

A Report on Seba's Specimens in the Herpetological Collection of the Muséum National d'Histoire Naturelle, Paris, and their Status as Linnaean types.

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The zoological collections amassed by Dutch pharmacist Albertus Seba (1665–1736) were lavishly illustrated in his privately published volumes generally referred to as “Seba’s Thesaurus”. Many of the illustrations were subsequently used by Carolus Linnaeus as the bases for his descriptions and naming of new taxa. Consequently, according to the Articles of the International Commission for Zoological Nomenclature, the specimens that served as the models for those illustrations have the status of types.

After the death of Seba, his holdings were divided and sold, with many going to the collection/museum of the Dutch prince, or *Stathouder*. In 1794, armies from Revolutionary France conquered The Netherlands, and subsequently confiscated many important and valuable collections of art and natural history. The *Stathouder* collection ended up at the Muséum National d’Histoire Naturelle, Paris, where many specimens remain today. The authors have sought to find and confirm the locations and identities of the herpetological specimens from Seba’s collection, and to ascertain if any can be correctly attributed as Linnaean type specimens.

Key Words – Seba, Linnaeus, type specimens, *Stathouder* collection, herpetology

INTRODUCTION

The recognition of holotypes is essential to the basic science of taxonomy. As new species are being discovered, it is increasingly more important to compare newly acquired material with types in order to reduce the problems associated with publishing junior synonyms. Not surprisingly, taxonomists named most of the more common, conspicuous, and widespread species in the period between 1758 and 1870. As the founder of biological binomial nomenclature, Carolus Linnaeus may be credited with naming a high proportion of these species, in part because he invented the system still employed, and in part because during his lifetime collectors would send him specimens from around the world for naming. Consequently, the recognition of Linnaean type specimens may be important for accurate taxonomic studies.

During the early to mid-eighteenth century, Dutch pharmacist and businessman Albertus Seba (1665–1736) directed much of his considerable fortune towards acquiring a worldwide natural history collection. The first collection impressed the Czar of Russia, who purchased it and had it transferred to Russia (Adler, 1989). Seba then built another collection, which he catalogued and lavishly illustrated, the results being published in four massive volumes known generally as “Seba’s Thesaurus” (Seba, 1734, 1735, 1759, 1765). After Seba died, his collection was divided and sold much of it going to foreign natural history museums. Part of the holdings, however, were acquired by the Prince of Orange of the Netherlands, or *Stathouder*, who kept them in a private museum. Seba’s volumes and their plates were among the best-illustrated natural history materials in the eighteenth century, and were used by Linnaeus (1758 *et subseq.*; Kitchell and Dundee, 1994) in lieu of on-hand specimens when he described and assigned binomial names to plants and animals. According to the Articles of the International Commission for Zoological Nomenclature (ICZN, 1985), specimens which served as models for illustrations that were used in describing a taxon become the *de facto* type specimens (Articles 12-b-7 and 72-c-v). Our interest in this project came from a realization that numerous Seba specimens were available for study and possible confirmation as “lost” Linnaean types.

In 1794, armies of the revolutionary French Republic invaded and, by 1795, conquered The Netherlands. The final major battle on 20 January 1795 involved the only time in history in which a naval battle was won by a cavalry charge, when the French cavalry of General Pichegru rode across the Texel river to capture the icebound Dutch fleet. The French had converted the Jardin du Roi into the Muséum National d’Histoire Naturelle (MHNP) on 10 June 1793, and were interested in increasing the holdings of natural history objects. The Republican Government therefore dispatched a group of scientists to join the army, “in the midst of our conquering legions to increase the domain of natural science” (Lacèpede, 1798). Chosen to oversee the confiscation of many art and natural history objects for France were Museum Geology Professor Bartholomy Faujas de Saint-Fond (1741–1819) and Chief Botanist André Thouin (1747–1824). Thouin, who produced most of the available correspondence to the Government, had been born at the Jardin du Roi, son of the Chief Botanist whom he eventually succeeded. It is likely that as someone whose family had been associated with the Ancien Regime of French royalty, Thouin may have had personal reasons to both stay out of Paris and placate the new Government authorities.

