

Jawbone of a South American monkey from Brooks Wharf, City of London

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THIS ARTICLE describes the jawbone of a monkey discovered in a post-medieval deposit in the City of London². For the reasons discussed below, the specimen is believed to be a South American capuchin monkey (*Cebus nigrivittatus* Wagner 1848). This very exciting find represents the first archaeological record in London of a non-human primate. It is also the earliest record in Britain of a New World (Platyrrhine) monkey; the five other primates discovered so far on British archaeological sites have all been identified as *Macaca sylvanus* the so-called Barbary 'ape', an Old World (Catarrhine) tailless monkey that is found wild in Algeria and Morocco, and also in Gibraltar (Appendix II³).

The jawbone (Fig. 2) was found by Martin Brendell⁴ in July 1981 buried in the Thames foreshore at Brooks Wharf (near Queenhithe), at the front of the barge bed. The jaw was located at a depth of about 4 feet (1.2m). From the same and deeper levels (5ft) (1.5m) came a number of clay tobacco pipes, and at a slight higher level (between 3 and 4ft (0.9 - 1.2m) there was found a single pewter button (Fig. 3) and a



Fig. 1: Engraving of 'Le Sai' Weeper capuchin monkey from de Buffon & Daubenton *Histoire Naturelle* vol. XV (1767), Pl. VIII: 66.

few more clay pipes. Apart from these finds and several oyster shells and brick fragments (not collected), the foreshore at this location was barren silty grey clay. Other pits cut into this area of the Thames foreshore have confirmed that the post-medieval deposits at Brooks Wharf are mostly undisturbed by modern activity and that they do not generally contain residual material from earlier periods⁵. The monkey jawbone therefore comes from a secure post-medieval context that, on the evidence of the associated clay tobacco pipes, is no earlier than c 1610-40, and certainly no later than c 1680/1710; with the majority of the pipes suggesting a date in the mid to late 17th century (c 1640-80) (Table 1)⁶.

The one button found is of pewter with a coloured glass centre imitating jet. According to Joanna Marschner and Amanda Herries⁷, both of the Museum of London, buttons with a similar use of glass are frequently to be seen on 18th century garments but the small shank could indicate a late 17th century date. They also suggest that the small size of the button would indicate that it was intended for use on a waistcoat rather than a coat. The wire through the shank might be for fastening to the garment, or to another button to form a cuff link (a design adopted from the late 17th century onwards).

Identification of the Jawbone

The specimen is a right mandibular ramus, complete except for the coronoid process which is broken off at the level of the mandibular notch; with a small portion of the left ramus still attached. As is usual for animal bones recovered from waterlogged levels on the foreshore, the surface of the jawbone is stained brown.

Measurements taken of the London jawbone are given in Appendix I. The points of measurement and nomenclature used are based on those devised for human⁸ and animal⁹ mandibles, with some modification to allow for differences in anatomy.

Although all the teeth except for the first lower molar are missing (lost in antiquity) inspection of the alveoli (tooth sockets) revealed that there were originally three premolar teeth. This number occurs only in New World monkeys. In the Old World species

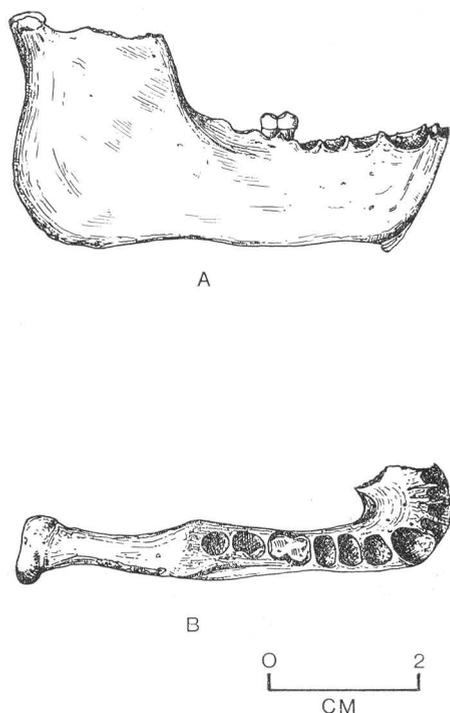


Fig. 2: Drawing of the jawbone of the capuchin monkey from Brooks Wharf, London (BM(NH) reg. no. ZD 1981.1314): (A) lateral view; (B) dorsal view. (drawings by Kate Armitage)

there are only two premolar teeth¹⁰. Comparison with the specimens of New World monkeys in the collections of the British Museum (Natural History) has identified the London jawbone as an adult capuchin monkey (family *Cebidae* Erxleben 1777) from South America. The value for the length of the canine alveolus, 6.2 mm, signifies that the London animal was male (Table 2)¹¹.

