

Two contrasting types of andesitic stratovolcano: Maekake-type vs. Kurofu-type

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The Asama volcano consists of two contrasting types of andesitic stratovolcano with different internal structure. The Maekake volcano has been constructed by repeated large scale Plinian eruptions. The alternation of lavas and pyroclastics around the crater was formed by the different degree of welding of pyroclastic rocks; the lavas are not lavas but agglutinates. The middle flank of Maekake volcano comprises clastogenic lavas and welded intermediate-type pyroclastic flow deposits. Contrasting to the Maekake volcano, which is essentially a densely welded pyroclastic cone, the central portion of present dissected Kurofu volcano is characterized by voluminous volcanic breccias with minor amount of lava flows. The Kurofu volcano, especially the Gippa and Kengamine lava groups which are its main constituents, was formed by repeated Strombolian eruptions. The volcanic rocks around the crater were agglutinates, estimated from the blocks included in flow mounds of debris-avalanche deposit, which was formed by the collapse of Kurofu volcano. The steep slope of the volcanic cone comprises volcanic breccias with secondary volcanic sand, which were the deposit of fragmented lavas. The lavas outpoured from the summit crater flowed down and crumbled to fragments, which rolled down the slope and deposited as massive volcanic breccias with minor amount of lava flows. The gentle slope of volcano away from the central crater is composed of lava flows and block and ash flow deposits. The Maekake-type and Kurofu-type volcanoes are stratovolcanoes with contrasting internal structure, reflecting their different mode of eruption.