

# THE MICROLITHIC CULTURE IN SOUTHWESTERN JAPAN

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## 1. Sites of the Microlithic culture in southwestern Japan

In 1953 an excavation was carried out in the Yadegawa site in Nagano prefecture, located almost in the middle of the Japan archipelago. This excavation has been regarded as the first full-scale investigation of the microlithic culture in Japan. Since then, the researches are being done at various places in the Japan islands, and more than 500 sites, from Kyushu to Hokkaido, have been found by excavation and surface investigations.

The hitherto known sites are spreading from the northernmost of Hokkaido to Kagoshima in southernmost Kyushu. Thus far, any further sites of the microlithic culture have not been discovered in the Okinawa islands, located in the south of Kagoshima. According to the general features of stone tool assemblages and according to the technology and typology of micro-blade cores, these sites could be roughly divided into two regions; the northeast and the southwest.

The stone tool assemblages in the northeastern area are characterized by development of the end and side scrapers and graters removed from blades, and also characterized by the existence of boat-shaped micro-blade cores, represented by Yubetsu technique. This technique is found mainly in Hokkaido and also in the northeastern area of mainland, where the Araya-type graters are also found.

On the contrary, in southwestern Japan there have found no flake tools removed from blades there are a few types of stone tools. As a whole, a very small number of flake-tools has been found. Pebbles and flakes were used parent micro-blade cores and their shape is basically cylindrical

or conical found almost all over this area.

The northeast-southwest contrast in the microlithic culture is understood as a fundamental regional difference of the microlithic culture in the Japan archipelago.

Here I would like to focus the southwestern area and to consider some aspects of the microlithic culture in this area.

The southwestern area consists of the southwestern part of the mainland, the Shikoku and Kyushu islands. The southwestern area occupies a half part of the mainland, which extends north and south. In this area, approximately 370 sites of the microlithic culture are known and about 60% of them are located in Kyushu.

The stone tools found in the sites of the southwestern area consist of assemblages of micro-blades, micro-blade cores, scrapers and utilize-flake.

The number of sites in Kyushu is largest in the southwestern area. Moreover, among the archaeological remains in association with the micro-blades and micro-blade cores, there are potteries and stone arrowheads. On the other hand, the relation of the excavated objects with knife blades and trapezes is problematic, so that there still exist some complicated matters. In addition to the cylindrical or conical shape of micro-blade cores, there found some different types in typology and technology in different excavated places. This indicates that we should assume more regional diversity and a certain time span. In this manner, Kyushu could be regarded as the most important area in studies on the microlithic culture in southwestern Japan.

## 2. Classification of the Micro-Blade Cores

- (1) Micro core in cylindrical and conical shape (The Nodake-type micro-blade core) (Fig. 1)

As raw materials, smaller square or round pebbles were used, or some pieces of cracked pebbles or flakes, removed from a fist-size stone

by percussion, were used. A striking platform of a micro-blade core was first secured from a raw material, then the controlled-flaking was done to the body. After flaking for preparation of a striking platform, a micro-blade was flaked in the front face and at the both sides of the face. Comparing with other micro-blade cores, many sorts of stones such as obsidian, chert, shale and glassy-andesite were used.

- (2) Type-A of a boat-shaped micro-blade core (The Fukui-type and Senpukuji-type micro-blade core) [Fig. 1]

Broken pebbles were prepared by removing thick flakes or outer layers from a micro core and controlled-flaking was done for side-retouch before preparing a strike platform.

Although most striking platforms were made by small controlled-flaking in an oblique direction from a side, some were flaked in the vertical direction. Removal of a micro-blade was started from an edge of shorter side. Whole shape of the micro-blade core is similar to the boat-shaped micro-blade core predominant in the northeast. Moreover, part of process such as retouching a body before manufacturing a striking platform is also resembling. Good quality of obsidian was used as stone material.

- (3) Type-B of a boat-shaped micro-blade core (The Funano-type micro-blade core) [Fig. 2]

Cracked pebbles or flakes were used as the raw material of micro-blade cores. The most characteristic feature in manufacturing technique is that an existing removed face of the raw material was served as a striking platform for retouching the micro-blade core's side and for the removal of micro-blades. The platform for removal of micro-blade cores was produced at one end or both ends of the shorter side.