Zoologists today recognise four species of *Cebus*¹²:

Group 1: 'Tufted' (1 species only)

C. apella Linnaeus 1758. Brown capuchin.

Group 2: 'Untufted' (3 species):

C. capucinus Linnaeus 1758. White throated capuchin.

C. albifrons Humbolt 1812. White fronted capuchin.

C. nigrivittatus Wagner 1848 (= *C. olivaceus* Schomburgk 1848)¹³. Weeper capuchin.

Tate (1939)¹⁴ drew up a table of cranial characters that may be used to separate 'tufted' from 'untufted' cebids. Using the character proposed by Tate for distinguishing between the mandibles from the two groups¹⁵, the London jawbone is identified as an 'untufted' capuchin (Fig. 4). Of the three 'untufted'

species represented by the series of skulls in the BM (NH) collections, the London jawbone most resembles the Weeper capuchin *C. nigrivittatus*. One of the main reasons for believing that the London specimen is a Weeper capuchin is the shape of the inferior border of the horizontal ramus which is very different from that found in the other three species (Fig. 5)¹⁶.

Map 1 shows the distribution of the Weeper capuchin in South America, which is found wild in the north eastern part of the continent, from eastern Venezuela, including the Guianas and the area southwards to the north bank of the Amazon; its westward range is limited by the Rio Negro¹⁷. Having identified the species of monkey and located its place of origin, the next stage in the investigation into the jawbone from Brooks Wharf was to ascertain the historical link between London and the north eastern region of South America in the 17th century and so explain the presence of this animal in the City at this time.

English settlements in Guiana in the 17th Cent.

From the point of view of explaining the presence in London of a Weeper capuchin monkey, it is highly significant that the natural range of this animal in South America includes the territory known in the 17th century as the 'Island' of Guiana (i.e. the region encircled by the rivers Orinoco, Cassiquiare, Negro and the lower reaches and delta of the Amazon). For it was here that the English made repeated attempts throughout the 17th century to establish trading stations and plantations (Map 1). These endeavours to colonise Guiana all ended in failure, however. None of the early settlements on the Orinoco and Wiapoco rivers lasted more than a few years. Contemporary accounts written by the early pioneers¹⁸



Fig. 3: Pewter button with glass centre imitating jet from Brooks Wharf, London. Late 17th or early 18th century. (drawings by Kate Armitage)

Table 1: List of the clay tobacco pipes from the same excavated pit as the monkey jawbone.

Quantity	Type ^a	Date	Stamp	Other features
3	L5	c. 1610-40	On one example, the round pedestal base has a circular stamp incorporating a Tudor rose (in relief)	In all three pipes the rim of the bowl is rouletted
3	L10	c. 1640-60	none	ditto
1	L15	c. 1660-80	none	rim of bowl rouletted
1	L18	c. 1660-80	none	ditto
2	L20	c. 1680-1710	one with initials IN (in relief) on the upper surface of the stem, immediately behind the bowl. Maker may be John Newall c. 1696 (Oswald 1975) (note b) or Samuel Nodwell c. 1701 (Atkinson & Oswald, 1969)	none

NOTES:

- (a) Classification and dating of the pipes follows the system of D. Atkinson & A. Oswald, 'London clay tobacco pipes', *J Brit Archaeol Ass* 32 (1969) 1 - 67. The pipes were identified using the type series in the collections of the D.U.A., Museum of London.
- (b) A. Oswald, *Clay Pipes for the Archaeologist*, Oxford BAR 14 (1975).

reveal that some of the colonies were ruined through disease, whilst others were either destroyed by hostile native tribes or were abandoned because of lack of support from Britain¹⁹. Further south, the English colonies in the Amazon basin suffered from competition with the Spanish and Portuguese who, believing they had a prior claim to the area, mounted ruthless attacks on them. Since the English settlements received no military support from their monarch James I (unlike the Spanish colonists whose king sent armies to South America) all of them were eventually wiped out by the superior Spanish and Portuguese forces.

In contrast to these early failures, English attempts to settle Guiana in the later 17th century met with success, at least initially, and between 1651-67 the colony at Surinam flourished; only to be lost in the Dutch War of 1667, when it was conceded to the

Dutch in 1668 under the terms of the treaty of Breda²⁰. Although a few English settlers continued to live in Surinam, under Dutch rule, the loss of this colony marked the end of the first phase of English involvement with Guiana and it was not until c. 1814 that the English repossessed the territory to the west of Surinam (formerly British Guiana now the republic of Guyana)²¹.

Many of the attempts to colonise Guiana were organised in London and one of the earliest companies set up to exploit the resources of that country was founded in 1619 by Captain Roger North; the registered title of this company was 'The Governor and Company of Noblemen and Gentlemen of the City of London Adventurers in and about the River of the Amazons'²².

London was not only the administrative centre for Guianan colonisation, but also served as an essential

Table 2: Length (mm) of the canine alveolus in modern male and female 'untufted' capuchin monkeys (*C. capucinus*, *C. albifrons* & *C. nigrivittatus*) compared with the jawbone from Brooks Wharf, London (BM(NH) reg. no. ZD 1981.1314).

MODERN ^b	N	Length of alveolus ^a		
		M	Range	SD
male	27	6.5	5.7 - 7.6	0.44
female	19	5.1	4.2 - 5.7	0.39
POST-MEDIEVAL				
Brooks Wharf, London	1	-	6.2	-

(a) Abbreviations: N = no. specimens; M = mean; SD = standard deviation.

(b) Specimens of wild capuchins held in the collections of the BM(NH).

