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A Note on the Age of the Subfossil Site of Ampasambazimba, Miarinarivo Province, Malagasy Republic

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ABSTRACT

A radiocarbon age determination of 1035 ± 50 years B. P. is given for a lemuroid bone from the prolific subfossil site at Ampasambazimba, Miarinarivo Province, Malagasy Republic. This is the first absolute date to have been obtained for a central plateau site, and, it is suggested, the most recent yet acquired for the subfossil lemuroids.

INTRODUCTION

Subfossil remains of both extant and recently extinct lemuroids have been recovered from deposits in the center, south, and southwest of the island of Madagascar. Certainly the best known, and almost equally certainly the most productive, of all these sites is that of Ampasambazimba. Situated on the island's high central plateau, at an altitude of about 1100 meters, the site is, unfortunately, covered today by rice paddies.

Discovered in 1902 by Raybaud, a colonial administrator, Ampasambazimba has accumulated the largest literature of any Malagasy subfossil site (e.g. Raybaud, 1902; Jully and Standing, 1904; Grandidier, 1905; Standing, 1908; Fontoynt, 1908; Perrier de la Bathie, 1927; Lenoble, 1940; Battistini and Vérin, 1967; Walker, ms). The most extensive exca-

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ventions to have been carried out at the site were those performed between 1903 and 1907 by Standing, whose series of reports on Ampasambazimba and its fauna culminated in his monograph of 1908; later work was carried out sporadically between 1919 and 1934 by Lamberton (e.g. 1929, 1934). Lemuroids known from the site include the following:

EXTINCT	LIVING
<i>Archaeoindris fontoynonti</i>	<i>Avahi laniger</i>
<i>Palaeopropithecus maximus</i>	<i>Indri indri</i>
<i>Archaeolemur edwardsi</i>	<i>Propithecus</i> sp.
<i>Hadropithecus stenognathus</i>	<i>Cheirogaleus</i> sp.
<i>Megaladapis grandidieri</i>	<i>Lemur</i> sp.
<i>Mesopropithecus pithecoides</i>	<i>Hapalemur griseus</i>
<i>Varecia insignis</i>	<i>Lepilemur mustelinus</i>

Ampasambazimba lies some 1.5 km. southwest of the village of Tsarazaza, Miarinarivo Province (fig. 1). The site is that of a former lake probably created by the damming of the River Mazy, to the north of a loop of which the fossiliferous deposits lie, by a lava flow; the eventual breaching of this flow by the river led to the draining of the site to its present marshy condition (Standing, 1908; Walker, ms). The sediments laid down during the infilling of the lake have been characterized by Standing as follows:

"To a depth of about 1 metre below the present surface the deposits consist of recent vegetable remains which rapidly turns to mud on admixture with water. This is superposed on a stratum of forest débris, consisting of leaves, twigs, seeds and fruits of numerous species. Below this again a layer of larger branches and tree trunks is frequently encountered . . . the bones begin in general with this layer of wood, though they are occasionally met with nearer the surface.

"In several places the bed of the marsh has been uncovered. It is found to consist of a compact layer of pebbles cemented together by mineral deposits . . . These pebbles apparently form a nearly horizontal floor about three metres below the present surface.

"Primate remains are found at all depths" (1908, pp. 63, 65).

For a variety of reasons Standing proposed a recent origin for the deposits, suggesting an age for the fossils of not more than 500 years. Subsequent authors have been in general agreement with this estimate, but despite the fact that absolute dates for several other Malagasy subfossil sites have recently been determined (Mahé, 1965; Mahé and Sourdat, In press), no radiometric age determination has previously been available for Ampasambazimba. Recently, however, at my request, Miss Theya Molleson submitted a tibial diaphysis (BM M 9927) of *Megaladapis grandidieri* to J. C. Vogel for radiocarbon dating. The specimen was col-