The scientists systematically set to work to inventory and remove objects of value and interest to France. Among these acquisitions were the mosasaur of Maastricht (Desmond, 1975) and the *Stathouder* collection, both of which still reside at the Muséum National d’Histoire Naturelle in Paris. A report on the *Stathouder* fishes has been published (Bauchot and Daget, 1996), but fails to make any reference to Linnaean types. During 1996–7, the authors searched for and examined specimens and documents pertaining to Seba’s herpetological specimens still in the museum. This report conveys our methods of study and preliminary evaluation of the specimens.

MATERIALS AND METHODS

We began by searching for specimens listed in the MHNP registers as being from

either "Seba" or "Stathouder Collection". Several specimens were listed as missing or destroyed; we examined the collections and additional museum records to ascertain the fates of missing specimens. From the remaining list, we searched the spirit collection for listed specimens. Where possible, these were compared with illustrations from Seba's Thesaurus and subsequent publications that credited a specimen as being from the Seba collection.

One of us (TS) researched the French National Archives for records pertaining to the acquisition and packing of the *Stathouder* collection in 1794. We began by confirming important aspects of documents published by Bauchot and Daget (1996), and used these to establish dates for the packing of the *Stathouder* collection in The Hague. Difficulties in establishing correct dates have been complicated by the temporary use of a new calendar system by the French Republic. Established on 22 September 1792, the French system started with the year 1, and changed the names of months and days as well. Adding to the confusion, the Government decreed that each month would contain 30 days. Though the MHNP has long ago lost its acquisition records, copies were discovered in the National Archives. These files are not stored with museum documents or travel accounts, but were instead found among reports to the Comité de Instruction Publique. These letters, written by Thouin, were examined to provide an historical paper trail to confirm the status of museum specimens.

We believe some of the Linnaean types currently lost to history can be recovered through careful analysis of documents and comparison of original illustrations and publications with the physical specimens still to be found in the Muséum's Zoothèque (the preserved collections). We used this approach to successfully trace and recover the type specimen of *Basiliscus basiliscus*.

RESULTS

There has been considerable confusion regarding the dates for the acquisition of the *Stathouder* collection (Bauchot and Daget, 1996). Cuvier and Valenciennes (1828) noted that the fishes arrived in 1795. Daudin (1802) examined specimens in Paris that came from the Seba collection, which in turn arrived with the *Stathouder* materials. Letters from Thouin (Archives nationales, AJ 15/836) confirm that he and Faujas de Saint-Fond went to The Hague in March 1795 specifically to see the collection. They also recorded that they started working to pack the materials on 11 March 1795, dividing the work so that Faujas de Saint-Fond oversaw the mammals, minerals, and reptiles, while Thouin managed the birds, insects, and other objects. The collections occupied fifteen rooms, and took forty days to inventory and pack. On 19 April 1795, a ship filled with 95 boxes, representing the first of three shipments, departed The Hague for Paris. This shipment included all the specimens of fishes, reptiles and amphibians, leaving only birds, mammals, and books to be sent later (Thouin letters, Archives Nationales, AJ 15/836; Letouzey, 1989).

There is no copy of a complete list or inventory of specimens in the Museum archives, or the National Archives section allotted for museum records. One of us (TS) noted, however, that scientists in the employ of the French Republic, though authorized to spend large amounts of money to acquire war booty, might still find it prudent to keep extremely detailed records of both the booty and accounts spent.

Table 1. Seba's specimens and their status in the MHNP as of December 1996.

