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THE TERMINAL PLEISTOCENE MICROBLADE INDUSTRY IN HOKKAIDO (JAPAN): A CASE OF THE SOUTHERN ISHIKARI LOWLAND

This paper reports on the recent discovery of the Terminal Pleistocene microblade industry, which was recovered from Hokkaido, northern Japan.

Studies of microblade assemblages in Hokkaido have been directed to a great extent toward constructing a chronological framework. These studies have performed intensive analyses on the attributes of microblade cores. As a result, various microblade reduction methods were presented by Tsurumaru (1979) and others. The chronological framework has been based on lithic technological analyses of these microblade cores. Because archaeological sites in Hokkaido have been distorted by periglacial processes, the debate over the chronological framework has made complex progress in the last forty years.

Since the 1980s excavations have increased significantly in two regions of Hokkaido: the Ishikari Lowland (central Hokkaido) and the Tokachi Plain (eastern Hokkaido). In 1997 and 1998, the Rankoshi type of microblade core was uncovered at Kashiwadai-1, stratigraphically beneath the primary En-a tephra, dated ca. 21,000-19,000 CALYBP (Hokkaido Buried Cultural Property Centre 1999). It is clear that the Hokkaido microblade assemblages date back to the En-a tephra. Recent investigations using tephra and radiocarbon dating have been conducted (Izuho and Akai 2005), and thus, it is now generally accepted that microblade assemblages in Hokkaido can be divided into at least two periods: early and late (Nakazawa et al. 2005). Microblade assemblages existed from the LGM (Last Glacial Maximum) to the Terminal Pleistocene in Hokkaido. The early period of microblade assemblages consists of the Rankoshi, Tougeshita, and Sakkotsu microblade core types. The late period of microblade assemblages comprises the Shirataki, Oshorokko, and Hirosato microblade core types. However, the appearance and disappearance of microblade assemblages in Hokkaido remains as a matter for further investigation.

In this paper, I limit the discussion to the southern Ishikari Lowland and assemblages above En-a tephra. There have been comprehensive discussions regarding microblade assemblages in Hokkaido (Nakazawa et al. 2005). In the southern Ishikari Lowland, all microblade assemblages have been uncovered at open sites located on river terraces or in inland paleo-dunes (Fig. 1). The sites

are buried in loam sediments related to the marker tephras including Spfa-1 (40-45ka) and En-a. In the layers above En-a tephra, Oruika-2, Kamihoronai-Moi (Sakkotsu type), Yukannboshi-E10, Kiusu-7, Osatsu-16A (Tougeshita type), Meboshigawa-2, Marukoyama, Syukubai-Jyousou, Osatsu-16B (Oshorokko type) have been discovered. In the Ishikari Lowland, lithic raw materials that were a major resource of obsidian and hard shale have not been procured. In other words, these "high-quality" lithic raw materials were transported in this area far from Shirataki, Oketo, Tokachi-Mitsumata, Akaigawa (obsidian source) and the Oshima Peninsula (hard shale source).

The Sakkotsu microblade core type assemblages of Oruika-2 (Hokkaido Buried Cultural Property Centre 2003, 2005) and Kamihoronai-Moi (Atsuma Board of Education 2006) were composed of microblades, end scrapers, burins, side scrapers, and drills (Fig. 2). Figure 4 shows the reduction sequence of the Sakkotsu microblade core type assemblages in the southern Ishikari Lowland. Bifacial cores were made from obsidian, which served as the source for flake blanks used for producing end scrapers, burins, and side scrapers, and thus, the reduction of bifaces seems to have supplied microblade cores. X-ray fluorescence analysis indicates that much of the obsidian of Oruika-2 was Shirataki, located about 170 km northeast of the site. AMS radiocarbon dates were obtained from both sites; they rage around ca.14,000 CALYBP.

