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Abstracts

Contents

14th September

Tuesday

16:15 - 19:35

Oral Session
*20min per paper

CT-A

CT-A-14E
Ecology & Behavior
SOCIAL ORGANIZATION
Chairs: C. Neumann & K. Koops

265 16:15-16:35
DOMINANCE AND SOCIAL RELATIONSHIPS IN FEMALES OF A TOLERANT MACAQUE SPECIES, *MACACA NIGRA*
**J. Dubosco, D. Perwitasari-Farajallah, M. Agil, B. Thierry, K. Hodges, A. Engelhardt*

266 16:35-16:55
CALCULATING DOMINANCE HIERARCHIES IN A DYNAMIC SYSTEM: RANK AND RANK CHANGES IN MALE CRESTED MACAQUES (*MACACA NIGRA*)
**C. Neumann, A. Maulana Irvan, M. Agil, D. Perwitasari-Farajallah, A. Widdig, A. Engelhardt*

267 16:55-17:15
SOCIAL INTERACTION OF MALE SULAWESI CRESTED BLACK MACAQUES (*Macaca nigra*) IN THE TANGKOKO-BATUANGUS NATURE RESERVE, NORTH SULAWESI, INDONESIA
**S. Sumarto, K. Watanabe*

268 17:15-17:35
DOMINANCE HIERARCHY AND SOCIAL GROOMING AMONG COMMENSAL FEMALE BONNET MACAQUES(*MACACA RADIATA*) IN MYSORE, INDIA
**S.R. Chacko*

269 17:35-17:55
SYNCHRONIZED RANK CHANGES IN JUVENILES AND THEIR MOTHERS AND RELATED BEHAVIOR OBSERVED IN A CAPTIVE GROUP OF JAPANESE MACAQUES
**Rizaldi, K. Watanabe*

270 17:55-18:15
NON-AGGRESSIVE INTERVENTIONS IN CONFLICTS AMONG CAPTIVE BORNEAN ORANGUTANS (*PONGO PYGMAEUS*)
**T. Tajima, H. Kurotori, S. Takeda*

271 18:15-18:35
DOMINANCE STYLE AMONG FEMALE WHITE-FACED CAPUCHINS (*CEBUS CAPUCINUS*) AT SANTA ROSA NATIONAL PARK, COSTA RICA
**M.L. Bergstrom, L.M. Fedigan*

272 18:35-18:55
MALE TAKEOVERS, SEXUAL HARASSMENT AND FEMALE REPRODUCTIVE SUCCESS IN HAMADRYAS BABOONS (*PAPIO H. HAMADRYAS*)
**P. Polo, F. Colmenares, M.V. Hernández-Lloreda*

273 18:55-19:15
HOW ADULT MALE CHIMPANZEES OF MAHALE ACQUIRE THE ALPHA STATUS?
**T. Nishida, A. Inaba, N. Itoh, T. Kooriyama, M. Nakamura, H. Nishie, T. Sakamaki, K. Zamma*

CT-B

CT-B-14E
Ecology & Behavior
PARENTAL BEHAVIOR
Chairs: F. Bercovitch & H-H. Su

274 16:15-16:35
PATERNAL CHANGES IN BODY WEIGHT DURING PARENTAL CARE PERIOD IN COOPERATIVELY BREEDING COMMON MARMOSETS
**I. Tatsuta, N. Kutsukake, A. Kawasaki, C. Yokoyama, H. Onoe, M. Hasegawa*

275 16:35-16:55
MALE-INFANT SOCIAL INTERACTIONS IN WILD CRESTED MACAQUES (*MACACA NIGRA*)
**D. Kerhoas, M. Agil, D. Perwitasari Farajallah, A. Engelhardt, A. Widdig*

276 16:55-17:15
MOTHERS MATTER! DOMINANCE STATUS, MATERNAL SUPPORT AND MATING SUCCESS IN MALE BONOBOS
**M. Surbeck, R. Mundry, G. Hohmann*

277 17:15-17:35
LIFE HISTORY TRAITS, MATERNAL BEHAVIOUR AND INFANT DEVELOPMENT OF THE BLUE-EYED BLACK LEMUR (EULEMUR FLAVIFRONS): IMPLICATIONS FOR CONSERVATION
**M.S.N. Volampeno, J.C. Masters, C.T. Downs*

278 17:35-17:55
GRANDMOTHERING IN CAPTIVE *GALAGO SENEGALENSIS BRACCATUS* - PARENTING BEYOND NURSING
L.T. Nash, S.E. Kessler

