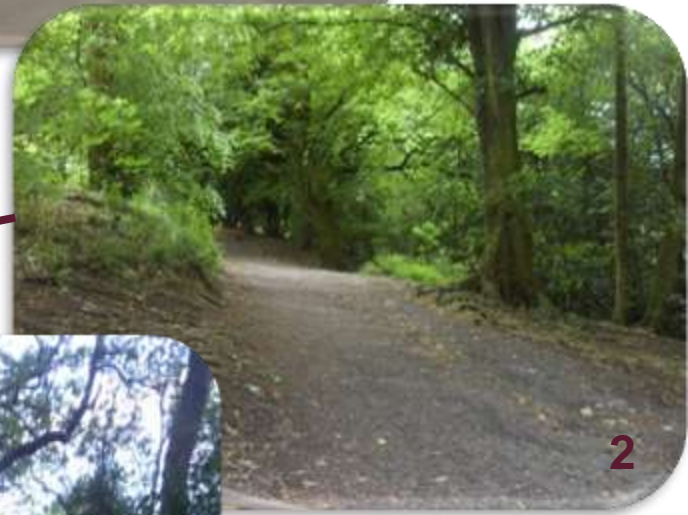


Right Shoe



Spatial Considerations







Grain Type 1

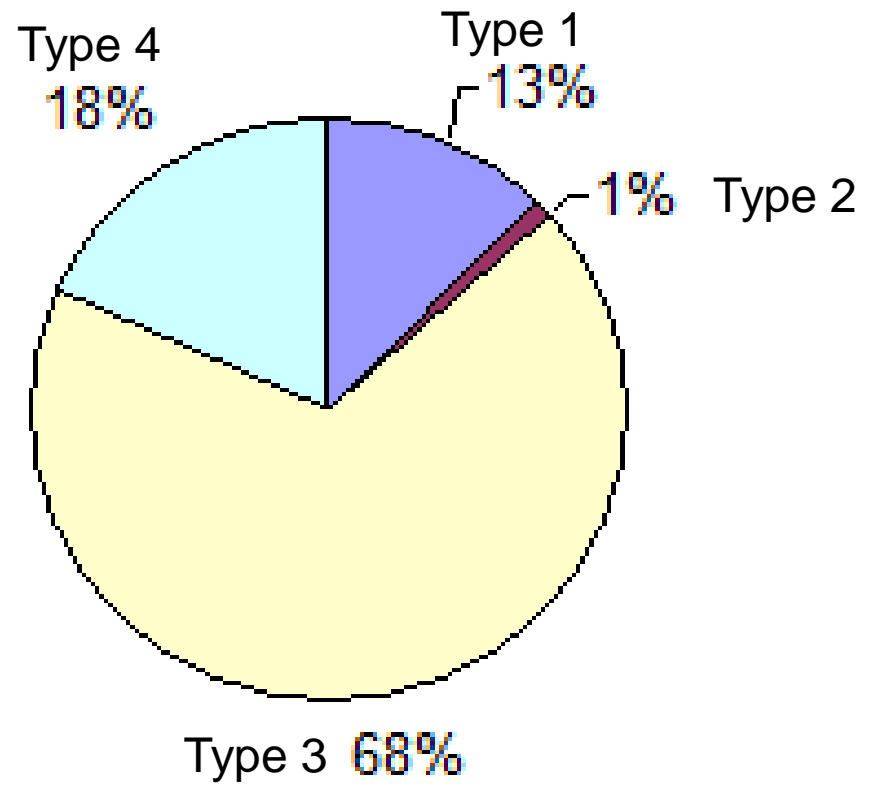
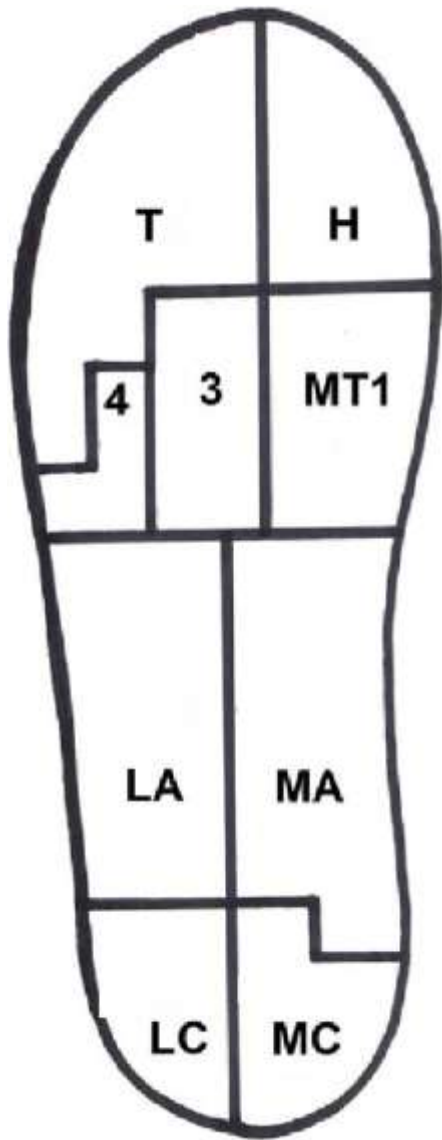