The Tougeshita microblade core type assemblages of Yukannboshi-E10 (Hokkaido Buried Cultural Property Centre 1997a), Kiusu-7 (Hokkaido Buried Cultural Property Centre 1997b), and Osatsu-16A (Hokkaido Cultural Property Protection Association 1997) were composed of microblades, end scrapers, burins, side scrapers, and drills. The whole reduction sequence in the southern Ishikari Lowland of the Tougeshita microblade core type assemblages has not been fully appreciated. These assemblages are widely distributed in Hokkaido, and at some sites have been recovered with the Sakkotsu microbladecore type.

The Oshorokko microblade core type assemblages of Meboshigawa-2 (Akai 2005a, Chitose Board of Education 1983), Marukoyama (Akai 2005b, Chitose Board of Education 1994), Syukubai-Jyousou, and Osatsu-16B (Hokkaido Cultural Property Protection Association 1997) were composed of microblades, end scrapers, burins, side scrapers, drills, bifacial leaf-shaped points, bifacial stemmed points, and axes (Fig. 3). Figure 5 shows the reduction sequence of the Oshorokko microblade core type assemblages in the southern Ishikari Lowland. Most tools such as end scrapers, burins, and side scrapers are made on blades, which are detached from prismatic blade cores. Bifacial cores did not serve as flake tools but supplied microblade cores or points. From empirical observations with the naked eye, it appears that many of these obsidian assemblages may have been procured at Akaigawa. Although no samples for AMS radiocarbon dates were collected from associated lithic assemblages, the late period of microblade core like Oshorokko type assemblages seems to have occurred during the Terminal Pleistocene, perhaps around 13,000-11,000 CALYBP (Fig. 4).

This study surveys microblade assemblages above En-a tephra in the southern Ishikari Lowland. From the facts above, although the particulars of the Tougeshita microblade core type assemblages are obscure, Sakkotsu microblade core type assemblages and Oshorokko microblade core type assemblages differ widely from each other with respect to reduction sequences. Nevertheless, both are microblade assemblages from the last glacial period. It is important that we discover what is behind these differences. One explanation may be the correlation between technological variability in microblade assemblages and paleoenvironmental changes. The change in natural environmental conditions such as climate, flora, and fauna during last glacial period could have caused various hunter-gatherer reduction strategies and behavioral adaptations. However there is little research on this topic in Hokkaido (Izuho and Takahashi 2005). It is important for Japanese Paleolithic research to investigate not only lithic assemblages but also the entire paleoenvironment in full detail. It is reasonable to suppose that studying these relationships in Hokkaido will contribute to an understanding of the formation process of microblade assemblages, which are distributed widely throughout the northern part of North America and in northeastern Asia.