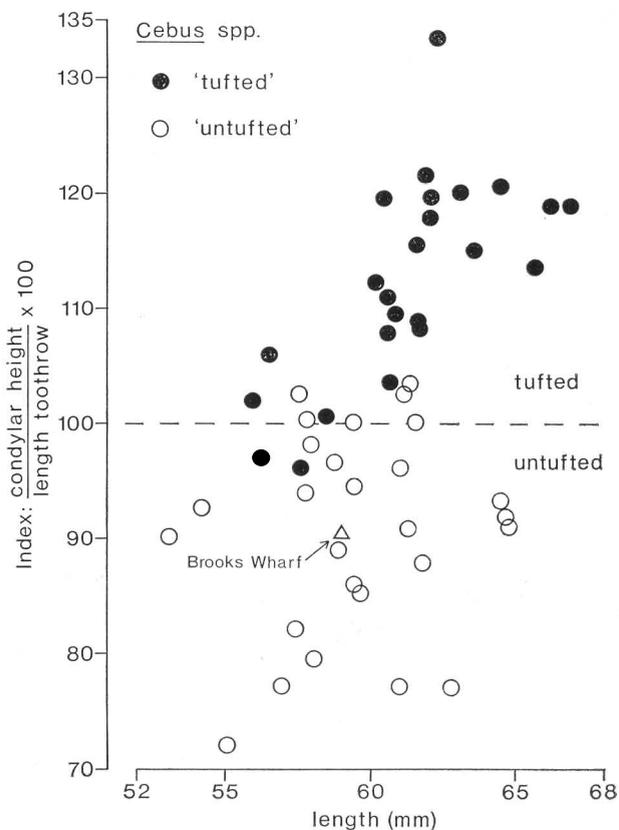


Fig. 4: Variation in the size and shape of the jawbone of modern wild capuchin monkeys compared with the specimen from Brooks Wharf, London. BM(NH) reg. no. ZD 1981.1314.

supply base for the early colonists. Many ships were dispatched from the City throughout the 17th century, carrying provisions for the settlers in Guiana²³. These same ships returned home bearing trade goods (obtained from the native tribes) and the products of the Guianan plantations (principally tobacco and sugarcane). It was in one of these homeward bound ships that the capuchin monkey found at Brooks Wharf was probably brought back from South America.

Alive or dead?

The transportation of exotic animals live to Britain from distant countries posed formidable problems in the 17th century. Such an enterprise would have been particularly difficult in the case of animals from the New World. Even if room could be found on board a returning vessel for such creatures²⁴, the length of the voyage to London, from three to four months, and the problems associated with confinement in unsatisfactory travelling quarters and an inadequate diet meant that many of them perished at

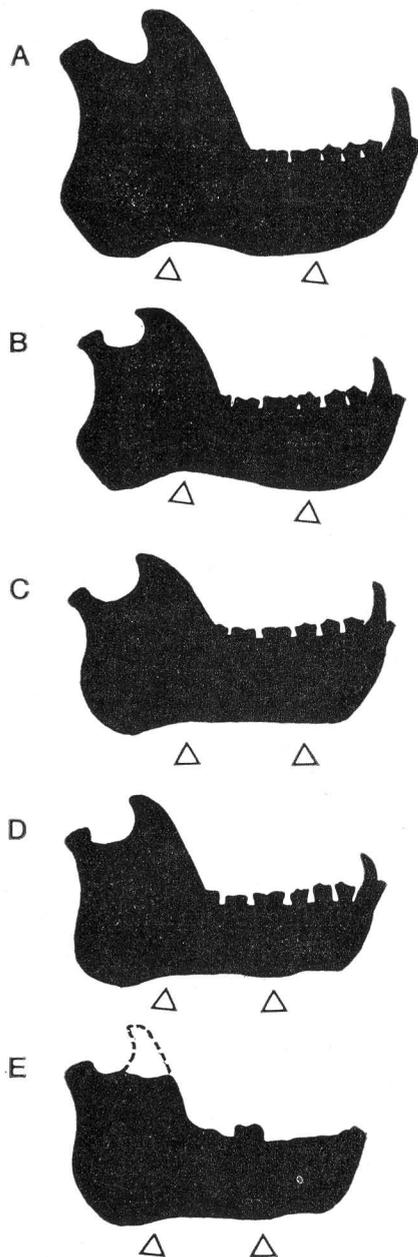


Fig. 5: Generalised profiles of the jawbones of the four species of capuchin monkey (adult males) compared with the specimen from Brooks Wharf, London. BM(NH) reg. no. ZD 1981.1314. (A) *C. apella*; (B) *C. capucinus*; (C) *C. albifrons*; (D) *C. nigrivittatus*; (E) Brooks Wharf, London. Arrows denote inferior border of the horizontal ramus.

