



## **A review of the subgenus *Euprepiosaurus* of *Varanus* (Squamata: Varanidae): morphological and molecular phylogeny, distribution and zoogeography, with an identification key for the members of the *V. indicus* and the *V. prasinus* species groups**

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### **Abstract**

We provide a synopsis of the currently recognized taxa within the subgenus *Euprepiosaurus* of *Varanus*, consisting of the *V. indicus* species group (in chronological order, *V. indicus*, *V. doreanus*, *V. jobiensis*, *V. finschi*, *V. melinus*, *V. yuwonoi*, *V. caerulivirens*, *V. cerambonensis*, *V. juxtindicus*, *V. zugorum*) and the *V. prasinus* species group (accordingly, *V. prasinus*, *V. beccarii*, *V. kordensis*, *V. bogerti*, *V. keithhornei*, *V. telenesetes*, *V. macraei*, *V. boehmei*, *V. reisingeri*). We summarize the taxonomic history of the species groups and highlight the morphology and distribution of the species in detail. Molecular genetic analyses confirm *Euprepiosaurus* and also the two contained species groups as monophyla. Our molecular (mitochondrial 16S rRNA gene) data further reinforce that *V. beccarii*, *V. boehmei*, *V. keithhornei*, and *V. macraei* are distinct species within the *V. prasinus* group. *V. kordensis* consistently proves to be a sister species to all remaining members of the *V. prasinus* species group studied by us. Comparatively low genetic distances argue for relatively recent speciation processes within the *V. indicus* group. The species status of *V. caerulivirens* and *V. finschi* is again corroborated. The analyses consistently place *V. cerambonensis* and *V. melinus* as sister species. It is further evident that both species groups within *Euprepiosaurus* still contain distinct unrecognized taxa. Finally, we discuss the phylogeny and zoogeography of *Euprepiosaurus* in the light of our data and provide an identification key for the species of this subgenus.

**Key words:** Squamata, Sauria, Varanidae, *Euprepiosaurus*, *Varanus indicus* species group, *V. prasinus* species group, distribution, morphology, molecular genetics, taxonomy, phylogeny, zoogeography

### **Introduction**

The species groups of the Pacific or Mangrove Monitor Lizard, *Varanus indicus* (Daudin), and of the Emerald Monitor Lizard, *V. prasinus* (Schlegel), which are united as sister taxa in the subgenus *Euprepiosaurus* Fitzinger (see Böhme 1988, Böhme *et al.* 1994), refer back to an unstable taxonomic history. In his comprehensive review, Mertens (1942) classified *V. indicus* together with the Water Monitor Lizard, *V. salvator* (Laurenti), and the Crocodile Monitor Lizard, *V. salvadorii* (Peters & Doria), in the subgenus *Varanus* Merrem, which further included the Komodo Dragon, *V. komodoensis* Ouwens, and some large Australian monitor lizards. In contrast, *V. prasinus* was mentioned by Mertens (1942) together with the Timor Monitor Lizard, *V. timorensis* (Gray), and the Australian pygmy monitor lizards in the subgenus *Odatia* Gray. Also Branch (1982) largely retained representatives of the *V. indicus* and *V. prasinus* species groups in different subgenera