MAMMALIAN SPECIES No. 309, pp. 1–4, 3 figs.

Osbornictis piscivora.

By H. Van Rompaey

Published 30 June 1988 by The American Society of Mammalogists

Osbornictis J. A. Allen, 1919

Osbornictis J. A. Allen, 1919:25. Type species *Osbornictis piscivora* J. A. Allen.

CONTEXT AND CONTENT. Order Carnivora, Family Viverridae, Subfamily Viverrinae. The genus *Osbornictis* includes one species, *Osbornictis piscivora.*

Osbornictis piscivora J. A. Allen, 1919

Aquatic Genet

Osbornictis piscivora J. A. Allen, 1919:25. Type locality Niapu, Zaire.

CONTEXT AND CONTENT. Context same as for genus. No subspecies are recognized.

DIAGNOSIS. *Osbornictis piscivora* is a slender genet that, because of its more or less uniform color and strongly contrasting facial markings, cannot be confused with any other of the Viverrinae (Fig. 1). Allen (1919, 1924) found the type to agree closely in size with *Genetta victoriae*, the largest of the genets, with which the principal comparisons have been made. Morphologically, *O. piscivora* differs from *G. victoriae* in having a shorter extension of the premaxillae in front of the canines, greater lateral expansion of the braincase, greater development of the postorbital processes, heavier structure and higher arching of the zygoma, much narrower palatal region, smaller molars, sharper edged premolars, greater diastemata between premolars, slenderer mandible and smaller coronoid process. Further, the small size of the rhinarium and absence of a median sulcus, naked palms and soles, and abbreviated rostrum are notable (Allen, 1919, 1924).

GENERAL CHARACTERS. External measurements (in mm) of two adult male aquatic genets provided by Allen (1924) and Hart and Timm (1978), respectively, are: total length, 910 and 785; length of tail, 415 and 340; length of hind foot, 90 and 83; length of ear, 40 and 40. A female weighed 1,500 g, a male 1,430 g (Hart and Timm, 1978).

Skull dimensions (in mm) for the adult male (holotype; Allen, 1924), two adult animals of unknown sex (Verheyen, 1962; G. E. Nordquist, in litt.), and seven adult animals of unknown sex (Colyn and Gevaerts, 1986; Colyn, in litt.), respectively, are as follows: greatest length of skull, 108.8, 97.4, 96.4, 98.9, 97.3, 101.7, 99.5, 102.4, 104.8, 102.1; condyloincisive length, 105.0, 94.3, 86.0, 95.8, 93.9, 97.6, 97.3, 99.0, 102.3, 96.5; palatal length, 51.9, 45.1, 47.6, 46.7, 47.2, 46.4, 45.0, 45.1, 47.1, 45.5; maxillary toothrow (P1 to M2), 36.8, 32.9, 35.0, 33.4, 34.7, 35.5, 34.2, 34.8, 35.6, 35.5; zygomatic breadth, 54.5, 46.4, 45.5, 48.2, 47.7, 48.5, 48.7, 47.3, 50.0, 49.5; interorbital breadth, 15.4, 9.4, 9.1, 11.3, 12.3, 11.2, 10.6, 9.5, 13.0, 10.7; postorbital constriction, 13.1, 9.4, 11.0, 10.6, 11.9, 12.9, 13.3, 9.6, 12.4, 11.0; across postorbital processes, 30.6, 21.9, —, 23.7, 26.9, 21.2, 20.5, 21.6, 24.3, 22.0; greatest braincase breadth, 35.0, 29.8, 39.6, 30.7, 31.4, 29.8, 30.0, 29.0, 29.4, 29.1; palatal breadth (outside to outside of posterior edge of P4), 28.6, 25.9, 26.8, 24.0, 25.5, 27.6, 27.9, 26.7, 27.3, 27.7; rostrum breadth at P1, 16.2, 14.4, 14.0, 13.3, 14.3, 14.5, 14.6, 13.4, 15.0, 14.1; incisive breadth (base of incisors), 8.0, 8.0, 8.0, 6.8, 7.0, 7.9, 8.0, 7.3, 7.5, 7.6; breadth at base of canines, 16.8, 14.8, 13.9, 14.4, 14.9, 15.2, 14.6, 13.9, 16.8, 15.3; greatest (oblique) length of P4, 10.1, 8.8, 9.9, 7.1, 9.0, 9.3, 9.3, 9.8, 8.8, 9.4; greatest breadth of P4, 5.2, 5.1, 5.4, 4.1, 4.8, 5.4, 5.1, 5.0, 5.0, 5.1; greatest (transverse) breadth of M1, 7.1, 6.8, 7.4, 6.1, 6.3, 7.0, 7.1, 7.0, 7.3, 6.8; greatest breadth of M2, 2.3, 2.3, 3.0, 1.0, —, 2.5, 1.8, 1.8, 2.7, 2.9; greatest length of M2, 1.1, 1.6, 1.5, 1.4, —, 1.3, 1.3, 1.1, 1.4, 1.2; length of mandibular ramus (symphysis to posterior border of condyle), 75.0, 67.1, 67.6, 69.4, 66.7, 70.4, 68.8, 69.8, 72.3, 69.4; length of toothrow (p1 to m2), 40.3, 36.1, 38.1, 37.0, 38.9, 39.9, 37.7, 39.0, 38.8, 38.7; length of m2, 2.7, 2.7, 3.1, 2.4, 3.2, 3.0, 2.7, 3.1, 2.8, 3.2; breadth of m2, 2.4, 2.2, 2.7, 1.8, 2.4, 2.5, 2.3, 2.6, 2.5, 2.6.

