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## NEOLITHIC LITHIC INDUSTRIES OF THE EASTERN WING OF THE FERTILE CRESCENT: PAYING HOMAGE TO PROFESSOR STEFAN K. KOZŁOWSKI

### ABSTRACT

A systematic study by Stefan K. Kozłowski during the 1990s and the 2000s revealed marked techno-typological differences between the Neolithic lithic industries of the “Eastern and Western Wings” of the Fertile Crescent of Southwest Asia. The present article addresses regional variability in Pottery Neolithic flaked stone industries within the Eastern Wing. It suggests the potential existence of

lithic variability between the plains and the mountains of central Mesopotamia. Given the known lithic variability also in the Eastern Wing of northern Mesopotamia, the present study suggests the need to define the variability of lithic industries in other parts of each wing; such research would help better explain the historical, ecological, and cultural backgrounds of regional differences.

**Keywords:** Neolithic Fertile Crescent, Mlefatian, Matarrah, pressure debitage, Zagros Mountains

Stefan K. Kozłowski made a number of significant archaeological contributions to prehistoric studies on the Fertile Crescent of Southwest Asia. The one referred to in this article is his modelling of regional differences in Neolithic lithic industries between the “Eastern and Western Wings” of the region. In an important monograph, Kozłowski<sup>1</sup> described such differences in detail. Later, he reinforced his model through an extensive literature survey<sup>2</sup> and original data from his fieldwork in Nemrik and M’lefaat, northern Iraq,<sup>3</sup> incorporating archaeological records other than lithics.

I have been particularly intrigued by this series of Kozłowski’s studies since I began excavating the Neolithic site of Tell Seker al-Aheimar, north-eastern Syria, in 2000. The reason was that this Pre-Pottery Neolithic B (hereafter as PPNB) site, despite being situated in Syria and supposedly belonging to the Western Wing, yielded lithic assemblages remarkably different from those of other sites in Syria. The PPNB lithic industry of Tell Seker al-Aheimar was characterised by pressure core reduction technology while showing no evidence of the local use of naviform core technology<sup>4</sup> popular in the Levantine Pre-Pottery Neolithic industries. Consequently, Tell

Seker al-Aheimar, situated at the westernmost edge of the Eastern Wing, provides a unique opportunity for understanding the nature of the east-west distinction in the Neolithic lithic industry of the Fertile Crescent.

Kozłowski<sup>5</sup> defined Mlefatian, named after the site of Tell M’lefaat excavated by Robert L. Braidwood and by himself, as a major lithic industry representing the Eastern Wing of the Zagros Mountains.<sup>6</sup> Mlefatian is characterised by the use of bullet core technology for pressure blade blank production and the manufacturing of backed bladelets. Its chronological (Early, Late, and Post-Mlefatian) and regional (Jarmo, Kermanshah, Abdul Hosein, Zagros, and Deh Luran groups) variabilities were also defined using the then-available data.<sup>7</sup>

This scheme provides a useful framework for exploring the variability of Neolithic industries in the Zagros Mountains, which occupy a large portion of the Eastern Wing. However, no one, including Kozłowski, has surmised that a single lithic industry (Mlefatian) dominated the entire region of Neolithic Zagros for millennia. As a matter of fact, many studies have since attempted to evaluate this scheme. I myself have proposed a further periodisation of the Mlefatian, adding

<sup>1</sup> Kozłowski 1999.

<sup>2</sup> Kozłowski, Aurenche 2005.

<sup>3</sup> Kozłowski 1998; 2002.

<sup>4</sup> Nishiaki 2016.

<sup>5</sup> Kozłowski 1999.

<sup>6</sup> Kozłowski 1998.

<sup>7</sup> Kozłowski 1999.