(drawings by Kate & Philip Armitage)

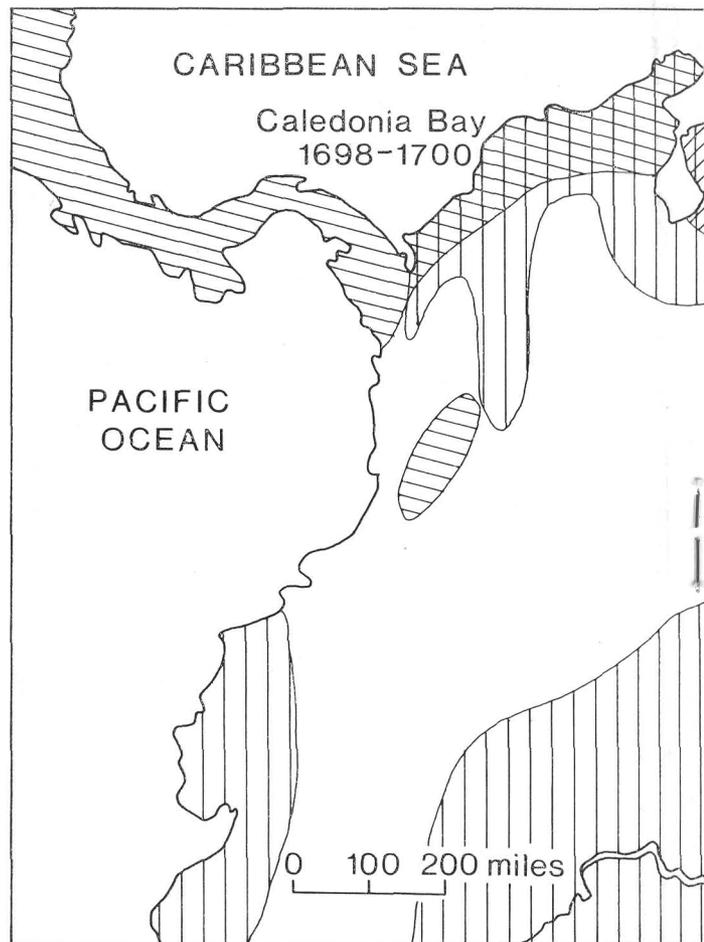
sea. The problems are well illustrated by Sir Hans Sloane's unsuccessful attempt in 1689 to bring back from Jamaica a live *Guana* (or giant lizard) and an alligator; the lizard fell overboard and was drowned whilst the alligator managed to survive most of the voyage only to die within sight of Britain²⁵. Not all endeavours to import exotic fauna from the New World met with disaster, however. An opossum and some flying squirrels, all from Virginia, were successfully transported alive across the Atlantic and were later kept in the menagerie in St James's Park (in 1611)²⁶. Although there are, as far as I am aware, no contemporary accounts of the arrival in Britain in the 17th century of capuchin monkeys, their transportation would have presented few problems and would certainly have been far easier than with many other mammalian species; the adaptation of the capuchin to an arboreal life meant that they would have been quite 'at home' in the rigging of a ship²⁷.

There is documentary evidence to show that the English settlers in Guiana obtained live monkeys from the natives. Among the trade items supplied by the Arawak tribes to the English colony on the Wia-poco river in 1604, were tobacco, cotton-yarn, parrots and 'greene and blacke' monkeys²⁸. John Lerys (Jean de Lèry), a Frenchman who lived in Brazil between 1557 and 1558 has left an eyewitness account of how the natives captured Weeper capuchins: "The Indians cast them downe from trees wounded with Arrowes, and afterward having healed them, and made them tame a little while at home, they exchange and barter them for Merchandises"²⁹.

Capuchin monkeys once tamed make entertaining pets and any brought back by sailors or returning colonists from Guiana would have been much sought after by those wishing to own an exotic pet, and such animals would undoubtedly have commanded high prices. Although capuchin monkeys would have been relatively scarce in Britain in the 17th century, they became a common sight in most European towns in the 19th century where they are perhaps best known under the guise of the 'organ grinder's monkey':

'The capuchin monkeys . . . are easily tamed, and on that account are carried into all parts of the world. In the large towns and cities of Europe, musicians walk about with them, and train them to perform various feats . . . They present arms, ride on the backs of dogs, and amuse spectators with a variety of tricks. They are extremely gentle and tractable'³⁰.

Up to now it has been presumed that the London monkey was a living animal. An alternative explanation is that the London jawbone represents the remains of a monkey killed in the wild and then preserved by drying before being brought back from Guiana as a curio. The problem of establishing