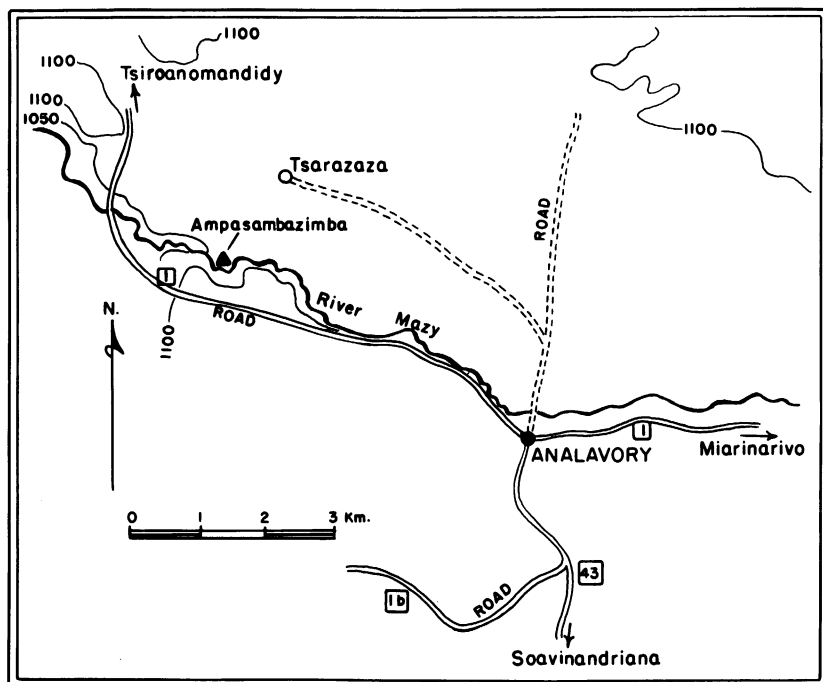


FIG. 1. Outline map of the location of Ampasambazimba.

lected by Standing during his excavations at Ampasambazimba, and yielded a date (Pta 739) of 1035 ± 50 years B. P. Primate subfossils, as Standing noted, were recovered from all depths in the deposit, and the level at which BM M 9927 was found is not recorded.

SIGNIFICANCE OF THE DATE

As previously mentioned, Mahé (1965) and Mahé and Sourdat (In press) have provided radiocarbon dates for a number of Malagasy subfossil sites (fig. 2). All of these dated sites, however, are situated in the south and southwest of the island; Ampasambazimba is the first site to be dated which lies in the high central plateau and within the prehistoric limit of the distinctive eastern floral zone of Madagascar (fig. 2). Although the area around Ampasambazimba, like most of the plateau, is today almost entirely denuded of forest, at the time of deposition of the fossiliferous sediments the region was covered with rain forest of the type still characteristic of parts of the eastern, windward, side of the island; that

