

***Eucalyptus* (Myrtaceae) macrofossils from the early Eocene of Patagonia, Argentina**

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Today, *Eucalyptus* comprises approximately 700 species distributed essentially in Australia, although a few taxa occur in some southeastern Asia islands and in Papua New Guinea. They occupy a diverse range of habitats, from high altitude meadows to the coast and from rainforest margins to watercourses in Australian deserts. Though, the macrofossil record is meager and controversial, leaves were recorded from the middle Eocene to Miocene of New Zealand and the Miocene and Pliocene of Australia while fruits from the Miocene of Australia and New Zealand. For South America, *Eucalyptus* fossil fruits are known from a single report from Miocene sediments of Patagonia. Recently, numerous fossil leaves and infructescences assignable to *Eucalyptus* were collected from the early Eocene Tufolitas Laguna del Hunco (~52my), in Patagonia. Although the leaves and fruits are not in organic connection, they were found intimately associated in the same locality and stratigraphic level. The leaves are characterized by their linear-lanceolate falcate shape, a prominent middle vein, an intramarginal vein developed from the base and laminar glands. Fossil fruits are impressions or compressions of 5-valvate woody capsules grouped in triads forming panicles. The capsules are hemispherical and show the remains of the calyptra and the staminal ring. Even though assignation of fossil remains to a modern -and controversial- genus such as *Eucalyptus* might result arguable, foliar and fruit morphological characters do not leave too much place to including these fossils within any other genus than the modern *Eucalyptus*. This constitutes the first report of fossil leaves in South America and one of the oldest worldwide records of infructescences with definite *Eucalyptus* affinities. These fossils are of particular interest because *Eucalyptus* is now extinct in South America strengthening biogeographical links between Paleogene floras of Patagonia and Australasia.