

## THE ACTIVITIES OF THE LIGABUE STUDY RESEARCH CENTRE ON THE THIRTIETH ANNIVERSARY OF ITS FOUNDATION

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With 4 figures

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### Abstract

In 2003 the Ligabue Study Research Centre celebrated its first thirty years of activity with various projects concerning research and scientific promotion: the opening of a new exhibition area in the Venice Museum of Natural History and the creation of a multi-themed exhibition in the Palazzo delle Miniere at Fiera di Primiero (Trento).

The new room in the Venice Museum is dedicated to the scientific expedition which took place in the Ténéré Desert between 1971 and 1973. It briefly examines the history of the expedition, which contributed towards the foundation of the Ligabue Study Research Centre.

The exhibition "From Meteorites to Dinosaurs ... to Men" has been staged with the collaboration of the Comprensorio del Primiero (Trento). Theories about biological evolution act as a bond throughout the exhibition: gathering a wide range of exhibits, the exhibition links the evolutionary potentials which can be found in the history of terrestrial organisms to the global evolution of the solar system and to human cultural evolution.

### Riassunto

L'attività del CENTRO STUDI RICERCHE LIGABUE in occasione del trentennale della sua fondazione.

Nel 2003 il Centro Studi Ricerche Ligabue ha celebrato i suoi primi trent'anni di attività con numerose iniziative nel campo della ricerca e della divulgazione scientifica. Questo secondo aspetto è stato caratterizzato da due manifestazioni: l'apertura di un nuovo percorso espositivo al Museo di Storia Naturale di Venezia e una mostra politematica presso il Palazzo delle Miniere a Fiera di Primiero.

La nuova sala del Museo Veneziano è dedicata alla spedizione scientifica nel deserto del Ténéré, svoltasi negli anni tra il 1971 e il 1973. Riassume brevemente la storia di quella spedizione che stimolò la nascita stessa del Centro Studi Ricerche Ligabue.

La mostra "dalle Meteoriti ai Dinosauri...all'Uomo" è stata realizzata in collaborazione con il Comprensorio del Primiero. Le teorie dell'evoluzione biologica fanno da collante all'intero percorso espositivo, che nel riunire l'ampia varietà di reperti, collega le potenzialità evolutive riscontrabili nella storia degli organismi terrestri, all'evoluzione complessiva del Sistema Solare e alla stessa evoluzione culturale umana.

In 2003 the Ligabue Study Research Centre celebrated its first thirty years of scientific-cultural activities with various projects concerning both research and promotion. In particular, the Centre's endeavours have been promoted by two exhibitions. On August 9, 2003, the permanent exhibition entitled "From Meteorites to Dinosaurs ... to Men" was opened in the 14<sup>th</sup> century Palazzo delle Miniere at Fiera di Primiero, while on October 25, 2003 the Venice Museum of Natural History, including a room called the "Dinosaur Fossil Deposit", was officially reopened to the public. This room is dedicated to the scientific expedition conducted in 1973 by the Ligabue Study Research Centre and the National Museum of Natural History of Paris, and led by Giancarlo Ligabue and Philippe Taquet. This expedition enabled the study of the dinosaur fossil deposits of Gadoufaoua, in the Ténéré Desert (Niger), whose sands yielded the skeleton of an *Ouranosaurus nigeriensis*, now exhibited in Venice. The sediments of this deposit belong to the Elrhaz formation, upper Aptian (lower Cretaceous), and formed in a marshy and deltaic environment, which was rich in vegetation and populated by dinosaurs, crocodiles, pterosaurs and fish. The exhibition area of the Venice Museum enables the visitor to retrace the history of the expedition, its difficulties and the technologies which were used to save the palaeontologic material. The central part of the exhibition is dominated by the skeleton of the *Ouranosaurus nigeriensis* as well as the sizeable skull and the rest of the dermic part of the *Sarcosuchus imperator*, possibly the largest crocodile found to date. The interactive material and a big central screen for the projection of footage relating to the expedition



Fig.1: The ceremony of the new exhibition area at the Venice Museum of Natural History.

permit the exhibitors to engage the public immersively in the history of the Gadoufaoua deposit and the discovery of the remains of dinosaurs, crocodiles, turtles, fish and shellfish, as well as vegetable finds which are now exhibited inside the showcases that complete the exhibition area. Therefore, not only the public, particularly young visitors, can admire the richness of the exhibited material, but they can also experience the main moments of the first expedition with Italian participants dedicated to the research and the study of dinosaurs.