Whole shape of Type-B is like a boat, but, unlike Type-A, length and width of the platform for removal of micro-blades are almost equal and it shows chunky shape. The front face has wide u-shape or reversed trapezoidic shape.

Rhyolite (hornfels) was exclusively used as the raw stone materials in Kyushu, but chert, obsidian and shale were also used in some areas.

(4) Type-C of a boat-shaped micro-blade core (The Unehara-type and Kajiyazono-type micro-blade core) [Fig. 2]

For this type of the micro-blade core, broken small flat and round pebbles or plate-like pebbles were used as raw stone materials. Preparation of a striking platform and side-retouch were not made. The existing cracked face was used for platform of removing micro-blades. Removal was made at one end or both ends of shorter side. The shape depends mainly on the material, so that it is very primitive technique.

Whole shape is similar to a boat, but the Type-C has narrow long u-shape, contrasting with the Type-B.

Sand ston, clay slate and tuff-shale were used as raw stone materials.

In what follows, I will compare the distributions of these types of micro cores with each other.

### 3. Distribution of the Micro-Blade Cores

(1) Cylindrical and conical miro-blade core (The Nodake-type micro-blade core) [Fig. 3]

This type of micro-blade cores is widely distributed all over the southwestern area from the southwestern area from Kyushu to the southern parts of Chubu and Kanto districts. In southeastern Kyushu, however, this type is rather sparsely distributed. On the Setouchi coast, many flat cylindrical and conical micro-balde cores of raw flake materials are excavted. These micro-blade cores are mainly distributed also in south Chubu and Kanto.

(2) Type-A of a boat-shaped micro-balde core (The Fukui-type and Senpukuji-type micro-blade core) [Fig. 4]

The distribution of micro-balde cores of this type in Kyushu is

concentrated on the northwestern part. In areas the number of sites and the number of excavated objects in one site are extremely small.

Therefore, Type is seldom found other than Kyushu. The concentrated distribution in northwestern Kyushu may have something to do with the fact that this area produces good quality of obsidian.

(3) Type-B of a boat-shaped micro-blade core (The Funano-type micro-blade core) [Fig. 5]

This type is exclusively excavated in southeastern Kyushu. Furthermore, it is occasionally found on the Setouchi coast and in the Kinki area. Even in the areas from Tokai to southern Chubu and Kanto, good materials of Type-B are excavated. This type seems not so general as the Nodake-type micro-blade core. Although there is unevenness in the distribution, this type is widely spreading over southwestern Japan.

(4) Type-C of a boat-shaped micro-blade core (The Unehara-type and Kajiyazono-type micro-blade core) [Fig. 6]

The distribution of this type of micro-blade cores is very special and restricted in southeastern Kyushu. Moreover, this type is excavated with other types. Since the manufacture of Type-C depends on the technique and raw materials, its distribution seems to depend on the presence of raw materials.

#### 4. The Upper and Lower Limits of the Period of the Microlithic Culture

We will determine the period of the microlithic culture in southwestern Japan by means of the stratigraphic analysis of sites and the radiocarbon-14 dating method. According to stratigraphy, the typical remains of micro blades and micro cores are found there. [Fig. 7]

In stratigraphy, all sites belong to the microlithic culture are excavated from upper than AT (Aira-Tn volcanic ash) layer. This AT layer is a wide range of tephra found in the most part of the Japan islands. The age of this layer is estimated from 21,000 to 22,000 year-old by

radiocarbon. From this estimation, the upper limit of the period of the microlithic culture is probably not earlier than this age. The value of  $14,300 \pm 700$  BP determined at Yasumiba site in Sizuoka prefecture could be regarded as a criterion.

