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Caspar Stoll's Praying Mantises of the Dutch Colonial Empire

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Abstract. 1. The important role of 18th century cabinets of natural history is discussed. 2. Stoll's monumental work is critically assessed. 3. The rediscovery of Manuel as the rightful authority of the Mantodea names found within the *Encyclopédie Méthodique* is presented. 4. The recognition of Houttuyn as the rightful authority of the Latin binomials found within the final edition of Stoll's text is presented. 5. The correct usage of nomenclature that is associated with the species treated within Stoll's text is introduced, strictly utilizing the guidance set forth from the International Code of Zoological Nomenclature.

Privately owned cabinets of natural history were commonplace among Europe's high society during the colonial era of the 18th century. While foreign regions were being explored during this time period, the fauna and flora that the early European colonizers encountered were oftentimes new to science and their uniqueness garnered much attention from collectors and enthusiasts back home. More often than not, the elites who purchased the natural history objects that were brought back to Europe were not scientists but rather hobbyists, social status seekers, or the occasional affluent amateur. Several prominent naturalists amassed personal collections as well and they frequently mingled with the elites who wanted to display their cabinets to others to further their indulgence. For those cabinet owners with greater means, professional draftsmen, engravers, and colorists were employed to illustrate the specimens within their care. This self-serving practice offered a short-term boost to the social status of the cabinet owner but had more lasting effects on science, as many of our currently known species that were first illustrated and described were created after the specimens housed within the private collections of the European elite.

Caspar Stoll (c. 1725-1795) was a clerk for the Admiralty of Amsterdam. His upper-class employment allowed him the opportunity to interact with the Dutch elite and to observe firsthand some of the natural history objects that were brought home from the various Dutch colonies upon merchant ships returning to Europe. Stoll was also known as a naturalist himself and he had a wide circle of associates who owned cabinets, the most prominent among them was Pieter

Cramer– a wealthy Dutch merchant and renowned naturalist in his own right. Cramer hired painter Gerrit Wartenaar to illustrate his collection of exotic butterflies, which resulted in a four-volume set of drawings and descriptions of a great many previously unknown species of Lepidoptera. Chainey (2005) records that Cramer died after his first volume had been published and the continuation of his work was, in part, left to Stoll. As Stoll was waiting for more material to finalize the last volume of Cramer's Lepidoptera series, he turned his attention toward describing the Orthoptera that had been collected from the Dutch colonies. The material used for his text was sourced from the cabinets of natural history that were owned by Stoll's naturalist friends in addition to several specimens that he had received himself from various (often unnamed) colonial collectors.

The Van Breukelerwaard insect collection was one of two main cabinets of natural history that Stoll sourced for Mantodea material that he described and had illustrated for his text. We know from Engel (1939: 218) that Joan Raye Van Breukelerwaard (aka Breukelerwaerth or Breucelerwaerth) was the son of the Governor of Surinam and was appointed as an administrator over many plantations within the Dutch colony. By the time that he had relocated back to Amsterdam after his services abroad concluded, Van Breukelerwaard had amassed an impressive cabinet of birds, insects, shells, corals and minerals– most of which were evidently collected from Dutch Surinam by the slave laborers who worked the various plantations during Van Breukelerwaard's tenure as administrator. Van Breukelerwaard's cabinet was sold in 1827 with the insect collection being purchased by the Rijksmuseum van Natuurlijke Historie in Leiden. This collection was subsequently acquired by the Zoologisches Museum der Humboldt-Universität zu Berlin, which is now the Museum für Naturkunde Berlin (Zoological Collections). Very few of Stoll's type specimens remain within this collection, as most have been lost or destroyed over time from neglect.

The other primary cabinet of natural history that Stoll sourced material from belonged to Holthuizen. Engel (1939: 126) writes that L.F. Holthuizen (aka Holthuysen, Holthuisen or Holthuyzen) was a Dutch collector who possessed an impressive cabinet of insects and birds that was kept in Amsterdam. The specimens from this collection were sold at auction in Hamburg, Germany to several different private parties in October 1793. It is generally assumed that Stoll maintained his own private collection but there is no evidence of this and there is no record of such within any of the various historical cabinet registries. Rather, Stoll noted on several occasions that he deposited those specimens that were sent directly to him from the colonies into Holthuizen's cabinet.

Cabinet ownership fell out of favor at the turn of the 19th century and the natural history objects that these collections once contained were widely dispersed among obscure collectors, family members, or institutions of higher learning. As such, a great many type specimens from the first known cabinets of natural history are irretrievably lost or presumed destroyed. What remains of most of these first type specimens is usually a brief descriptive note (often inscribed in Latin or another foreign language) and, with good fortune, an accompanying illustration. Over time, massive private collections have been replaced by the holdings of museums and universities, which have proven to be much more stable repositories for invaluable type specimens.

Stoll published the first part of his Phasmatodea/Mantodea volume in 1787, entitled, "Natuurlijke en naar het leven nauwkeurig gekleurde afbeeldingen en beschrijvingen der Spoken, Wandelende Bladen, Zabel-springhanen, Krekels, Trekspringhanen en Kakkerlakken. In alle vier deelen der wereld, Europa, Asia, Afrika en Amerika, huishoudende. Bij een verzameld en beschreven door Caspar Stoll' - Représentation exactement colorée d'après nature des Spectres ou Phasmes, des Mantes, des Sauterelles, des Grillons, des Criquets et des Blattes. Qui se trouvent dans les quatre parties du monde. l'Europe, l'Asie, l'Afrique et l'Amérique; Rassemblées et Décrites par Caspar Stoll". It is believed that Wartenaar was retained for the illustration work of this volume. Stoll's primary contribution to this text, in addition to organizing the entire publication, was composing the descriptions that were provided of each specimen– written both in Dutch and in French. He did not use Latin binomials to name any of the specimens therein. Rather, Stoll coined common phrases to refer to the various species that were treated. This first volume of Stoll's work consists of species descriptions found on pages 1-56 with accompanying illustrated plates numbering 1-18. We know from Boeseman & Ligny (2004) that this first edition was released in four different variants that were largely identical but for the modernized spelling of some Dutch terms in the later two.

