Testudine material, collected at the Pirapozinho Site (Bauru Group), has been macroscopically analyzed and mechanically prepared for several years. All the studies indicated that, due to the richness of the material and to the excellent state of preservation of it (based mainly on the presence of articulated individuals (carapace/plastron conditions)), a catastrophic event occurred in the site. However, analysis of the obtained in tomographic exams proved to be essential to the study of the Testudines group as, by that means, it is possible to visualize the internal structures of the turtle material without causing damage to them, resulting in accurate data to taphonomic interpretation. These data indicated that some of the macroscopically analyzed material was not as complete as it was imagined to be. The majority of the sample presented different stages of disarticulated internal condition. As a result, it could be determined to the Pirapozinho Site eight taphonomic classes, enclosing completely articulated to disarticulated elements: class I—articulated and complete skeleton, including skull and mandible; class II—partially articulated skeleton with no skull and/or mandible; class III—articulated skull and mandible isolated from the post-cranium elements; class IV—isolated skull or isolated mandible; class V—carapace/plastron with a reduced or without internal bone material; class VI—isolated carapace or isolated plastron; class VII—isolated post-cranium material; and class VIII—high degree of bone fragmentation. The taphonomic data together with sedimentary ones indicate both slowly and catastrophic events. They also indicate a reworking and a time-averaging processes. The present model postulates a multi-episodic event to the Pirapozinho Site, with a total of ten different moments of humidity and drought registered.

**Poster Session III**

**MACROEVOLUTIONARY INSIGHTS BASED ON BIONIC SPECIALIZATION OF MAMMALIAN ASSEMBLAGES: INTERCONTINENTAL COMPARISON AMONG AFRICA, SOUTH AMERICA AND EUROPE**

**HERNANDEZ FERNANDEZ, Manuel, Universidad Complutense de Madrid, Madrid, Spain; MORENO BOFARULL, Ana, ARIAS ROYO, Anton, Universidad Autonoma de Madrid, Cantoblanco, Madrid, Spain; VRBA, Elisabeth, Yale Univ., New Haven, CT**

Vba’s resource-use hypothesis, developed after the study of the mammalian fossil record from Africa, predicts that generalist species have lower specificity and extinction rates than specialists. We test several subsidiary predictions of this hypothesis using the bionic specialization index (BSI) for each mammal species, which is based on its geographical range within different climate zones. This index can be used globally allowing intercontinental and intertaxa comparisons. Our results, based on the study of extant African (A), South American (SA) and European (E) mammals, are consistent with the axioms of the resource-use hypothesis, which predicts (1) a high frequency of stenobiotic species, (2) that carnivores are more eurybionic than herbivore clades, (3) the higher incidence of bionic specialist clades in the tropical rainforest, desert, steppe and tundra biomes, and (4) the fact that certain combinations of inhabited biomes occur more frequently among species than do others. We also found that the tropical deciduous woodland (A, SA), sclerophyllous woodland (E), neotropical forest (E) and taiga (E) are important sources of species, which is due to either the large size of these biomes or the high incidence of climatic cycles on them. These results can be explained within the premises of the resource-use hypothesis. The low incidence of tundra specialists in Europe might be due to the reduced extent of this biome in the continent. Other deviations from some predictions of the evolutionary hypothesis tested here are probably due to the high incidence of mountainous terrain on ecological specialization in European and South American mammals, or to the influence of the Pleistocene Great American Biotic Interchange. The resource-use hypothesis and related habitat-theory suggest that a key to present-day macroecological patterns is found in the past: in the long term history of turnover (speciation, extinction) of clades, and in the palaeoclimatic and other geological changes of the areas in which the clades evolved. As a result of our work, here we present evidences based on extant assemblages that support an evolutionary theory originally based on the fossil record.

**Poster Session III**

**LATE MIOCENE MAMMALIAN FAUNA INCLUDING LARGE HOMINIDS FROM THE NAKALI FORMATION, RIFT VALLEY, KENYA**

**HIDEO, Nakaya, Kagoshima Univ., Kagoshima, Japan; YOSHIIIRO, Sawada, Shimane Univ., Matsue, Japan; YUTAKA, Kunimoto, Kyoto Univ., Imajuku, Japan; MASATO, Nakatsukasa, Kyoto Univ., Kyoto, Japan; HARUO, Saegusa, Univ. of Hyogo, Sanda, Japan**

The branching age of the human clade from the other hominoids was estimated to be around five million years ago by the calibration of DNA sequence. Hominid fossils are reported from some localities over six million years ago (Senut et al. 2001, Brunet et al. 2002) post 20th Century. The late middle to late early Miocene (between 13 and 7 Ma) is the important age for revealing the human origins. Samburupithecus kiptalami (Ishida & Pickford 1997) from the Namurungule Formation (Rift Valley, Kenya) is the only hominoid fossil associated with a rich vertebrate fauna from Sub-Saharan Africa in this geologic age. The Namurungule Fauna was correlative with the Fauna Set VI (10 to 8 Ma) of mammalian biostратigraphy of Sub-Saharan Africa by Pickford (1981) (Nakaya et al. 1984, Nakaya 1994, Pickford et al. 1984, Tsukikawa 2004). Geologic age of the Namurungule Formation was determined as 9.6 Ma by K-Ar dating and magnetostratigraphy (Sawada et al. 1998). However, S. kiptalami is represented only by a single left maxilla with the upper cheek tooth row. Phylogenetic position of S. kiptalami is not yet established within the Hominidae. The Japanese expedition team has excavated the Nakali Fauna (Rift Valley, Kenya) since 2002. This team has collected more than 700 vertebrate remains including hominoid fossils (Nakatsukasa & Kunimatsu 2005, Nakatsukasa et al. 2005). We have identified 27 taxa of the following orders and families from the Nakali Fauna including unreported taxa by previous works. Reptilia: Crocodilia, Testudinata, Squamata (Serpentes), Mammalia: Primates (Non-cercopithoid catarhine, Hominoida spp., Colobinae), Rodentia (Rhyzomyidae, Thryonomyidae), Proboscidea (Deinotheriidae, Gomphotheriidae, Elephantidae), Hyracoidae (Procaviidae), Carnivora (Mustelidae, Hyaenidae), Perissodactyla (Equidae, Rhinocerotidae), Artiodactyla (Suidae, Hippopotamidae, Giraffidae, Bovidae). The faunal assemblage from the Nakali Formation is similar with the assemblage from the Namurungule Formation, and also correlative with the Fauna Set VI (10 to 8 Ma). Large hominoid fossils from the Nakali Fauna are new material from the late Miocene in age.