Fig. 1. Collection sampling by the University of Tokyo team at the stepped trench of Matarrah (Braidwood's Operation VIII), Iraq, 5<sup>th</sup> of July 1957 (after Verhoeven 2006).

a pre-Mlefatian phase<sup>8</sup> and dividing another of its phases, the Post-Mlefatian, into early and late subphases.<sup>9</sup> More temporal and spatial variants will likely be identified in future research that will contribute to the understanding of the complex development trajectories of Neolithic lithic industries in the Eastern Wing. In terms of spatial variability, Kozłowski<sup>10</sup> identified another lithic industry in the Eastern Wing, the Nemrikian, while diagnosing plain sites in northern Mesopotamia. However, Neolithic lithic variability within the Eastern Wing remains little explored, especially in central Mesopotamia to the south.

In this regard, a Japanese archaeological mission recently reported on an interesting lithic industry of the 6<sup>th</sup>-millennium-BC Pottery Neolithic at Shakar Tepe<sup>11</sup> and Shaikh Marif<sup>12</sup> in the Shahrizor Plain, Zagros Foothills. This industry differs from the Mlefatian in that

it “lacks evidence of pressure blade production and is instead characterised by the production of large robust blades” and is thought to represent “another type of local lithic tradition” during the Pottery Neolithic Period in central Mesopotamia. Moreover, the report suggests that no parallel for it has been found in the Zagros Mountains but instead could be located in Matarrah, a site situated approximately 100 kilometres to the west.<sup>13</sup>

Given that the comparison was based on a photograph of the lithics in a preliminary report of the original excavations at Matarrah in 1948,<sup>14</sup> I examined a surface-sampled lithic collection from this site stored at the University Museum, University of Tokyo. The collection was obtained during a general survey conducted by a team from the University of Tokyo in 1957.<sup>15</sup> The available archives suggest that the step trench that opened in 1948 was still visible at the time of sampling on the 5<sup>th</sup> of June 1957 (Fig. 1). A study of the pottery collection made by the University of Tokyo<sup>16</sup> reveals that it mostly consisted of Neolithic specimens from the Hassuna and Halaf periods.

The flaked stone artefacts from Matarrah preserved in the University of Tokyo collection comprise 53 specimens, including three obsidian pieces that were likely imported from Anatolia (Fig. 2: 12–13). The remaining chert assemblage, which is our focus, consisted of 27 tools (Fig. 2: 1–9), 8 cores (Fig. 2: 10–11), and 18 other pieces. The most characteristic tools are blades with truncations at both ends, most of which exhibit glossed edges derived from sickle use (Fig. 2: 1–9). In terms of core reduction technology, the chert assemblage emphasises blade production by direct percussion: five single platforms (Fig. 2: 10–11) and three exhausted cores. The plain butts of the blade and flake products indicate that the striking platforms of the cores were rarely faceted. The blade blanks (Fig. 2: 1–9) showed a width range between 13.1 and 38.0 millimetres, with a median of 21.2 millimetres ( $n=29$ ). The thickness ranged from 3.8 to 13.9 millimetres, with a median of 7.1 millimetres. Similar to Shakar Tepe and Shaikh Marif, the existence of robust percussion-flaked blades is noteworthy (Fig. 2: 1–4). There is no clear indication of the use of pressure technology for blade production. There do exist two narrow blades with parallel ridges and lateral edges, 14.5 millimetres (Fig. 2: 8) and 13.2 millimetres (Fig. 2: 9) in width, respectively, that may represent pressure-detached products. However, their on-site production has not been demonstrated. The situation is the same for interpreting the existence of

<sup>8</sup> Nishiaki, Darabi 2018a.

<sup>9</sup> Nishiaki *et al.* 2018b.

<sup>10</sup> Kozłowski 1999.

<sup>11</sup> Odaka *et al.* 2023a.

<sup>12</sup> Odaka *et al.* 2023b.

<sup>13</sup> Odaka *et al.* 2023a.

<sup>14</sup> Braidwood *et al.* 1952.

<sup>15</sup> Tani-ichi and Matsutani 1981, pls. 95.2–98.2; Verhoeven 2006.