As Stoll was describing the Mantodea material from the Dutch Colonial Empire for the first edition of his text, Fabricius was simultaneously describing material that had been collected from the Danish, French and British colonies. (Oftentimes, the two authors described the same species within their respective publications. But as Fabricius used proper Latin binomials to name his species while Stoll did not, names by Fabricius take priority.) Within her 1964 book concerning Fabricius' type material, Zimsen records that Fabricius had access to several cabinets that were owned by the Danish elite, who allowed him to go through their personal collections and describe any new species that he found therein. The type specimens that were part of the many private collections that Fabricius curated were often traded or sold to other collectors or, once the owner died, their cabinet would be auctioned off or passed on to a relative (whether in part or in whole). Fabricius' type specimens were thus scattered over many different collections at the outset of their names being made available to science and their distribution only became more scattered over time. Some of these type specimens have eventually found their way into museums while others have become lost or destroyed over the past two centuries. Additionally, Fabricius maintained a personal collection of his own in Kiel, wherein he stored a great many insect specimens that he had received from various parts of the world through a network of naturalist friends and colonial collectors.

The Holthuizen collection, which contained roughly half of the type specimens that Stoll described and had illustrated, was sold at auction six years following the publication of the first edition of his text. Prior to the finalization of this auction, Lichtenstein examined the specimens that Stoll had described and matched them with those that had been previously named by either Fabricius or Linne. Lichtenstein established new binomials for the species that did not match any of those already named, with primary exception to some specimens featured by Stoll that Lichtenstein considered to be juvenile representatives and thus uncertain as to species designation. For those species that were newly named by Lichtenstein, the author noted "nobis" next to the given binomial. In 1796, Lichtenstein published the resultant catalog of these names.

Manuel redescribed many of Stoll's species in 1797. He mostly ignored Fabricius and Lichtenstein and introduced a set of additional names for these species himself within volume 7 of the *Histoire Naturelle, Insectes* of the *Encyclopédie Méthodique*. Evenhuis (2003: 36) documents that volume 7 of *Insectes* was published in two parts. Part 1 (Issue 54) consists of pages 1-368 and was published on 13 May 1793. Part 2 (Issue 61) consists of pages 369-827 and was published on 09 Feb 1797. Both parts of volume 7 have Olivier listed as the editor. However, regarding Olivier's contribution to the second part of volume 7, Evenhuis writes:

> Olivier was exceptionally productive during his term of employment with the EM, having completed 2,400 pages of work in 3 1/2 volumes before he was forced to abandon the project to accompany Jean-Guillaume Bruguière on a scientific and diplomatic mission to the Middle East from 1793–1798. At the time Olivier was called away, he had finished some text for part 2 of volume 7 of the *Histoire Naturelle* and this was printed in 1797 under his name. The remainder of volume 7 (essentially from page 601 to the end) was completed by others (denoted at the end of their articles by their initials).

Evenhuis lists that Bénédict E. Manuel was one of Olivier's substitute authors for the Insectes articles of volume 7 during his absence. Indeed, we find the initial "(M.)" at the end of the introduction to the "Mantes" article on page 618 of volume 7, signifying Manuel's authorship. To give further credence toward Manuel's authorship of this article, Schmitt (2021: 757) points out that there is a note from Charles J. Panckoucke– the publisher for the *Encyclopédie Méthodique*– within the prospectus of volume 7 (the 61st issue) wherein Panckoucke notes:

> This end of volume VII is largely due to the care and work of citizen B. E. Manuel, a naturalist as learned as he is modest, who was kind enough to undertake this work in the absence of citizen Olivier, sent by government in Asia and Africa to acquire new knowledge in the natural history of these great countries.

Schmitt (pers. com.) further advised that Olivier never makes reference to Gmelin's edition of *Systema Naturae* from 1790 in any of his previous works, whereas Gmelin is referenced within the Mantes article, which would further indicate that this article was not authored by Olivier but by Manuel.

The Mantes article is found on pages 619-642 of the second half of volume 7 of the *Encyclopédie Méthodique*, wherein the species descriptions that were produced within Stoll's 1787 edition of his text are republished with Latin binomials assigned to each. This article has traditionally been referenced as "Olivier, 1792" within most Mantodea literature of the past two centuries. As written, both the referenced year of this article and its authorship are in error. The publication year of the first part of volume 7 is 1793. This portion of the volume was authored by Olivier prior to his expedition to the Orient. The Mantes article, however, is found in the second portion of volume 7 (pages 619-642), which wasn't published until 1797– one year prior to Olivier's return to Europe from his voyage. This latter portion of the volume was authored by Manuel during Olivier's absence per the publisher and was signed by Manuel. Therefore, the

proper reference for all Mantodea names that are introduced within volume 7 of the *Histoire Naturelle, Insectes* of the *Encyclopédie Méthodique* is "Manuel, 1797" and not "Olivier, 1792".

Stoll had the species descriptions and illustrated plates finished for the second edition of his text but died in 1795 before they were released. The work was then taken over by Martinus Houttuyn, who created a register of the common names that Stoll provided with his descriptions in Dutch and French and then assigned corresponding Latin binomial names to each specimen himself. Many of these latest names were carried over from previous authors, such as Manuel, but several were new from Houttuyn, who was the only author who had access to the latest species treatments that were featured in the final edition of Stoll's text.

The contributions of Houttuyn toward finishing Stoll's text have largely been forgotten and he is rarely attributed as the true author of the Latin binomials for the Mantodea species featured within this work. We know that Houttuyn generated the register of names within Stoll's text (found on pages 77-79 of the final 1813 edition) from four lines of evidence: First, as Boeseman & Ligny point out, the style and format of the register is identical to previous works that have been undoubtedly authored by Houttuyn. Second, the Latin name register within the 1813 edition of Stoll's text uses nomenclature that was sourced from other authors who made the names available only after Stoll died. Third, Houttuyn comments on two of Stoll's species descriptions by referencing his own work from 1766 in the first person (see page 63 footnote in regard to figure 79 and page 64 footnote in regard to figure 80). Lastly, and much more straightforward, is the words of Houttuyn himself. On page 62 of the final 1813 edition, there is a footnote that reads, "The able and renowned Mr Stoll, after the presentation of four installments of this work, viz. three of the Phasmidae and Mantidae Pl. I-XVIII; and one of the Gryllidae Pl. I-VI, having passed away, I, Doctor M. Houttuyn, have continued this work on behalf of interested amateurs." (translation provided by Boeseman & Ligny 2004: 77).

