

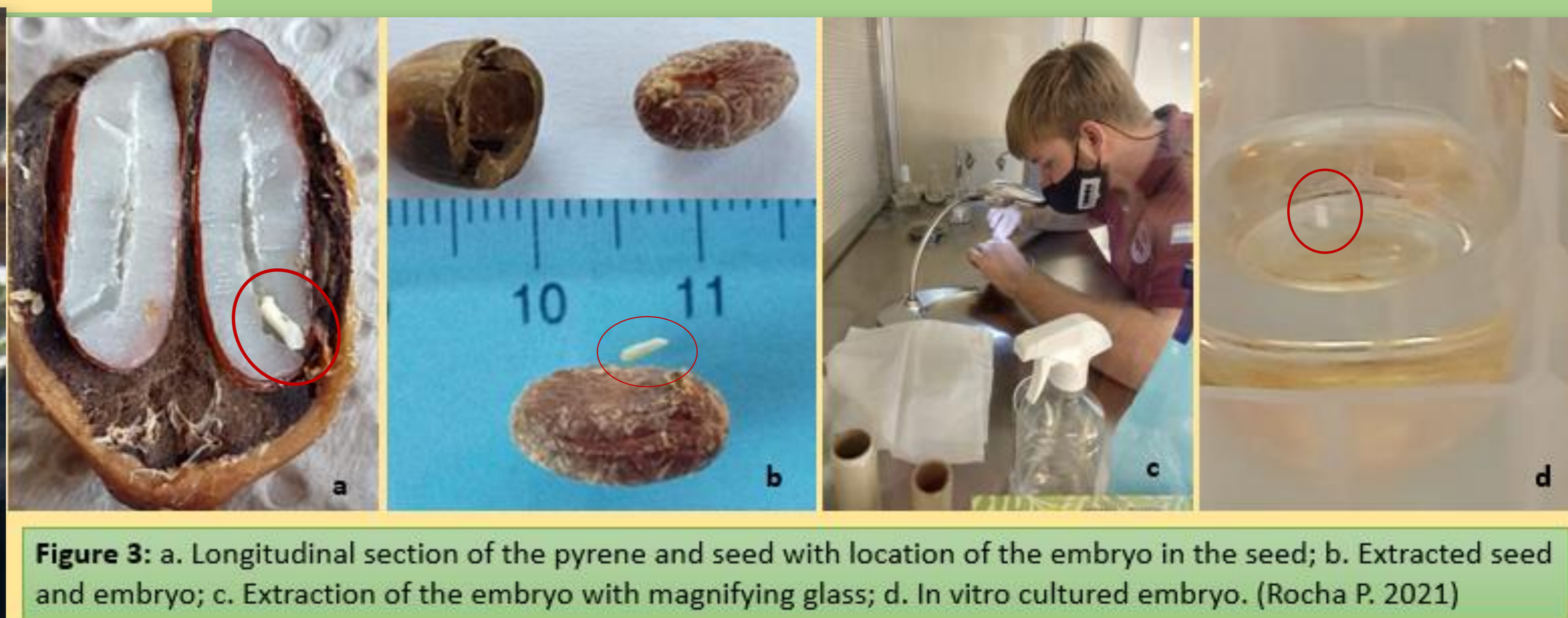


Zygotic embryos rescue for ex situ conservation of *Butia noblickii* palm

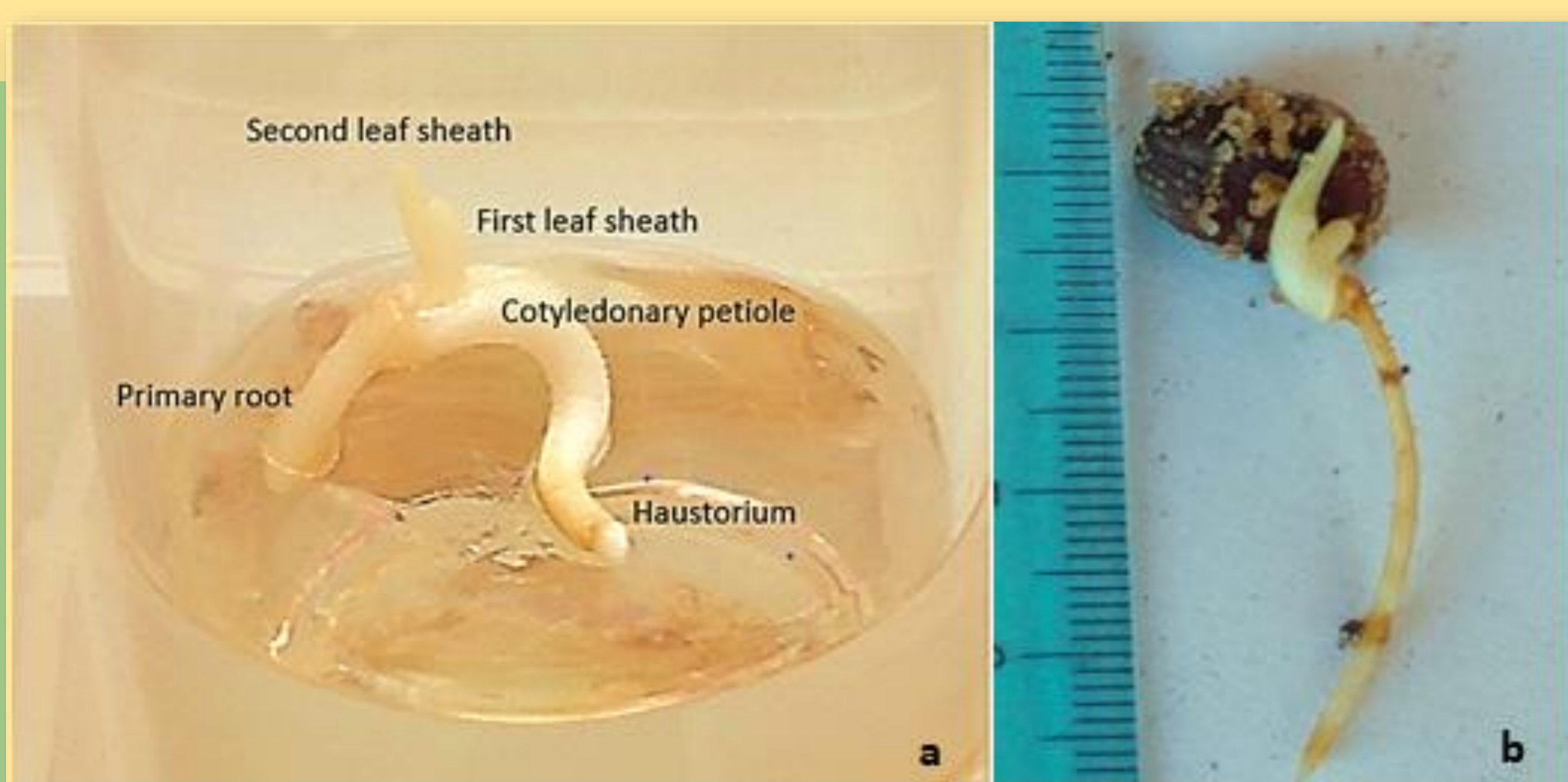
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INTRODUCCION: *Butia noblickii*, commonly known as Bonpland's palm, is a species endemic to the southeast of the province of Corrientes (Argentina) and has been described very recently (1). Its spatial distribution is notably fragmented, with an increasing risk of population patches becoming isolated due to human transformation of the landscape. According to IUCN (2010) criteria, its current conservation status should be categorized as endangered (2). The pronounced dormancy that delays the germination of seeds of the genus *Butia*, represents a limitation for natural regeneration (3, 4). To generate a methodology for in vitro germination of zygotic embryos for subsequent encapsulation in sodium alginate, dehydration, and cryopreservation (5), we performed in vitro embryo culture assays under controlled laboratory conditions.



MATERIAL AND METHODS: A random sample of 40 seeds of *B. noblickii*, obtained from mature fruits, was disinfected with ethanol and bleach, and their embryos were mechanically extracted under magnifying glass. The embryos were cultured in vitro, in Murashige and Skoog nutrient medium, in dark conditions and at an average temperature of 30±02° C. A control ex vitro treatment of whole seed, sown in plastic containers with sand, at room temperature, was developed.



RESULTS: about 2 weeks of in vitro culture, 45% of the embryos were germinated as inferred from thickening and elongation of their cotyledonary petioles. After 6 months, the seedlings continued their normal development, with the formation of leaf sheaths and roots. In ex vitro conditions, the germination capacity was 2%, requiring at least 3 to 12 months to germinate.

CONCLUSIONS: Results suggest that the exposure of the embryo to in vitro culture conditions allowed to accelerate the germination of *B. noblickii* (45% of germination in less than 1 month) and the normal development of seedlings. Implying a greater development, in less time, compared to ex vitro germinated seedlings. These constitute the first step towards generating a long-term ex situ conservation protocol by encapsulation and cryopreservation of zygotic embryos.

REFERENCES: 1 Deble et al. 2012. Balduinia; 2 Aparicio. 2013. Libro Rojo.120. FVSA; 3 Oliveira et al. 2013. Trees; 4 Magalhães et al. 2012. Trees; 5 Pence et al. 2020. Biological Conservation