Upperparts are uniform dark chestnut brown, with a much darker median dorsal stripe, and without a trace of spots or bands; this color, in reduced intensity, extends over the underparts from the pectoral region to the base of the tail, lightening to dull red mesially and with a slight mixture of whitish hairs along the midline of the abdomen (Allen, 1919, 1924). None of five skins in Koninklijk Museum voor Midden-Afrika (KMMA) shows the dark median dorsal stripe (Verheyen, 1962); neither do eight skins collected by Colyn and Gevaerts (1986).

Head is pale fuscous brown with a reddish tinge, broken by a pair of elongated spots of clean white to yellowish between the eyes divided by a narrow fuscous band, and a narrower, more indistinct posterior pair of spots between the anterior base of the ears; a narrow black eye ring; front and sides of the muzzle and sides of head below the eyes whitish; ears exteriorly blackish, nearly naked internally and edged with long whitish hairs; chin and throat white, passing into brownish posteriorly and with scattered whitish hairs on the

FIG. 1. Aquatic genet with a catfish. Photograph of a watercolor by C. Brenders. As no photograph of a live animal is known to exist, a watercolor was made based on the description, the skins in KMMA, and the photograph of a dead specimen taken by J. A. Hart. Photograph by C. M. Anthierens.

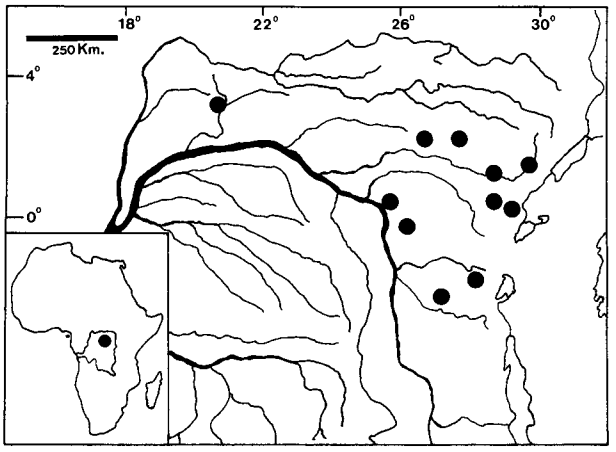

FIG. 2. Distribution of *Osbornictis piscivora*. Map by P. Bosmans.