In Kyushu, a thick loam layer accumulates on the AT layer. The loam layer can be classified into a soft loam (the upper part) and a hard loam layer (the lower part). The soft loam contains stone tools of the microlithic culture and the layer below the hard layer contains stone tools of knife blade cultures. In Kanto area, the microliths were deposited in layers such as the soft loam (L1S) layer of the uppermost part of Tachikawa loam layer, the black band 0 (B0) layer (right below the L1S), and the upper part of the loam (L1H) layer, below the B0. Beneath the L1H, a set of stone tools, mainly knife blades, have been excavated.

Concerning the lower limit of the period, there is widely spreading a volcanic ash layer, "Satuma," in southern Kyushu whose age is determined approximately 10,500 year-old by radiocarbon. From the layer above Satuma, archaeological remains belong to the Early Jomon Period are excavated. Remains belong to the microlithic culture are not found in this layer, but found in the layer right below. From this fact, we may assume that the age of this layer could give the lower limit of the period of the microlithic culture. The age of culture layer in Senpukuji Cave in Nagasaki is determined from about 10,800 to 11,800 year-old by means of thermo-luminescence and fission track. In the culture layer right above, there is another culture layer containing of potteries with striate patterns without associations of micro blades and cores. Since the age of this layer is around 10,300 year-old, we may safely assume that this gives the lower limit of the period of the micro-blade and core culture.

In Fukui Cave in the same prefecture, the age of the microlithic culture in association with potteries is estimated 12,000 year-old by radiocarbon.

Integrating these data, the date of the termination of using micro blades and cores is probably from 10,000 to 11,000 years before.

### 5. The Periods of Four Types of the Micro-Blade Cores

The microlithic culture in southwestern Japan are characterized by four types of micro-balde cores as we have seen above. Then we will examine the date of these micro-balde cores and their mutual relationships in the aspects of stratigraphy, associations and the radiocarbon method.

The number of sites in which different types are found in stratigraphically different layers of one site is very few.

Among these sites, Fukui Cave is a very valuable site to know stratigraphically the sequence of the microlithic culture.

In the second layer and the third layer of this cave, Type-A and potteries with nail patterns are excavated. In the fourth layer, cylindrical and conical micro-balde cores without potteries are found. Furthermore, cylindrical and conical micro cores are also found in the seventh layer. From these facts we may infer that the cylindrical and conical micro-balde cores is prior to Type-A.

According to the age determination by radiocarbon, the second layer is  $12,400 \pm 350$  BP, the third layer  $12,700 \pm 500$  BP and the seventh layer  $13,600 \pm 600$  BP.

Because Type-A is often found in association with potteries and because this type is excavated from the uppermost of the loam layer, it seems to belong to the later period of the microlithic culture.

According to stratigraphical examinations, in Kyushu and Kanto areas, cylindrical and conical micro-balde cores precede Type-A and the advent of potteries. These micro-bale cores seem to associate with knife blades and a part of trapezes. This type of micro cores are excavated in a type-site of Yasumiba in Shizuoka prefecture where the value of  $14,300 \pm 700$  BP is estimated as the upper limit of the period of the microlith culture.

On the contrary, in southern Kyushu, the cylindrical and conical micro-balde cores are found in association with potteries. In Kanto area, according to stratigraphy, they are found even in latest period of the microlithic culture.

In the end, it can be said that cylindrical and conical micro-balde cores are constantly found from the early period to the late period of the microlithic culture in southwestern Japan.

There are stratigraphically no sites where Type-B was found with other types of cores. Type-B was found alone or with cylindrical and conical micro-blade cores. In southern Kyushu, Type-C is added to this combination.

The content of associations is very complicated, because there are several cases in which the micro-balde cores were found alone or with knife blades and trapezes or with potteries. In eastern Kyushu, they are excavated from the upper and lower parts of the soft loam layer. In southern Kanto, the situation is a little different: They are excavated from the middle layer, and the cylindrical and conical micro-blade cores are excavated from the layer below.

Like cylindrical and conical micro-blade cores, Type-B in Kyushu seems to exist throughout the period of the microlith culture. However, the location of their centers of distribution is different. In southern Kanto, this type emerged later than in Kyushu and seems to have a shorter period.

The distribution of Type-C is concentrated on southern Kyushu. This type is found with cylindrical and conical micro-balde cores. Potteries or stone arrowheads were found as associatios.