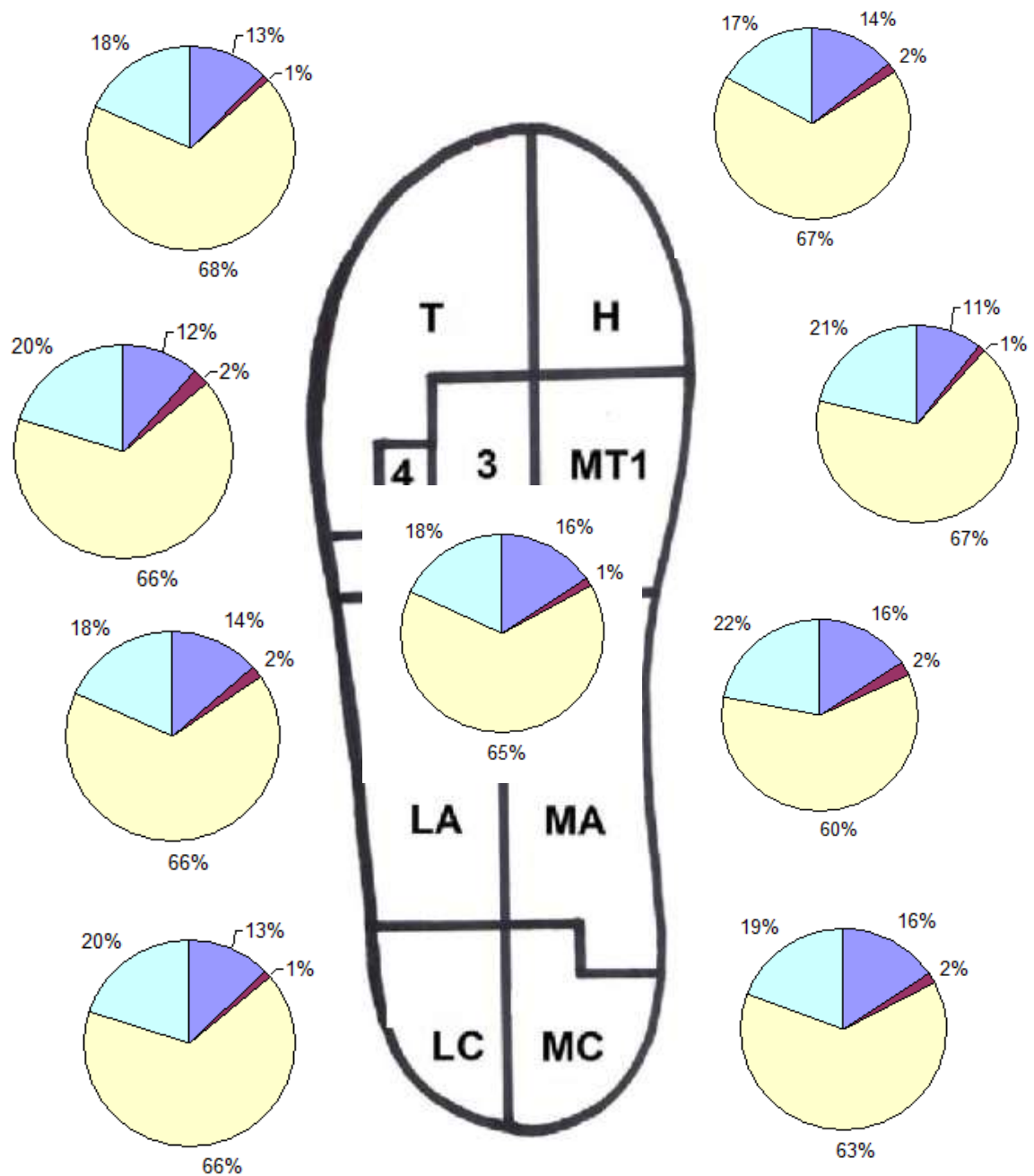
Grain Type 2

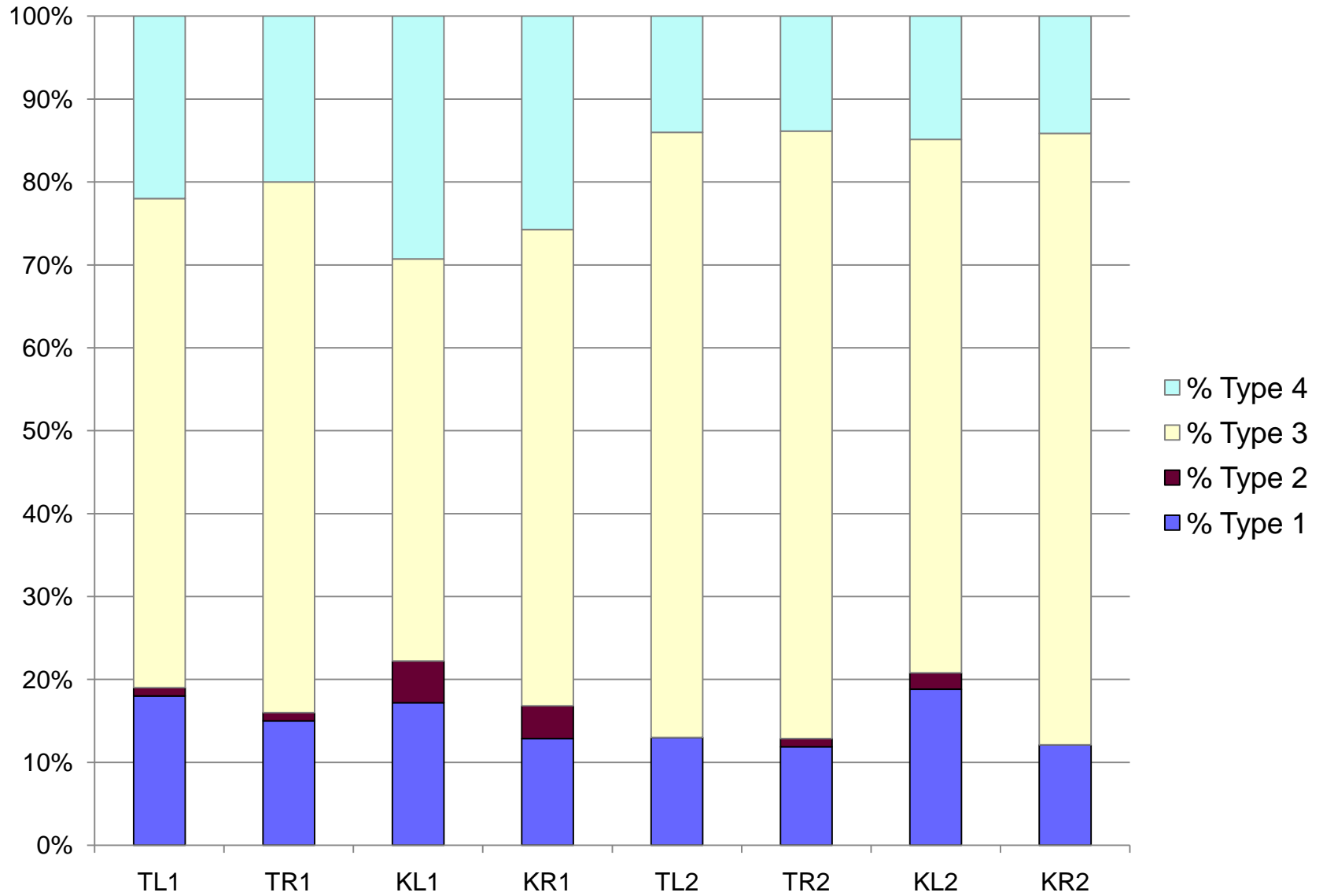


Grain Types 3 & 4









Great complexity

Sampling and analysis

Interpretation issues