foreneck (Allen, 1919, 1924). Tail entirely without annulations, heavily clothed with long black hairs, from 40 to 50 mm in length, the heavy underfur pale brownish gray, from 25 to 30 mm in length (Allen, 1919). The color of the tail can be expressed as from 2.5 YR 2/2 to 2/4 according to the Munsell color chart; the color of the back, shoulders, neck, and sides as from 2.5 YR 4/8 to 5/8. A young juvenile exhibits a much darker color (from 2.5 YR 3/2 to 2/2) than an adult because the red is completely missing; the fur is more woolly and the only long hairs already present are black (Verheyen, 1962). The fore and hind limbs are a dull slightly rufescent brown, passing into blackish brown on the upper surface of the feet. The rhinarium is similar in contour to that of *G. victoriae* but about one-half its size. The carpal pad is greatly elongated as in *Viverricula* (Allen, 1919, 1924). Drawings of the rhinarium, the palmar surface of the forefoot, and the plantar surface of the hindfoot are in Allen (1924).

DISTRIBUTION. The aquatic genet seems limited to equatorial forest between the right bank of the Zaire River and the rift in east and northeast Zaire (Fig. 2). Bere (1975) stated that *Osbornictis* occurs in western Uganda but has a very limited range. No actual records are given. Kingdon (1977) suggested that, although not recorded from Uganda, it might occur in Bwamba and also in North Kigezi. Verschuren (1978) stated that J. R. Bider observed *Osbornictis* near Kigwena (4°10'S, 29°33'E) near the Niengwe River, Burundi, in 1973.

Until 1979 only 16 specimens were known; this number was nearly doubled when during 1981–1982 Gevaerts collected three skulls and five skins (belonging to six specimens), and Colyn six skulls and three skins (belonging to seven specimens; Colyn and Gevaerts, 1986). Since then, Colyn and Gevaerts, also in the Tshopo region, collected one incomplete skull and a complete female specimen that was mounted (KMMA 86033M1; Colyn, in litt.). There is no fossil record.

FORM AND FUNCTION. The skull (Fig. 3) is long and lightly built (Allen, 1924); sagittal crest and postorbital processes are highly developed in adult animals. The dental formula is i 3/3, c 1/1, p 4/4, m 2/2, total 40.

Gregory and Hellman (1939) remarked that the skull of *Osbornictis* had but few resemblances to that of the fish-eating *Cynogale* (Hemigalinae, Viverridae): the somewhat elongated muzzle, large orbits, and bullae expanded posterolaterally; striking differences are the blunt-cusped rounded molars and the sharper postorbital constriction of *Cynogale*. Gregory and Hellman (1939:329) found: "*Osbornictis* merely a moderately specialized side branch of the Viverrinae with certain convergent resemblances to *Cynogale*."

Allen (1924) compared postcranial skeletons of adult males of comparable age, and found that the bones, ribs, and vertebrae are about one-third heavier in *G. victoriae* than in *Osbornictis*. He found the scapula, atlas, and pelvis especially light. The scapula is thin with a large vacuity in the postscapular fossa, with a translucent adjoining area caused by the thinness of the bone. The type specimen of *Osbornictis* has 12 pairs of ribs and 25 caudal vertebrae (Allen, 1924).

Stains (1983) examined the calcaneum of the type specimen and found that it had a sustentaculum and medial articular surface characteristic of the Viverrinae. The calcaneum of *Osbornictis* is similar in some respects to that of *Genetta genetta* but the former seems to have a more slender and longer posterior surface than the latter. Calcanea of these two forms are difficult to distinguish and Stains (1983) found that this may cause some questions as to the validity of *Osbornictis* as a separate genus. Drawings of the skull, bones of the extremities, and vertebrae are in Allen (1924).