There are no sites whose stratigraphical sequence between a micro-blade core and other micro-blade cores has determined. It is very difficult to determine the period by examining combinations of these micro-balde cores, because cylindrical and conical micro-blade cores in association with



Type-C and Type-B seems to exist constantly throughout the period of the microlithic culture in Kyushu.

According to stratigraphy and associations, periods of four types will be determined as follows: Type-A is probably emerged in the latest period, other three types seem to precede Type-A. The locations of the centers of these three types are probably different and exist in juxtaposition.

## 6. The Typological and Technological Relationship between Micro-Blade Cores

The technological relation between four types of micro-blade cores in southwestern Japan will be considered in what follows.

Concerning the technical sequence between preparing a striking platform and retouching sides, for the case of Type-A, side-retouch was first made then preparation of a striking platform followed. For other three types, preparation of a platform was made first.

The preparation of a striking platform and retouch technique are found in Type-A and cylindrical and conical micro-blade cores, but not in Type-B and Type-C. In the cases of Type-B and Type-C, flaked faces, which were made when obtained as a raw material, were used as a striking platform for flaking micro-blades. Therefore, Type-B and Type-C seem to be closely related in technique. In addition, these two types were in common with the fact that both sides of a shorter side were made use of flaking the micro blades.

Flaking of micro blades at shorter side is similar to Type-A, B and C. But for the case of Type-A, the flaking was made only at one side.

Among the four types, Type-B resembles Type-C in technique. Type-C was probably developed in the area in which manufacturing technique of Type-B applied to flint stone materials.

Moreover, the influence of Type-A seems to find in variation of

Type-C whose lower edges were remarkably retouched.

The cylindrical and conical micro-blade cores and Type-A have their own characteristic feature and there found no technical relationship between them.

The production technology of cylindrical and conical micro-blade cores is similar to the technology of removing elongate flakes in the knife blade culture prior to the microlithic culture. However, it is not likely to think that there was the direct transition from the knife blade culture to the microlithic culture. This is because in the microlithic culture there found a new aspect of stone tool assemblage and regional diversity, unlike the knife blade culture.

The concentrated distribution of Type-A on northwestern Kyushu is regarded as a key element to consider its origin and development. The location suggests intimate relationship with the Asian continent. Moreover, this area produces good quality of obsidian.

Concerning Type-B, its relation with Horoka-type micro-blade cores in northeastern Japan or with similar materials in northeastern Asia should be investigated in future.

## CONCLUSION

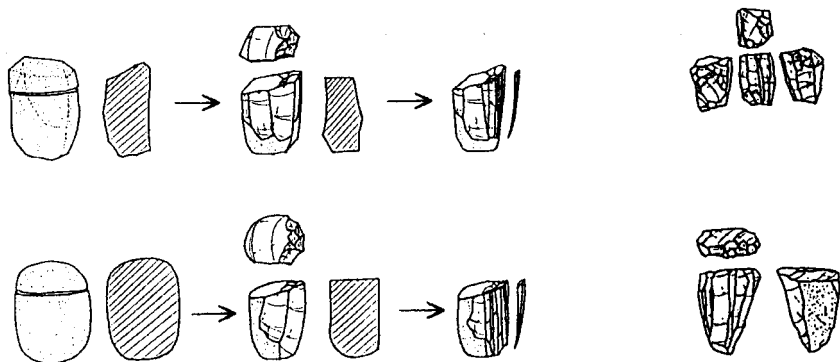
We have surveyed reserches on the microlithic culture in southwestern Japan in accordance with the typological and technological studies. The questions of the origins of four types of micro-blade cores, their mutual connections and their dates are still left open. In particular, we should make clear the relation of Type-A with the micro-blade cores in north-eastern Japan, where the retouch of both sides of a blank was the significant manufacture technology. Moreover, Type-B should be investigated in connection with Horoka-type micro-blade cores.

