

The Primates collection of the Museum of Anthropology "G. Sergi", Rome (with some notes on taxonomy and systematics)

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Summary – *The Primates collection of the Museum of Anthropology of the University of Rome is the result of occasional, but systematic, sampling since Giuseppe Sergi was called to teach Anthropology at the Faculty of Sciences (1884). The collection is mainly composed by crania (166) and some postcranial skeletons (21). The heterogeneous provenience prevents to have an exhaustive data set about each single specimen, but the whole series well represents the variability of extant non-human Primates. A general description of the collection is reported together with a complete list, including information on taxonomy, age class, and preservation status for each specimen.*

Keywords – *Primates, Taxonomy, Systematics, Museum collections, University of Rome.*

Introduction

In 1884, within the positivist atmosphere of last decades of the 19th century (Cresta et. al., 1993; Manzi, 1987; Puccini, 1993), the first chair of Anthropology in the Faculty of Sciences at the University of Rome was created and Giuseppe Sergi (1841-1936) was called to teach the "Natural History of Man" from the University of Bologna, where he was since 1880. Together with the new institute and the foundation in 1893 of a scientific society and its journal (now the *Rivista di Antropologia*), bio-anthropological collections started to be gathered and the first nucleus of a Museum of Anthropology (recently entitled to the memory of Giuseppe Sergi) was born. The museum followed the story of the institute since the beginning – they were originally placed in the *Regia Scuola di Applicazione per Ingegneri* at S. Pietro in Vincoli, moved in 1887 to the *Collegio Romano*, and in 1938 (under the direction of Sergio Sergi) definitively had their present place in the area called *Città Universitaria*, committed to contain great part of the Faculties of "La Sapienza" (Sergi S., 1939). Since 1983, that of Anthropology is one of the three museum of the Department of Animal and Human Biology in the same university.

Thus, for more than one century, there were collected samples (mainly human crania and other osteological remains) from all over the world, and these collections in the Museum of Anthropology "G. Sergi" constituted one of the main references in Italy for the study of skeletal variability in extant and extinct human populations, including also important fossil specimens (Manzi, 1985; Passarello & Manzi, 1993).

At the same time, but more occasionally, it was also gathered skeletal material

belonging to non-human Primates. This additional skeletal material composes now a collection which, although not based on a large number of specimens, is remarkable for the variation that it encompasses. Specimens were of different provenience – scientific expeditions, exchanges with zoological gardens and other museums, laboratory experiments, personal gifts. Collections refer to names such as Vram, Moscione, Gullo, Rudel; many of the samples were prepared and ordered by Rondinara, a museum keeper at the beginning of the 20th century. Unfortunately, given the occasional nature of many acquisitions, there is not a systematic data registration, lacking references about place and date of the record, name of the collector, or other information useful to reconstruct the history of the sample. Moreover, the systematic references of the specimens were often approximate, based upon general resemblance, subjective inferences, and old taxonomic terminology.

Anyway, these limits do not decrease the value of the collection in didactic contexts, and Primate specimens are anyhow available for scientific purposes above the rank of species, being most of the samples very well preserved and representative of large part of the variability of our order. The present paper is aimed to revise, with new and up-to-date diagnoses, all the taxonomic attributions given in the past, as well as to furnish a general review of the series.

A general glimpse into the collection

The non-human Primate collection of the Museum of Anthropology in Rome is composed by 166 crania; 21 of them are associated also to post-cranial bones, including 10 prepared, 6 complete but not articulated, and 5 incomplete skeletons. Figure 1 reports the distribution of the series in 4 categories: only a few specimens result fragmentary or damaged, while many are entire, and most of them show an excellent status of preservation.