Radinsky (1975), by comparison of endocranial casts, found that *Osbornictis* differed from other viverrines in having relatively smaller and more pedunculate olfactory bulbs, less laterally divergent coronal sulci, apparently no delimitation of an orbital gyrus between presylvian sulcus and anterior rhinal fissure, no continuous posterior branch of the suprasylvian sulcus, and a more overlapped cerebellum. The volume of the olfactory bulbs may be an indicator of the degree to which the sense of smell is developed. The olfactory bulbs range in volume from about 3 to 6% of the total brain volume, with a mean for the viverrids of 4.7% and 3.5% for *Osbornictis*. The relatively small olfactory bulbs seem to point to a relatively poor sense of smell in *Osbornictis*, expected in a piscivorous species.

ECOLOGY. All specimens, with one exception, were reported from heavily forested districts in Zaire, between 460 and 1,500 m. The one exception is a native skin purchased near Butembo (KMMA 18237). Probably this animal was captured in the lowland forest region to the west. Butembo region is covered with vegetation unlike the lowland forest; this fact, coupled with heavy human settlement, makes it unlikely that *Osbornictis* occurs in this area (Hart and Timm, 1978). Two specimens in KMMA (26602 and 30844) were sent by the "Station de la chasse" in Epulu. J. Hart (in litt.) remarked that during 30 months' field work in central Ituri near Epulu, he never encountered *Osbornictis*. J. Hart (in litt.) and Colyn and Gevaerts (1986) noted that their specimens were collected in regions dominated by large, homogeneous stands of *Gilbertiodendron* forest.

The aquatic genet seems generally to be solitary in its habits. Nevertheless, two specimens taken at Masange, a pregnant female and an adult male, were captured only 2.5 weeks apart from the same local area of forest (Hart and Timm, 1978).

Most museum specimens were purchased from local hunters. The two Bushi specimens collected by C. Cordier were caught in snare-traps set on the forest floor for the Congo peacock (*Afropavo congensis*; Verheyen, 1962). The Masenze specimen was snared on a small game trail on the forest floor; both the Masange animals were captured by the Bambuti pygmies near a small stream with the use of Basenji dogs (Hart and Timm, 1978). Both the Bambuti pygmies and the neighbouring Bantu agriculturists consider aquatic genets to be rare (Hart and Timm, 1978). The natives near Katshungu village stated they were well acquainted with this species and found it "not rare in the region north of the Lugulu River" (Verheyen, 1962:128). According to the Bakumu, *Osbornictis* also is not so rare in the Tshopo region where specimens were captured in native traps placed near small rivers or sometimes near villages (Colyn and Gevaerts, 1986).

Little is known with certainty about the food of *Osbornictis*. Allen (1919:25) stated: "Habits piscivorous." A. Prigogine, who collected the Butembo specimen, learned from the natives that *Osbornictis* feeds on Crustacea (Schouteden, 1950; Verheyen, 1962). Ewer (1973:113) found this "very surprising since neither its broad feet nor its rather delicate sectorial teeth seem in any way adapted for securing or devouring such prey but look more suited to a diet of frogs and fish." According to the Bambuti aquatic genets primarily eat fish, but on occasion will eat cultivated tubers (*Manihot* sp.) left to soak in small streams (Hart and Timm, 1978). The stomach of the Masenze specimen contained numerous bones of small fish and one entire catfish (Clariidae) about 10 cm in length. The Bambuti suggested that catfish was the favored prey of *Osbornictis* and that the distinctive palms of *Osbornictis* may be used to catch clariid catfish from muddy holes in undercut stream banks (Hart and Timm, 1978). Nothing is known about the reproduction of *Osbornictis* except that the Masange female, collected 31 December, contained one embryo about 15 cm in length (Hart and Timm, 1978).