Houttuyn died in 1798– just seven years after Stoll. The finished manuscript for the second edition of Stoll's text was then shelved with the publisher (J. C. Sepp) for another fifteen years before it was produced in 1813. This posthumous edition includes the entire contents of the original 1787 text and adds pages 57-74 of specimen descriptions and illustrated plates 19-25, as well as a postscript and Houttuyn's register of names. It is a common misconception that the combined 1813 edition is merely a reprint of the first Dutch edition from 1787 that has been translated into French. In actuality, the 1787 edition contains both Dutch and French of each species description, as does the final 1813 edition.

The recognition of Manuel as the rightful authority of the Mantodea names found within the *Encyclopédie Méthodique* is not a new development but rather an ignored one, as Sherborn's 1922-32 *Index Animalium* cites "B. E. Manuel" in reference to those names found within volume 7 of the encyclopedia. Likewise, the recognition of Houttuyn as the rightful authority of the Latin binomials found within the final edition of Stoll's text is also not a new development, as the taxonomy for Orthoptera, Neuroptera, and Phasmida has recognized his authority for decades. Here too, Sherborn's *Index Animalium* cites "M. Houttuyn in Stoll" in reference to all of the new species names that were published within Stoll's work. Most unfortunately, however, the entirety of Sherborn's indexing work has been neglected among the taxonomic literature for

Mantodea from the last century and, as a result, many of the earliest Mantodea names have been incorrectly attributed or, in some cases, entirely overlooked.

We know from Evenhuis (2016) that Charles Davies Sherborn (c. 1861-1942) was an English bibliographer who tirelessly composed an 11-volume work that cataloged the names of all extant and extinct animals that were published between 1758-1850. This *Index Animalium* spanned over 42 years of work from Sherborn, who reportedly scoured through thousands of books and journals, recording and then alphabetizing all of the names found therein. The result is a 9,000-page compendium that lists over 440,000 species names and their original genus, author and published reference. Smithsonian Institution Libraries recognized the importance of this bibliographic foundation for taxonomy and created a digital edition of the entire text and a web-accessible database of all the species names listed from the *Index Animalium*.

As a significant number of binomials for Mantodea are presently attributed to either Stoll or Olivier, the rediscovery of the fact that neither of these two authors actually named any Mantodea species themselves is quite a disruptive realization to the taxonomic stability of this group. To determine the correct usage of nomenclature that is associated with the species treated within Stoll's text, we must strictly use the guidance set forth from the International Code of Zoological Nomenclature.

One of most central concerns of the present work involves those taxa that were previously considered junior synonyms and are now rediscovered to be valid. These senior synonyms may be given priority, following the Principle of Priority, or they may still be considered invalid despite their older age. ICZN Article 23.9 speaks to this issue:

> Article 23.9. **Reversal of precedence**
> In accordance with the purpose of the Principle of Priority [Art. 23.2], its application is moderated as follows:
> 23.9.1. prevailing usage must be maintained when the following conditions are both met:
> 23.9.1.1. the senior synonym or homonym has not been used as a valid name after 1899, and
> 23.9.1.2. the junior synonym or homonym has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years.
>
> 23.9.2. An author who discovers that both the conditions of 23.9.1 are met should cite the two names together and state explicitly that the younger name is valid, and that the action is taken in accordance with this Article; at the same time the author must give evidence that the conditions of Article 23.9.1.2 are met, and also state that, to his or her knowledge, the condition in Article 23.9.1.1 applies. From the date of publication of that act the younger name has precedence over the older name. When cited, the younger but valid name may be qualified by the term *nomen protectum* and the invalid, but older, name by the term *nomen oblitum*. In

> the case of subjective synonymy, whenever the names are not regarded as synonyms the older name may be used as valid.

Of additional concern are the cases where type species are determined to be junior synonyms to resurrected names. Here too the ICZN speaks to this issue:

> Article 67. **General provisions**
> 67.1.2. The name of a type species remains unchanged even when it is a junior synonym or homonym, or a suppressed name.

Lastly, in **Opinion 1820** from 1995, under its plenary powers, the ICZN ruled that Lichtenstein's 1796 work be suppressed for nomenclatural purposes. Thus, with the exception of *Mantis filum*, all Mantodea names from *Catalogus musei zoologici ditissimi Hamburgi, d III. Februar 1796 auctionis lege distrahendi. Sectio Tertia. Continens Insecta* are deemed unavailable. However, in an earlier ICZN ruling from 1943, **Opinion 145** states:

> Where a work is rejected for nomenclatorial purposes, either under Article 25 of the International Code or under the plenary powers granted to the International Commission on Zoological Nomenclature, names (whether generic or specific) first published in such works are to be treated as having never been published. Where, therefore, an author subsequently establishes a genus or species to which he applies the same name as one of those in the rejected work, the later published name is available nomenclatorially and is not to be rejected as a homonym by reason of the earlier publication of that name in the work so rejected.

These rulings are relevant to the present work because although Lichtenstein was the first author to publish proper Latin binomials for many of the species found within the first edition of Stoll's text in 1796, these names are suppressed. Therefore, those binomials provided by Manuel in 1797 would take priority over Lichtenstein. And although Lichtenstein used these same names once more in a subsequent paper from 1802, which would make them available, they still fall into synonymy, as they were officially published after Manuel. Moving forward, this present analysis will critically assess the taxonomy of each of the Mantodea treatments presented within both editions of Stoll's text and apply the principles set forth by the ICZN to make determinations as to any needed nomenclatural modifications.