About the new diagnostic assessments, taxa recognition above the genus level was based upon morphological keys for taxonomic ranks, while genus determinations were made by means of morphological and anatomical comparison with available descriptions in basic literature (Fleagle, 1988; Hershkovitz, 1977; Osman-Hill, 1953-1970). Taxonomy under the genus level will be not reported here (with a few exception), given some well known limits in the attribution to many Primate species dealing only with skull morphology (for a general view to the issue and related debate see Kimbel & Martin, 1993). As a general reference, taxonomy follows that adopted in Martin (1990) and Conroy (1990), integrated by Groves (1993) and with some additional notes briefly discussed throughout the text.

About age at death, specimens have been included in 4 classes (0-3), depending upon the number of upper molars (of each hemiarcade) that have reached the masticatory plane (crown full erupted), with intermediate classes when the discriminant molar appeared still in eruption.

Figure 2 shows in synthesis the distribution of the collection between Lemuriformes, Plathyrrini, and Catarrhini subgroups. In the Appendix a complete list of the whole collection is reported, with information on taxonomy, age class, and preservation status for each specimen.

Lemuriformes

Prosimians represent just a minor part of the collection, with only 8 specimens (5% of the total sample). Lemuridae are represented by 7 specimens, probably including 3 *Varecia variegata* and 4 specimens belonging to the *Eulemur* / *Lemur* group. In addition, only 1 *Nycticebus* (family Lorisidae) is available in the series.

Platyrrhini

South American variability is well characterised in the Primate collection of Museum "G. Sergi", with 31 specimens making up 19% of the whole collection, *Cebus* and *Alouatta* being the more represented taxa. Table 1 shows the number of specimens per genus, and Figure 3 the respective percentages.

Following recent molecular data (Chaves et al., 1999; Horovitz et al., 1998; Schneider et al., 2001; Von Dornum & Ruvolo, 1999) and more consolidate knowledge about life-history parameters among Primates (Harvey & Clutton-Brock, 1985), it seems biologically consistent and practically useful to consider a taxonomy which groups the large South American anthropoidea into the families Atelidae (*Alouatta*, *Ateles*, *Brachyteles*, *Lagothrix*), Cebidae (*Aotus*, *Cebus*, *Saimiri*), and Pitheciidae (*Callicebus*, *Pithecia*, *Cacajao*, *Chiropotes*). Although the relationship between these taxa still remains rather uncertain, they seem indeed to be both monophyletic and enough biologically homogeneous to be clustered in such groups. Callitrichidae (*Saguinus*, *Leontopithecus*, *Callimico*, *Callithrix*, *Cebuella*) – that show a peculiar pattern of features with respect to all the other *Ceboidea* – represents a surely different and monophyletic biological model, being well represented by the family rank.

Catarrhini

Table 1 and Figure 4 resume the distribution per genus of this subgroup, that clearly represents the largest fraction (76%) of the collection.

Due to their monophyletic nature (Page et al., 1999) and biological characterisation, Colobidae and Cercopithecidae are here interpreted as families, while Cercopithecinae and Papioninae as subfamilies. Colobidae are represented in the series only by 6 specimens, 4 from the Asian clade and two from the African one. They are all well preserved and complete but, because of both the scarcity and heterogeneity of references in the literature about skull morphology among Asian

Tab. 1 – Number of specimens per genus for the Platyrrhini and Catarrhini samples.

<i>Platyrrhini</i>	N	<i>Catarrhini</i>	N
<i>Alouatta</i>	8	<i>Cercopithecus</i>	25
<i>Ateles</i>	1	<i>Erythrocebus</i>	1
<i>Brachyteles</i>	1		
<i>Lagothrix</i>	1	<i>Cercocebus</i>	1
		<i>Theropithecus</i>	1
<i>Aotus</i>	2	<i>Papio</i>	40
<i>Cebus</i>	10	<i>Macaca</i>	34
<i>Callicebus</i>	1	<i>Colobus</i>	2
		<i>Presbytis</i>	3
<i>Leontopithecus</i>	4	<i>Pygathrix</i>	1
<i>Saguinus</i>	1		
<i>Callithrix</i>	2	<i>Hylobates</i>	7
Tot	31		
		<i>Pongo</i>	6
		<i>Pan</i>	3
		<i>Gorilla</i>	3
		Tot	127

