

Rediscovery of the wild pig *Sus bucculentus*

Sus bucculentus, a species of wild pig from Indochina, was described more than a century ago¹ but has not been reported since and has remained in the 'mystery' category. We here report its rediscovery in the Annamite Range in Laos, an area which is becoming famous for the discovery of new and previously undescribed large mammals².

Sus bucculentus was described from two skulls¹ from Vietnam, and was claimed to differ from the much commoner *S. scrofa* (the widespread Eurasian wild pig from the same area) in skull characters and in the form of the lower canine of the male, in which it was said to resemble the warty pig (*S. verrucosus*) of Java. The whereabouts of the type specimens was unknown until recently. In July 1996, the type male skull was found by one of us (C. P. G.), unregistered but bearing an identification in Père Heude's handwriting, in the collection of

the Institute of Zoology, Academia Sinica, Beijing. It is inscribed "Bienhoa", an important colonial centre of the former French Indochina, and so doubtless a place of export rather than a locality. It does resemble *S. verrucosus* in many ways (deep preorbital fossa, elongated facial skeleton, high occipital crest, flat dorsal outline to the braincase and very long palate), but the canine is not like *S. verrucosus* as claimed in the original description¹. It has large premolars compared to the molars, in contrast with both *S. scrofa* and *S. verrucosus*; a primitive condition³.

A new specimen of *S. bucculentus*, a partial skull of a juvenile male, was obtained from indigenous hunters in the Annamite Range, Laos, in January 1995 by two of us (G. B. S. and K. K.; Fig. 1a). The locality of the new skull is Ban Ni Ghang, 18° 19' N, 104° 44' E, a village on the Nam Gnouang. This can be taken as the first definite

locality for the species. The morphology is identical to that of the type skull (Fig. 1b) except for age differences.

Muscle tissue adhering to the new skull was used to extract and sequence a 327-base fragment of the 12S ribosomal mitochondrial gene, which was compared with material from a local wild *S. scrofa* (Fig. 1c) and a local domestic pig. The latter two were identical, but differed at 24 sites from the specimen of *S. bucculentus*. For a gene as conserved as the 12S ribosomal gene⁴, a difference as large as this is remarkable.

The rediscovery of this species is significant. It is another representative of a steadily enlarging clique of primitive large mammals whose ranges are more-or-less restricted to the Annamite Range², which lies along the central part of the Laos/Vietnam border. Here it lives alongside the much more widespread common wild pig, *S. scrofa*. This rugged region of igneous rocks, with localized karst cliffs and domes, still has large tracts of montane evergreen broad-leafed forest with an understorey of bamboo, palms and saplings, broken by swidden plots and regenerating forest.

The primitive status of *S. bucculentus* recalls two other recently described Annamite mammals: the bovid *Pseudoryx nghetinhensis*, which has been interpreted as alternatively a divergent member of the bovine (ox/buffalo/kudu) clade³ or the sister group of the caprine (sheep/goat/chamois) clade⁵; and the cervid *Megamuntiacus vuquangensis*, which is the sister group of the diverse genus *Muntiacus* (muntjac deer)³. These conclusions underline the significance of the Annamites as a biotically unique region where primitive taxa, long extinct elsewhere, have been able to survive into the late twentieth century.

Colin P. Groves

Department of Archaeology and Anthropology,
Australian National University,
Canberra, ACT 0200,
Australia

colin.groves@anu.edu.au

George B. Schaller

George Amato
Wildlife Conservation Society,
Bronx, New York 10460, USA

Khamkhoun Khounboline

Department of Forestry,
Vientiane,
Lao People's Democratic Republic

1. Heude, P.-M. *Mémoires d'Histoire Naturelle de l'Empire Chinois*, 2, 85-115, 212-222; 4, 113-133 (Musée du Zikawel, Shanghai, 1892).

2. Schaller, G. B. & Rabinowitz, A. *Oryx* 29, 107-114 (1995).

3. Dung, V. V. et al. *Nature* 363, 443-445 (1993).

4. Amato, G. & Gatesy, J. in *Molecular Approaches to Ecology and Evolution* (eds Schierwater, B., Streit, B., Vagner, G. & DeSalle, R.) (Birkhauser, Basel 1994).

5. Thomas, H. *Mammalia* 58, 453-481 (1994).

6. Groves, C. P. & Dawson, S. *Mammalia* (in the press).

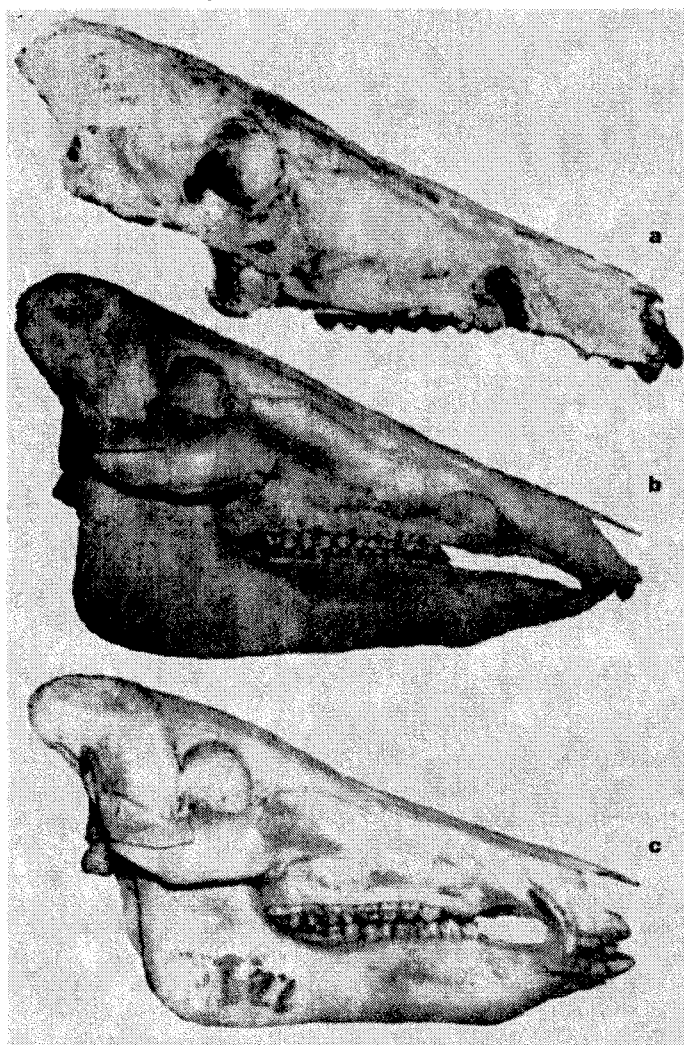


Figure 1 a, Cranium of juvenile *Sus bucculentus*, with third molars unerupted, from Laos.

b, *S. bucculentus* type skull, adult male, labelled as being from Bienhoa (southern Vietnam).

c, *S. scrofa* adult male from Indochina (no exact locality). Specimens are not to scale: skull lengths are respectively 354, 391 and 366 mm.

Distinctive visible features are that *S. bucculentus* has a more elongated facial skull than *S. scrofa*; the preorbital fossa is deep and well outlined; the dorsal margin of the braincase is straight, not convex and the occipital crest is higher; and the premolars are long compared to the molars.