***Acanthops* Serville, 1831**

"The Withered Leaf Mantis" Stoll, 1787: 12, Plate IV, Figure 14

Names attributed to Figure 14 between 1787-1813.
Stoll, 1787: 12 "The Withered Leaf Mantis"
Lichtenstein, 1796: 80 *Mantis angulata*
Manuel, 1797: 636 *Mantis fuscifolia*
Lichtenstein, 1802: 33 *Mantis angulata* Lichtenstein, 1796
Houttuyn in Stoll, 1813: 77 *Mantis sinuata*

Remarks. In 1787, Stoll described a species from "Surinam" that he called "The Withered Leaf Mantis". There is no record of who collected the voucher specimen for Stoll but he was known to have a business relationship with a Dr. Renaud, who sent him Lepidoptera and Hemiptera specimens from Dutch Surinam. Although Renaud is not explicitly mentioned in this case or in any of the following treatments that do not specify a cabinet or collector of the type specimen, it is believed that Dr. Renaud was the most likely source of this material. The current location of this specimen is unknown, as it was deposited into the Holthuizen collection by Stoll, as with others that he personally received from Surinam, and is therefore irretrievably lost. Lichtenstein assigned the Latin binomial *Mantis angulata* to this species in 1796. Curiously, Lichtenstein neither cited a previous author as the original authority of this name nor qualified the name with the "nobis" notation to signify that it was his own, as he had done throughout the remainder of his text. However, Lichtenstein listed the epithet with an exclamation mark ("!") to evidently denote that he had physically seen this specimen prior to his review of the Holthuizen collection at auction. Since no other source is credited, this first authorship must be attributed to Lichtenstein.

In 1797, Manuel redescribed the specimen depicted in figure 14 and named it *Mantis fuscifolia*, citing Stoll as his only reference. Manuel referred to this species as the "brown parched leaf mantis" and commented that its forewings are "sinuate, dried leaves." Lichtenstein used the name *Mantis angulata* once more in 1802, when he redescribed this species and included a note

that the referenced specimen originated from Surinam and was part of the Holthuizen collection. When the final edition of Stoll's treatise was published posthumously in 1813, Houttuyn generated an entirely new name, *Mantis sinuata*, in reference to figure 14 in his register. As all three of these names refer back to the same iconotype, they are synonyms.

Acanthops fuscifolia (Manuel, 1797)
Mantis fuscifolia Manuel, 1797
Mantis fuscifolia Olivier, 1792 **attributio erroris**
= *Mantis angulata* Lichtenstein, 1802
= *Mantis sinuata* Houttuyn in Stoll, 1813
Mantis sinuata Stoll, 1813 **attributio erroris**

The type species for *Acanthops* is *Mantis fuscifolia* Olivier, 1792 (now *Mantis fuscifolia* Manuel, 1797)

"The Brown Withered Mantis" Stoll, 1787: 12, Plate IV, Figure 14 = *Acanthops fuscifolia* (Manuel, 1797)

***Angela* Serville, 1839**

"The Five-Spots Mantis" Stoll, 1787: 8-9, Plate III, Figure 9

Names attributed to Figure 9 between 1787-1813.
Stoll, 1787: 8-9 "The Five-Spots Mantis"
Lichtenstein, 1796: 80 *Mantis picta*
Manuel, 1797: 636 *Mantis quinquemaculata*
Lichtenstein, 1802: 21 *Mantis picta* Lichtenstein, 1796
Houttuyn in Stoll, 1813: 79 *Mantis quinquemaculata* Manuel, 1797

Remarks. In 1787, Stoll described a species from "Surinam" that he called "The Five-Spots Mantis" in reference to the specimen's patterned hindwings having three black and two yellow maculations. There is no record of who collected the voucher specimen for Stoll but it is believed to be from Dr. Renaud, as explained earlier. This specimen was evidently deposited into the Holthuizen collection by Stoll and thereafter lost. In 1796, Lichtenstein assigned the name *Mantis picta* to this species. In 1797, Manuel republished Stoll's original description of "The Five-Spots Mantis" with some minor modifications to the text and introduced the name *Mantis quinquemaculata* for this species, citing Stoll as his only reference. Manuel referred to this species as the "mantis with transparent wings with five black marks" and commented that it is found in Surinam. Lichtenstein used the name *Mantis picta* once more in 1802. When the final edition of Stoll's treatise was published posthumously in 1813, Houttuyn used Manuel's *quinquemaculata* over Lichtenstein's name in reference to figure 9 in his register. As both names refer back to the same iconotype, they are synonyms.

Angela quinquemaculata (Manuel, 1797)
Mantis quinquemaculata Manuel, 1797
Mantis quinquemaculata Olivier, 1792 **attributio erroris**
= *Mantis picta* Lichtenstein, 1802

"The Five-Spots Mantis" Stoll, 1787: 8-9, Plate III, Figure 9 = *Angela quinquemaculata* (Manuel, 1797)

"The Shining Purple" Stoll, 1787: 25, Plate VIII, Figure 28

Names attributed to Figure 28 between 1787-1813.
Stoll, 1787: 25 "The Shining Purple"
Manuel, 1797: 640 *Mantis purpurascens*
Lichtenstein, 1802: 20 *Mantis purpurascens* Manuel, 1797
Latreille, 1807: 93 *Mantis fausta* Thunberg, 1784
Houttuyn in Stoll, 1813: 79 *Mantis versicolor*

Remarks. In 1787, Stoll described a species from "Surinam" that he called "The Shining Purple" in reference to the specimen's iridescent hindwing maculations. Stoll noted that this specimen was part of the Van Breukelerwaard cabinet. As of 2013, the Museum für Naturkunde Berlin (ZMB) held five male syntypes of *purpurascens* (Ehrmann pers. com. 2021). One of the male types that is mounted with its wings spread is believed to be the specimen used by Stoll for figure 28. Lichtenstein did not address figure 28 within his 1796 auction catalog so the first author who provided a Latin binomial to this species was Manuel, who assigned the name *purpurascens* to the species in 1797. Lichtenstein acknowledged this name in 1802. Houttuyn then ignored Manuel's contribution and introduced *versicolor* as an entirely new name for figure 28 within his register for the 1813 edition of Stoll's text.

