

New Specimen of *Cebupithecia* from La Venta, Miocene of Colombia, South America

Takeshi SETOGUCHI, Masanaru TAKAI
Primate Research Institute, Kyoto University,
Inuyama City, Aichi 484, Japan

Carlos VILLARROEL A.,
Department of Geology, National University Bogota 8, Colombia
Nobuo SHIGEHARA,

Department of Anatomy, Dokkyo School of Medicine, Mibu,
Tochigi 321-02, Japan.

& Alfred L. ROSENBERGER
Department of Anthropology, University of Illinois at Chicago,
Illinois 60680, U.S.A.

SYSTEMATIC ACCOUNTS

Cebupithecia sarmientoi STIRON and SAVAGE, 1951

(Figure 1)

Material: IGM-KU 8602 (Instituto Nacional de Investigaciones Geologico-Mineras [INGEOMINAS]-Kyoto University), a right maxilla with C and P².

Locality: Locality 9-86-B in the El Dinde area, probably within the Monkey Unit of the Honda Formation (FIELDS, 1959), in the Tatacoa desert, Huila Department, Republic of Colombia.

Age: Middle Miocene, Friasian Land Mammal Age, 12-15 Myr.

Description: Although the upper canine of IGM-KU 8602 is of the almost same size and shape as the holotype of this species, UCMP 38762, the anterior and the posterior blades are more sharply defined in the former than in the latter. The vertical groove on the lingual face between the anterior blade and the central torus is deeper in the former. And whereas the anterior blade is more well developed than the posterior blade in the holotype, in IGM-KU 8602 the posterior blade is more well defined and sharper so that the crown is more elongated posteriorly. In relation to these well developed blades, the base of the crown is a little more elongated antero-posteriorly in IGM-KU 8602 than in the holotype, reaching the condition seen in upper canine of extant *Pithecia*. The crown is curved slightly outward and posteriorly. The prominent basal cingulum which is more well developed than in extant *Pithecia* and *Cacajao* encircles the base of the crown as in the holotype. The root is completely preserved in IGM-KU 8602. The root is slightly curved posteriorly. The ratio of the crown height to the length of the root is roughly 1:1.5 (the crown height is 7.9 mm and the height of the tooth is 19.8 mm: the length of the root is calculated as $19.8 - 7.9 = 11.9$ mm). The root becomes narrower towards the tip of the root. The enamel surface is almost smooth but slightly crenulated as in the holotype.

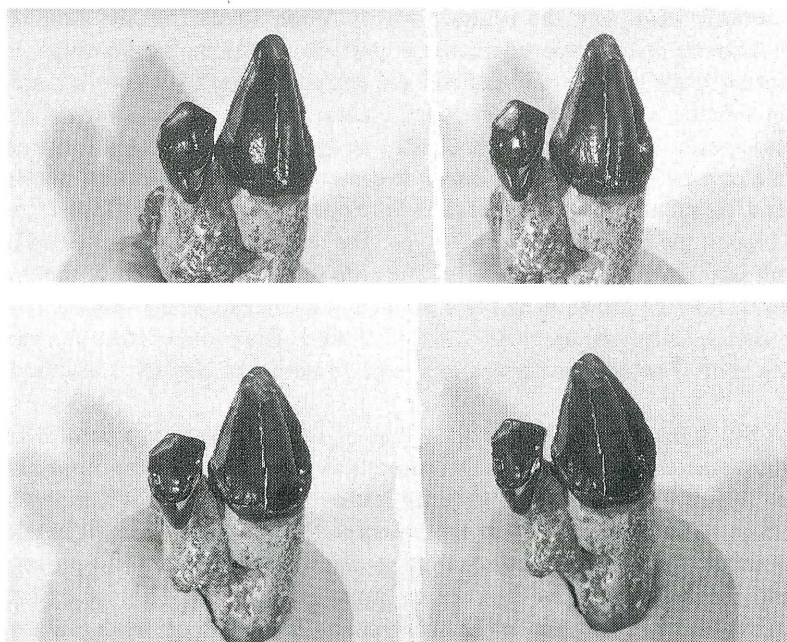
P² of IGM-KU 8602, is much larger than that of the holotype. The ectoloph is tall and elongated antero-posteriorly: the length is longer than even P⁴ of the holotype. The talon is well developed lingually making the tooth broad transversely. The tooth is broader than P² and P³, and is of the same breadth as P⁴ of the holotype. The posterior part of the talon extends lingually from the posterior base of the ectoloph so that the buccal half of the crown comprised of the flat and broad talon. The difference in height between the ectoloph and the talon is greater than in any of the premolars of the holotype. No indication of the lingual cingulum nor of the lingual cusp on the talon is present whereas the lingual cingulum on P⁴ and the distinct bicuspid condition on P³ and P⁴ are visible on the holotype.