Because this microlithic culture is a new culture developed in a wider region of natural environment of northeastern Asia between the Final

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Old Stone Age and the Middle Stone Age, our research should not be restricted to Japan islands. Rather, we should investigate it is a wider context of northeastern Asia. I would say that the first the step toward this direction has been already started in this International Symposium in Asia-American Region. Therefore, I appreciate this new enterprise.

Cylindrical and conical micro-blade cores (Nodake type)



Boat-shaped micro-blade core (Type-A: Fukui-type, Senpukuji-type)

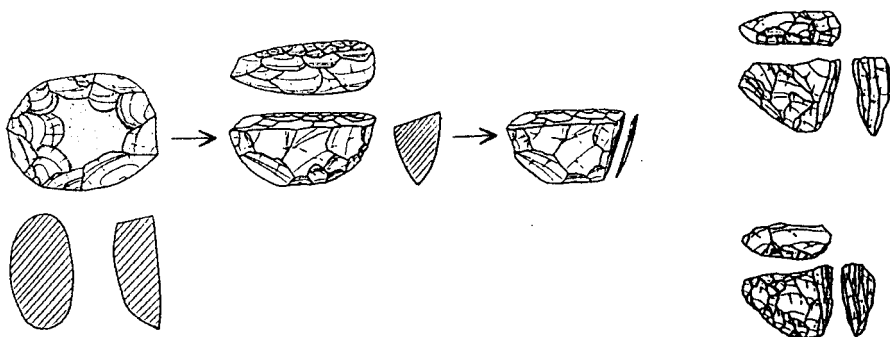
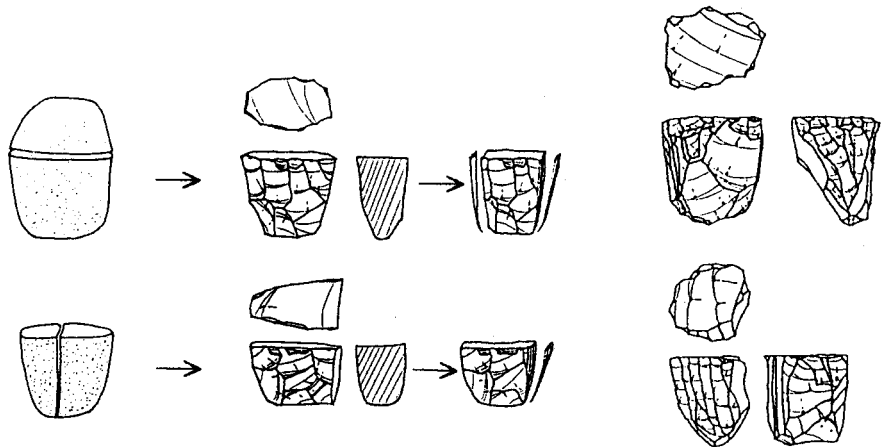


Fig. 1. Fabrication processes of micro-blade core

Boat-shaped micro-blade core (Type-B: Funano-type)



Boat-shaped micro-blade core (Type-C: Unehara-type, Kajiyazono-type)