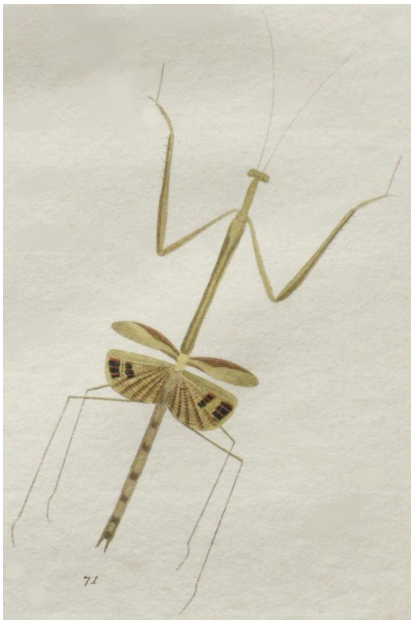
Thunberg described *Mantis fausta,* a species of Neuroptera, from the Cape of Good Hope (modern day Cape Town, South Africa) in 1784. This species was listed by Fabricius in 1787 and again in 1793. In 1807, Latreille combined the species represented in Stoll's figures 16, 28, 38 & 53 under *fausta*. These figures were later determined to represent *Tenodera* Burmeister, 1838, *Angela* and *Schizocephala* Serville, 1831 respectively.

Angela purpurascens (Manuel, 1797)
Mantis purpurascens Manuel, 1797

Mantis purpurascens Olivier, 1792 **attributio erroris**
= *Mantis fausta* Latreille, 1807 **partim**
= *Mantis versicolor* Houttuyn in Stoll, 1813
Mantis versicolor Stoll, 1813 **attributio erroris**

The type species for *Angela* is *Mantis purpurascens* Olivier, 1792 (now *Mantis purpurascens* Manuel, 1797)

"The Shining Purple" Stoll, 1787: 25, Plate VIII, Figure 28 = *Angela purpurascens* (Manuel, 1797)



“The Slim Body with Small Wings” Stoll, 1813: 58, Plate XIX, Figure 71

Names attributed to Figure 71 between 1787-1813.
Stoll, 1813: 58 “The Slim Body with Small Wings”
Houttuyn in Stoll, 1813: 79 *Mantis brachyptera*

Remarks. Stoll described “The Slim Body with Small Wings” after the first edition of his text was published in 1787. Houttuyn assigned the Latin binomial *Mantis brachyptera* to this species within the register for the second edition of the text that was eventually published in 1813. Stoll documented that this specimen came from Surinam and was part of Van Breukelerwaard’s cabinet. As of 2013, the zoological collection at the Museum für Naturkunde Berlin, the last known depository of Van Breukelerwaard’s insect collection, contained one female *purpurascens* within their type collection (Ehrmann pers. com. 2021). However, this particular specimen does not have a type label and its wings are not spread as in Stoll’s illustration. Thus, it is unlikely that this specimen is the one used by Stoll for his treatment of *brachyptera*, rendering the illustration from his text as the iconotype. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll’s stead between 1796-1802.

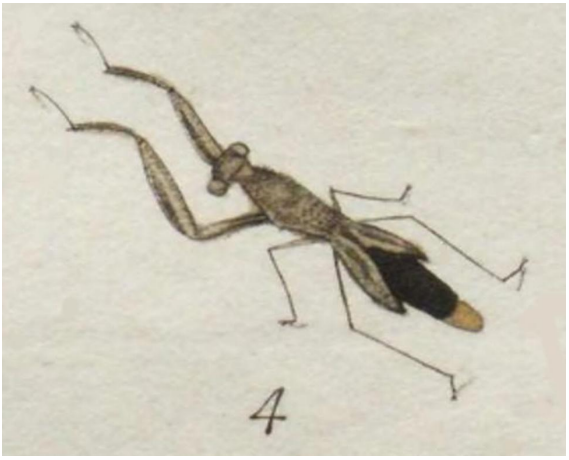
Within his original description of “The Slim Body with Small Wings,” Stoll pointed out that this species “agrees with” the specimen depicted in figure 28 (*purpurascens*) in stature but has much smaller wings. He speculated that “The Slim Body with Small Wings” may be the female form of “The Shining Purple” but he did not go as far as to declare a conspecificity between the two. In 1839, Serville synonymized *versicolor* and *purpurascens* with *brachyptera*, pointing out that the two former names represent males of *brachyptera*, which is the female of the same species.

Angela purpurascens (Manuel, 1797)
Mantis purpurascens Manuel, 1797
= *Mantis brachyptera* Houttuyn in Stoll, 1813

Mantis brachyptera Stoll, 1813 **attributio erroris**

"The Slim Body with Small Wings" Stoll, 1787: 58, Plate XIX, Figure 71 = *Angela purpurascens* (Manuel, 1797)

***Astollia* Kirby, 1904**



"The Green Dwarf" Stoll, 1787: 5-6, Plate 1, Figure 4

Names attributed to Figure 4 between 1787-1813.
Stoll, 1787: 5-6 "The Green Dwarf"
Manuel, 1797: 639-640 *Mantis chloris*
Lichtenstein, 1802: 32 *Mantis prasinana*
Houttuyn in Stoll, 1813: 77 *Mantis abbreviata*

Remarks. In 1787, Stoll described a very peculiar species that he called "The Green Dwarf". Stoll noted that he had "received this species from Surinam several times," indicating that he had studied multiple specimens that allowed him to compare them together for accuracy of their characters. From this analysis he determined that all were adults and "in perfect condition". These type(s) are currently lost, as they were evidently deposited into the Holthuizen collection by Stoll, leaving only the original illustration of this species as the iconotype. In 1796, Lichtenstein suggested that Stoll's description/illustration was based upon a "larva" of an uncertain species so he did not assign a Latin name for this taxon as he did for most other of Stoll's depicted specimens. In 1797, Manuel republished Stoll's original description of "The Green Dwarf" and named this species *Mantis chloris* while citing Stoll as his only reference. Manuel referred to this species as the "green mantis with black wings" and commented that he "called her *chloris* because of her green color"– although the colored illustration of Stoll's specimen is not exactly green. In 1802, Lichtenstein seemingly resolved his query over Stoll's treatment and named this species *Mantis prasinana*. When the final edition of Stoll's treatise was published posthumously in 1813, the figure for "The Green Dwarf" was given a third name by Houttuyn, *Mantis abbreviata*. As *chloris* was the first name attributed to this species, this name takes priority over the other two.