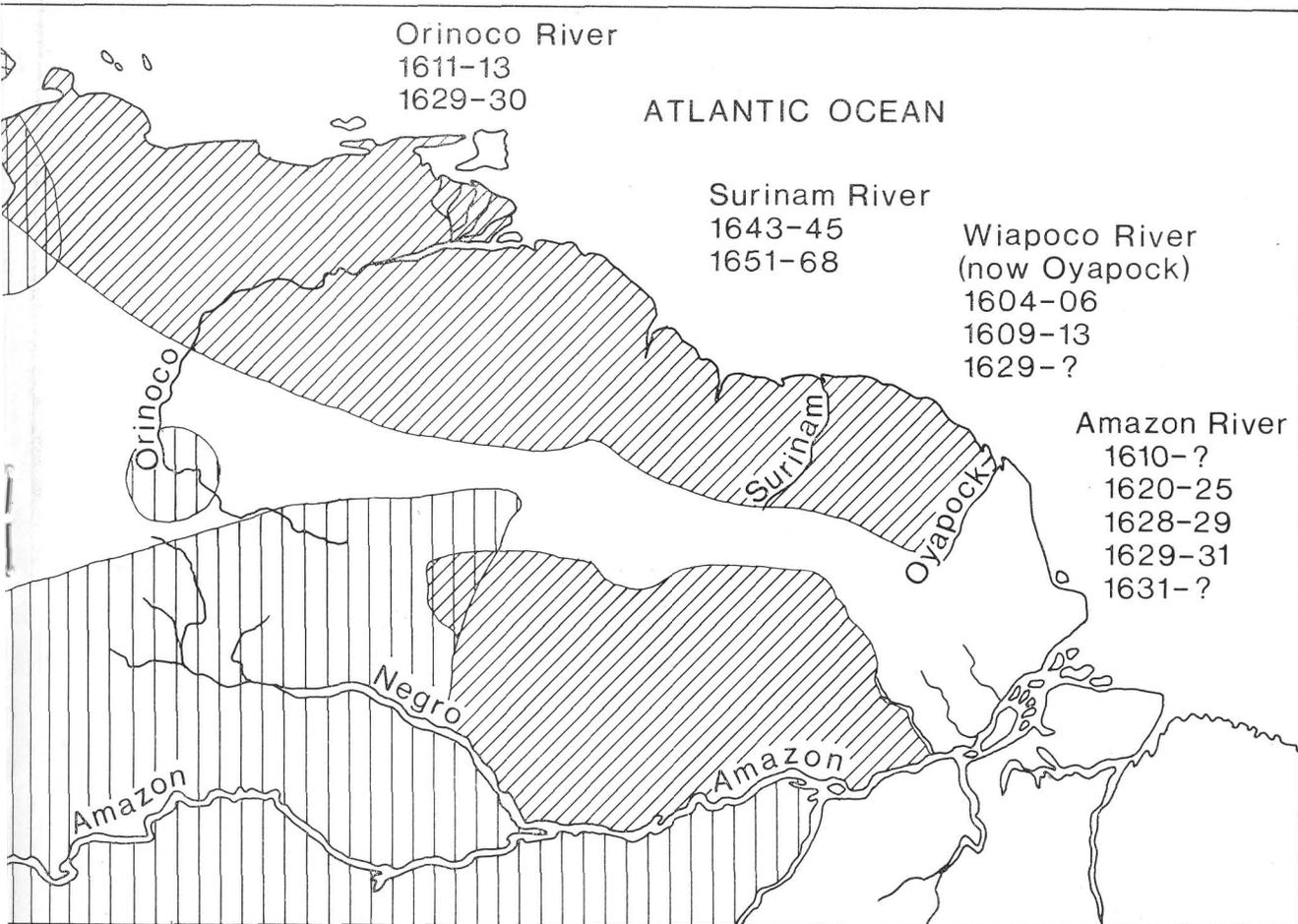
Cebus spp.:  *C. nigrivittatus*  C

Map 1: Map of Scottish colonies

whether the jawbone from Brooks Wharf came originally from a dried specimen of a wild animal or from an individual that had died after a number of years in captivity was resolved by X-radiography.

Bone Structure & Diet

Although capuchin monkeys are hardy animals and have been known to survive in captivity for up to 10 years (and occasionally as long as 25 years)³¹, they are very prone to suffer from bone disease (eg. rickets & osteomalacia) brought about by a deficiency of calcium in the diet. In the wild their diet is varied and includes leaves, fruit, butterflies, spiders, grubs of various beetles and bird eggs. But when kept in captivity, the animal's diet is usually re-



C. capucinus



C. albifrons

of northern South America to show the location of the English, Irish and Dutch colonies in the 17th century, together with the natural ranges of the three 'untufted' capuchin monkeys.

(map by Philip Armitage & Anne Davis)

restricted to fruit and vegetables and the monkey is unable to obtain sufficient calcium for normal growth and development³².

Because of this susceptibility to calcium deficiency, the structure and composition of the bones of a capuchin monkey kept in captivity over a number of years should be very different from that of its free living wild relative.

With this difference in mind, the London jawbone was examined by X-radiography and the internal bone structure compared with mandibles of captive and wild capuchin monkeys in the collections of the BM(NH) and the Hunterian Museum, Royal College of Surgeons³³. The results of the test may be summarised as follows:

In the two mandibles from wild monkeys examined there was good cortical development and the trabeculae of the interior cancellous tissue were fewer, more widely spaced and thicker than those in the two captive animals. The bony substance forming the cortical layer in the two captive monkeys, on the other hand, was more porous looking and poorly developed, and the interior cancellous tissue appeared as a diffuse 'reticulate' mass (thin trabeculae enclosing small lacunae) that completely filled the internal medullary cavity of the vertical ramus.

The London jawbone was found to resemble closely the two captive animals.

Earliest record in Europe of a Weeper capuchin

There are a number of early references to small

black monkeys in South America that show that the Weeper capuchin was probably well known to 16th and 17th explorers. One of the most widely quoted source is the description published in 1578 by the Frenchman John Lérius (Jean de Lèry) in a book on his life in Brazil (1557-58) in which he describes the capuchin as 'une petite guenon noire que les Sauvages appellent Cay'³⁴.