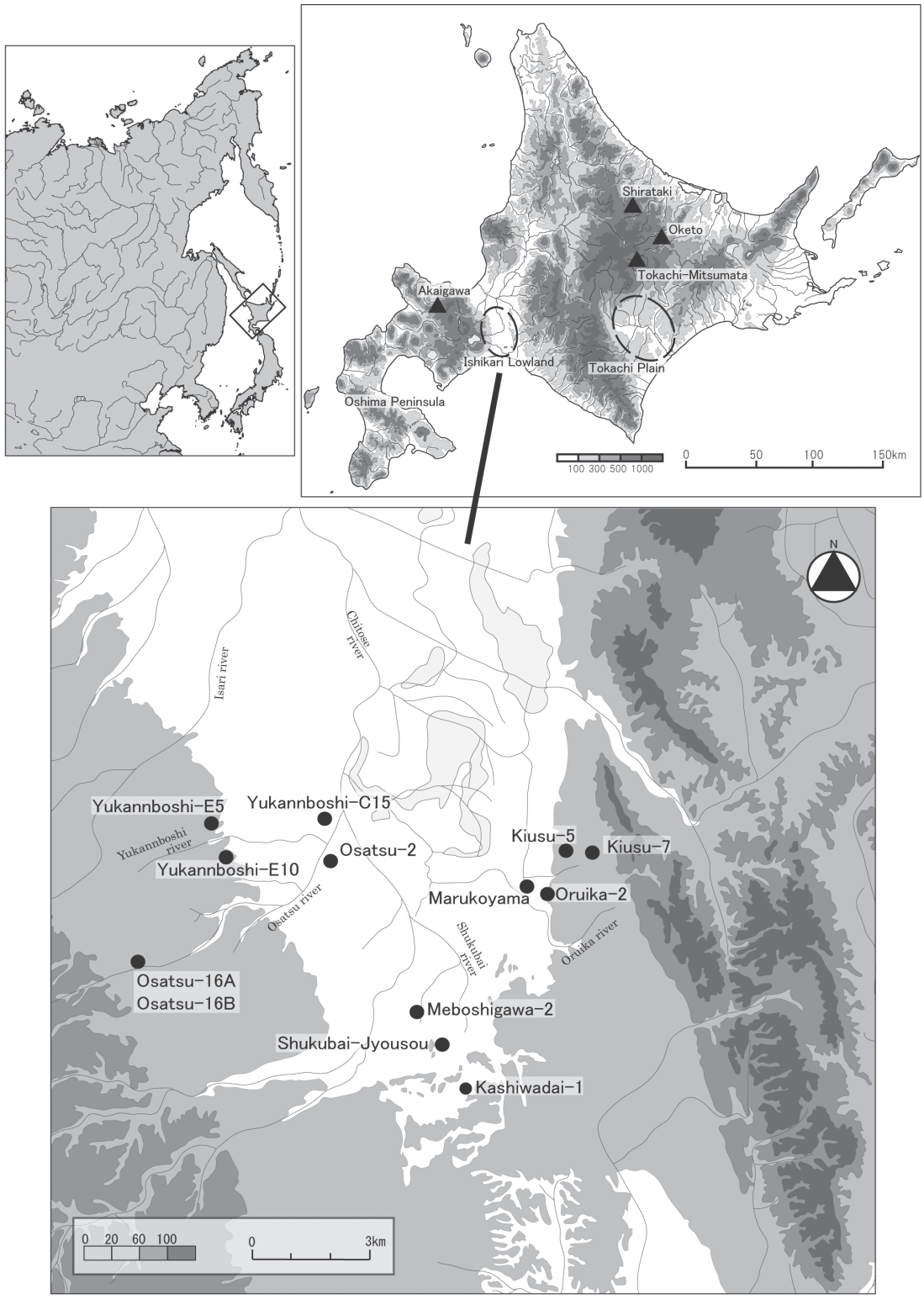

Fig. 1. Topography and site distribution of the microblade assemblages in the southern Ishikari Lowland