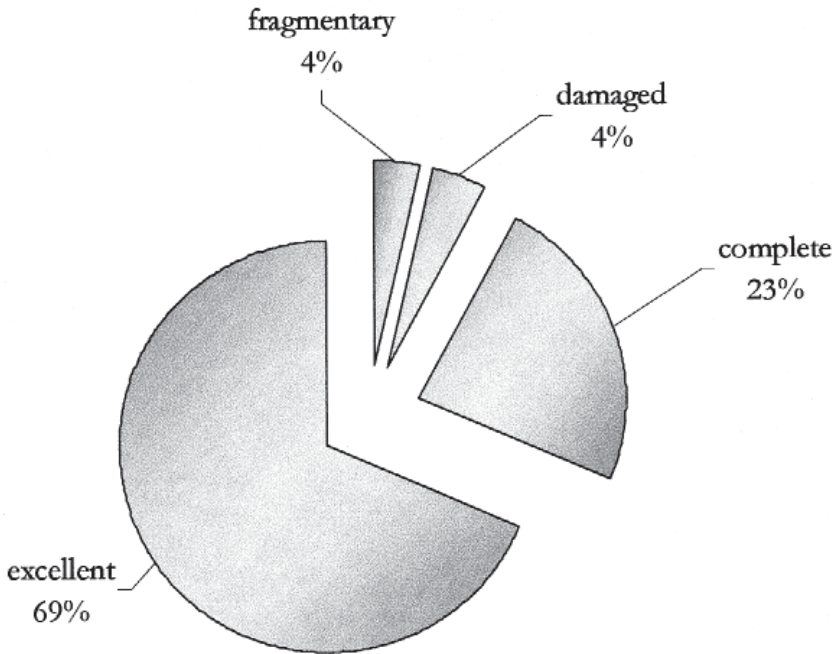


Fig. 1 – Distribution of the whole collection into four preservation categories: fragmentary (fragmented and incomplete bones), damaged (complete but partially damaged skull), complete (entire skull) and excellent (entire and well preserved skull).

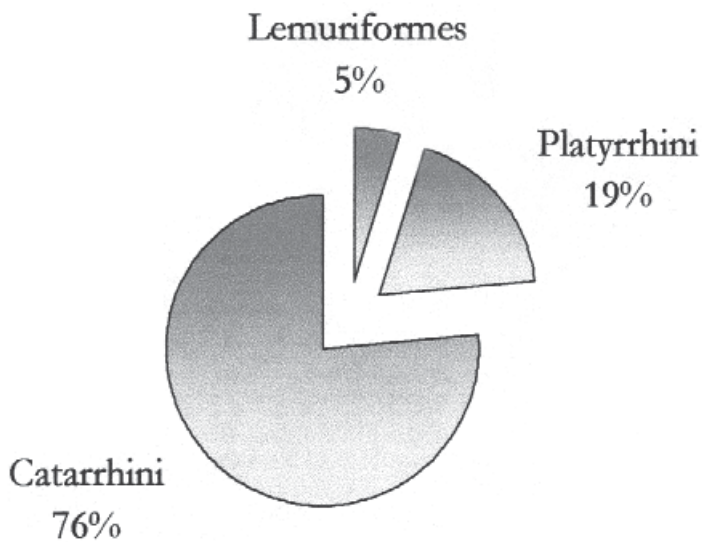


Fig. 2 – Distribution of the whole collection into Lemuriformes, Platyrrhini and Catarrhini infraorders.

