

Iizuna-Nishiyama Tephra and Yokokawa second Pumice in the north Kanto District, Central Japan

Hiroomi Nakazato[1]; Tsutomu Nakazawa[2]

[1] NARO(NIRE); [2] GSJ, AIST

<http://nkk.naro.affrc.go.jp/>

Nakazato and Nakazawa (2006) detected a pumice layer including abundant cummingtonite and quartz from the Konan terrace in the Saitama Prefecture, and correlated the tephra with the Iizuna-Nishiyama tephra (Iz-NY: Hayatsu and Arai, 1980) based on the similarity of the rock description character and the chemical composition of cummingtonite. This study presents a new locality of the Iz-NY and discusses the relation between Iz-NY and Yokokawa second Pumice (YoP-2: Nakayama, 1978).

The outcrop where Iz-NY was newly detected is the Jumonji point in the Haruna town, Gunma Prefecture. Takada et al.(1990) reported the ESR age of YoP-2 at this point. In this point, Iz-NY is a scattered fine pumice layer and intercalated in the tephric soil deposits above 60-65cm of YoP-2. The characteristics of Iz-NY here are corresponding to those in the Sugadaira and Konan terrace as shown in the table below.

YoP-2 is also remarkable tephra containing abundant cummingtonite and quartz. YoP-2 is correlated with SgP-2 in the Sugadaira (Suzuki and Hayakawa, 1990), Mihara volcanish ash (Yaguchi et al., 1993), and Nagafuji volcanish ash (Kitazume et al., 1994) along the Agatsuma River. YoP-2 and SgP-2 can be distinguished from Iz-NY based on a little difference of the refractive index and the chemical composition of cummingtonite and the heavy mineral composition.

The age of SgP-2 is about 240ka (MIS7) because Ata-Th is located right below it (Suzuki and Hayatsu, 1991). The age of YoP-2 had been thought MIS5-6 (Takada et al.,1990; Sugai, 1992). However, YoP-2 is surely correlated with SgP-2 based on the petrographic properties and stratigraphic relation with Iz-NY.

Table Petrographic properties of tephtras

tephra Loc. H.M.compo. Ref.index of cum Mg value(1sigma)

Iz-NY Konan cum,il 1.663-1.670(1.666) 63.3(0.56)

Iz-NY Sugadaira mt,cum,ho,il 1.663-1.668(1.666) 63.5(0.75)

Iz-NY Haruna cum,mt,il 1.663-1.670(1.666)

SgP-2 Sugadaira cum,mt,ho,bi 1.661-1.669(1.665) 64.3(0.39)

YoP-2 Haruna cum,mt,ho,bi 1.661-1.667(1.665)

YoP-2 Yokokawa cum,mt,ho,bi 1.663-1.671(1.665) 64.7(0.75)

References

Hayatsu and Arai(1980): Jour. Geol. Soc.,86, 243-263; Kitazume et al.(1994):Proc. JAQUA meeting, 24,176-177; Nakayama(1978)Kom Chiri, 14,245-252; Nakazato and Nakazawa(2006): Abs. JGU meeting 2006, Q126-009; Sugai(1992):Geog. Rev. Jap.,65A, 339-353; Suzuki and Hayakawa(1990):Quat. Res, 29, 105-120; Suzuki and Hayatsu(1991):Quat. Res.,30, 361-368; Takada et al.(1990): Proc. AJG meeting, 38, 152-153; Yaguchi et al.(1993): Proc. JGS meeting, 297.