Whole plant reconstructions in *Araucariaceae* and *Pararaucariaceae* from the La Matilde Formation, Patagonia, Argentina: solving an old puzzle?

FALASCHI[1,3] and A. B. ZAMUNER[2,3]

In palaeobotanical studies, the recognition of a whole plant normally is a complex process due to the natural loss of the plant's parts and organs and due to several taphonomic processes. Therefore organic connections, identical cuticular characters and/or exclusive and intimate association in the same fossiliferous levels are needed in order to reassemble the whole organism. For these reasons, whole plant reconstructions are usually scarce and precious. We present here tentative reconstructions of two paradigmatic Jurassic plants from southern Patagonia based mainly on impressions/external molds of araucarian female cones and of coniferous leafy branches coming from two well-known localities in the La Matilde Formation from Patagonia: Cerro Cuadrado and Monumento Natural Bosques Petrificados. Permineralized samples stored in several collections were also used for comparisons. Several organic connections between female cones of Araucaria cf. A. mirabilis (Spegazzini) Windhausen emend. Calder and leafy branches of the Brachyphyllum type, would allow including them in the same biological entity, within the Araucariaceae family. The presence of an exclusive association of araucarian organs also certified this idea. A second species of leafy branches, Araucarites sanctaecrucis Calder, was found in organic connection with a female cone of Pararaucaria patagonica Wieland emend. Calder and also with the tiny male cones of Masculostrobus altoensis Menéndez. In both cases, the typical morphology of A. sanctaecrucis was recognized in the leaves clothing the cones' peduncles and also in the base of the bracts and microsporophylls. Two whole plant reconstructions were made: the "Araucaria mirabilis tree" (Araucariaceae) and the "Pararaucaria patagonica tree" (Pararaucariaceae), solving the relations between previously described, world-wide known coniferous species and emphasizing the bispecific composition of the Jurassic forests in this area.

1 Laboratorio de Paleobotánica, Departamento de Ecología, Genética y Evolución. Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires (UBA). Int. Güiraldes 2620, (1428) Buenos Aires, Argentina. marsilea2001@yahoo.com.ar
2 División Paleobotánica, Museo de La Plata, Paseo del Bosque s/nº, (B1900FWA) La Plata, Buenos Aires, Argentina. Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET). azamuer@fcnym.unlp.edu.ar