The exhibition "From Meteorites to Dinosaurs... to Men" is the result of a collaboration between the Ligabue Study Research Centre and the seven towns of Primiero. It is currently hosted in two rooms of the 14<sup>th</sup> century Palazzo delle Miniere of Fiera di Primiero, already the venue of an ethnographic museum. The exhibited findings represent a part of those which have been gathered during the activities of the Research Centre. The materials come from different continents, in addition to various geological eras and historical periods. Their acquisition by the region of Fiera di Primiero represented the origin of a small but active scientific museum, which is clearly separated from similar initiatives in the area, mainly centred on materials of local origin. Therefore, a private collection became a public heritage and an instrument for the development and the promotion of scientific culture.

The exhibition includes some fragments of meteorites, which document the origin and the first phases of the solar system; various fossilised remains of different organisms; and two manufactured exhibits – a female statuette of Olmeca origin and a fragment of cuneiform writing – which



Fig. 2: An example of the interactive material in the Venetian show room.

constitute evidence of ancient human civilizations. The main theme of the exhibition as a whole is the state of transformation pervading Nature and the possibility of reconstructing the subsequent phases of Natural History through the analysis and the interpretation of documents. Man is, at the same time, both the spectator and interested party of Natural History; he is the result of biological evolution as well as of the cultural evolution which emerges in various terms and conditions.

In order to organise the exhibition area, it was necessary to start with the chronological sequence of the finds, but we tried to avoid suggesting the idea of a "project" which – according to some people – could act as a background to the evolution of living organisms, a progression from initial simplicity towards the ultimate improvement of the organisms. On the contrary, we emphasised the synchronic aspects of evolution, classifying contemporary events on parallel levels of the exhibition. For example, in the showcase dedicated to invertebrates, we tried to show the evolutionary potential of "life without vertebrates" and underline the structural complexity which has been present since the very first moments of the Cambrian explosion of life. In contrast, the evolution of vertebrates is not seen as a progression towards the colonisation of the emergent lands, but as a contemporary development of different evolutionary lines, that allowed dinosaurs – widely present in the two exhibition rooms – to adapt to a great variety of habitats in the Mesozoic era. In that period there also appeared the first mammals and birds: in the exhibition, the latter are represented by the rare specimen of *Cathayornis*. The same period ended with the decline of large reptiles and the subsequent ascendancy of mammals. However, the link between the skull of the Cynodont, a small mammal of the Triassic period, and that of the Miocenic *Machairodus giganteus*, the extraordinary sabre-toothed tiger which is the symbol of the current exhibition, is not at all linear. Similarly, the subsequent appearance of Man does not seem automatic. However, it is only in the light of Darwin's Theory of Evolution that such phenomena find their explanation, even though the new discoveries, which came consecutively in the past hundred and fifty years that separate us from the publication of *The Origin of Species*, led to an overall revision of Darwin's original idea. Unfortunately, the confirmation of the exact development of evolutionary processes will never come from a labora-



Fig. 3: The Miocenic *Machairodus giganteus*, the sabre-toothed tiger, symbol of the exhibition "From Meteorites to Dinosaurs ... to Men".

tory test, which is conventional for the empirical sciences. On the contrary, evolutionist biology, which adopts the method of historical sciences, became the research of those biological traces that mark the different phases of the history of living organisms. In this paradigm, palaeontology remains a field full of potentials, which could provide solutions to some problems concerning the origin and the extinction of the species. Therefore, fossils contain proof of the transformations that constitute the history of life on this planet, petrified remains of organisms that lived in a remote past, and which now, from a show-glass in a small mountain museum, continue to educate us in the "grandeur in this view of life".



Fig. 4: The characteristic skull of *Psittacosaurus mongoliensis*, a Cretaceous dinosaur, the latest acquisition of the exhibition of the Primiero.