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Terminology for better description of man-made strata in relation to geopollution and geological hazards in Japan

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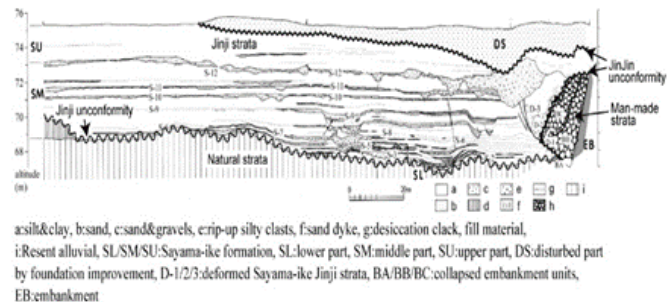
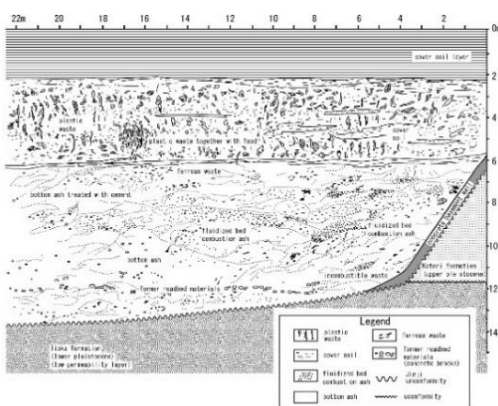
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Deposition of Anthropogenic deposits [1] is accelerating due to rapid urbanization. Many are associated with contamination and geohazards such as subsidence or liquefaction-fluidization during earthquakes [2]. The history of research on these deposits is short compared with that of research on natural strata and an internationally agreed terminology for their depositional relationships has yet to be agreed. In Japan, there is now a terminology defining: the Jinji Unconformity[3]which is the unconformity between artificial and natural strata; Jinjin strata [4]which are the anthropogenic horizons; and Jinjin Unconformities which are the discontinuities at the bases of different phases of deposition of the Anthropogenic strata. These terms are supported by a set of proposed terms for the finer detail of anthropogenic deposits which will aid in more effective strategies to investigate such deposits to determine actual and potential hazards. This is of importance in Japan where there is much new development on land already covered by anthropogenic deposits. The Jinji unconformity in coastal, hilly and mountainous areas is closely associated with geological hazards. Also, as science and technology advance, the synthesis and use of hazardous chemicals is accelerating increasing the risk of contamination through industrial processes, accidents and war. We owe it to our descendants to consider these deposits in a more systematic way.



Anthropogenic Sediments Source:from Yoshikawa et al.(1997) revised by Nirei et al.(2015)

Figure.1 : Cross-section of waste disposal deposits showing the underlying Jinji unconformity. Source: Nirei et al. (1996), revised by Nirei (Edgeworth et al. 2015) **(left)**

Figure 2 : Anthropogenic strata seen in a geological cross section of Sayama Pond showing a Jinjin unconformity, as revealed during an archaeological dig (Nirei et al.2015) **(right)**.

References:[1]Nirei Hisashi, et al. (2012) Episodes 35(3):33-36.[2] Nirei Hisashi,et al. (2015) Episodes (in press).[3]Edgeworth Matt, et al. (2015) Anthropocene Review: 1-26.[4] Nirei Hisashi, et al. (2015) Proceedings of the Twenty-Fifth Symposium of PMUG:49-51, Japan.