279 17:55-18:15
OBSERVATIONS ON A DAYTIME BIRTH IN THE WILD OF A TITI MONKEY (*CALLICEBUS OENANTHE*) AND SUBSEQUENT MALE PARENTAL CARE
**A.M. DeLuycker*

280 18:15-18:35
TWINNING FREQUENCY OF JAPANESE MACAQUES (MACACA FUSCATA) AT TAKASAKIYAMA
**Y. Sugiyama, H. Kurita, T. Matsui, T. Shimomura*

281 18:35-18:55
SENESCENCE AND TERMINAL INVESTMENT IN FREE-RANGING FEMALE RHESUS MACAQUES (*MACACA MULATTA*)
**C.L. Hoffman, J.P. Higham, A. Mas-Rivera, J.E. Ayala, D. Maestripieri*

282 18:55-19:15
REPRODUCTIVE SUCCESS OF FEMALE TAIWANESE MACAQUES (*MACACA CYCLOPIS*)
**H-H. Su*

CT-C

CT-C-14E
Ecology & Behavior
SELF-MEDICATION AND HOST-PARASITE ECOLOGY
Chairs: M.A. Huffman & A.J.J. MacIntosh

283 16:15-16:35
MEDICINAL USE OF PLANTS BY ORANG-UTANS
**H.C. Morrogh-Bernard, R. De Martin, L. Hoffmannova, K. Dolezal, I. Foitova*

284 16:35-16:55
SELF-MEDICATION IN BONOBOS: A REPORT OF LEAF-SWALLOWING FROM LUI KOTALE IN SALONGA NATIONAL PARK, DR CONGO.
**A. Fowler, G. Hohmann, B. Fruth*

285 16:55-17:15
THE ADAPTIVE SIGNIFICANCE OF GEOPHAGY IN THE MILNE-EDWARDS SIFAKA (PROPITHECUS EDWARDSI) AT RANOMAFANA NATIONAL PARK, MADAGASCAR
**S.J. Arrigo-Nelson, A.L. Baden, R.L. Salisbury, P.C. Wright, E.M. McGee*

286 17:15-17:35
DOCUMENTING GEOPHAGY IN WILD CHACMA BABOONS AT WILD CLIFF, SOUTH AFRICA, USING TRAP CAMERAS
**P.A. Pebsworth, M.A. Huffman*

287 17:35-17:55
FEEDING ON PHYTOESTROGENS: IMPLICATIONS FOR UGANDAN RED COLOBUS MONKEY (*PROCOLOBUS RUFOMITRATUS TEPHROSCELES*) PHYSIOLOGICAL ECOLOGY
**M.D. Wasserman*

288 17:55-18:15
PARASITE SPECIES DIVERSITY AND INFECTION INTENSITY OF ORANGUTAN - ECOLOGICAL FACTORS WITH AN EMPHASIS ON FOOD ITEMS IN THEIR DIET
**I. Foitova, M.A. Huffman, L. Dusek, J. Jarkovsky, R. Klapka, M. Olšanský*

289 18:15-18:35
THE FRACTAL DIMENSION: MEASURING BEHAVIORAL COMPLEXITY AND ITS IMPLICATIONS FOR EVALUATING THE HEALTH OF PRIMATES IN THE WILD
**A.J.J. Macintosh, M.A. Huffman*

290 18:35-18:55
PARASITE BURDEN AS A TOOL TO ASSESS IMMUNOSENESCENCE IN WILD BROWN MOUSE LEMURS (*MICROCEBUS RUFUS*)
**S. Zohdy, T.H. Rakotoarinivo, J. Carag, P.C. Wright, J. Jernvall*

291 18:55-19:15
SOCIAL GROOMING IN PRIMATES: HYGIENIC OR HEALTH RISK?
**B.T. Wren, M.J. Remis, T.R. Gillespie*

292 19:15-19:35
OF LEMURS AND LOUSE FLIES: IMPLICATIONS OF LEMUR ECOLOGY AND BEHAVIOR ON PARASITE SPECIFICITY IN RANOMAFANA NATIONAL PARK, MADAGASCAR
**S.E. Vaughn, E. McGee*