A proper scientific description of this monkey does not appear in the literature until 1767, however³⁵. In that year, de Buffon published a very detailed account, including measurements of the internal organs, and an illustration of the Weeper capuchin which he referred to as 'Le Sai' (Fig. 1)³⁶. This was followed in 1819 by F. Cuvier who again provided a description and a drawing of a Weeper capuchin, this time under the name of *Sajou male (griseus)* in his work *Histoire Naturelle Mammifères* livr. 12.

If the identification of the London jawbone is correct, then this specimen provides proof that at least one living Weeper capuchin was to be seen in Europe in the 17th century. There must have been other examples kept as pets elsewhere in Europe as both the Dutch and French had colonies in Guiana in the 17th century and so had ample opportunity to obtain specimens. If this was so, why then did all the 17th century naturalists have to rely entirely on

earlier authors (who had observed the animal in the wild) for their sources of information on the Weeper capuchin? For instance, the English naturalist John Ray (1627-1705) derived his knowledge of this animal from the work of Jean de Lèry (1578) and makes no mention of his actually having seen a living, or dead, specimen himself³⁷.

The 17th century zoological literature therefore can not provide a source of information on the early history of *Cebus nigrivittatus* in Europe and it is here that the archaeological record could make a significant contribution to the subject.

Acknowledgements

I wish to acknowledge with much gratitude the help given me by Mrs Prue Napier and D Branden-Jones. My special thanks also goes to M Brendell of the British Museum (Natural History) for allowing me to study the jawbone from Brooks Wharf and for information on the stratigraphy and dating of the find spot. I would also like to extend my gratitude to the following people for their invaluable help in this project: to my colleagues at the Museum of London: Kate Armitage, Amanda Herries, Joanna Marschner, Anne Davis, Jackie Pearce, Robert Baldwin, Barbara West & A Dyson; Elizabeth Allen, Hunterian Museum, Royal College of Surgeons and Dr Juliet Clutton-Brock, British Museum (Natural History).

APPENDIX I: Measurements (mm) of the jawbone of the capuchin monkey from Brooks Wharf, City of London. BM(NH) reg. no. ZD 1981.1314.

Point of measurement	Value
Max. length: distance between posterior edge of condyle to infradentale (note a)	59.0
Condylar height: distance from condyle to base of ramus	30.1
Height of mandible in front of P ₁	15.7
Height of mandible in front of M ₁	15.2
Height of mandible behind M ₂	17.7
Symphysial height: distance between gnathion (note b) and infradentale	18.2
Min. breadth across ascending ramus	20.5
Length of tooth row including the canine (C - M ₃)	33.3 +
Length of cheektooth row: anterior border alveolus P ₁ to posterior border alveolus M ₄	26.5 +
Length across canine alveolus	6.2 +

NOTES:

- (a) Infradentale = most anterior-superior point on the alveolar margin between the lower central incisors.
 (b) Gnathion = middle point on lower border of mandible directly below infradentale.
 + Measured on the buccal (outer) side.

APPENDIX II: List of the remains of *Macaca sylvanus* found on British archaeological sites.

Site	Date	Description
1) Joymount, Carrickfergus, N. Ireland	c. AD 1400	skull & skeleton
2) Cuckoo Lane, Southampton	late 13th cent AD	skull & clavicle ³⁸ .
3) Catterick Fort, Yorkshire	Romano-British	skull (BM(NH) ZD 1977.3120)
4) Dunstable, Bedfordshire	late 2nd cent. AD	skull & skeleton of sub-adult male (BM(NH) ZD 1975.569)
5) Navan Fort, Ireland	700 - 200 BC	skull of adult male (BM(NH) ZD 1977.3119)

