

Flint Patina as an Aspect of “Flaked Stone Taphonomy”: A Case Study from the Loess Terrain of the Netherlands and Belgium

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This paper describes recent research into variable patinas observed on lithic artifacts from the loess-mantled region of Southern Limburg, The Netherlands and Belgian Limburg. There, patina intensity and artifact typology and technology have long been used as indicators of the relative age of surface finds. Though it is true that Neolithic and later flint surface finds never possess the intensity of patina observed on Paleolithic artifacts, this study indicates that sub-aerial exposure likely plays a marginal role in flint patination. Rather, type and degree of patina development appear more closely related to depositional context. We consider data from local surface sites, inferences about the geochemical influence of plant roots, humic acids, soil pH, temperature, and site aspect; and microscopic analysis of thin sections produced from a small sample of artifacts. Finally, we propose a simple model of the flint patination process based on empirical and experimental research on glass hydration. This is a preliminary, conceptual study aimed at developing a working protocol for more extensive flaked stone taphonomy research. Excavations, lithic artifact assemblage analyses, and geochemical studies are currently ongoing, and continue to build on the results of this preliminary research.

Keywords: STONE TOOLS, ARTIFACT TAPHONOMY, FLAKED STONE TAPHONOMY, CHERT, FLINT, PATINA, PALEOLITHIC, THIN SECTIONS.

Introduction

The term “patina” originated to describe the greenish film that spontaneously forms on copper or bronze objects resulting from exposure to humid atmospheric conditions, technically a veneer of “malachite,” a hydrated

copper carbonate mineral. Within Stone Age archaeology, however, the term is used in a far more general sense, referring to any film, rind, encrustation, or layer produced on the surface of flint due to chemical weathering. Using the term in this general