# Relation to the bone preservation and depositional environment in Japanese elephant fossil site

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Of large-size land vertebrate fossils from Japan, elephant fossil is comparatively much discovered. Although the elephant fossils have been known from Japanese every part, there are many reports on Palaeoloxodon naumanni or Stegodon aurorae above all. The preservations of these fossils are various, and the depositional environments are the same. The depositional environment was discussed in detail about the elephant fossil sites that have been reported until now. However when arranged some reports, it seems to have a trend to the relate preservation and the associated fossils. According to the depositional environment, stagnant water sediment, flood sediment, channel, and fan sediment are recognized in order of good place of the preservation. The trend was summarized as follows.

Stagnant water sediment: Many parts of elephant fossil are mostly remained, even in skull and limb (especially in finger). The bones are position in narrow space. The sediment includes the many fossils that are considered to have lived in an environment with the fossil elephant.

Flood sediment: Skull or small finger bones of elephant are not preserved in good condition. Bones are broken up. Some fossils are yielded with fossil elephant and they include fossils that are considered to have inhabited in the same deposited place.

Channel: The elephant fossil is remained in few parts in the sediment. They are deposited only in the channel. Some animals and some species are included. The sediment also has the case of marine deposit.

Fan sediment: Preservative condition of fossil is no good like wear the surface of fossils. A part of body independently occurs.

It is a certain trend and the completely same information does not been acquired by such result at each depositing space. Moreover, it may be difficult simply to compare them, because the analysis of depositional environment differs by each report.

Now the large-size land vertebrate fossils from Japan almost occur in condition of a part of body, and rather rare except for the sediment of fissure of limestone that all the bones of one animal are preserved. However, the fossil of a vertebrate is nearly completely yielded in continentals. Also each bone is discovered in the condition joined. Considering such a situation, even if the condition of the depositional environments is the same, the difference may be present in the taphonomy of elephant fossils between the island and the continental. Thus clarifying the relation between the depositional environment and the preservation of fossils will contribute to infer the paleoenvironment of Japan. In future excavation, more detail investigation on depositional environment is required.