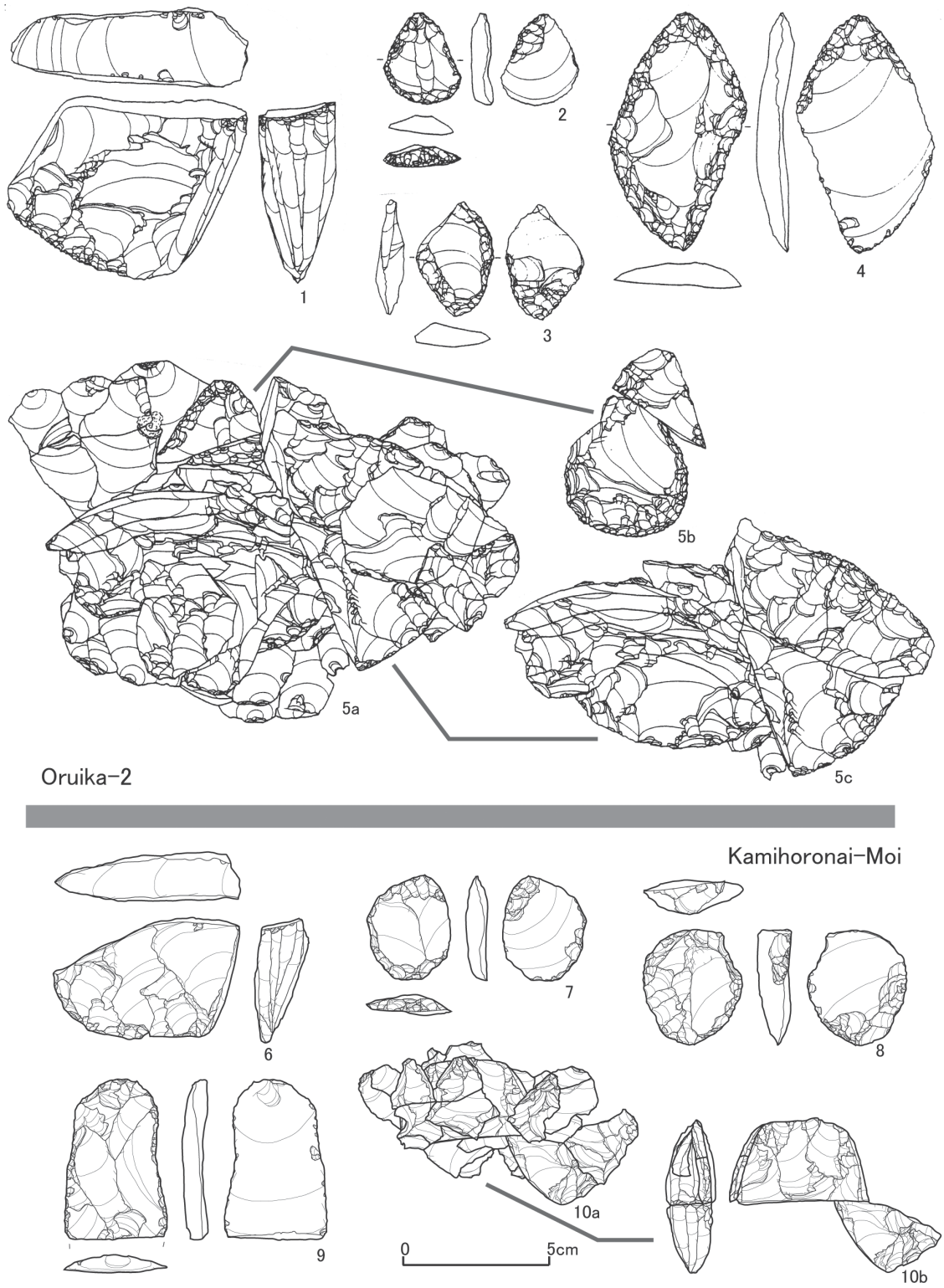

Fig. 2. Lithic artifacts from Oruika-2 and Kamihoronai-Moi. **1,6:** microblade core; **2,7:** end scraper; **3,8:** burin; **4,9:** side scraper; **5:** refitted biface, and scraper and flakes; **6:** refitted microbladecores, microblades and flakes