Saussure established *Stollia* to incorporate *chloris* in 1869. As this name was preoccupied by a Pentatomidae (Heteroptera) genus by Ellenrieder in 1862, Kirby established *Astollia* in 1904 to incorporate *chloris*. Saussure originally characterized *chloris* as having "scale-like elytra and elongated wings as in the Phasmids". Indeed, this trait is very curious and rather unique among Mantodea but common within Phasmatodea. Giglio-Tos (1927: 508) noted that but for these shortened forewings/longer hindwings, *Astollia* is similar to *Tithrone* Stal, 1877. Beier (1934: 9)

commented that this genus is "reminiscent of *Acontista*" Saussure & Zehntner, 1894. Roy (2006: 328) noted that this genus has the appearance of *Acontista* or *Raptrix* Terra, 1995. The genus, therefore, appears to belong among Acontistidae but the status of its only species, *chloris*, remains dubious.

Following Stoll's publication of "The Green Dwarf," there is no historical record of any specimens of *chloris* having been found or examined again. In 1871, regarding *abbreviata* (synonym of *chloris*), Saussure writes, "[this species] offers only rudimentary elytrons with fully developed wings, a species that has not yet found in the collections, and which would establish a kind of passage to the Phasmids by the character mentioned above." Thus, for the first six decades following the 1813 publication of Stoll's final work (and for the nearly three additional decades following the original 1787 publication), no specimens of *chloris* were found among the European collections. Giglio-Tos reiterates this circumstance in 1927 by noting that *chloris* is "known only from Stoll's figure and description".

Ehrmann provided a perplexing redescription for *Astollia* in 2002 that included details regarding the lower frons, vertex, wing venation, foreleg spination, and supraanal plate for *both* sexes of this monotypical taxon. It is puzzling how such character details could have been derived from Stoll's 1787 illustration (shown above), let alone the contrasting description between the two sexes. It is only presumed that Stoll's illustration is of a female. Whichever sex it truly represents, however, the opposite sex remains unknown to science and, as mentioned, *chloris* is known only from its iconotype. Thus, it is inferred from Ehrmann's description that he must have had access to additional specimens in order to provide such detail to this genus description. However, when asked for clarification into this matter, Ehrmann (pers. com. 2022) only deferred the present author to Roy.

Following Ehrmann's dubious redescription of *Astollia*, Roy summarized the taxonomy thusly in 2006:

> To these five genera [of Acontistinae] it would be advisable to add the enigmatic genus *Astollia* Kirby, 1904, known only by the summary description and figure of *Mantis abbreviata* Stoll, 1813, previously named *Mantis chloris* Olivier, 1792, from the same figure already published by Stoll in 1787 and for which this genus was created. … This description raises several comments. First of all it is curious that a species often harvested two centuries ago, and very characteristic with its short elytra and wings normally developed, does not appear in any of the listed collections and has not been since. … In these conditions one can wonder if the genus *Astollia* is really justified and if *chloris* would not fit more naturally into the *Acontista* genus itself, the brevity of the elytra is not an obstacle. But of course we should be able to examine specimens, found in nature or among the indeterminate of an old collection; to note again that males can be very different from females and probably completely macropterous; it is not even impossible that they have since been described as *Acontista*.

Here we see that Roy reconfirms the complete absence of physical specimens of *chloris*, the extrapolated account of Ehrmann notwithstanding. This lack of specimens remains true to this day. Roy further casts doubt on the validity of *Astollia* and suggests that *chloris* may in fact be a

member of *Acontista*. This latter point is entirely possible but cannot be confirmed with any level of confidence given the brevity of Stoll's original description and the imprecise nature of the iconotype.

With the complete dearth of specimens from over the past 235 years, either deposited in a physical collection or recorded with digital photography, we must consider the possibility that *chloris* is extinct. This assumes, of course, that *chloris* is a distinct species and not just an aberrant form of a known *Acontista*, as Roy suggested. It also assumes that Stoll's illustration is accurate and that he did in fact analyze several specimens of a Surinamese mantis with shortened, acutely terminated forewings that are surmounted by blackened hindwings extending well beyond the abdomen– a unique condition among Mantodea. Stoll apparently recognized the unique nature of this species and pointed out that he had received multiple samples from Surinam that were all "in the same form" and in "perfect condition". At present, there is no reason to doubt Stoll's integrity, as the majority of his published illustrations are surprisingly precise in comparison to their extant representatives. However, it remains quite perplexing that Stoll treated a species that has never been seen or collected by anyone else since. Aside from the lingering possibility of Stoll and his illustrators providing an entirely inaccurate representation of this enigmatic species, it remains plausible that this species is exceedingly rare or presently extinct. Thus, until further evidence suggests otherwise, *chloris* is regarded as *nomen dubium*.