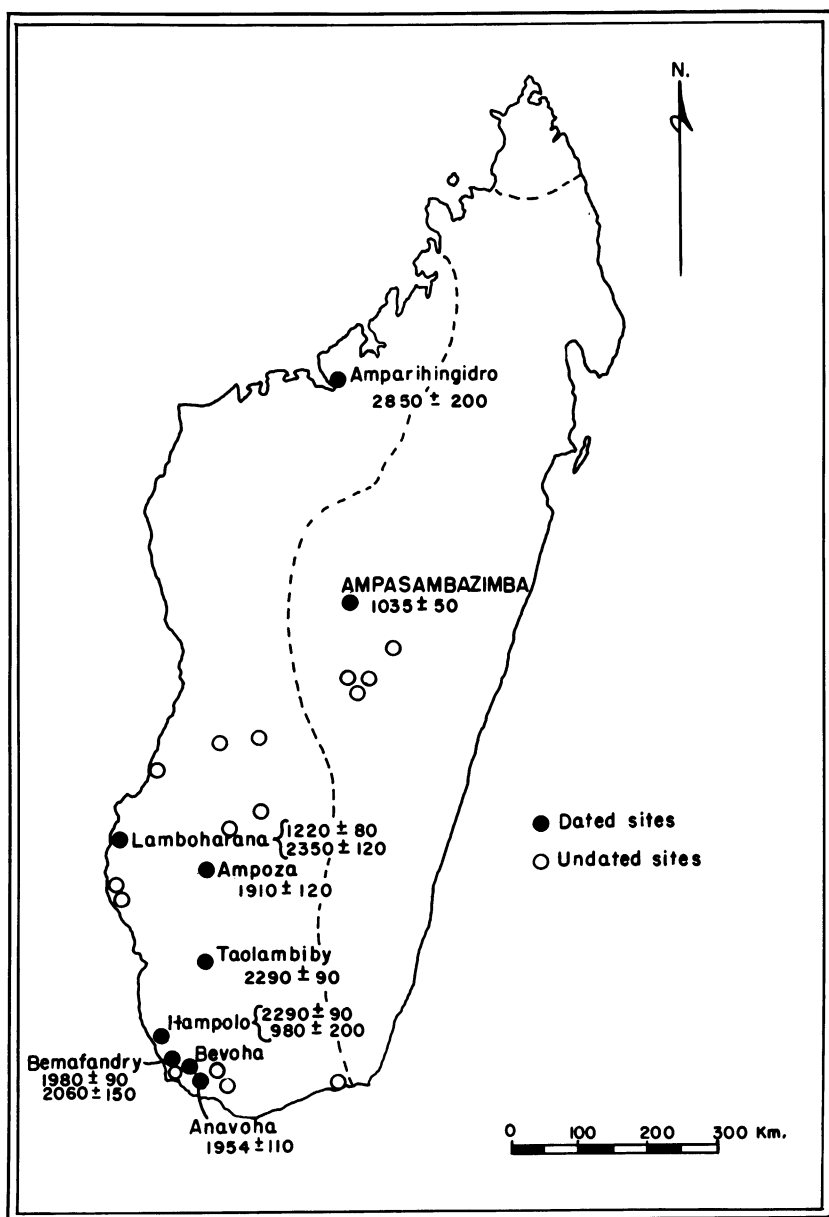


FIG. 2. Subfossil sites, with dating where available, of Madagascar. The broken line indicates the westernmost limit of the windward flora, as given by Battistini and Vêrin (1967, fig. 1, p. 408).

this was so is suggested not only by faunal evidence (of those living species given in the faunal list above, *Indri indri* and *Avahi laniger*, in particular, are strongly characteristic of the eastern rain forest of Madagascar), but also by botanical (Perrier de la Bathie, 1927) and climatological (Battistini and Vérin, 1967) studies.

Moreover, despite the fact that Mahé (1965) and Mahé and Sourdat (In press) have quoted a date of 980 ± 200 years for the site of Itampolo, it is highly probable that the date for Ampasambazimba represents the most recent reliable date yet obtained for any of the subfossil lemuroids. Mahé and Sourdat have described a section through the site at Itampolo in which they define two fossiliferous layers, one between 60 and 90 cm. depth, and the other between 115 and 125 cm. The earlier date for this site, 2290 ± 90 years B. P., was obtained from a piece of wood recovered at a depth of 120 cm., that is, close to the bottom of the lower fossiliferous layer. But the younger date was obtained on a *Hippopotamus* bone found just below the surface, at a depth of only 15 cm. This is well above the top of the upper fossiliferous horizon. Lemuroid remains are rare at Itampolo in comparison with those of *Hippopotamus*, the dominant faunal element at the site, and whether or not the presence of the latter this high in the section is due to disturbance, it seems at the very least extremely probable that the date of 980 years considerably postdates the last occurrences of lemuroids at this site.

Finally, it is interesting to note that in the upper strata at Ampasambazimba there is clear archeological evidence of the contemporaneity of man with the extinct lemurs. Not only have examples been found of a type of pottery still in use on the plateau, but Standing (1908, p. 71) recorded the presence of "coarse earthenware of Chinese manufacture," which he attributed to the influence of Arab traders. This can have found its way to the site at the most only a few centuries ago, and suggests that the dated bone was recovered considerably lower down in the section. The most recent subfossil remains from Ampasambazimba, then, may even date from, or from not long before, the time period originally suggested by Standing.

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