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Upper Pleistocene Palaeoclimate and Palaeoenvironmental evolution of Kivu
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Paleoenvironmental reconstruction of the inter-tropical regions of Africa have been carried out based on palynological studies. However, there are little or no information on the lap-sided zones of the Lake Kivu inspite of several approaches over the last twenty years. Sedimentary sequences of Cishaka Formation was sampled at the high altitude section of the National Park of Kahuzi-Biega located on the western flank of Lake Kivu in D.R. Congo and subjected to palynological investigation. The data allowed for the reconstruction of 35000 years of regional paleoenvironmental history.

Ca. 60 organic rich sediment samples derived every 10cm from a 6 meter depth core hole in the Cishaka Formation were subjected to palynological analysis after extraction of fossils by acetolysis procedure. The sediment samples are mainly dark grey colored claystones and shales. The base of the cored hole at 600cm depth is poor in pollens and has been dated to cover a period 38800 +/- 4100 BP. The chronology of events has been established on the basis of dating ¹⁴C.

Based on observed different forest taxons nine phases or zones of forest evolution were established. The dynamics of the main components of the forest taxons within the zones was used to subdivide the first zone into three subzones and the zone 7 into two subzones. During the Upper Pleistocene - the so-called period of the "Kalambo Interstadial" (32000-26000 years BP), a heterogeneous forest occupies the land under a moderately hot-humid climate. During the regressive phase of the Hypothermal of Mount Kenya (25000-15000 years BP), the Last Glacial Maximum undergoes a development of an important extension of herbaceous open environment that witnesses a big dryness.

Then, the restoration of an Afro-highland forest with an Afro-subalpine connotation, witnesses cold-humid climatic conditions and is temporarily interrupted by a new extension of open environments attesting a dry throbbing that one can assimilate to the recent Dryas (DR = YD). At the Optimum Humid Holocene (10000-7000 years BP), with the growth of precipitations, Lake Kivu registers an important rise whereas the depressions in altitude are transformed in lakes.

The progression of ombrophile mountain forest that should have followed has not been archived for the lack of sedimentologic records. Around 6500 years BP the first swampy deposits of the Holocene reveal the existence of an ombro-mesophile middle forest in regressive evolution testifying cooler climatic conditions. Around 4000 years BP, an important expansion of the natural climatic open environments, prairies in altitude and savannas on the lower slopes of reliefs, attest a hydrous deficit to put in relation with the African global period of aridity to this time. The return to a certain climatic stability during the first millennium AD allows the highlander forest to take the size.

