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Abronia fimbriata is one of the gems that live in the last forest remnants of Guatemala's highlands.

Arboreal Alligator Lizards in the Genus *Abronia*: Emeralds from the Cloud Forests of Guatemala

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Guatemala is one of the world's biodiversity hot spots, attributable in part to its complex topography but also to its privileged location between two biotic realms, the Nearctic and the Neotropical (Campbell and Vannini 1989). The cloud forests of this small Central American country host an array of endemic birds, mammals, snakes, lizards, and amphibians. Virtually every mountain complex in Guatemala has at least one endemic species of reptile or amphibian (Acevedo 2006). Eighteen endemic species of reptiles and amphibians occur in the central volcanic chain of Guatemala, a count exceeded only by that of the Sierra de las Minas Mountains, which supports at least 24 endemic species. These mountains are located in the northern portion of the semiarid region of the Motagua Valley. The Sierra de las Minas casts a rain shadow across the valley, producing seasonally dry tropical forest in the valley and humid cloud forests near the peaks. This unique system harbors many exotic creatures found nowhere else on earth.

Among these unusual creatures are the Arboreal Alligator Lizards in the genus *Abronia*, known to locals as "dragoncitos" (tiny dragons). These secretive lizards live in the pine-oak and cloud forests of northern Mesoamerica and belong to the family Anguidae (Campbell and Brodie 1999). Anguid lizards appear to have had a northern origin in the supercontinent of Laurasia after the split of Pangaea (Macey et al. 1999).

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Abronia spend most of their lives among the epiphytes of the cloud forests.

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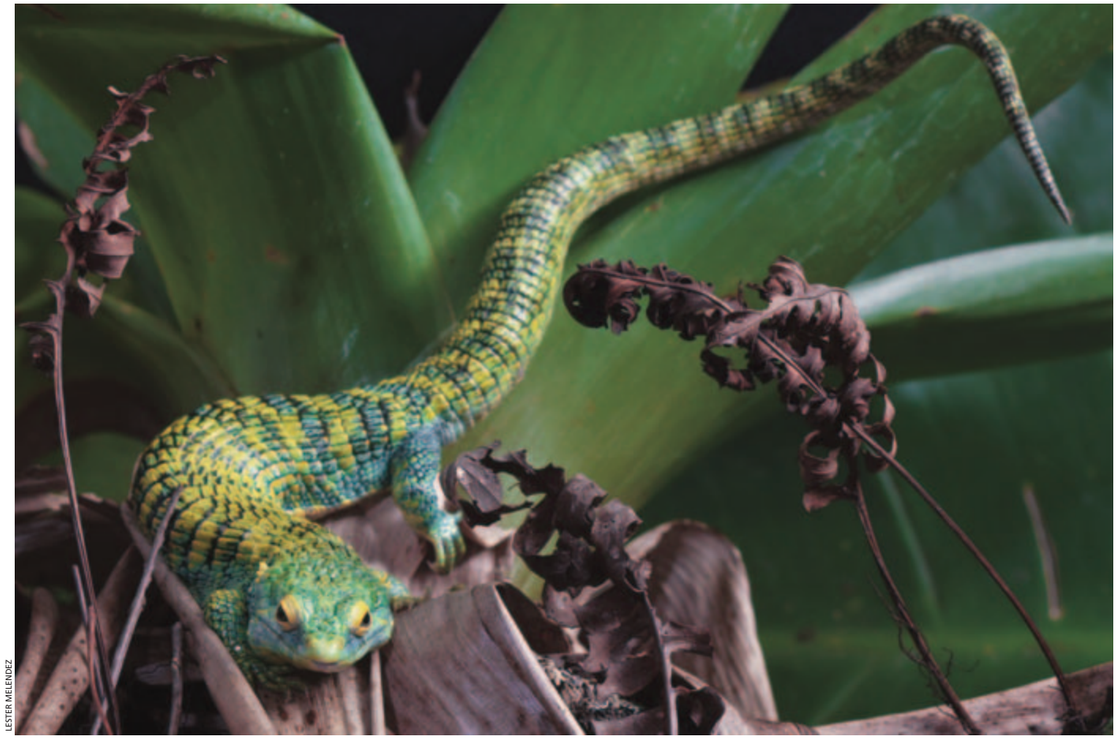
Shortly after birth, juvenile *Abronia vasconcelosii* demonstrate agility and climbing ability.

Species of *Abronia* occur from southern Tamaulipas and Guerrero, Mexico, to southern Honduras (Campbell and Frost 1993). In Guatemala, this group has diversified into 10 species, eight of them endemic. These national endemics are *A. anzuetoi*, *A. aurita*, *A. campbelli*, *A. fimbriata*, *A. frosti*, *A. gaiophantasma*, *A. meledona*, and *A. vasconselosii*. Two other species are shared with southern Mexico, *A. matudai* and *A. ochoterani* (Acevedo 2006). With few exceptions, species of *Abronia* are known only from a limited number of specimens, often from only the type or a few specimens from the immediate vicinity of the type locality (Campbell and Frost 1993).

Abronia spend most of their lives among the epiphytes of the cloud forests and are strictly diurnal (Campbell and Frost 1993). Their prehensile tails are particularly useful adaptations to an arbo-



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The long prehensile tail of this female *Abronia vasconcelosii* is a particularly useful adaptation to an arboreal lifestyle.

real lifestyle. Many species of *Abronia* (e.g., *A. fimbriata*) become quite tame in captivity, but some, such as *A. vasconselosii*, seem to become more aggressive, probably responding to the stress of confinement. These lizards are insectivorous and, in captivity, feed voraciously on orthopterans. Predators are almost unknown, but snakes and birds presumably feed on these lizards. One of the most striking observations of predation was that of a magnificent Resplendent Quetzal (*Pharomachrus mocinno*) preying on an *Abronia* (probably *A. fimbriata*; Yee, pers. obs.; see the back cover of this issue).

All species of *Abronia* for which reproductive data are available bear live young (Campbell and Frost 1993). Captive breeding of *A. vasconselosii* has been achieved in Guatemala by one of the authors (L. Melendez) at the Museo de Historia Natural "Jorge Ibarra." Six live young were born on 28 March 2008; however, none of them survived beyond nine months. This is the only known instance of *Abronia* reproduction within the country. Copulation of the reproductive pair occurred in late July, and the female was gravid for eight months.

Behavior of *Abronia* is largely limited to anecdotal observations, and field research on these species is almost non-existent. The conservation status of most species is uncertain, but restricted distributions and habitats disturbed or destroyed by human development have left most species in the genus among the most endangered lizards in the world (Campbell and Frost 1999). Moreover, many species of *Abronia* are threatened with immediate extinction. In all likelihood, at least *A. campbelli* (Brodie and Savage 1993) and *A. frosti*

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Abronia, such as this female *A. vasconcelosii*, associate closely with epiphytes.

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A pair of *Abronia vasconcelosii* mating in captivity.

(Campbell et al. 1998) have become extinct since their discovery (Campbell and Mendelson 1998).

Abronia, along with the arboreal pit vipers of the genus *Bothriechis*, are among the gems that live in the last forest remnants of Guatemala's highlands. These forests, along with the unique clusters of endemic species they harbor, are at high risk of disappearing altogether. Many of the species that inhabit these forests likely will become extinct before even being discovered by science. The only things that can be said about *Abronia* with absolute certainty are that we know almost nothing about their natural history and that their habitat is in urgent need of conservation measures.

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