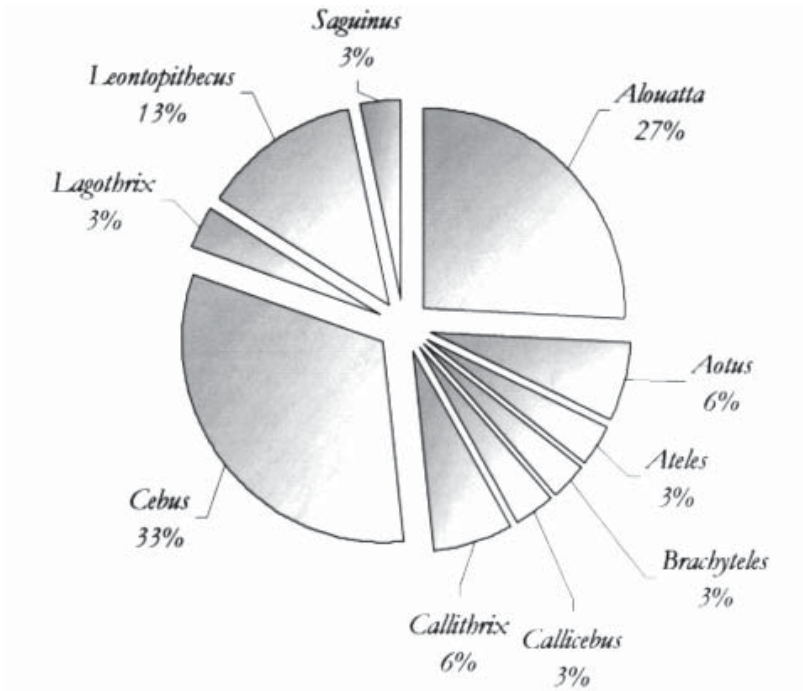


Fig. 3 – Composition of the Platyrrhini sample per genus.

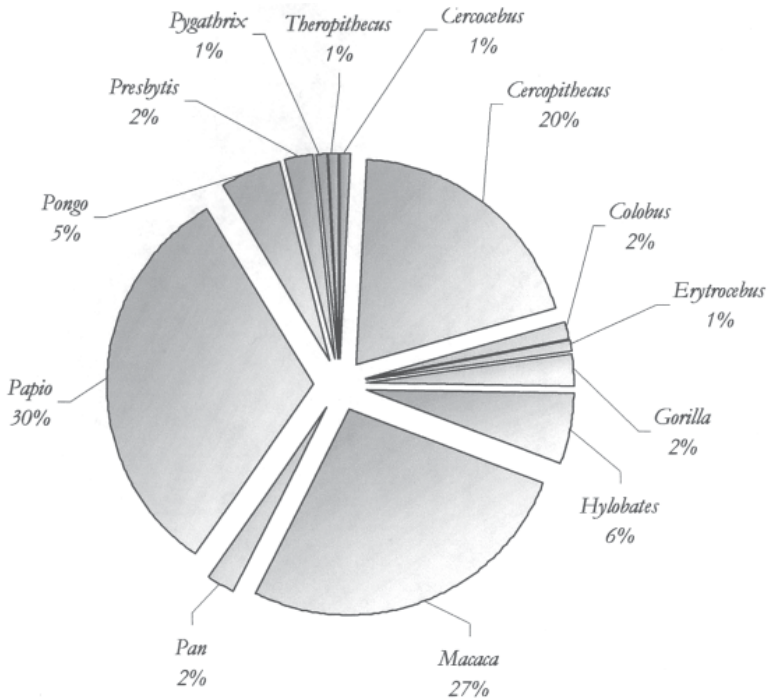


Fig. 4 – Composition of the Catarrhini sample per genus.

Colobidae as well as for the marked variability (see Albrecht & Miller, 1993), taxonomic assessment of this clade is rather uncertain. Cercopitheciinae are distinguished only as *Cercopithecus* (including *Allenopithecus* and *Chlorocebus*), *Erythrocebus* and *Miopithecus*. The Papioninae – since taxonomy and systematics are not yet well defined for this group, representing a singular exception to the general agreement between morphology and molecular data (Disotell, 1994; Disotell et al., 1992; Fleagle & McGraw, 1999; Harris, 2000; Page et al., 1999) – has to be distinguished in the genus *Cercocebus* (including *Lophocebus*), *Papio* (including *Mandrillus*), *Theropithecus* and *Macaca*.