Specimens 1, 3, 4 & 5 identified by Mrs Prudence Napier³⁹

1. Archaeozoologist attached to Dept Urban Archaeology, Museum of London, and also Dept. Zoology, British Museum (Natural History).
2. The jawbone is held in the collections of the BM(NH) where it may be examined on request. BM(NH) reg. no. ZD 1981. 1314.
3. The history of the 'Gibraltar ape' is discussed in F. E. Zeuner, 'Monkeys in Europe, past and present', *Oryx* 1 (No. 6) (1952), 265-273.
4. One of the founder members of the *Society of Thames Mudlarks*.
5. M. Brendell (1981, *pers.comm.*)
6. Due to the difficulties of excavating in the Thames foreshore, Brendell is not able to say whether or not the two later pipes (type L20) were from the vicinity of the jawbone or from a slightly higher level: all of the pipes uncovered were placed in a single bag.
7. 1981, *pers.comm.*
8. D. Brothwell, *Digging Up Bones*, London (1972) Fig. 36, 83.
9. A. von den Driesch, *A Guide to the Measurement of Animal Bones from Archaeological Sites*, Peabody Museum Bulletin No. 1 (1976).
10. D. R. Swindler, *Dentition of Living Primates*, London (1976).
11. The size of the canine in the capuchin provides a clear indication of sex: the canine is larger and more powerfully developed in the male compared to its counterpart in the female. D. R. Swindler, *op cit* Fn. 10, 108.
12. P. Hershkovitz, 'Mammals of Northern Columbia. Preliminary report no. 4: Monkeys (primates), with taxonomic revisions of some forms', *Proceedings of the United States National Museum* 98 (1949) 323 - 427; W. C. Osman Hill, *Primates: Comparative Anatomy and Taxonomy IV Cebidae Part A*. Edinburgh (1960) 419 & 420; P. H. Napier, *Catalogue of Primates in the British Museum (Natural History) Part I: Families Callitrichidae and Cebidae*, London (1976) 35 - 47.
13. The 'correct' scientific name for the Weeper capuchin has been the subject of much fierce controversy among zoologists and the issue is still unresolved — see P. Hershkovitz, *op cit* Fn. 12, 343 & 344; W. C. Osman Hill, 'The correct scientific name of the Weeper capuchin', *Proceedings of the Zoological Society of London* 131 (Part 2) (1958) 316-318; W. C. Osman Hill, *op cit* Fn. 12, 405-419, 428 & 429; A. M. Husson, *The Mammals of Suriname*, Leiden (1978) 225.
For the purposes of this article I have selected *Cebus nigrivittatus* as the name most commonly used at the present time.
14. Referred to in P. Hershkovitz, *op cit* Fn. 12, 324 & 326; W. C. Osman Hill, *op cit* Fn. 12, 416.
15. In the 'tufted' species *C. apella* the height of the vertical ramus is greater in proportion to the length of the horizontal ramus, producing a jawbone that appears 'blocky'. The dimensions of the vertical and horizontal ramus in the three 'untufted' species, on the other hand, are more in proportion (see Fig. 5). This difference in shape between the two Cebid groups may be expressed using the index: condylar height ÷ length of toothrow (C-M₂) × 100. Values greater than 100% = 'tufted'; less than 100% = 'untufted' (applies in most cases but there is some overlap — see Fig. 4).
16. Note: the profile of *C. nigrivittatus* shown in Fig. 5 may not be used in every case to identify this species; the mandibles of this animal in the collections of the BM(NH) show a range of 'shapes' and only 6 of the 12 male specimens examined conform to this standard profile. The range in forms observed in the BM(NH) specimens reflects the considerable individual variation that is found in *Cebus* monkeys . . . 'even in members of the same stock brought up under identical environmental conditions' — W. C. Osman Hill, *op cit* Fn. 12, 405 & 406.
17. Map 1 is based on W. C. Osman Hill, *op cit* Fn. 12, Maps 7 & 8.
A recent revision of the natural ranges of the 4 *Cebus* spp. has been carried out by Douglas Brandon-Jones, but this has not yet been published (Brandon-Jones 1982, *pers.comm.*).
18. J. A. Williamson, *English Colonies in Guiana and on the Amazon 1604 - 1668*, Oxford (1923); V. T. Harlow (ed.) *Colonising Expeditions to the West Indies and Guiana 1623 - 1667*, Hakluyt Society series II vol. LVI London (1925) 138-257; C. Alexander Harris (ed.) *A Relation of a Voyage to Guiana by Robert Harcourt 1613*, Hakluyt Society II vol. LX London (1928) 1 - 32.
19. After 1613, the Guianan tobacco plantations were eclipsed by the success of the colony in Virginia and London businessmen thereafter showed very little interest in the Guianan enterprises — J. A. Williamson, *op cit* fn. 18, 60 - 63; V. T. Harlow, *op cit* fn. 18, LXXIV.
20. J. A. Williamson, *op cit* fn. 18, 150; V. T. Harlow, *op cit* fn. 18, XCII.
21. V. T. Harlow, *op cit* fn. 18, XCIV.
22. J. A. Williamson, *op cit* fn. 18, 83.
23. One vessel mentioned in the contemporary records by name is the *Little Hopewell* which was despatched from London to the Amazon in 1628 — J. A. Williamson, *op cit* fn. 18, 115.
24. The size of English sea-craft in the 17th century was small. This is exemplified by the fleet of three vessels which left Dartmouth for Guiana in 1609 (under the command of Robert Harcourt). The three vessels were the *Rose* 80 tons, the *Patience* a pinnacle of 36 tons and the *Lily* a shallop of 9 tons.
These sizes may be compared with the displacement of 1900 tons for an East Indian of the 18th century — J. A. Williamson, *op cit* fn. 18, 41; F. Braudel, *Civilization and Capitalism 15th - 18th century vol. I The Structures of Everyday Life*, London (1981) 423; M. Schonhorn (ed.) *A General History of the Pyrates by Daniel Defoe*, London (1972) XLVI - XLVIII.
25. G. R. de Beer, *Sir Hans Sloane and the British Museum*, London (1953) 48.
26. R. Weinstein, 'Some menagerie accounts of James I', *Trans London Middlesex Archaeol Soc* 31 (1980) 133 - 141.
27. Though even here the animal was not completely safe from hazard: in 1698 a young chimpanzee being