Astollia chloris (Manuel, 1797) **nomen dubium**
Mantis chloris Manuel, 1797
Mantis chloris Olivier, 1792 **attributio erroris**
= *Mantis prasinana* Lichtenstein, 1802
= *Mantis abbreviata* Houttuyn in Stoll, 1813
Mantis abbreviata Stoll, 1813 **attributio erroris**

"The Green Dwarf" Stoll, 1787: 5-6, Plate 1, Figure 4 = *Astollia chloris* (Manuel, 1797)

***Blepharopsis* Rehn, 1902**

"The Mantis with Inlaid Wings" Stoll, 1787: 41, Plate XII, Figure 47

Names attributed to Figure 47 between 1787-1813.
Stoll, 1787: 41 "The Mantis with Inlaid Wings"
Manuel, 1797: 641 *Mantis marmorata*
Lichtenstein, 1802: 23 *Mantis mendica* Fabricius, 1775
Latreille, 1807: 90 *Mantis mendica* Fabricius, 1775
Houttuyn in Stoll, 1813: 78 *Mantis mendica* Fabricius, 1775

Remarks. In 1787, Stoll described "The Mantis with Inlaid Wings" from a male specimen that derived from the Barbary Coast (northern Africa). The specimen was sourced from the Van Breukelerwaard cabinet. There was no indication who the collector of this specimen was and its present whereabouts is unknown. In 1797, Manuel assigned the Latin binomial *Mantis marmorata* to this species and clarified that it occurs in Tunisia. Thereafter, Lichtenstein, Latreille, and Houttuyn all referred "The Mantis with Inlaid Wings" to Fabricius' *Mantis mendica*.

Blepharopsis mendica (Fabricius, 1775)
Mantis mendica Fabricius, 1775
= *Mantis marmorata* Manuel, 1797
Mantis marmorata Olivier, 1792 **attributio erroris**

"The Mantis with Inlaid Wings" Stoll, 1787: 41, Plate XII, Figure 47 = *Blepharopsis mendica* (Fabricius, 1775)

***Callibia* Stal, 1877**

"The Diana" Stoll, 1813: 74, Plate XXV, Figure 100

Names attributed to Figure 100 between 1787-1813.
Stoll, 1813: 74 "The Diana"
Houttuyn in Stoll, 1813: 78 *Mantis diana*

Remarks. Stoll finalized the posthumous edition of his text with a brief note concerning a "beautiful mantis" that he called "The Diana". He offered no formal description of this species, noting only that it "surpassed several species of its Genus" with its "beauty and of the variety of its colors". The origin of this specimen was listed by Stoll as the East Indies, although it is clearly of Neotropical origin. This confusion could have been an assumption on Stoll's behalf or a labeling error within the collection from whence it came. Stoll stated that he sourced this specimen from the "large and magnificent cabinet of the famous Mr. J. P. a Roy." Engel (1939: 231) documented that Roy resided in Amsterdam and had a cabinet from which other illustrators sourced material. The fate of this cabinet and its natural history objects is entirely unknown, leaving the illustration of "The Diana" from Stoll's text as the iconotype of this species. As with the other specimens that were treated in the posthumous edition of Stoll's text, the treatment of this species was not made available to Lichtenstein or Manual until its final publication in 1813 and thus Houttuyn was the only author who had the opportunity to assign to it a Latin binomial. Houttuyn's species epithet *diana* has remained stable since the name's introduction and this species is still considered valid

Callibia diana (Houttuyn in Stoll, 1813)
Mantis diana Houttuyn in Stoll, 1813
Mantis diana Stoll, 1813 **attributio erroris**

The type species for *Callibia* is *Mantis diana* Stoll, 1813 (now *Mantis diana* Houttuyn in Stoll, 1813)

"The Diana" Stoll, 1813: 74, Plate XXV, Figure 100 = *Callibia diana* (Houttuyn in Stoll, 1813)

***Choeradodis* Serville, 1831**

"The Shield-Bearing Mantis" Stoll, 1787: 35-37, Plate XI, Figure 42

Names attributed to Figure 42 between 1787-1813.
Stoll, 1787: 35-37 "The Shield-Bearing Mantis"
Lichtenstein, 1802: 25-26 *Mantis cancellata* Fabricius, 1775
Houttuyn in Stoll, 1813: 78 *Mantis cancellata* Fabricius, 1775

Remarks. Stoll described a species in 1787 that he called "The Shield-Bearing Mantis" in reference to the foliaceous expansions of its pronotum. He noted that Mr. Gootenaar received this specimen from the Blaauwen Berg, which is the Blue Mountain in western Surinam. We learn from Fatah-Black (2013: 181-182) that Adriaan Gootenaar was a colonial agent of Dutch Surinam who represented slave traders and who managed a large number of plantations himself. Gootenaar reportedly spent most of his career in Surinam and died in 1786 on his plantation at the age of 50. Stoll noted that this specimen was part of the cabinet belonging to Raye Van Breukelerwaard, who was the son of the Governor of Surinam. It is believed that Gootenaar received this specimen from one of his many slave laborers and then relinquished it to Van Breukelerwaard, as he was a known collector of natural history objects from the colony. The present location of this specimen is unknown.

In 1775, Fabricius described a specimen from the British Museum that he named *Mantis cancellata*. He noted that this specimen derived from "Indiis" within his works from 1775 and 1781 (which was a term that both he and Linne interchangeably used to denote either the West Indies or the East Indies) but changed this type location to "India" within his text from 1793. This type specimen has since been lost. Roy (2004a: 118) declared that *cancellata* is *nomen dubium* but is probably representative of *Asiadodis squilla* (Saussure, 1869) from India.

In describing "The Shield-Bearing Mantis," Stoll noted that this specimen had decidedly different morphology than *Mantis strumaria* Linne, 1758– a previously established Surinamese species that also bears a shield-like pronotum. What Stoll did not recognize at the time of his writing was the significant sexual dimorphism within *Choeradodis* Serville, 1831. The iconotype of *strumaria* is male, whereas the specimen that Stoll analyzed from the Van Breukelerwaard

collection is a conspecific female. Lichtenstein noted this divergent morphology in 1802 and posited that Stoll's "Shield-Bearing Mantis" represented Fabricius' *Mantis cancellata.* It is evident that Lichtenstein made this determination without ever examining the *cancellata* type specimen that was deposited in the British Museum and based his identification solely on Fabricius' 1793 work, which he cited. Houttuyn agreed with Lichtenstein's determination and also listed figure 42 as *cancellata* within his register for the final edition of Stoll's text.