More in general, Cercopitheciidae results the best represented group in the collection, mostly for the prevalence of *Papio*, *Macaca* and *Cercopithecus*, whose distribution in age classes is reported in Figure 5.

The Hominoidea section has been fractionated into the “traditional” taxa Hylobatidae and Pongidae (plus Hominidae) only. However, it is clear that taxonomy of the apes has still to be deeply revisited. It seems useless to assign a family rank to the single genus *Hylobates*, whereas the paraphyletic origin of the *Pan-Gorilla* group versus *Pongo* is clearly proved (see Goodman et al., 1994; Pilbeam, 1996; Shoshani et al., 1996). We think it is useful to recognise that African and Asian great apes represent a homogeneous biological and ecological model compared with the extant and extinct variability of the genus *Homo*, making no recommendable a unique family rank for all of them, even if little genetic and molecular changes are involved. Conversely, the Hominoidea variability is rather limited, when compared to other Mammalian taxa, and it appears then disproportionate to accept a splitting between *Pan* and *Gorilla* (in a single family Panidae), from one side, and the genus *Pongo* from the other.

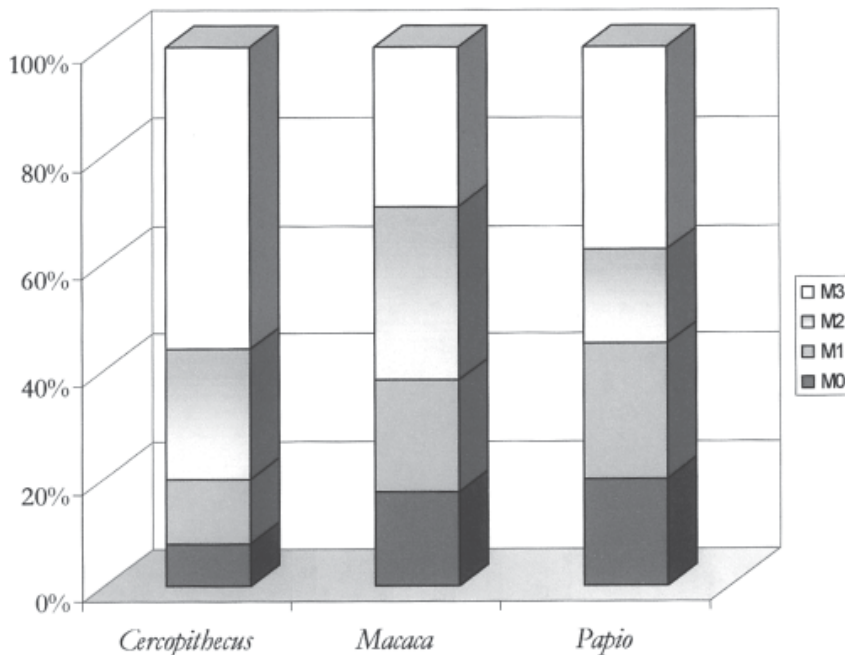


Fig. 5 – Distribution into four age classes of *Cercopithecus*, *Macaca* and *Papio* specimens, depending upon the number of upper molars fully erupted (at the masticatory plane) on each hemiarcade.

ABSTRACT

La collezione primatologica del Museo di Antropologia "G. Sergi", Roma (con alcune note di tassonomia e sistematica)

Riassunto – La collezione primatologica del Museo di Antropologia dell'Università di Roma è il risultato di un campionamento occasionale ma sistematico, iniziato quando Giuseppe Sergi fu chiamato per la Cattedra di Antropologia della Facoltà di Scienze (1884). La collezione è principalmente composta da crani (166) e alcuni scheletri postcraniali (21). La provenienza eterogenea dei singoli reperti ne rende impossibile avere informazioni specifiche, ma l'intera collezione rappresenta in maniera soddisfacente la variabilità dei primati non umani attuali. Una descrizione generale della collezione viene fornita insieme ad una lista completa dei reperti, comprensiva di informazioni tassonomiche, classi di età e stato di conservazione.

