



## The original descriptions of reptiles

PETER UETZ

*J. Craig Venter Institute, 9704 Medical Center Drive, Rockville, Maryland 20850, USA*  
*German Cancer Research Center, Im Neuenheimer Feld 515, 69120 Heidelberg, Germany*  
*e-mail: uetz@jcvi.org*

### Abstract

By September 2009 an estimated 9084 species of extant reptiles have been described by a total of 4579 papers and books which are listed in a supplementary file. In this review I summarize the history of these species beginning with Linnaeus in 1758. While it took 80 years to reach the first 1000 species in 1838, species descriptions since then have been added roughly at the rate of 1000 new species every 20 years, with a significant acceleration only during the past two decades. The top 40 most productive herpetologists (in terms of “species output”) have described 4780 species, amounting to over half of all species. George Albert Boulenger leads this elite list with 573 species that are still recognized today. Historically, 18 classic works of the 18<sup>th</sup> and 19<sup>th</sup> century can be singled out, describing almost 1000 species still recognized, including the *Erpétologie Générale*, published between 1834 and 1854 in nine volumes. The top 25 journals have published more than 3600 species descriptions in the past 250 years (including 169 in *Zootaxa*, ranked sixth), corresponding to about 40% of all species.

**Key words:** journals, bibliography, species number, species concepts, snakes, lizards, turtles, crocodiles

### Introduction

Species are the backbone of biology. Although a number of species concepts have been proposed, most contemporary biologists tend to use either a biological or an evolutionary species concept even though historically typological or morphological concepts have dominated (reviewed in De Queiroz 2007; González-Forero 2009; Knapp *et al.*, 2005). These concepts will not be discussed here but it should be kept in mind that many species lists most likely contain species recognized according to either one or both concepts and are thus constantly subject to change.

The aim of this paper is to compile all original descriptions of extant reptiles (i.e. lizards, snakes, turtles, tuataras and crocodylians but not birds), as well as some analysis of their authors and sources. Since original descriptions serve as definitions of a species, particular efforts are required so that future discoveries are not made difficult or ambiguous. The art of describing species is reviewed by Winston (1999) and will not be discussed here. Equally important is the availability of species descriptions. New species are often described in obscure journals and books of low print runs. While the problem of obscurity has been solved to some extent by online publications, older descriptions are often still difficult to obtain. A solution to this problem is the digitization of historical literature and I will summarize attempts along these lines.

### Material and methods

The species list and references of this study were taken from the TIGR/JCVI Reptile Database (<http://www.reptile-database.org> as of 9 September 2009, Uetz *et al.* 2007). On this date, the database contained 9084 species and their original references. The species list and bibliography is available for download at <http://www.reptile-database.org/data/originaldescriptions2009.xls>.