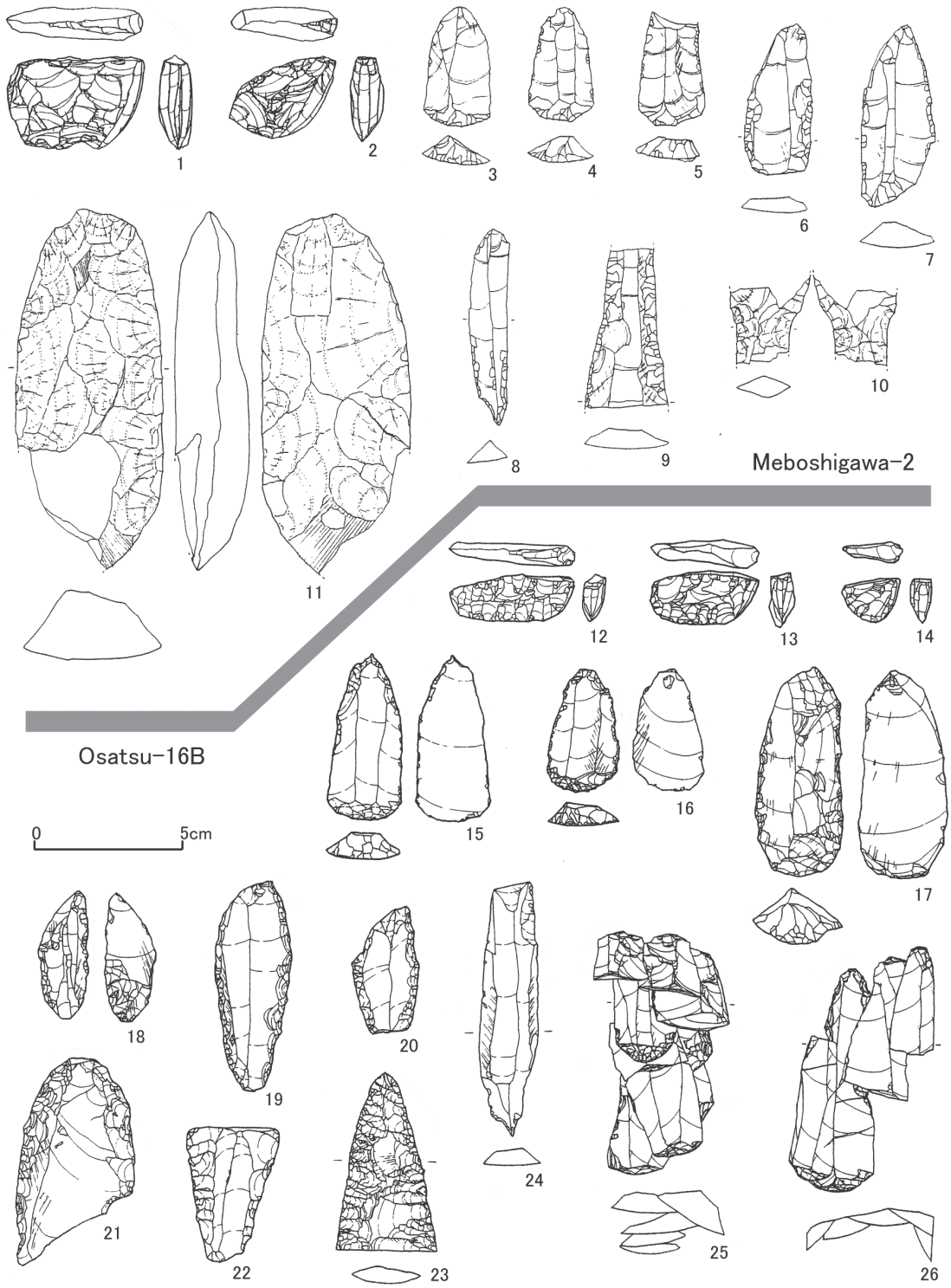

Fig. 3. Lithic artifacts from Meboshigawa-2 and Osatsu-16B. 1, 2, 12–14: microblade core; 3–5, 15–17: end scraper; 6–8, 18–20: burin; 9, 21, 22: side scraper; 10: bifacial stemmed point; 11: bifacial axe; 23: bifacial leaf-shaped point; 24: drill 25, 26: refitted baldes and end scrapers