REMARKS. Verheyen (1962) and Stains (1983) doubted the validity of the genus *Osbornictis*. Their view is based on isolated morphologic characters (respectively, skull and calcaneum). In view of important differences with *Genetta*, such as naked palms and soles, small rhinarium, and a uniformly colored pelage, and the rarity

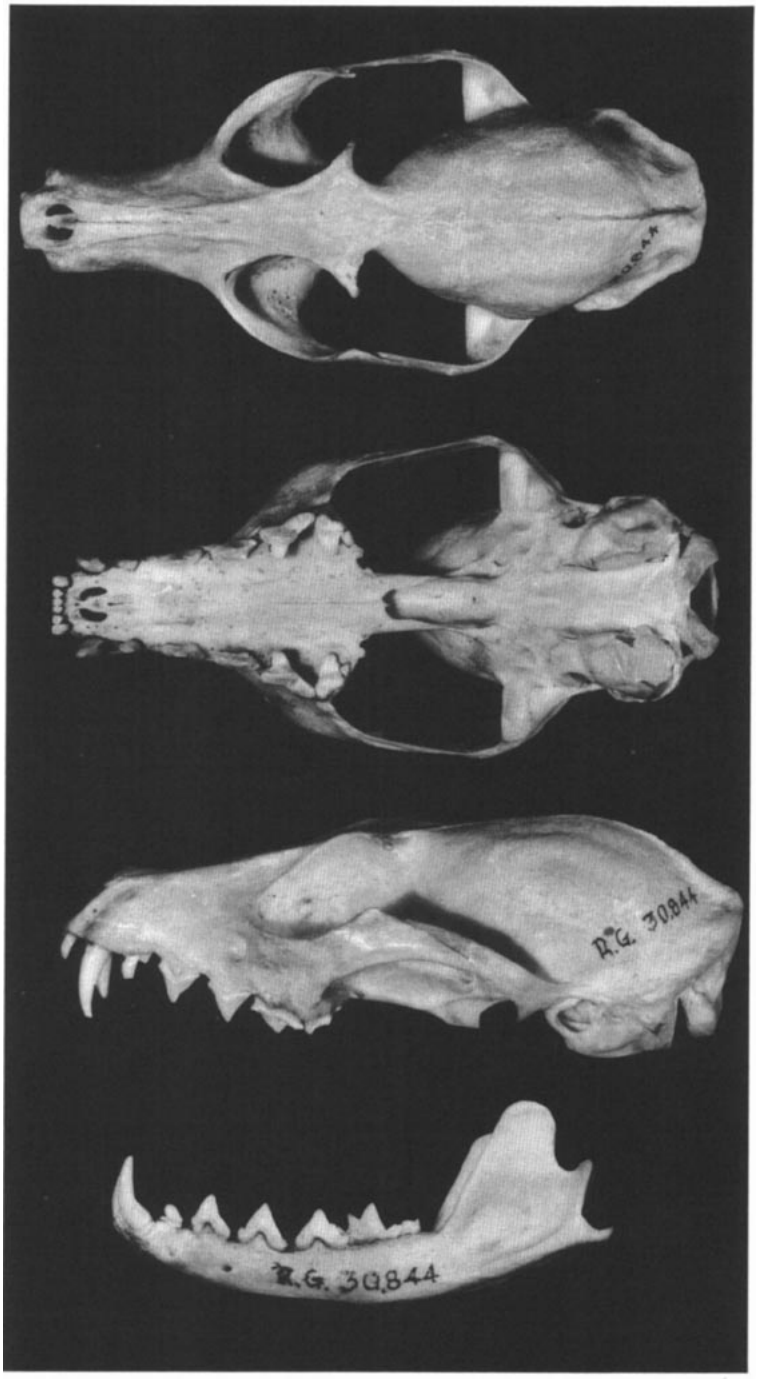

FIG. 3. Dorsal, ventral, and lateral views of skull, and lateral view of mandible of *Osbornictis piscivora* (30844 KMMA) from Epulu (1°26′N, 28°36′E). Condylobasal length of skull is 94.3 mm. Photographs by C. M. Anthierens.

of recorded data, *Osbornictis* should be considered as a valid genus until results of biochemical research, such as protein analysis and determination of the karyotype, are known.

