

## 最近 4500 年間の鳥海火山の噴火活動

—湿原堆積物に保存された火山灰層の解析—

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Eruptive History at Chokai Volcano during the Last 4000 Years:  
Implication from Ash Layers Preserved in Peat SoilTsukasa OHBA\*, Shintaro HAYASHI†, Masao BAN‡, Azusa KONDO\*,  
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A series of volcanic ash layers preserved in peat soil at an isolated bog (Oda bog) on the flank of Chokai volcano was examined to determine frequency and eruption types during the last 4,500 years. A total of 54 ash layers overlies the peat soil of which calibrated age is ca. 4500 cal yrs BP (the AMS age is ca. 4,000 years), implying that the frequency of explosive eruption is higher than once every 83 years. The layer of pale-yellow fine ash derived from afar was compared in terms of glass composition and age with Holocene widespread tephra around middle to south Tohoku, and To-b (Towada-b tephra) is consequently the most plausible candidate for correlation with the ash. Hydrothermally-altered lithic fragments and blocky- and irregular-shaped juvenile fragments coexist in most ash layers, implying that phreatomagmatic eruption is dominant at Chokai. Wide variety of proportion of juvenile to altered ash grains demonstrates the wide spectrum of eruption types from magma-dominant to hydrothermal-dominant types. Juvenile fragments in individual ash layers show a wide compositional range from basaltic andesite to rhyolite ( $\text{SiO}_2 = 55\text{--}75\%$ ). These data suggest that batches of compositionally heterogeneous magma repeatedly uprise and interact with subvolcanic hydrothermal system in various degrees, producing a wide variety of eruption styles.

**Key words**: Chokai volcano, ash components, AMS age, peat soil, phreatomagmatic eruption

## 1. はじめに

鳥海火山は活火山の一つであり、歴史時代にも噴火を繰り返している。その山体形成史は、約50万年前に始

まる古火山体の形成期(ステージⅠ)、16万年以降の西鳥海火山の活動期(ステージⅡ)、東鳥海火山の活動期(ステージⅢ)の3つの活動期からなる(林, 1984a)。東鳥

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