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## Upper Palaeolithic obsidian exploitation along the Shinano river in central north Japan

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Present paper focuses on the formulating interpretative models for acquisition and transportation of lithic raw materials, with reference to obsidian and siliceous hard shale, choosing a case of Upper Palaeolithic camp site Mattobara in central-north Japan. The site is located on the left bank of the latest Pleistocene river terrace in the middle course of the Shinano River, dated back ca. 17 ? 14ka from the date of similar assemblages and the dating of tephra in a neighboring areas. The lithic assemblage of this site is rather simple and small Points are significant. Excavations uncovered totally 8,200 lithic tools, flakes, and chips. Dominant raw material is siliceous hard shale, and it takes about 80percent of total lithic materials. Small scale concentrations of this site are representing the activities of small mobile-groups along the Shinano River in the later period of Late Pleistocene. Source identification of obsidian from Mattobara Loc. C by X-ray fluorescence analysis identified that thirty samples are from Wada-Pass, and one is from Kirigamine both located in Nagano Prefecture. On the contrary to the case of Loc. C, 24samples are from north Fukaura (Aomori Pref.) and Oga (Akita Pref.) and only one sample identified as Tadeshina (Nagano Pref.) in the case of Loc. A. These quite different and wide range available areas indicate a complex system of lithic raw materials. Linear linkage of stepping-stone model will be discussed, irrespective of long distant direct procurement /or nearby direct procurement (so called embedded strategy).

Keywords: Uper Paleolithic, Shinano river system, Obsidian, Geologic source identification, Matobara site, Point tool industry