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### Discovery of *Anolis sagrei* in Grenada with Comments on its Potential Impact on Native Anoles

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The Cuban Brown Anole, *Anolis sagrei* Duméril and Bibron 1837, is native to Cuba, Jamaica, and the Bahama and Cayman islands. This lizard also has become established in Florida and at scattered locations along the Atlantic coast of México to Belize (Schwartz and Henderson, 1991). In Florida, arguably the species' most successful invasion, it has displaced native *A. carolinensis* from many habitats throughout the peninsula (e.g., Campbell, 2000).

While in Grenada from 4-25 June 2002, we discovered one *A. sagrei* on the grounds of the Lazy Lagoon guest house in St. George's (Fig. 1), where we were studying the native anoles *A. aeneus* and *A. richardii*. We found no more *A. sagrei* in the vicinity of the Lazy Lagoon, but quickly discovered scattered populations around the harbor in St. George's. We then found the species on the grounds of the nine-year-old Rex Grenadian Resort near the Point Salines International Airport, some 4.5 km to the southeast. This led us to suspect that *A. sagrei* had been introduced with plants imported primarily for landscaping. The presence of *Osteopilus septentrionalis* and *A. carolinensis* on Anguilla has been traced to containers of ornamental plants that originated in Florida (Eaton et al., 2001; Townsend et al., 2000).

We contacted the owner of the local nursery that supplied plants to the Rex Grenadian and to a number of other resorts. Despite considerable familiarity with native plants and animals, no one at the nursery knew about *A. sagrei* or had seen lizards in containers of imported plants. We did not find the species on the grounds of the nursery or during subsequent searches

