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Apparent Confirmation that *Alouatta villosa* (Gray, 1845) is a Senior Synonym of *A. pigra* Lawrence, 1933 as the Species-Group Name for the Black Howler Monkey of Belize, Guatemala and Mexico

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Abstract: The revision of the Mesoamerican howler monkeys by Barbara Lawrence in 1933 (*Bull. Mus. Comp. Zool. Harv.* 75: 313-354) resulted in the black howler of the Yucatán Peninsula, Mexico, Belize, and northern Guatemala being referred to as *Alouatta pigra* Lawrence, 1933. In her revision, Lawrence (1933) recognized the existence of a previous name, *Mycetes villosus* Gray, 1845, for the black howlers of the region, but considered that it was not possible to use it because the holotype (in the Natural History Museum, London) was restricted to a damaged skull of an immature female (the skin had been lost), the type locality was imprecise and confused, and she was unable to determine to which of two forms she named (*A. palliata pigra* [Mexico and Guatemala] and *A. palliata luctuosa* [Belize]) it may have belonged. James D. Smith (1970, *J. Mammal.* 51: 358-369) argued that *luctuosa* was indistinguishable from *pigra*, but that *pigra* should be considered a species distinct from *palliata*. Here I discuss the type specimen of *Mycetes villosus* and its probable type locality, and argue, as Prudence Napier did (1976, *Catalogue of Primates in the British Museum (Natural History). Part 1: Families Callitrichidae and Cebidae*. British Museum [Natural History], London), that *Alouatta pigra* Lawrence, 1933 is a junior synonym of *Alouatta villosa* (Gray, 1845).

Key Words: Taxonomy, Black howling monkey, Mesoamerica, *Alouatta villosa*, *Alouatta pigra*, *Alouatta palliata*

The holotype of *Mycetes villosus* Gray, 1845 is a young adult howler monkey ZD.1843.9.14.3 with incompletely erupted maxillary canines and minimal dental attrition, purchased from Leadbeater and preserved at the Natural History Museum, London, UK (Napier 1976, p. 87). For years Leadbeater father and son were the leading natural history agents in London, with premises in Brewer Street, Golden Square (Sharpe 1906, p.411). The canine morphology of the skull of the holotype diagnoses it as female. A central puncture in the frontal bone and the loss of the right nasal bone, along with damage to the surrounding bones, are compatible with shotgun wounds. A round hole through the left parietal near the cranial summit drilled from another one in the basisphenoid, indicates the skull was once supported by a rod inside a mounted skin.

Gray (1845) lamented the poor condition of the skin. In his view it marred its chief diagnostic feature, the growth direction of the frontal hair, later shown by Schlegel (1876, pp.145, 152) to be individually variable. Gray (1845, p. 220) judged the frontal hair to be forward-directed, and stressed “the abundance, softness and length of the hair” which, other than the brownish roots of the cheek hairs, is entirely “silky” black. Sclater (1872) considered an adult male skin ZD.1865.5.18.3 that Osbert Salvin collected in the mountains

of Chilascó (15°07'N, 90°05'W), above 6,000 feet (1,800 m) in Vera Paz, Guatemala, to be the same species, and doubted the type locality “Brazils” given by Gray (1845). In the Accessions Register, however, Gray annotated the holotype as from “Central America (Mexico?)”; the question mark later being lined out. The skull locality reads: “Mexico”. The date of disposal of the skin is unrecorded, but it must have been available for Elliot (1913, p.269) to take the body dimensions he supplied. His description, “Entire pelage, hands, feet and tail jet black, base of hairs Prout’s brown” may not be based solely on the holotype.

Employing the next available name of *Mycetes palliatus* Gray, 1849, Lawrence (1933) recognized seven subspecies. She discarded *M. villosus* as indeterminable owing to her inability to establish which is its synonym of two new subspecies she instigated; *Alouatta p. pigra* from northern Guatemala and *A. p. luctuosa* from Belize. Hall and Kelson (1959) accepted the synonymy and priority of *A. villosa*, recognizing an eighth nominotypical subspecies from central and eastern Guatemala, the source of ZD.1865.5.18.3. The size, pelage colour and texture of *A. villosa* suggested to Hill (1962, p.103) that it is specifically distinct from the smaller mantled howler, *A. palliata*. Smith (1970) deemed this confirmed by

cranial and pelage characters and by the sympatry of *A. p. mexicana* at Macuspana in Tabasco, Mexico. He named the Guatemalan species *A. pigra*, with *A. p. luctuosa* as its synonym. Employing Smith's (1970) nomenclature, Horwich (1983) detected differences in troop size and male genitalia between the two species. Its cranial affinities remained to be evaluated, but Napier (1976, p.76) considered the *A. villosa* holotype indistinguishable from *A. pigra*. Its maxillary molar cusp pattern is much as Smith (1970) described for *A. pigra*. The skull, although smaller, resembles that of a Guatemalan male, ZD.1911.7.27.1.

