

# THE PRIVILEGE OF BEING PART OF A NOVEL, **EVOLVING URBAN ECOSYSTEM**

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It's a rare warm and sunny early spring day in Leiden, the Netherlands. I am sitting on my balcony overlooking the old city center. In front of me, there are great tits (*Parus major*) and ring-necked parakeets (*Psittacula krameri*) vying for space in the willow (*Salix sp.*) and the tree of heaven (*Ailanthus altissima*). To my right, a honeybee (*Apis mellifera*) is busy pollinating the bright yellow flowers of the potted *Mahonia japonica* on my balcony. And to my left, a yellowjacket (*Vespula germanica*) is scraping fibers off the decorative bamboo stalks, which it will later chew into a paper pulp to build its nest.

What I survey from my second-floor vantage point may seem like the impoverished urban biodiversity that we find in cities all over the world. But to my mind, I witness a unique event in the history of life on Earth: the birth of a novel ecosystem, driven and shaped by a single animal species, namely *Homo sapiens*. Those animals and plants I just mentioned are both native and introduced species, interacting with one another and with the urban environment in new ways and evolving as a result of this.<sup>1</sup>

We may think that evolution is a slow process. However, the past few decades have taught us that if natural selection is strong, evolution can be incredibly fast,<sup>2</sup> resulting in perceptible changes in organisms' appearance, behavior, and physi-

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ogy in less than a human lifetime. In cities where the living conditions are drastically different from 'wild' environments, natural selection is particularly strong. The city's physics and chemistry, its fragmentary nature, and its melting pot of native and non-native species make the urban environment a place where species evolve at break-neck speed.

What we witness if we observe urban nature is the birth of an entirely new habitat driven by the actions of humans. Moreover, this habitat is being shaped all over the world more or less simultaneously and in similar ways. Humans communicate technological advances over vast distances. For example, a new type of street lighting or a newly popularised garden plant will spring up across the globe

more or less simultaneously. Also, humans transport flora and fauna intentionally and accidentally. This means that the evolution of urban ecosystems is a globally telecoupled process.<sup>3</sup>

What better way to appreciate life in the city than to be aware of the fact that we are part of the urban ecosystem and that we witness its birth all around us as we speak? By observing the animals and plants that we see from our homes or on our daily walks through the city where we live, and by imagining how each and every one of these organisms is evolutionarily adapting to the city, we begin to feel like an integrated part of the urban ecosystem ourselves. Such a sense of belonging will, I think, help us to appreciate, conserve, and enhance the biodiversity of the urban landscape.