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# Leaf bathing in ring-necked parakeets *Psittacula krameri*

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## Abstract

*Leaf bathing in ring-necked parakeets* *Psittacula krameri*. Bathing is one of the main actions birds perform as part of their preening. They may bathe in water, snow, dust, and even ants. Leaf bathing, where birds make use of water droplets on leaves to bathe, is less common. Here we describe four observations between 2017 and 2021 of ring-necked parakeets *Psittacula krameri* bathing on water droplets on leaves during rain. Over the past twenty years we have often seen monk parakeets *Myiopsitta monachus* bathing in puddles but never on leaves. The monk parakeet often forages on the ground, but ring-necked parakeets are reluctant to do so. We therefore interpret that the leaf bathing we observed in the ring-necked parakeet could be an anti-predatory strategy to avoid going down to the ground.

Key words: Leaf bathing, Preening, Maintenance behaviour, Psittacidae

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## Resumen

*Baño con hojas en la cotorra de Kramer* *Psittacula krameri*. Una de las principales acciones en el cuidado y limpieza del plumaje de las aves es el baño. Las aves pueden bañarse en agua, nieve, polvo e incluso hormigas. Está más raramente descrito el baño con hojas, en el que las aves aprovechan las gotas de agua acumuladas en las hojas para bañarse. Aquí describimos cuatro observaciones de cotorras de Kramer *Psittacula krameri*, realizadas en 2017 y 2021, en las que aprovechan las gotas de agua acumuladas en las hojas durante la lluvia para bañarse. Durante los últimos veinte años hemos observado con mucha frecuencia a las cotorras de pecho gris *Myiopsitta monachus* bañarse en los charcos, pero nunca las hemos visto bañarse con hojas. Se sabe que la cotorra de Kramer es muy reacia a bajar al suelo, lo que contrasta con la cotorra de pecho gris que busca muy a menudo alimento en el mismo. Por lo tanto, interpretamos que este baño con hojas podría ser una estrategia antipredatoria de la cotorra de Kramer que le evitaría bajar al suelo.

Palabras clave: Baño con hojas, Cuidado del plumaje, Conducta de mantenimiento, Psitácidos

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## Resum

*Bany amb fulles a la cotorra de Kramer* *Psittacula krameri*. Una de les principals accions en la cura i neteja del plomatge a les aus és el bany. Les aus poden banyar-se en aigua, neu, pols i fins i tot formigues. S'ha descrit més rarament el bany amb fulles, en què les aus aprofiten les gotes d'aigua acumulades a les fulles per banyar-se. Aquí descrivim quatre ob-

servacions de cotorres de Kramer *Psittacula krameri*, fetes el 2017 i el 2021, en què aprofiten les gotes d'aigua acumulades a les fulles durant la pluja per banyar-se. Durant els darrers vint anys hem observat amb molta freqüència les cotorres de pit gris *Myiopsitta monachus* banyar-se en tolls, però mai les hem vist banyar-se amb fulles. Se sap que la cotorra de Kramer és molt reticent a baixar a terra, cosa que contrasta amb la cotorra de pit gris que hi busca aliment molt sovint. Per tant, interpretem que aquest bany amb fulles podria ser una estratègia antipredatòria per part de la cotorra de Kramer amb la qual evitaria baixar a terra.

Paraules clau: Bany amb fulles, Cura del plomatge, Conducta de manteniment, Psitacids

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Feathers are essential but delicate structures. However, as mature feathers are dead tissue and have no circulatory system for internal maintenance, birds must devote a significant proportion of time to their care (Bostwick, 2016). One of the main actions of preening is bathing. Birds may bathe in water, snow, dust and even ants (Potter, 1970; Slessers, 1970; Bostwick, 2016). Leaf bathing, also called foliage bathing, is less frequent. It involves birds making use of the water droplets accumulated on leaves to bathe. The first report of this behaviour was of a spotted towhee *Pipilo mulatus* using dew on leaves, scuttling about under and over the wet foliage to take a bath (Miller, 1942). The same behaviour was described by Abbott (1954) for a mockingbird *Mimus polyglottos*. Several other reports of leaf bathing have been described, most commonly of birds taking advantage of dew but also of water rain or garden sprinklers (Verbeek, 1962; Dow, 1968; Baptista, 1973; Klemann, 1994; Eisermann, 2005; Dijkstra, 2006; Mason and Macdonald, 2006; Murphy, 2011). Here we describe ring-necked parakeets *Psittacula krameri* taking advantage of water droplets accumulated on leaves during rain to bathe.

These events were observed during monitoring of the parrot population in Ciutadella Park in Barcelona (NE of Spain). The population of feral parrots in this park is large, with five reproductive species, among which the monk parakeet *Myiopsitta monachus* and ring-necked parakeet are the most abundant (Senar et al., 2017a, 2017b). Observations were made on 20/01/2007, 23/01/2017, 24/03/2017 and 08/02/2021, between approximately 10 h and 12 h noon. They all occurred in similar weather and bird behaviour was also similar. On these days, the weather was unstable, with showers. The birds behaved in an unusual way. The first thing that caught our attention was the constant screeching from all around the park. We then observed small groups of between three and eight birds moving continuously from tree to tree for periods of one to three minutes, and acting in an apparently chaotic way. When they reached the trees they moved continuously among the leaves, especially those on upper and outer branches, standing vertically face up and face down, making unusual turns, and rubbing all parts of their plumage (from head to tail, back, chest, and wings) on the leaves. Once they finished the bathing ritual on one tree (preferentially palm trees) they moved on to another, and so on while the rain lasted. The groups were not organized, with specimens changing from one group to another without any apparent pattern or cohesion. They sometimes mixed with other species of parrots and parakeets, although behaviour did not appear to be similar. On two of the days (20/01/2017 and 08/02/2021) it began to rain while the parrots were being monitored. Until that moment they were calm. Their bathing behaviour began with the change of weather.

Leaf bathing in parrots has commonly been described (Smith, 1975). The interesting point here, however, is that we have been monitoring parakeets in Barcelona for the last twenty years, and although we have seen monk parakeets bathing in pools of water many times, we have never observed ring-necked parakeets performing this behaviour. Ring-necked parakeets rarely come down to the ground in our area, not even to eat (Borray–Escalante et al., 2020). We have sometimes observed them drinking in puddles, but never bathing. We therefore think that this leaf bathing behaviour could be an anti-predatory strategy of ring-necked parakeets to bathe without having to go down to the ground.

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