

neurons is strongly associated with internal determinants of subjective valuation and decision making. This activity might be critical for comparing information about feeding opportunities and selecting foraging paths in natural foraging situations. The research presented complies with the European directive 2010/63/EU and with the French laws (code rural, articles R. 214-87 à 214-126). It has been approved by our ethics committee and is registered at the French Ministry of Research, project number 000581.02.

The Middle and Late Pleistocene *Macaca sylvanus* Fossil Record from Italy

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During the Plio-Pleistocene, the Barbary macaque *Macaca sylvanus* was widely distributed throughout Europe. Fossils are usually referred to the *M. sylvanus* lineage, but their specific taxonomic status is controversial because, due to its conservative morphology, it is difficult to distinguish fragmentary fossils of *Macaca* from other primitive papionins or define a firm alpha-taxonomy. Three subspecies are classically recognised in the fossil record of continental Europe: the Pliocene *M. sylvanus prisca* Gervais, 1859; the Late Pliocene to Early Pleistocene *M. sylvanus florentina* Cocchi, 1872; and the Middle to Late Pleistocene *M. sylvanus pliocena* Owen, 1846. The Plio-Pleistocene Italian fossil record includes cranio-mandibular fragments, isolated teeth or fragmentary postcranial bones. The best preserved and complete material comes from Villafranca D'Asti (Piedmont), Upper Valdarno (Tuscany) and Pietrafitta (Umbria). Recent studies focussed on fossil remains from Middle and Late Pleistocene deposits of Italy. This analysis includes recently discovered material and old paleontological collections. Among them is an almost complete mandible from the Roma area, which has been reconsidered and studied using CT scanning and computer graphic methodologies. Intraspecific variability, biochronology and ecology of the Pleistocene Barbary macaques are discussed together with the possible causes of their extinction in Europe.

Reach-to-Grasp in Naturalistic Settings: A Kinematic Approach

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The prehensile hand is one of the major traits distinguishing primates from other mammal species. All primates, in fact, are able to grasp an object and hold it in part or entirely using a single hand. Although there is a wealth of behavioural data regarding grasping movements in humans and apes, there is relatively little material on macaques. To date, evidence regarding free-ranging macaques is confined to observational data, while quantitative reports describe studies carried out in laboratory settings or in captivity. Here we provide an overview of recent studies

providing the kinematic descriptions of basic grip behaviour in free-ranging macaque monkeys (*Macaca sylvanus* and *M. fascicularis*). Video footage of these animals grasping objects was analysed frame-by-frame using digitalization techniques. The results revealed that the types of grips considered are each characterized by specific kinematic signatures. It was also found that hand kinematics are scaled depending on the context and the intrinsic properties of the object to be grasped. The findings outlined here regarding naturally free-ranging macaques complement previous reports and provide new insights on grip kinematics in non-human primates that may ultimately have implications in connection with evolutionary models of manual abilities. All the research complied with the European Directive 2010/63/EU.

Not Just Lemurs on the Menu: Assessment of Feeding Habits and General Prey Preferences among Introduced and Endemic Predators at the Bezà Mahafaly Special Reserve, Madagascar Using Scat Sampling

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There has been considerable research on understanding the dynamics of predation upon lemurs but, to date, these studies have either focused on only one predator (e.g. the fosa, *Cryptoprocta ferox*) or assessed predator communities in terms of temporal overlap or activity patterns using camera trap methodology. While important, these studies do not provide information on relative dietary behaviours of predators, and thus the potential impact of various predator guilds on local flora and fauna is currently missing. Using scat sampling (n = 31) across a 10-month period (2008–2009), this study assessed overall patterns of types of prey used by season, by month as well as prey preference by felids (*Felis* sp.), canids (*Canis lupus familiaris*), civets (*Viverricula indica*) and the fosa at the Bezà Mahafaly Special Reserve, Madagascar. All predators were omnivorous, using a variety of prey that included arthropods, reptiles, mammals and even plant material. Vertebrate prey was taken more during the wet as compared to the dry season. Comparisons of the two major introduced predators, felids and civets, indicate that while the two overlap in use of vertebrate prey, civets focused more on arthropods during the dry season. Identifiable remains included rats as well as lemurs, with lemur remains associated only with felids. Overall this study indicates that predators may be having a substantial effect on avian and, especially, small mammal and reptile populations as well as on lemurs, and that lemur predation must be understood in terms of overall predator patterns. Scat sampling provides a relatively easy to use and important tool to assess community prey patterns at other sites in Madagascar and elsewhere.