- brought back to England from Angola in West Africa fell from the rigging onto a cannon and subsequently died from an infection following the fracture of its upper and lower jaws — E. Tyson, *Orang-outang, sive Homo sylvestris: or, the Anatomy of a Pygmie compared with that of a Monkey, an Ape, and a Man*, London (1699).
28. Mentioned in the account of Charles Leigh's 1604 expedition to Guiana, reprinted in S. Purchas, *Purchas His Pilgrimes*, Hakluyt Society extra series XVI Glasgow (1906) 312 & 313. The 'blacke' monkeys alluded to by Leigh may well have been Weeper capuchins or ?spider monkeys.
 29. S. Purchas, *op cit* fn. 28, 526.
 30. *Cassell's Popular Natural History vol. 1*, London (18?) 110. '...extremely gentle...'—This favourable reference belies the true behaviour of capuchin monkeys: the male on reaching sexual maturity can often become extremely aggressive (Napier, 1982, *pers.comm.*). Even a mature female can present a very real danger to its owner — a hazard that can be eliminated if the animal's teeth are extracted, see D. Blundy, 'This monkey is nursemaid to a man', *The Sunday Times Magazine*, London (August 30th, 1981) 8 - 13.
 31. W. C. Osman Hill, *op cit* fn. 12, 404.
 32. G. H. du Boulay & M. A. Crawford, 'Nutritional bone disease in captive primates', *Symposium of the Zoological Society of London* 21 (1968) 223 - 236.
 33. Specimens (all adult males) examined by X-radiography: 2 wild *C.nigrivittatus* from British Guiana, BM(NH) reg. nos. 1908.12.15.2 & 1933.12.6.1; 1 captive *C.apella* kept in the London zoo 'for many years' (died 1840), BM(NH) reg. no. 1855.12.24.29; 1 captive *C.apella* history not known, Royal College of Surgeons G51.146. I am grateful to D. Brandon-Jones for drawing my attention to the captive *C.apella* skull in the BM(NH) collections.
 34. Quoted in G. L. de Buffon & L. J. M. Daubenton, *Histoire Naturelle* vol. XV, Paris (1767) 51, and also in S. Purchas, *op cit* fn. 28, 526.
 35. It is of interest that the present species was apparently not known to Linnaeus, who provided the nomenclature for two of the capuchin species only: *Simia capucina* (*Cebus capucinus*) 1758 and *Simia apella* (*Cebus apella*) 1758 — the descriptions of which were based on living animals he had observed in the managerie of the King of Sweden.
 36. G. L. de Buffon & L. J. M. Daubenton, *op cit* fn. 34, 51 - 66.
 37. W. C. Osman Hill, *op cit* fn. 12, 323.
 38. B. Noddle, 'The animal bones' in C. Platt & R. Coleman-Smith, *Excavations in Medieval Southampton 1953 - 1969, Leicester (1975)* 332 - 340.
 39. British Museum (Natural History) Osteology room general letter files: 1975 - 16; 1976 - 26; 1977 - 17.

Excavations & post-excavation work

City, by Museum of London, Department of Urban Archaeology. A series of long term excavations. Enquiries to DUA, Museum of London, London Wall, E.C.2. (01-600 3699).

Brentford, by West London Archaeological Field Group. Excavation and processing. Enquiries to 273A Brentford High Street, Brentford, Middlesex. (01-560 3880).

Croydon & District. Processing and cataloguing of excavated and museum collections every Tuesday throughout the year. Archaeological reference collections of fabric types, domestic animal bones, clay tobacco pipes and glass ware also available for comparative work, Hon. Curator, Croydon Natural History & Scientific Society Ltd., Museum Building, Croydon Biology Centre, Chipstead Valley Road, Coulsdon, Surrey. (01-660 3841 or 22 43727).

Hammersmith & Fulham, by Fulham Archaeological Rescue Group.

Processing of material from Sandford Manor and Fulham High Street. Tuesdays, 7.45 p.m.-10 p.m. at Fulham Palace, Bishops Avenue, Fulham Palace Road S.W.6 Contact Keith Whitehouse, 86 Clancarty Road, S.W.6. (01-731 0338).

Inner London Boroughs, by the Inner London Unit. Several rescue sites in various areas. (01-242 6620).

Kingston, by Kingston-upon-Thames Archaeological Society. Rescue sites in the town centre. Enquiries to Marion Hinton, Kingston Heritage Centre, Fairfield Road, Kingston (01-546 5386).

North-East Greater London, by Passmore Edwards Museum. Enquiries to Pat Wilkinson, Passmore Edwards Museum, Romford Road, E.15. (01-534 4545).

South West London Boroughs, by the South West London Unit, excavations and processing. Enquiries to Scott McCracken, St. Luke's House, Sandycombe Road, Kew (01-940 5989).

Southwark, by Southwark and Lambeth Archaeological Excavation Committee. Several sites from the Roman period onwards. Enquiries to Harvey Sheldon, S.L.A.E.C., Port Medical Centre, English Grounds, Morgan's Lane, SE1 2HT. (01-407 1989).

Surrey, by Surrey Archaeological Unit. Enquiries to David Bird, County Archaeological Officer, Planning Department, County Hall, Kingston, Surrey. (01-546 1050 x 3665).

Vauxhall Pottery, by Southwark and Lambeth Archaeological Society. Processing of excavated material continues three nights a week. All enquiries to S.L.A.S. c/o Cuming Museum, 155 Walworth Road, S.E.17 (01-703 3324).

The Council for British Archaeology produces a monthly Calendar of Excavations from March to September, with an extra issue in November and a final issue in January summarising the main results of field work. The Calendar gives details of extra-mural courses, summer schools, training excavations and sites where volunteers are needed. The annual subscription is £4.50 post-free, which should be made payable to C.B.A. 112 Kennington Road, S.E.11.