Groves (2001, p.179) contended that the immaturity of the holotype, its lost skin, and the "several other taxa of completely black howlers of which [Sclater (1872)] was unaware" makes *Mycetes villosus* indeterminable. This is an exaggeration. The holotype is mature enough to be morphologically adult and *Alouatta nigerrima* Lönnberg, 1941 is the only completely black howler taxonomically unrecognized in Sclater's time. Specimens of it did exist, however, such as an adult male skull and round skin ZD.1851.4.23.1 from "Rio Negro", purchased from the dealer, Stevens. The accession date, 23 May 1851, and purported locality indicate the specimen was collected by Henry Walter Bates or Alfred Russel Wallace who used Samuel Stevens (1817-1899) as their agent (Wallace 1905, p. 266). If so, it may well be the "large, entirely black kind" that Bates (1863, p.295) shot "in the narrow channels near Breves" (1°40'S, 50°29'W), Brazil, on about 27–30 September 1849 (Bates 1863, p.223). Wallace (1854) specified that only the "red species, *M. ursinus*" occurs on "the Rio Negro and Upper Amazon". His "black species, *M. caraya*?" on "the Upper Amazon" was probably *A. nigerrima*.

An already well-known contender can probably be eliminated by its reverse frontal hair direction, which Sclater (1872) illustrated, and also by the sex of the *Mycetes villosus* holotype. Only adult males of the sexually dichromatic *Alouatta caraya* (Humboldt, 1812) are black. The determination of *M. villosus* is thus effectively a two-horse race. However, for the sake of completeness, I examined adult male *A. caraya* skins at the Natural History Museum, London, to cover the improbability that the holotype skin and skull are from different individuals. Listed by Napier (1976, p.79), these all differ from Gray's (1845) description of *M. villosus* by the presence of pale hairs on the scrotum, throat and ventral midline. The four Natural History Museum *A. nigerrima* skins, ZD.1851.4.23.1, ZD.1968.103, ZD.1968.104 and ZD.1970.1028 differ from the two Natural History Museum *A. villosa* skins in the absence of a brownish tinge to the pelage which is ventrally much sparser. Its relatively coarse texture is not readily described as "silky". In the males, ZD.1851.4.23.1, ZD.1968.103 and ZD.1970.1028 the scrotal hairs are orange. ZD.1970.1028 further differs in the intermingling of reddish hairs among the blackish ones of the flank. Brownish hair roots are widespread in *A. villosa* ZD.1911.7.27.1, but more restricted to the back, brachium and cheek in ZD.1865.5.18.3.

Groves (2001, p.179) described the palate of "*Alouatta pigra*" as "distinctively narrow, deep, and V-shaped toward the back". The palate of *A. nigerrima* "slopes evenly down from post-incisive region to level of M²; mesopterygoid fossa is narrow, as is back of cranium. Nasal concave" (Groves, 2001, p. 184). However, the only verified "*A. pigra*" skulls at the Natural History Museum, ZD.1875.4.6.2 and ZD.1911.7.27.1 conform more with the latter description than with the former. The available skull sample is too small to satisfactorily gauge individual variation, but in all *A. caraya*, *A. nigerrima* and most *A. palliata* skulls at the Natural History Museum the zygomaxillary suture enters the orbit lateral to its sagittal midline. The only exception is skull ZD.1970.811 from the Salvin collection which may belong to skin ZD.1865.5.18.3. As in ZD.1843.9.14.3, ZD.1875.4.6.2 and ZD.1911.7.27.1, its zygomaxillary suture enters the orbit very close to the lacrimomaxillary suture. Except in ZD.1875.4.6.2, the infraorbital foramen on the zygomatic bone in these four skulls is smaller than that of *A. nigerrima*. They also differ in that the rear palatal rim is thin and sharp-edged with virtually no mesial protuberance, whereas in *A. nigerrima* it is thickened and emarginate, with a posteriorly projecting boss.

Neither ZD.1875.4.6.2 nor ZD.1911.7.27.1 have a well-developed mesostyle on the maxillary second molar, but it is better developed in ZD.1843.9.14.3 than in ZD.1875.4.6.2. The maxillary third molar in ZD.1843.9.14.3 lacks a stylar shelf, but is square and almost as large as the first molar. In ZD.1875.4.6.2 and ZD.1911.7.27.1 it is less square and a stylar shelf is barely present. All three have larger maxillary third molars than those of females ZD.1913.10.24.2 and ZD.1913.10.24.6 from Ecuador which do have stylar shelves. Although smaller, their second molars are not morphologically distinct from those of ZD.1843.9.14.3, ZD.1875.4.6.2 and ZD.1911.7.27.1. Smith (1970, p.363) reported that of all *Alouatta palliata* subspecies, *A. p. aequatorialis* (Ecuador to western Panama) most resembles *A. pigra*. "Both are large monkeys and frequently the typical mantle coloration of *palliata* is reduced or lost completely in some individuals of *aequatorialis*." Its cranial and dental traits, corroborated by its revised type locality (Mexico), indicate that the holotype of *M. villosus* is not one of these dark individuals, but represents the howler monkey later redescribed as *A. pigra*.

Acknowledgments

It is satisfying to apparently vindicate my late mentor, Prue Napier who was dismayed at the reluctance to respect the nomenclatural priority of *Alouatta villosa* (Gray, 1845). I thank Ms Paula Jenkins for permission to study the howler monkey collection in her care and for assistance with some technical terms.

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