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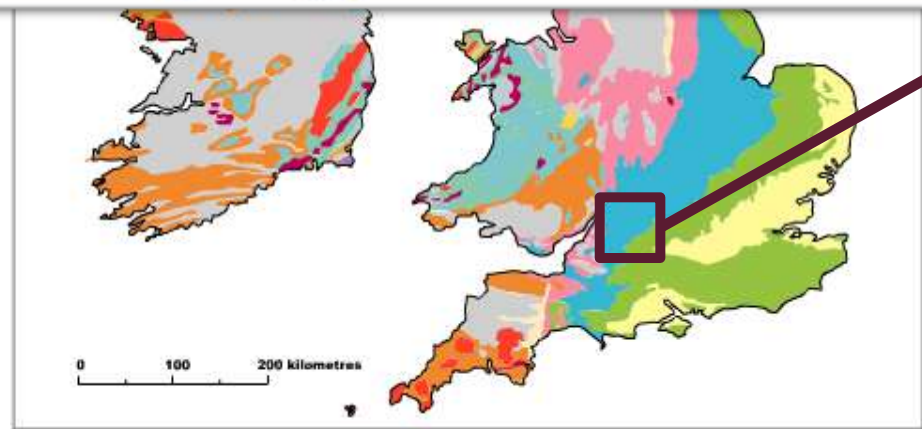
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References

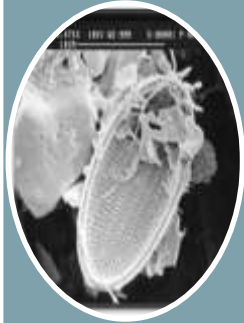
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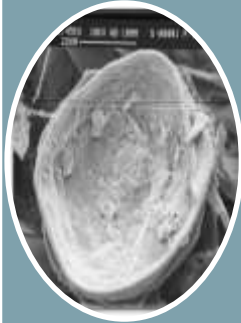








Diatoms



Ostracods



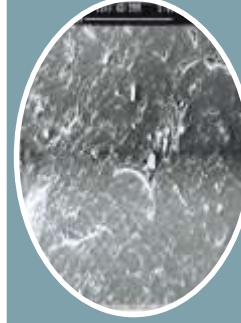
Pollen



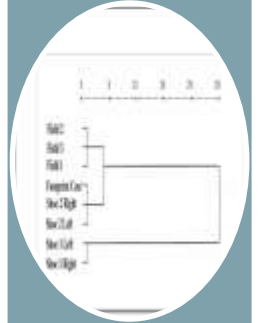
Thistle
spines



Hairs



Quartz



Elemental
composition