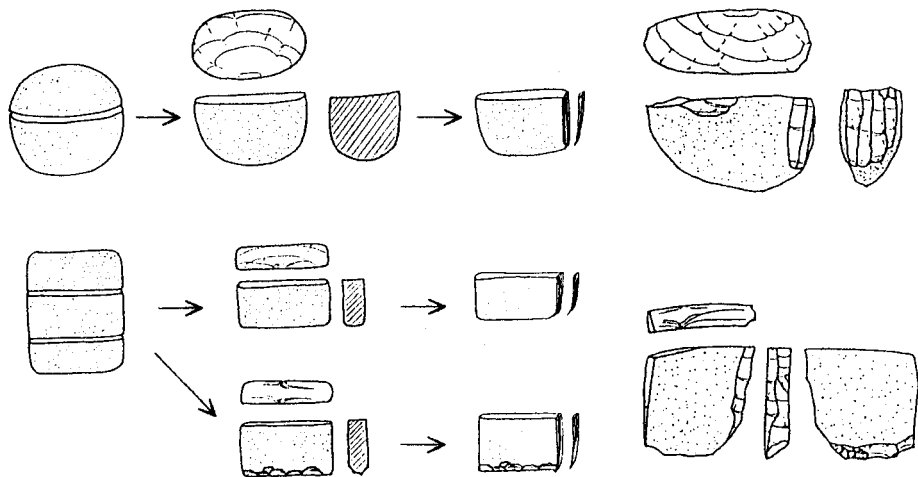


Fig 2 Fabrication processes of micro-blade core

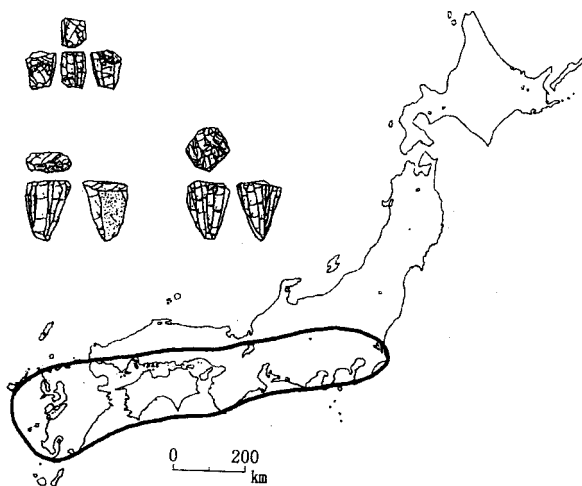


Fig. 3 The distribution of cylindrical and conical micro-blade cores

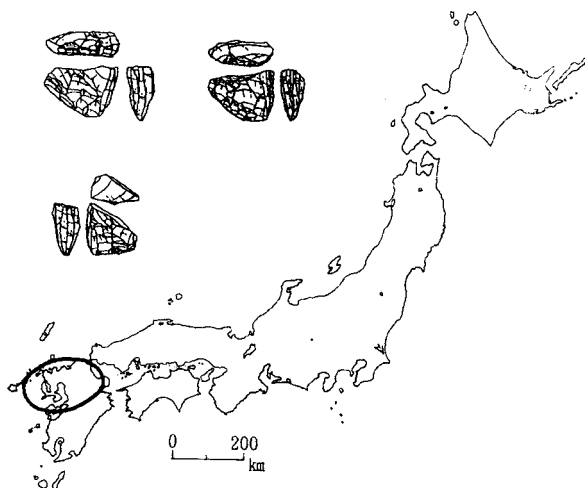


Fig. 4 The distribution of boat-shaped micro-blade core (Type-A)

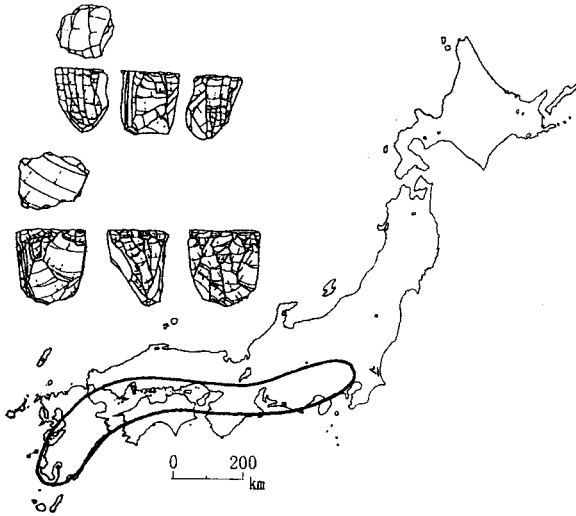


Fig. 5 The distribution of boat-shaped micro-blade core (Type-B)

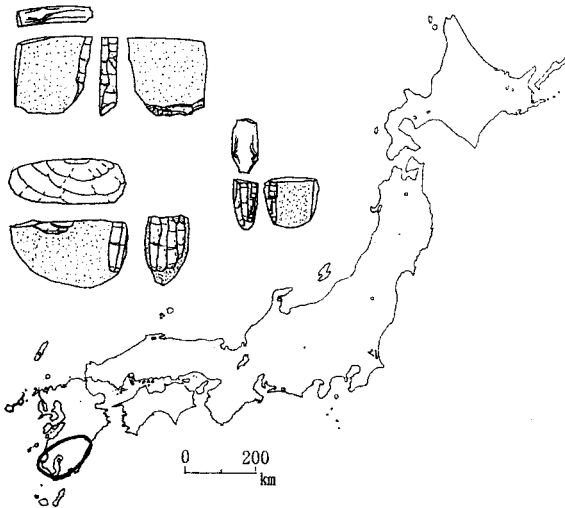


Fig. 6 The distribution of boat-shaped micro-blade core (Type-C)

