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Reevaluation of the stratigraphy of Hokkaido-Komagatake Volcano - newly found deposits and its significance

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The stratigraphy of Hokkaido-Komagatake Volcano, Northern Japan, are reconstructed on the basis of newly identified deposits after Yoshimoto et al (2008) and the previous studies. Mudflow deposits are newly recognized beneath the AD 1964 and AD 1856 pumice fall deposits, respectively, on the east coast. They contain poorly-vesiculated aphyric scoria which was characterized by juvenile material in the initial phase of AD 1640, AD 1694 and AD 1856. It suggests that the small-scale eruptions of the aphyric scoria magma were followed by the plinian eruptions. A block-and-ash flow deposit composed of agglutinate and its fine particle was newly recognized beneath Ko-g (6 ka) on the northern slope (400~600 asl), the occurrence of which suggests that the deposit is derived from collapse of welded pyroclasts emplaced at the summit part. Seven pumice fall deposits are recognized beneath Nigorikawa tephra (12 ka) at the 12 km southern east of the volcano. Five of them were correlated with Ko-h (17ka) Ko-i (33.6 ka), C2, C 3 and C4 tephra of Ganzawa et al. (2005). Two of them are the newly identified deposits. Twenty-two distinct explosive eruption units and three sector collapses have been recognized in the last 100 thousand years. Most of the eruptions are plinian eruption with/without pyroclastic flow. However, five eruptions are pyroclastic flow eruption without plinian fall. Various styles of eruption have been recognized in this volcano, which suggests that the previous volcanic eruption scenario of the volcano must be reexamined.

Keywords: Hokkaido-Komagatake Volcano, eruptive History, pumice fall, pyroclastic flow, mudflow