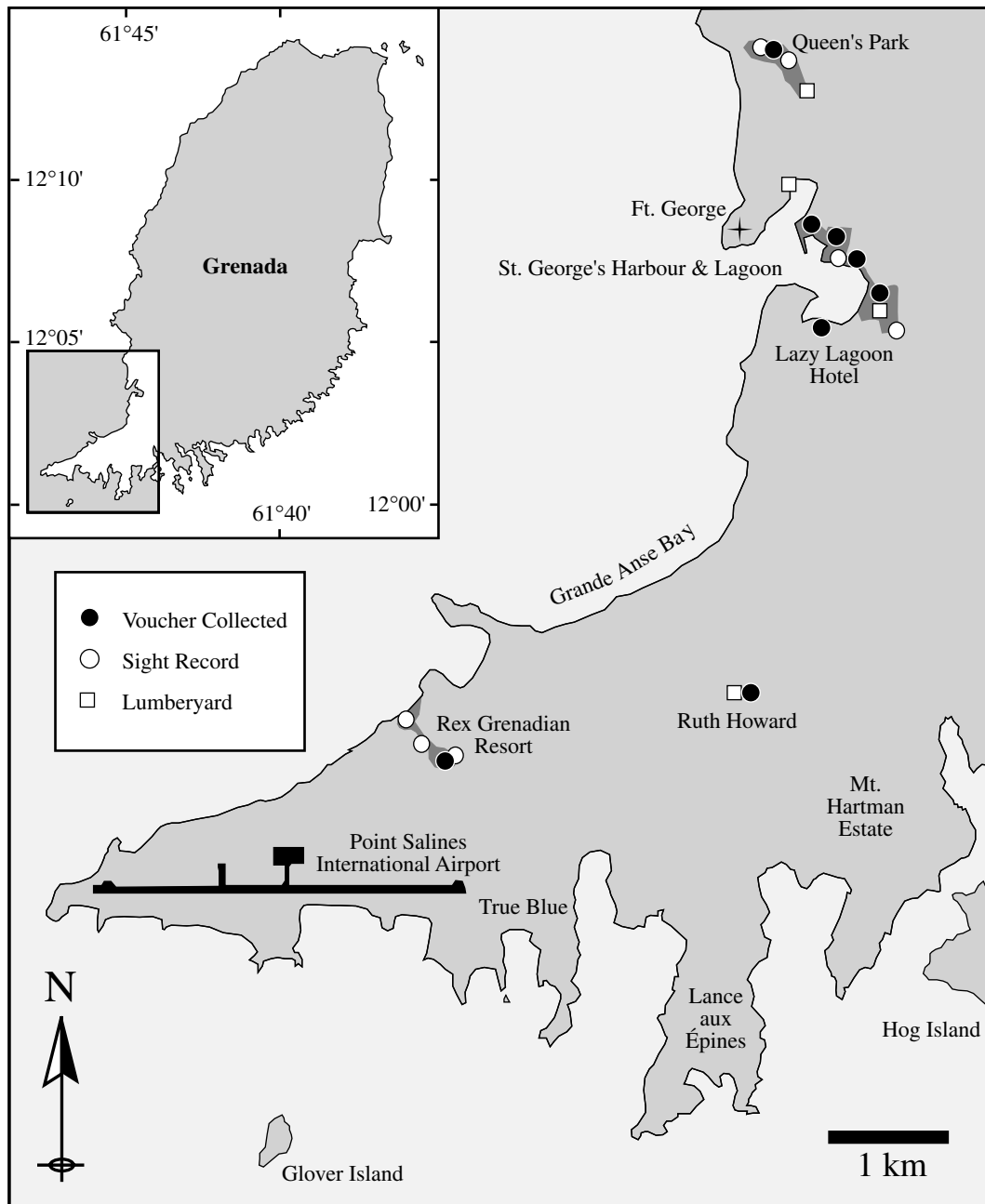


FIG. 1. Distribution of *Anolis sagrei* in the southwestern corner of Grenada.

at other resorts, including several that had used the same supplier of plants. We thus rejected the hypothesis that these lizards had arrived as stowaways in plant shipments.

The next explanation we considered was that *A. sagrei* arrived from Cuba after the Grenadian revolution in 1979, when much material was imported from

that country for the construction of the international airport — but exhaustive searches in and around the airport were unsuccessful. We discovered, however, a dense population in a lumberyard in the Ruth Howard area; some lumber had originated in Louisiana, but most had come from peninsular Florida, where *A. sagrei* is ubiquitous. We continued to search

for the species and soon found a population in Queen's Park, north of St. George's, again in the immediate vicinity of a lumberyard. Based on this discovery, and on the fact that many of the lizards observed were hatchlings, we concluded that *A. sagrei* arrived on the island in lumber shipments.

We found no evidence of the species in a densely developed urban area around an indoor lumberyard on the north side of St. George's harbor. Extensive searches on the grounds of St. George's University on the True Blue Peninsula were also fruitless, despite considerable ongoing construction work. We also checked without success a number of other locations comparable to those where we found *A. sagrei*: relatively natural open areas near the Grenada Dove Reserve at Mt. Hartman Estate; construction sites, fields, and resorts on Lance aux Epines; cleared areas on Hog Island; the grounds of resort hotels along Grande Anse Bay; Fort George on a promontory above St. George's; and numerous other sites throughout the island.

Unlike in Florida, where *A. sagrei* competes successfully with native *A. carolinensis* and other introduced congeners, it apparently cannot compete or even co-exist for long with the larger Grenadian species. We found *A. sagrei* and *A. aeneus* in close proximity at the Rex Grenadian and on the grounds of the Yacht Club in St. George's, but we found only the waif at the Lazy Lagoon in an area inhabited by *A. richardii*. On several occasions, we observed *A. richardii* catching and eating smaller anoles; consequently, we assume that *A. sagrei* cannot coexist with the larger species due to intense predation pressure. Because the native anoles are ubiquitous (Germano et al., in press) and occupy habitats with any vertically structured vegetation, *A. sagrei* is restricted to exceedingly marginal conditions. In and around the harbor and in Queen's Park, *A. sagrei* was found only in open fields; as soon as one moved to the margin of such an area and encountered shrubs, vines, or trees, *A. sagrei* was replaced by one or both of the native species.

Although *A. sagrei* is well-established in Grenada, we do not believe that it will be a threat to natural biotic communities; instead, we believe that the species will persist only in the severely disturbed habitats avoided by native anoles.

Voucher specimens are deposited in the Bobby Witcher Memorial Collection (BWMC 06878, 06927–35, 06972–3, 07032) at Avila University.

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