<sup>16</sup> Odaka 2019.

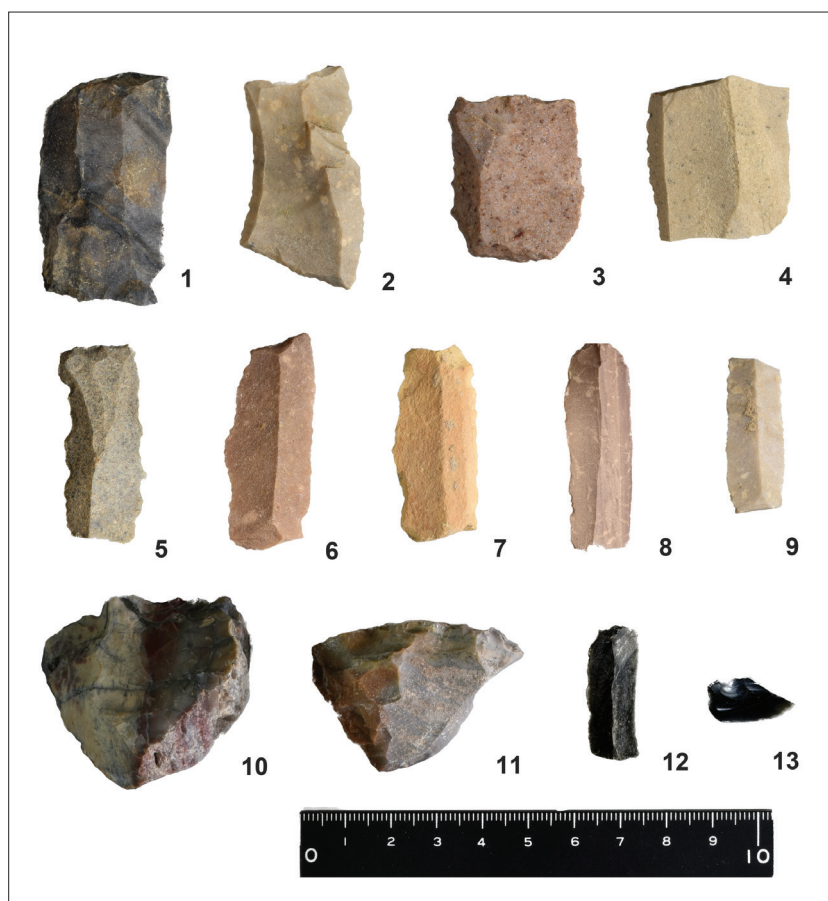


Fig. 2. Lithic artefacts from the 1957 sampling at Matarrah. 1, 5, 9 – Glossed blades; 2–3, 7 – Truncated blades; 4, 8 – Edge-damaged blades; 6 – Unretouched blade; 10–11: Single-platform cores; 12 – Obsidian edge-damaged blade; 13 – Obsidian side-blow blade flake.

pressure-flaked obsidian blades (Fig. 2: 12). Furthermore, if pressure blade production had occurred on-site, its frequency would have been very limited at Matarrah, similar to Shakar Tepe and Tepe Shaikh Marif. The lithic assemblages in question do not match our definition of the post-Mlefaatian period.<sup>17</sup> Collectively, these results suggest that a distinct industry was distributed in the plains of central Mesopotamia during the 6<sup>th</sup> millennium BC.

A non-contextual collection from Matarrah should not be interpreted broadly. This article marks the begin-

ning of further research on the variability of Neolithic industries in the Eastern Wing, which has remained much less investigated than the Western Wing or the Levant. This study was guided by Professor Kozłowski's insightful work, for which I sincerely express my deepest respect. Last but not least, I would also like to thank Takahiro Odaka, Kanazawa University, and Osamu Maeda, Tsukuba University, who inspired me to consult the University of Tokyo collection from the Matarrah site.

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<sup>17</sup> Nishiaki *et al.* 2018b.

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