Parole chiave – Primati, Tassonomia, Sistematica, Collezioni Museali, Università di Roma.

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Appendix

In the following list each specimen of the collection is reported, associated to reference code, taxonomy, age class (depending upon the number of upper molars fully erupted on each hemiarcade, from 0 to 3), preservation status (0: fragmentary; 1: damaged; 2: complete; 3: excellent), and presence of post-cranial bones (R: complete, prepared and articulated skeleton; X: complete post-cranial skeleton; P: partial skeleton).

Code	Taxonomy	Age	Cons	PC
Prosimians				
Lemuroidea				
MAUR1-P 1	<i>Lemuridae</i>	3	3	
MAUR1-P 2	<i>Lemuridae</i>	3	3	
MAUR1-P 3	<i>Lemuridae</i>	3	3	
MAUR1-P 4	<i>Lemuridae</i>	3	3	R
MAUR1-P 5	<i>Lemuridae</i>	3	3	
MAUR1-P 6	<i>Lemuridae</i>	3	3	
MAUR1-P 7	<i>Lemuridae</i>	3	3	
Lorisoidea				
MAUR1-P 8	<i>Nycticebus</i>	3	3	
Platyrrhini				
Atelidae				
MAUR1-P 9	<i>Alouatta</i>	3	2	
MAUR1-P 10	<i>Alouatta</i>	3	2	
MAUR1-P 11	<i>Alouatta</i>	3	2	
MAUR1-P 12	<i>Alouatta</i>	3	2	
MAUR1-P 13	<i>Alouatta</i>	3	2	
MAUR1-P 14	<i>Alouatta</i>	3	3	
MAUR1-P 15	<i>Alouatta</i>	3	3	
MAUR1-P 16	<i>Alouatta</i>	3	3	
MAUR1-P 17	<i>Ateles</i>	3	3	

MAUR1-P 18	<i>Brachyteles</i>	3	3	
MAUR1-P 19	<i>Lagothrix</i>	3	1	
Cebidae				
MAUR1-P 20	<i>Aotus</i>	1	3	
MAUR1-P 21	<i>Aotus</i>	3	3	
MAUR1-P 22	<i>Cebus</i>	1	2	
MAUR1-P 23	<i>Cebus</i>	2	3	
MAUR1-P 24	<i>Cebus</i>	3	1	
MAUR1-P 25	<i>Cebus</i>	3	1	
MAUR1-P 26	<i>Cebus</i>	3	2	
MAUR1-P 27	<i>Cebus</i>	3	2	
MAUR1-P 28	<i>Cebus</i>	3	2	
MAUR1-P 29	<i>Cebus</i>	3	3	
MAUR1-P 30	<i>Cebus</i>	3	3	
MAUR1-P 31	<i>Cebus</i>	3	3	
Callitrichidae				
MAUR1-P 32	<i>Leontopithecus</i>	3	2	
MAUR1-P 33	<i>Leontopithecus</i>	3	3	
MAUR1-P 34	<i>Leontopithecus</i>	3	3	
MAUR1-P 35	<i>Leontopithecus</i>	3	3	
MAUR1-P 36	<i>Saguinus</i>	3	3	R
MAUR1-P 37	<i>Callitrichidae</i>	0	3	R
MAUR1-P 38	<i>Callithrix</i>	3	3	X
Pitheciidae				
MAUR1-P 39	<i>Callicebus</i>	3	3	
Catarrhini				
Colobidae				
MAUR1-P 40	<i>Colobus</i>	3	3	X
MAUR1-P 41	<i>Colobus</i>	3	3	X
MAUR1-P 42	<i>Presbytis</i>	1	3	

MAUR1-P43	<i>Presbytis</i>	2	3	
MAUR1-P44	<i>Presbytis</i>	2,5	3	R
MAUR1-P45	<i>Pygathrix</i>	1	0	