CT-D

EN-A

EN-A-14E
Morphology & Phylogeny
LOCOMOTION & POSTURE
Chairs: A. Matsumura

293 16:15-16:35
REGIONAL DIFFERENCES IN CORTICAL THICKNESS OF THE FEMORAL NECK IN CHIMPANZEES
**A. Matsumura, T. Nakamura, H. Gunji, Y. Takahashi, T. Nishida, M. Okada*

294 16:35-16:55
FUNCTIONAL MORPHOLOGY OF ANTHROPOID HAND POSTURES: A 3D APPROACH TO PHALANGEAL ARTICULAR SURFACES
**A.S. Deane*

295 16:55-17:15
HIND LIMB USE AND LOADING PATTERNS IN PRIMATES WITH DIFFERENT LOCOMOTOR REPERTOIRES
**K.J. Carlson, B.A. Patel*

296 17:15-17:35
ORTHOGRADE TRUNK POSTURE, BIPEDALISM AND LUMBAR BACK MUSCULATURE
**B. Hesse, R. Fischer, M.S. Fischer, N. Schilling*

297 17:35-17:55
ARBOREAL ORIGIN OF BIPEDALISM REEXAMINED - COMPARATIVE DYNAMICS -
**T. Kimura*

268

DOMINANCE HIERARCHY AND SOCIAL GROOMING AMONG COMMENSAL FEMALE BONNET MACAQUES (*MACACA RADIATA*) IN MYSORE, INDIA

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It has been argued that commensal primates are behaviorally different from their wild counterparts and less useful for the study of primate behavior. Several differences proposed to occur in provisioned groups are an increase in aggression and the linearity of the female dominance hierarchy and more asymmetrical grooming relationships. This paper examines dominance and social grooming among females in a troop of commensal bonnet macaques to see if they fit the species' classification of "moderately relaxed". Dominance hierarchy strength, evaluated using a modified Landau index, was 0.72 on a 0 to 1 scale, indicating moderate linearity. Rank and aggression given were positively correlated (Spearman's rho r=.852, n=11, $p<0.01$) and rank and aggression received were negatively correlated (Spearman's rho r=-.856, n=11 $p<0.01$). However the hierarchy contained reversals with a Directional Inconsistency Index, DII, of 13% and a Dyads Up Index of 9%. Dominance and grooming scores were converted to an interval scale using standard scores to determine the dominance categories high, middle, and low rank. Grooming given and received were not correlated with rank (Spearman's rho r=-.483, n=11, $p>0.1$; r=0.539, n=11; $p>0.1$). As well, only females in the high rank category groomed adjacent individuals significantly more often than non-adjacent individuals ($\chi^2=15.83$, df1, $p<0.0001$). On the continuum of macaque behaviors from despotic to relaxed, wild bonnet macaques have been considered a level three (moderately relaxed) species and these findings are consistent. This indicates that commensality does not seem to affect the overall strength or character of bonnet macaque dominance and grooming interactions.

Keywords: *Macaca radiata*, commensal primates, grooming, social behavior

269

SYNCHRONIZED RANK CHANGES IN JUVENILES AND THEIR MOTHERS AND RELATED BEHAVIOR OBSERVED IN A CAPTIVE GROUP OF JAPANESE MACAQUES

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Synchronized rank change in juveniles and their mothers was studied in a captive group of Japanese macaques (*Macaca fuscata fuscata*), a species characterized by highly despotic hierarchical relations. This study aimed to evaluate whether rank changes of mothers lead to rank changes among their offspring and whether any observed correlation is due to 1) agonistic support by mother, the commonly made prediction, or 2) recognition by juveniles of an "opportunity" to change rank. We systematically recorded behaviors of 18 juvenile subjects belonging to two cohorts, together with their mothers. A total of 1854, 30-minute continuous focal recording sessions combined with all occurrence-sampling methods were collected. Our analyses allowed us to clarify the role support received from mother and other individuals and of some associated behavior patterns. Most rank changes among mothers were followed by a change of rank in their offspring (21 out of 26 cases) within several days (mean 5.1 ± 4.5 SD). Support provided by mothers or other individuals was not often observed and did not increase, even when a juvenile outranked their targets. Alternatively, juveniles started to perform intensive head-flagging, agonistic intervention, and successive aggression toward certain individuals after their mothers outranked them. These results suggest that juvenile macaques recognize opportunities and take the initiative to outrank others because of the rank change of their mothers. We highlight the importance of spontaneous behavioral changes in juvenile macaques for the inheritance of matrilineal rank.

Keywords: Japanese macaque; dominance rank; agonistic support; spontaneous behavior