Species	Register Number	Status of specimen
<i>Rana paradoxa</i> = <i>Proteus raninus</i> of Seba	1746	Several specimens, tadpole through adult stages. Cf. Seba I: pl. LXXVIII
<i>Mabuya multifasciatus</i> = <i>Euprepes</i> of Seba	1983	Single intact specimen in alcohol
<i>Alligator palpebrosus</i>	2141-2142 & 2145 & 2149	
<i>Varamus bengalensis</i>	2200	Well-preserved adult in alcohol. Model for Seba I: pl CV (Dumeril & Bibron, 1837: 67)
<i>Lophyrus tigrinus</i> = <i>Gonocephalus chamaeleontinus</i>	2564	Registered as skeletonized, but no card or specimen could be found to confirm.
<i>Calotes versicolor</i>	2550	Two juveniles in alcohol, the larger illustrated in Daudin (1802: pl. XLIV).
<i>Gymnophthalmus quadrilineatus</i>	3093	Alcoholic specimen, tail broken from body.
<i>Limnonectes cancrivora</i>	4460	Unknown
<i>Basiliscus basiliscus</i> = <i>Basiliscus Americanus</i> of Seba	780 Ig 211 (new numbers)	Adult in alcohol in good condition. See text for more data.

Political and revolutionary fervour was at its height in France; the infamous Terror of mass executions occurred in June and July of 1794. Even the Revolutionary Generals were at risk, political Commissars were attached to their military forces and reported on their "political correctness". One General was in fact guillotined despite his victories when he fell foul of the political apparatus. Consequently, we searched for letters written by the scientists to the French Governmental bodies in control at that time. Revolutionary France in 1795 was in chaos and there are many possible avenues that could prove fruitful. We concentrated not on the Museum's records but on following the money trail: to whom would Thouin need to send his expenditures and progress reports? To the Comité de l'Instruction Publique and the Commissaires de la République, the governmental bodies to whom Thouin and Faujas de Saint-Fond were responsible. We found the original documentation after consulting Gotteri (1989). Expense accounts that documented the hiring of a ship for transport, and multiple copies of detailed inventories of the *Stathouder* collection were located in the Archives Nationales. Each handwritten, parchment page was signed by Thouin, and specified which shipping box contained each specimen. Our research time unfortunately terminated shortly after discovery of these documents (Archives Nationales, F17-1277), so our information about them is limited. Complete reproduction and translation is necessary to verify the extent of this find, but it was indeed large enough to fill a small ship several times over.

We were able to ascertain that several boxes of catalogue lists of the specimens in

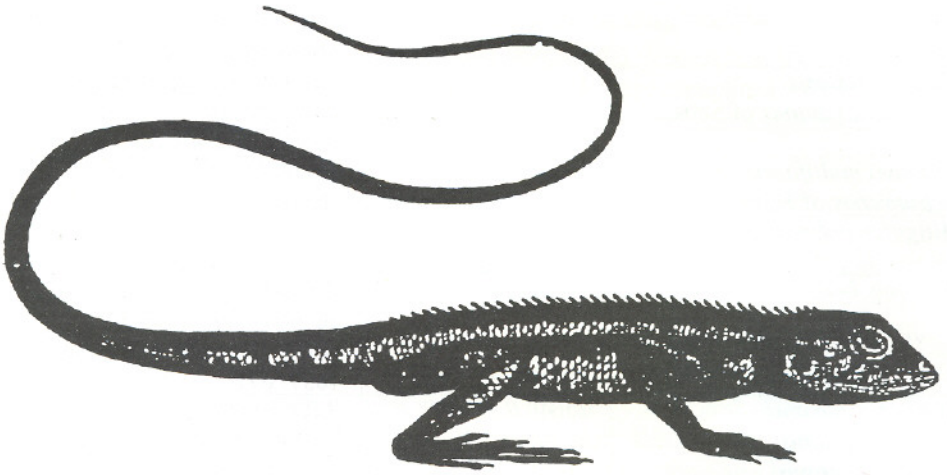


Figure 1. *Calotes versicolor*, depicted by Daudin as *Agame arlequiné* in 1802. Daudin states that this specimen is from Seba's collection (MHNH 2550).

the *Stathouder's* collections were packed under the direction of Thouin. The importance of these lists was recognised at the time, for Thouin reports that these inventories of "objects of science" were to be delivered into the care of Citizen Audibert to be hand delivered to the Comité in Paris. Box 21 contained the complete catalogue of the fishes, birds, and reptiles, along with some mammals and miscellaneous animal parts, and box 20 included the Prince's own catalogue to the serpents. Thus, contrary to Bauchot and Daget (1996), an inventory subsequent to Seba's *Thesaurus* did exist, but we have not had the opportunity to determine if and where those papers may now reside. Additional catalogues were assigned by Thouin to the following boxes: 16-worms (= invertebrates), 19-fishes, 22-insects, and 23-minerals and petrified specimens (= fossils).