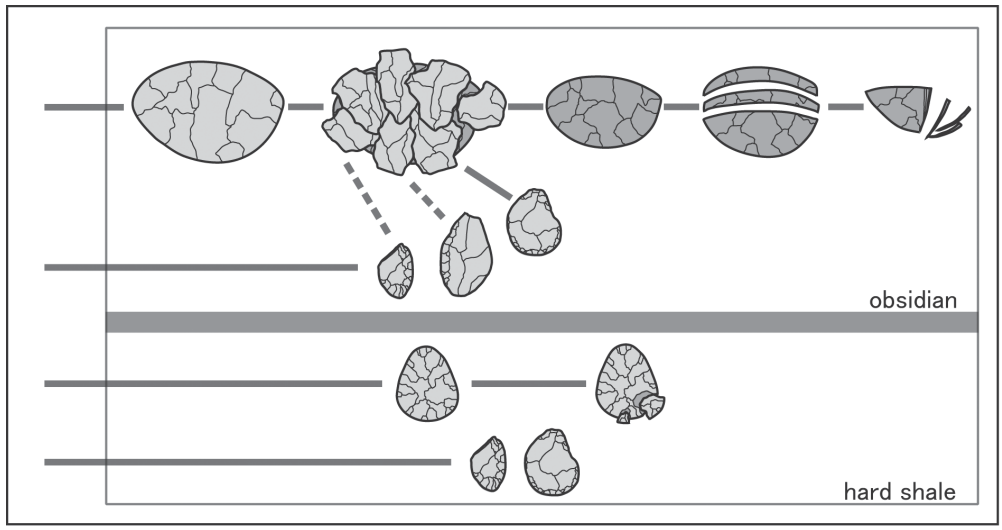

Fig. 4. The redaction sequence of the Sakkotsu microblade core type assemblages in the southern Ishikari Lowland

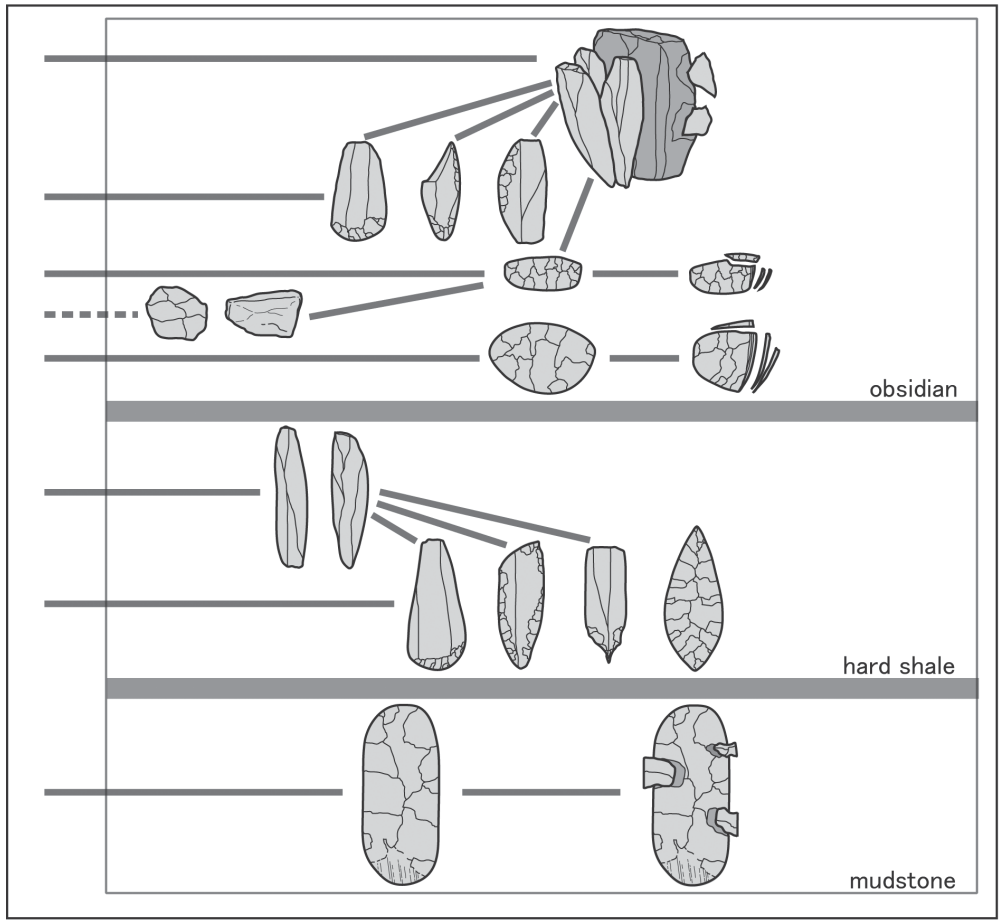

Fig. 5. The redaction sequence of the Oshorokko microblade core type assemblages in the southern Ishikari Lowland

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