Cercopithecidae

MAUR1-P46	<i>Cercopithecus</i>	0	3	
MAUR1-P47	<i>Cercopithecus</i>	1	1	
MAUR1-P48	<i>Cercopithecus</i>	1	3	
MAUR1-P49	<i>Cercopithecus</i>	1,5	2	
MAUR1-P50	<i>Cercopithecus</i>	2	2	
MAUR1-P51	<i>Cercopithecus</i>	2	2	
MAUR1-P52	<i>Cercopithecus</i>	2	3	
MAUR1-P53	<i>Cercopithecus</i>	2	3	
MAUR1-P54	<i>Cercopithecus</i>	2	3	
MAUR1-P55	<i>Cercopithecus</i>	2,5	3	
MAUR1-P56	<i>Cercopithecus</i>	3	1	
MAUR1-P57	<i>Cercopithecus</i>	3	1	
MAUR1-P58	<i>Cercopithecus</i>	3	2	
MAUR1-P59	<i>Cercopithecus</i>	3	2	
MAUR1-P60	<i>Cercopithecus</i>	3	2	
MAUR1-P61	<i>Cercopithecus</i>	3	2	
MAUR1-P62	<i>Cercopithecus</i>	3	2	
MAUR1-P63	<i>Cercopithecus</i>	3	2	
MAUR1-P64	<i>Cercopithecus</i>	3	3	
MAUR1-P65	<i>Cercopithecus</i>	3	3	
MAUR1-P66	<i>Cercopithecus</i>	3	3	
MAUR1-P67	<i>Cercopithecus</i>	3	3	
MAUR1-P68	<i>Cercopithecus</i>	3	3	
MAUR1-P69	<i>Cercopithecus</i>	3	3	
MAUR1-P70	<i>Cercopithecidae</i>	0	3	
MAUR1-P71	<i>Erythrocebus</i>	3	3	
MAUR1-P72	<i>Macaca</i>	0	2	
MAUR1-P73	<i>Macaca</i>	0	3	
MAUR1-P74	<i>Macaca</i>	0	3	
MAUR1-P75	<i>Macaca</i>	0	3	

MAUR1-P76	<i>Macaca</i>	0	3	
MAUR1-P77	<i>Macaca</i>	0	3	
MAUR1-P78	<i>Macaca</i>	1	0	
MAUR1-P79	<i>Macaca</i>	1	3	
MAUR1-P80	<i>Macaca</i>	1	3	
MAUR1-P81	<i>Macaca</i>	1	3	
MAUR1-P82	<i>Macaca</i>	1	3	
MAUR1-P83	<i>Macaca</i>	1	3	
MAUR1-P84	<i>Macaca</i>	1	3	
MAUR1-P85	<i>Macaca</i>	2	2	
MAUR1-P86	<i>Macaca</i>	2	2	
MAUR1-P87	<i>Macaca</i>	2	3	R
MAUR1-P88	<i>Macaca</i>	2	3	
MAUR1-P89	<i>Macaca</i>	2	3	
MAUR1-P90	<i>Macaca</i>	2	3	
MAUR1-P91	<i>Macaca</i>	2	3	
MAUR1-P92	<i>Macaca</i>	2	3	
MAUR1-P93	<i>Macaca</i>	2	3	
MAUR1-P94	<i>Macaca</i>	2,5	3	X
MAUR1-P95	<i>Macaca</i>	2,5	3	P
MAUR1-P96	<i>Macaca</i>	3	2	R
MAUR1-P97	<i>Macaca</i>	3	2	
MAUR1-P98	<i>Macaca</i>	3	2	
MAUR1-P99	<i>Macaca</i>	3	2	
MAUR1-P 100	<i>Macaca</i>	3	2	
MAUR1-P 101	<i>Macaca</i>	3	3	
MAUR1-P 102	<i>Macaca</i>	3	3	
MAUR1-P 103	<i>Macaca</i>	3	3	P
MAUR1-P 104	<i>Macaca</i>	3	3	
MAUR1-P 105	<i>Macaca</i>	3	3	
MAUR1-P 106	<i>Papio</i>	0	0	
MAUR1-P 107	<i>Papio</i>	0	1	
MAUR1-P 108	<i>Papio</i>	0	3	
MAUR1-P 109	<i>Papio</i>	0	3	
MAUR1-P 110	<i>Papio</i>	0	3	