A preliminary examination of the herpetological collection of the MNHP has been made. Over the last 200 years the Museum's collections lists and archiving techniques have changed, and much detail known to earlier researchers and clearly noted in their publications has disappeared from subsequent records. Therefore, we concentrated on proving the provenance of certain specimens that are known through illustrations of works published throughout the 19th century. A list of specimens listed in the Museum's registers and their current status is given in Table 1. The Museum registers now record many of the Seba specimens as destroyed or lost. In the case of the *Gymnophthalmus*, the tail has been broken from the body, but remains preserved with the body. The *Gonocephalus* (*Lophyrus*) is registered as a skeletonized specimen, but we could find no record of such an anatomical preparation in any of the other registers, nor could we find the specimen in the collection.

The two juvenile *Calotes versicolor* are well-preserved, and the pattern of the larger specimen suggests to us that it was the likely model for Daudin's illustration (Daudin, 1802:pl. XLIV; Fig. 1). Seba's illustrations of *Calotes* (Seba I: pls. XCII and XCIII)

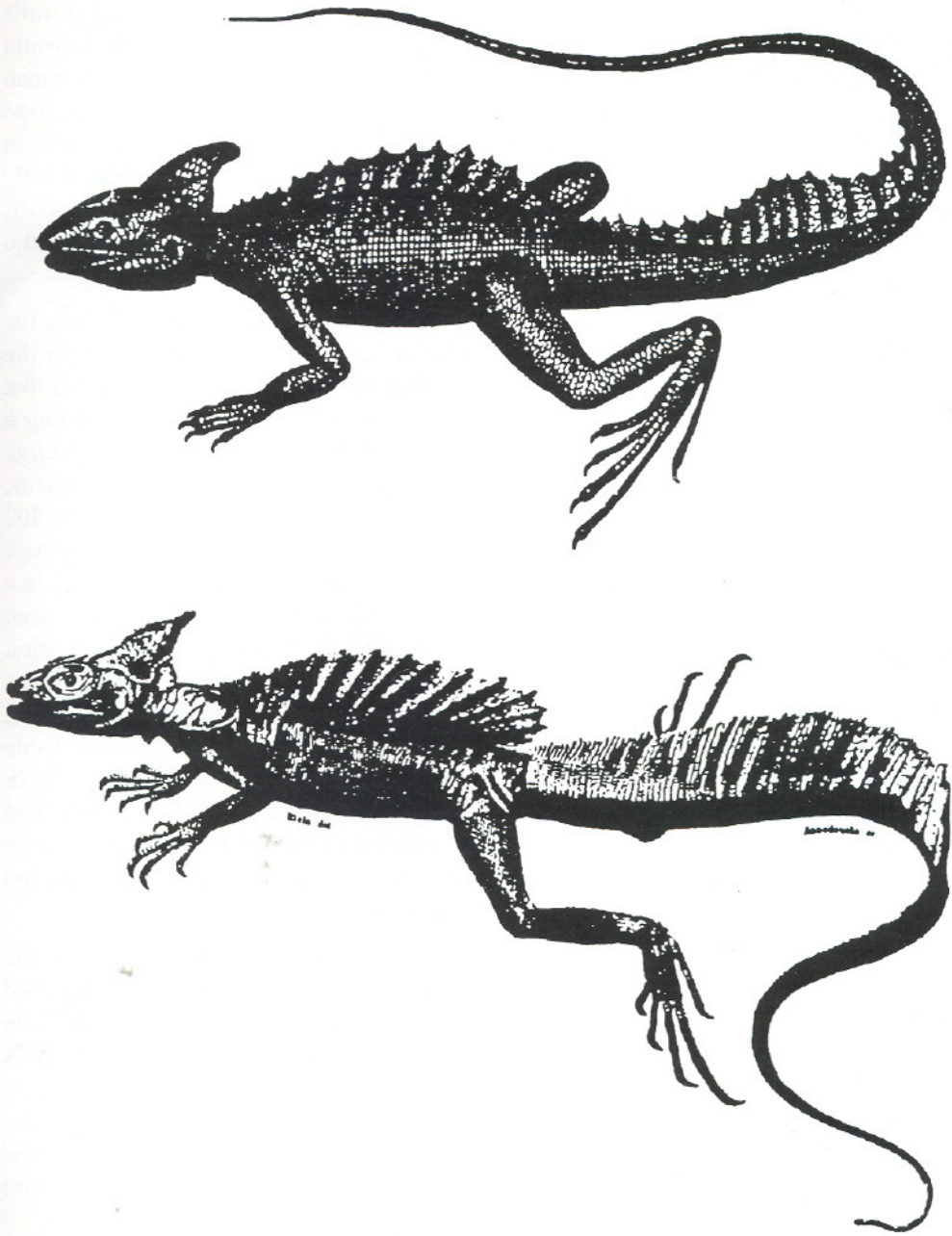


Figure 2. a. *Basiliscus basiliscus* as illustrated in Daudin (1802), based on a specimen from Seba's collection.
b. *Basiliscus basiliscus* as presented by Cuvier (1830), based on the same specimen.

are unfortunately so caricatured that they do not help in associating either specimen with the illustration.

We chose one specimen in particular to document both the physical and paper trails confirming the link between the MHNP and the Seba collection, and that would additionally qualify as a Linnaean type. This specimen was the Central American iguanine lizard, *Basiliscus basiliscus* (Linnaeus, 1758). An adult specimen was illustrated by Seba (1734, table C, Figure 1), and served as the model for Linnaeus in naming *Lacerta Basiliscus* (Linnaeus, 1758:206). The same specimen was specifically mentioned and illustrated in Daudin (1802, as *Basiliscus mitratus*: vol. 3, pl. XLII; Fig. 2a), illustrated again in Cuvier (1830:46; Fig. 2b), and reviewed in Dumeril and Bibron (1837: 181–187).