A diastema between canine and P² is not present

Discussion: The specimen, IGM-KU 8602 is identified as *Cebupithecia sarmientoi* only

because the canine is almost identical in shape and size to that of the holotype of the species, except for the difference in shape and size on P^2 . Although the buccal part including the tip of the ectoloph of right P^2 of the holotype is broken off, the buccal base of the crown as well as the lingual half of the tooth are well preserved. P^2 of IGM-KU 8602 (breadth: 4.7 mm) is transversely broader than P^2 of the holotype (breadth: 3.8 mm). The talon on IGM-KU 8602 is broader transversely and wider antero-posteriorly and the ectoloph is taller than the holotype, too. That is to say, comparing with the holotype, on IGM-KU 8602 the relative size of P^2 to canine is seriously large. Besides, the P^2 -morphology of IGM-KU 8602 is different from that of the holotype of *Cebupitheciasarmientoi*, connecting with the difference of their sizes. However, because the canine-morphology is almost identical, the differences in P^2 - morphology must be regarded as the one within the intra-specific variation of morphology. Of course, there is another possibility that IGM-KU 8602 and the holotype belong to different sexes respectively (the latter is male and the former is female). Recently HERSHKOVITZ has reported the taxonomy of *Pithecias* and indicated their sexual dimorphism, (HERSHKOVITZ, 1987). If extinct *Cebupithecias* also had the sexual dimorphism, this hypothesis is reasonably accepted, but there is no other effective evidence for it.

In 1951's paper, STIRTON indicated the slight diastema between the canine and P^2 on the holotype of *Cebupitheciasarmientoi*, UCMP 38762 (STIRTON, 1951). Observing the new specimen, IGM-KU 8602, there is no diastema between them. On IGM-KU 8602, the posterior blade of the canine and the ectoloph of P^2 are nearly in a row without any diastema. The "diastema between canine and P^2 " on the holotype must be the result of the twisting of the anterior part of the specimen, the base of canine and its root, during fossilization. The absence of the diastema between canine and P^2 on the living pitheciinans also supports this view.



Cebupitheciasarmientoi. IGM-KU 8602. $\times 3$.

Top pair: lingual view, and bottom pair: occlusal view.

The distinct sharp anterior- and posterior blades of the robust canine and the tall triangular paracone of the sharp ectoloph of P^2 suggest that the individual, IGM-KU 8602, shows more insectivorous direction than the holotype and than the living pitheciinans. SZALAY and DELSON say; "The similarities of *Cebupithecia* both in dental proportions and particularly in anterior dental specializations strongly suggest a primarily frugivorous feeding regime." (SZALAY and DELSON, 1979). However, the more insectivorous character of the anterior cheek teeth, the canine and P^2 , on IGM-KU 8602 suggests that the primitive pitheciinans, such as *Cebupithecia*, might have the more insectivorous diet than the living ones. Judging from the morphology of the dentitions on the holotype and IGM-KU 8602, the anterior cheek teeth elements, the canine and $P^{2,3}$ and (P^4) show the insectivorousity and the other hand, the posterior ones, (P^4) and $M^{1,2,3}$, show the omnivorousity. On IGM-KU 8602, moreover, it is interesting that the lingual face of the posterior ectoloph shows the polished wear facet probably owing to the occlusion with P_3 .

From the La Venta fauna many primates fossils have been discovered; *Cebupithecia*, *Stirtonia*, *Kondous*, *Aotus dindensis*, *Neosaimiri* and *Micodon*. The study of the diet of *Cebupithecia* will define not only its niche but also the whole niches of the primates among the La Venta fauna.

ACKNOWLEDGMENTS

We are grateful to INGEOMINAS of Colombia for the assistance they provided in all our fieldwork. This work was supported by Overseas Research Grants from the Ministry of Education, Science and Culture of the Japanese Government. We are also grateful to Dr. Y. NOGAMI, Professor of Kyoto University Primate Research Institute, the leader of the Kyoto University South American Paleontological Expedition (1982, 1984 and 1986). Special thanks to Mr. Minoru KINOSHITA for taking the photographs of this specimen and Mr. Junji NAGUMO for typing this manuscript.

REFERENCES

- FIELDS, R.W. (1959): Geology of the La Venta badlands, Colombia, South America. Univ. Calif. Publ. Sci., 32: 405-444.
- HERSHKOVITZ, P. (1987): The taxonomy of South American Sakis, genus *Pithecia* (Cebidae, Platyrrhini): A preliminary report and critical review with the description of a new species and a new subspecies. Am. J. Primat., 12:387-468.
- ROSENBERGER, A. L. (1979): Phylogeny, Evolution and Classification of New World Monkeys (Platyrrhini, Primates), Ph. D. thesis, City University of New York, New York; University Microfilms, Ann Arbor, Mich.
- SETOGUCHI, T. (1985): *Kondous laventicus*, a new ceboid primate from the Miocene of the La Venta, Colombia, South America. Folia Primatol., 44:96-101
- SETOGUCHI, T. & ROSENBERGER, A. L. (1985): Miocene Marmosets: First Fossil Evidence. Int. J. Primatol., 6:615-625.
- STIRTON, R. A. (1951): Ceboid Monkeys from the Miocene of Colombia. Univ. Calif. Publ. Bull. Dept. Geol. Sci., 28:315-356.