MAUR1-P 111	<i>Papio</i>	0	3	
MAUR1-P 112	<i>Papio</i>	0	3	
MAUR1-P 113	<i>Papio</i>	0	3	
MAUR1-P 114	<i>Papio</i>	1	0	
MAUR1-P 115	<i>Papio</i>	1	0	
MAUR1-P 116	<i>Papio</i>	1	0	
MAUR1-P 117	<i>Papio</i>	1	2	
MAUR1-P 118	<i>Papio</i>	1	3	
MAUR1-P 119	<i>Papio</i>	1	3	
MAUR1-P 120	<i>Papio</i>	1	3	
MAUR1-P 121	<i>Papio</i>	1	3	
MAUR1-P 122	<i>Papio</i>	1	3	
MAUR1-P 123	<i>Papio</i>	1,5	3	P
MAUR1-P 124	<i>Papio</i>	2	3	
MAUR1-P 125	<i>Papio</i>	2	3	
MAUR1-P 126	<i>Papio</i>	2	3	X
MAUR1-P 127	<i>Papio</i>	2	3	
MAUR1-P 128	<i>Papio</i>	2	3	
MAUR1-P 129	<i>Papio</i>	2,5	2	
MAUR1-P 130	<i>Papio</i>	2,5	3	
MAUR1-P 131	<i>Papio</i>	3	2	
MAUR1-P 132	<i>Papio</i>	3	2	
MAUR1-P 133	<i>Papio</i>	3	3	
MAUR1-P 134	<i>Papio</i>	3	3	
MAUR1-P 135	<i>Papio</i>	3	3	
MAUR1-P 136	<i>Papio</i>	3	3	
MAUR1-P 137	<i>Papio</i>	3	3	
MAUR1-P 138	<i>Papio</i>	3	3	
MAUR1-P 139	<i>Papio</i>	3	3	
MAUR1-P 140	<i>Papio</i>	3	3	
MAUR1-P 141	<i>Papio</i>	3	3	
MAUR1-P 142	<i>Papio</i>	3	3	
MAUR1-P 143	<i>Papio</i>	3	3	
MAUR1-P 144	<i>Papio</i>	3	3	
MAUR1-P 145	<i>Papio</i>	3	3	

MAUR1-P 146	<i>Cercocebus</i>	3	3	
MAUR1-P 147	<i>Theropithecus</i>	3	3	R
Hylobatidae				
MAUR1-P 148	<i>Hylobates</i>	2	2	
MAUR1-P 149	<i>Hylobates</i>	2	2	
MAUR1-P 150	<i>Hylobates</i>	3	2	
MAUR1-P 151	<i>Hylobates</i>	3	2	
MAUR1-P 152	<i>Hylobates</i>	3	2	
MAUR1-P 153	<i>Hylobates</i>	3	2	
MAUR1-P 154	<i>Hylobates</i>	3	3	
Pongidae				
MAUR1-P 155	<i>Gorilla</i>	2	2	
MAUR1-P 156	<i>Gorilla</i>	3	3	
MAUR1-P 157	<i>Gorilla</i>	3	3	
MAUR1-P 158	<i>Pan</i>	0	2	P
MAUR1-P 159	<i>Pan</i>	0	3	R
MAUR1-P 160	<i>Pan</i>	2	3	
MAUR1-P 161	<i>Pongo</i>	1	3	P
MAUR1-P 162	<i>Pongo</i>	1	3	
MAUR1-P 163	<i>Pongo</i>	2,5	3	R
MAUR1-P 164	<i>Pongo</i>	3	3	
MAUR1-P 165	<i>Pongo</i>	3	3	R
MAUR1-P 166	<i>Pongo</i>	3	3	X