Daudin (1802) stated that the specimen illustrated in his *Histoire Naturelle* was the same lizard illustrated by Seba in the *Thesaurus*, and that it was on display in the Museum's gallery at the time he was writing. Dumeril and Bibron (1837) noted that the basilisk they examined was the same as that seen by Daudin, thus confirming a Seba-Linnaeus-Daudin link for the lizard. We found the specimen among the large bottles in the Zootheque, MHNP 780, the holotype for *Basiliscus basiliscus* (Linnaeus, 1758), and with labels marking it as the holotype for *Basiliscus mitratus* Daudin 1802 and as *Basiliscus Americanus* Seba. Brygoo (1987:69–70) noted the double holotype status of this specimen (as *B. mitratus* and *B. Americanus*), but failed to link it as a type for *B. basiliscus* of Linnaeus. The question of whether this approach can be used on other missing Linnaean type specimens is indeed an exciting one for both scientific historians and taxonomists. Though the Museum registers note specimens from Seba's Cabinet and the *Stathouder* collection, no single list exists for all such specimens, excepting Thouin's lists at the Archives Nationales. All the specimens listed in Table 1 except the basilisk were found from a long examination of the registers. RGS "discovered" the basilisk while reading Daudin's (1802) accounts of lizards he had illustrated. Our subsequent search was doubly fortunate in thus finding both a specimen not on the available Seba collection list, and one that was well represented in illustrated and described formats, providing additional substance to our paper trail.

While the *Stathouder* collection contained specimens obtained prior to the acquisition of the Seba material, the latter is all illustrated, and specimens acquired by the Prince of Orange were labelled "Seba". In thus separating *bona fide* Seba specimens, a process to involve Museum registers, published accounts, and Thouin's lists at the Archives Nationales, we believe those animals to represent Linnaean types. The status of those types has, to date, been uncertain (e.g., Lang, 1989), and in the MHNP series, they are not listed as Linnaean types (though they are often listed as types for junior synonyms). A review of the Museum collections to discover and appropriately label the Linnaean types as such is still necessary.

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