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## **Abstract**

The venomous snakes recorded from Brunei Darussalam are enumerated. A total of 19 species, representing two families (Elapidae, 15 species, and Viperidae, four species), have been recorded in the country. For each species, there is a brief description of biology, localities, and references. Antivenom sera available at RIPAS Hospital are listed and annotated with their potential use. Apart from bites from venomous snakes, the presence of one "spitter," the equatorial cobra, *Naja sumatrana*, increases the risk of humans to venom ophthalmia. Finally, future directions for research and management of snake envenomation, and for enhancing knowledge of the country's snakes for conservation and improving health care, are discussed.

## Introduction

Brunei Darussalam (total land area: 5,765 km²) lies along the northwest coast of Borneo, where its two disconnected portions are separated by the East Malaysian state of Sarawak. It shows great contrasts, with vast tracts of unbroken lowland dipterocarp forests, peat, and freshwater swamps, on one hand, to a large and rapidly expanding capital city (Bandar Seri Begawan), connected to other urban centers and to the nearby cities of Malaysia via an extensive system of highways, on the other hand. The small human population (2013 estimate: 415,717), coupled with the dependence on oil and gas, has resulted in the lowland forests being left relatively intact. This is in stark contrast to the situation in the nearby states in Borneo.

The relatively pristine forests and matchless biodiversity of Brunei have been the subject of numerous popular and review articles (Das 1994; Eaton and Ibrahim 1995; Slik et al. 2003), and forestry practices have been compared favorably relative to those in neighboring states (Bryan et al. 2013). The herpetofauna, as expected from the pristine nature of forests and the diversity of forest types represented, is exceptional. Comprehensive inventories, though, are available only for a few areas (see Das 1995; Das et al. 2008), and new species records continue to be reported (e.g., Dehling and Das 2006; Keller 2011). Snakes figure prominently in biotic and herpetofaunal inventories. For instance, the early work of Motley and Dillwyn (1853) includes the snake fauna of the island of Labuan, situated off Brunei (Fig. 5.1).

This essay provides an inventory of the venomous snake fauna of Brunei, including both the terrestrial and marine species, based on museum records and the published literature, providing locality records. Notes on emergencies brought