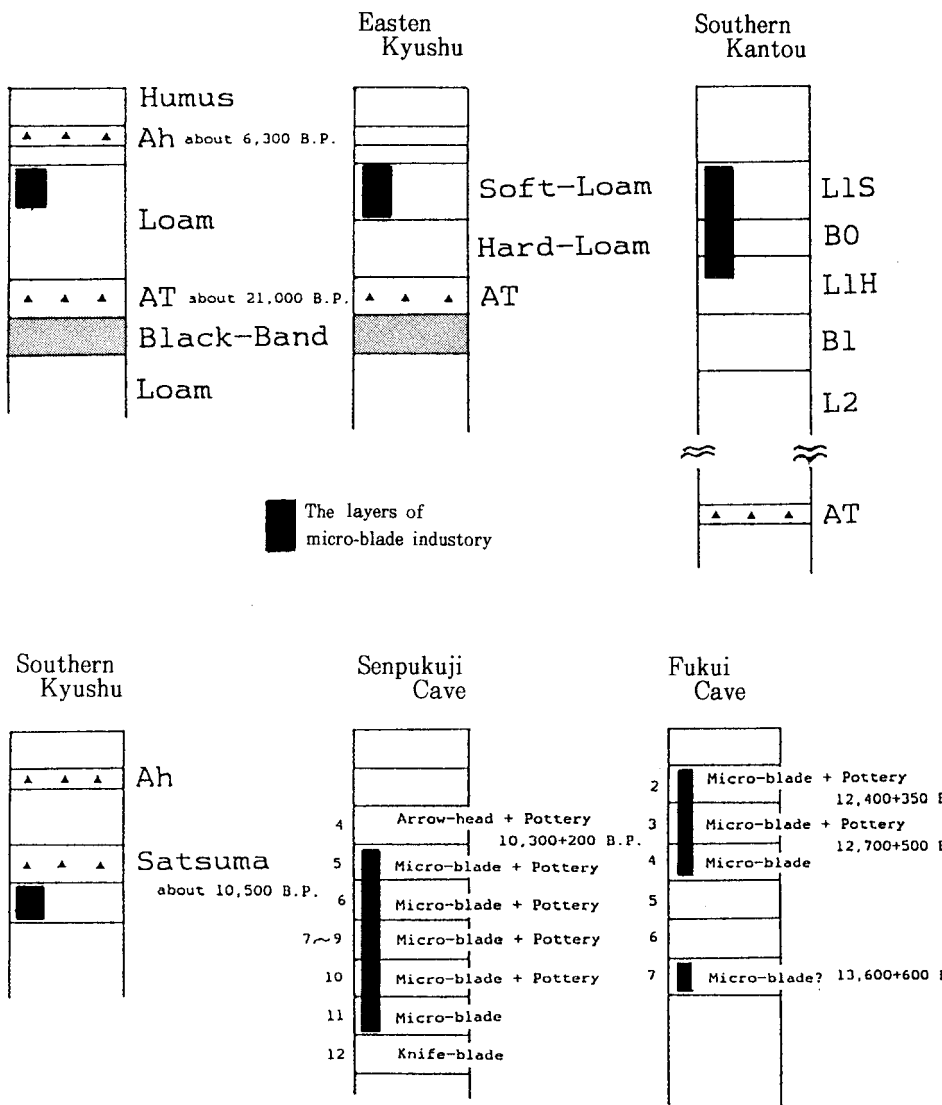


Fig. 7 Schematic sections of stratigraphy



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(Note) All books and articles in this bibliography are written in Japanese.

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