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News and Views

The first hominid fossil recovered from West Java, Indonesia

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Introduction

Although not as well known as the fossil-bearing beds of central and eastern Java, fossiliferous sites from western Java were first identified by European geologists in the 1920s (Zwierzycki, 1926). Von Koenigswald (1933) named the "Tji Djoelang" (= "Cijulang": current transliteration) fauna, and regarded it as the "first real fauna" (von Koenigswald, 1949: 91) of Java. The fauna's namesake refers to the major river of this West Javan region. The original fossils included in von Koenigswald's Cijulang fauna were derived from exposures near Rancah, a village in the central-eastern portion of West Java.

In 1999, our team excavated two sites along the Cipasang and Cisanca Rivers in West Java (Fig. 1). We recovered large vertebrate fossils from both excavations and surface surveys of the surrounding areas. At Cipasang, we sampled three air-fall tuffs that have been dated by laser $^{40}Ar/^{39}Ar$ methods (Kramer et al., 2001; Weinand et al., in prep.). At Cisanca, we recovered bovid teeth that we subjected to EPR (electron paramagnetic resonance) analyses to determine their age (Weinand et al., 2000; Weeks et al., 2003; Bogard et al., 2004).

Our most significant discovery was a hominid incisor found in situ, more than 3 m below the surface at Cisanca (designated "RH1" = "Rancah Hominid 1"). This is the first fossil hominid recovered from West Java and one of the very

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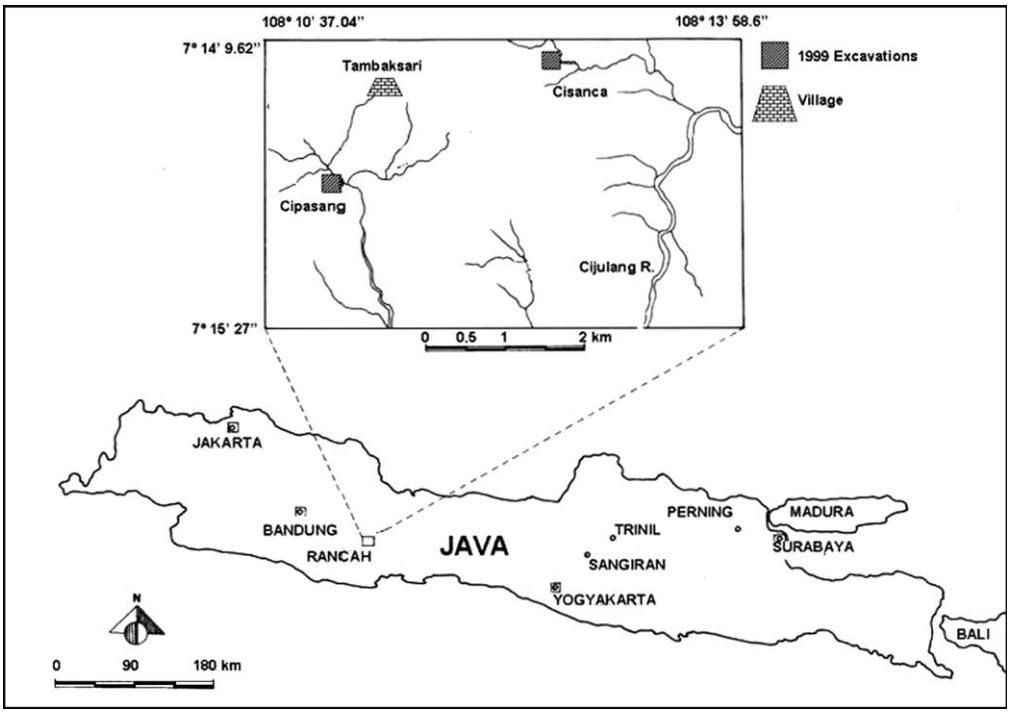

Fig. 1. The 1999 excavations in West Java.

few Indonesian hominids to be produced as the result of a controlled excavation (Kramer et al., 2000, 2001, 2002). In this paper, we present paleoanthropological and geochronological analyses to provide the interpretive context for RH1.

Discovery and description of RH1

Specimen RH1 was recovered by an individual excavator with a trowel from a fine, blue sandstone stratum 333 cm below the surface at Cisanca on July 8, 1999 (Fig. 2: RH1 is identified as "H – Hominid tooth" in the legend). Initial excavations were done by shovel to remove the topsoil and overburden. When the fossiliferous strata were reached, excavation was continued by trowel and dry-screening. All osteological and dental specimens, as well as any lithics (measuring at least 1 cm along their longest axis), were plotted in three dimensions. Approximately 25 m^2 of deposit were excavated at Cisanca to a maximum stepped-depth of 7 m. Despite dry-screening all deposit through successive ½-inch and ¼-inch mesh, no other hominid remains were recovered.

Specimen RH1 is a permanent, lower, right, lateral incisor crown (Fig. 3). There is no root preserved on this specimen. The tooth grades from off-white enamel superiorly to dark mottled brown inferiorly. The occlusal surface lacks labial convexity and is dominated by a (likely) post-mortem, semi-lunar chip extending over the distal two-thirds of its surface. Dentin is exposed beneath this damage. Enamel thickness measured from the distal edge of the chip to the distal edge of the occlusal surface is approximately 1 mm. Neither mesial nor distal interproximal wear facets are present. The maximum height of the crown, measured from the unworn mesial occlusal edge inferiorly to the crown base is 10 mm.

The crown outline at its base forms an oval with a labiolingually long axis. In labial view, the crown would be symmetric if not for the damage on the incisal edge. Both the mesial and distal borders gently taper to the cervix. The labial enamel surface is smooth and featureless, and is convex