Osbornictis piscivora was named for H. F. Osborn, president of the American Museum of Natural History at the time of the "American Museum Congo Expedition," during which *Osbornictis* was discovered. Piscivora means "fish-eating"; it contains the Latin words *piscis* (fish), and *vorare* (to devour). The natives from the region of Katshungu call it "Kéké" (Verheyen, 1962), whereas in the Kibila and Kipakombe languages of the Masange-Masenze region it is called "Esele." Here the meat is taboo and cannot be eaten, except by male elders (Hart and Timm, 1978). The Bakumu of the Tshopo region call it "Mani-mani" (Colyn, 1986). It also has been called Congo water civet (Corbet and Hill, 1980).

I thank C. M. Anthierens for photographs of the skull and of the watercolor, P. Bosmans for drawing the map, C. Brenders for the use of the watercolor, L. Cederholm, M. Colyn, and U. Rahm for various information, J. A. Hart for the slide of the Masange specimen, D. Meirte for permission to photograph the skull and examine the skins in the KMMA, and G. E. Nordquist for the measurements of the specimen in the James Ford Bell Museum of Natural History.

LITERATURE CITED

ALLEN, J. A. 1919. Preliminary notes on African Carnivora. J. Mamm., 1:23–31.

———. 1924. Carnivora collected by the American Museum Congo Expedition. Bull. Amer. Mus. Nat. Hist., 47:73–281.

BERE, R. M. 1975. Mammals of East and Central Africa. Longman, Hong Kong, 76 pp.

COLYN, M. 1986. Les Mammifères de forêt ombrophile entre les rivières Tshopo et Maïko (Région du Haut-Zaïre). Bull. Institut Royal Sci. Nat. Belgique: Biologie, 56:21–26.

COLYN, M., AND H. GEVAERTS. 1986. *Osbornictis piscivora* Allen, 1919, deux nouvelles stations de récolte dans la Sous-Région de la Tshopo (Haut-Zaïre). Bull. Institut Royal Sci. Nat. Belgique: Biologie, 56:9–11.

CORBET, G. B., AND J. E. HILL. 1980. A world list of mammalian species. British Mus. (Nat. Hist.), London, 226 pp.

EWER, R. F. 1973. The carnivores. Weidenfeld and Nicolson, London, 494 pp.

GREGORY, W. K., AND M. HELLMAN. 1939. On the evolution and major classification of the civets (Viverridae) and allied fossil and recent Carnivora: A phylogenetic study of the skull and dentition. Proc. Amer. Philos. Soc., 81:309–392.

HART, J. A., AND R. M. TIMM. 1978. Observations on the aquatic genet in Zaire. Carnivore, 1:130–132.

KINGDON, J. 1977. East African mammals (Carnivores). Academic Press, London, 3A:1–476.

RADINSKY, L. 1975. Viverrid neuroanatomy: phylogenetic and behavioral implications. J. Mamm., 56:130–150.

SCHOUTEDEN, H. 1950. L'*Osbornictis piscivora*. Bull. Cercle Zool. Congolais, 20:10–11.

STAINS, H. J. 1983. Calcanea of members of the Viverridae. Bull. S. California Acad. Sci., 82:17–38.

VERHEYEN, W. 1962. Quelques notes sur la zoogéographie et la craniologie d'*Osbornictis piscivora* Allen 1919. Rev. Zool. Bot. Africaines, 65:121–128.

VERSCHUREN, J. 1978. Les grands mammifères du Burundi. Mammalia, 42:219–224.

Editors of this account were B. J. VERTS, TROY L. BEST, and SYDNEY ANDERSON. Managing editor was CARLETON J. PHILLIPS.

H. VAN ROMPAEY, JAN VERBERTLEI, 15, 2520 EDEGEM, BELGIUM.