Choeradodis strumaria (Linne, 1758)
Gryllus (Mantis) strumarius Linne, 1758
= *Mantis cancellata* Lichtenstein, 1802
= *Mantis cancellata* Houttuyn in Stoll, 1813

"The Shield-Bearing Mantis" Stoll, 1787: 35-37, Plate XI, Figure 42 = *Choeradodis strumaria* (Linne, 1758)

"The Choking Mantis" Stoll, 1787: 39-40, Plate XII, Figure 45

Names attributed to Figure 45 between 1787-1813.
Stoll, 1787: 39-40 "The Choking Mantis"
Lichtenstein, 1796: 79 *Mantis strumaria* Linne, 1758
Lichtenstein, 1802: 26 *Mantis strumaria* Linne, 1758
Houttuyn in Stoll, 1813: 78 *Mantis rhomboidea*

Remarks. Stoll described a species in 1787 that he called "The Choking Mantis," evidently referring to the greatly expanded pronotum that gives the appearance of the creature's neck being obstructed. Stoll described how this species was remarkably different from its congener that was illustrated in figure 42 and noted that he had received it from Surinam and deposited it within the Holthuizen collection. As such, it is believed that this specimen was originally collected by Dr. Renaud, as with many of the other specimens that Stoll received from Dutch Surinam. Unfortunately, as this type specimen became part of the Holthuizen collection, it is now irretrievably lost along with the other types that were sold at auction. Prior to the auction of this specimen, Lichtenstein assessed it to be a match to Linne's *strumaria*. He referenced this figure as such in both his 1796 and 1802 works. Houttuyn took issue with this assignment and felt as though Stoll's figure 45 represented an entirely new species, which he named *Mantis rhomboidea*. Houttuyn's nomenclatural designation has remained consistent throughout the past two centuries and *rhomboidea* is still considered to be a valid species apart from *strumaria*.

Choeradodis rhomboidea (Houttuyn in Stoll, 1813)
Mantis rhomboidea Houttuyn in Stoll, 1813
Mantis rhomboidea Stoll, 1813 **attributio erroris**
= *Mantis strumaria* Lichtenstein, 1802 **partim**

"The Choking Mantis" Stoll, 1787: 39-40, Plate XII, Figure 45 = *Choeradodis rhomboidea* (Houttuyn in Stoll, 1813)

***Creobroter* Serville, 1839**

"The Yellow-Eyed Dwarf" Stoll, 1813: 71, Plate XXIV, Figure 93

Names attributed to Figure 93 between 1787-1813.
Stoll, 1813: 71 "The Yellow-Eyed Dwarf"
Houttuyn in Stoll, 1813: 78 *Mantis gemmata*

Remarks. Stoll described a species for the second edition of his text that he called "The Yellow-Eyed Dwarf". There is no indication who the collector of the specimen was but Stoll noted that it was sourced from the Van Breukelerwaard cabinet. He recorded that the origin of the specimen was from the "regions of America," which is believed to be in error. The more probable location, given the genus designation, is the Dutch East Indies colony of modern-day Indonesia. The description of this species and its accompanying illustration were not made available until the posthumous edition of Stoll's text in 1813, wherein Houttuyn assigned to it the Latin binomial *Mantis gemmata.* The type specimen is presumed lost, rendering the illustration from Stoll's text as the iconotype.

Creobroter gemmata (Houttuyn in Stoll, 1813)
Mantis gemmata Houttuyn in Stoll, 1813
Mantis gemmata Stoll, 1813 **attributio erroris**

"The Yellow-Eyed Dwarf" Stoll, 1813: 71, Plate XXIV, Figure 93 = *Creobroter gemmata* (Houttuyn in Stoll, 1813)

***Deiphobe* Stal, 1877**

"The Gray Mantis, Spotted with Black" Stoll, 1787: 10-11, Plate IV, Figure 12

Names attributed to Figure 12 between 1787-1813.
Stoll, 1787: 10-11 "The Gray Mantis, Spotted with Black"
Manuel, 1797: 635 *Mantis mesomelas*
Lichtenstein, 1802: 29 *Mantis conspurcata*
Houttuyn in Stoll, 1813: 78 "Nympha"

Remarks. Stoll described a species in 1787 that he called "The Gray Mantis, Spotted with Black". Even though the illustration of this specimen is depicted as a brachypterous adult, Stoll determined that it was a mature nymph that "should have molted once more". He documented that the specimen originated from Surinam but did not indicate who the collector was or from what cabinet he sourced it. As with several other specimens that Stoll treated from his associates' cabinets, the type locality of this species is believed to be in error due to imprecise record keeping. In 1796, Lichtenstein referenced this figure as depicting a nymph of an uncertain species and thus did not name it as he did most other of the specimens used by Stoll. Due to Lichtenstein referencing this specimen within his auction catalog for the Holthuizen collection, it is likely that Stoll's type derived from this cabinet. In 1797, Manuel named this species *Mantis mesomelas* and explained that "mesomelas means half black". In 1802, Lichtenstein named an Indian species that is depicted in Stoll's figure 60 as *conspurcata* and listed the specimen from figure 12 as its "pupa" – a designation that he used to denote what he believed were mature juveniles but were actually brachypterous adult females. However, the specimen depicted in figure 12 has little resemblance to the specimen shown in figure 60. Lichtenstein's suggested conspecificity between *conspurcata* and *mesomelas* is therefore tenuous and is rejected. Houttuyn did not list a binomial for this species within his register for the final edition of Stoll's text, referring to it only as "Nympha" – a designation that he used for all supposed juvenile specimens depicted by Stoll.

Deiphobe mesomelas (Manuel, 1797)

Mantis mesomelas Manuel, 1797
Mantis mesomelas Olivier, 1792 **attributio erroris**
= *Mantis conspurcata* Lichtenstein, 1802 **partim**

"The Gray Mantis, Spotted with Black" Stoll, 1787: 10-11, Plate IV, Figure 12 = *Deiphobe mesomelas* (Manuel, 1797)

"The Yellow-Winged Mantis" Stoll, 1787: 19, Plate VI, Figure 22

Names attributed to Figure 22 between 1787-1813.
Stoll, 1787: 19 "The Yellow-Winged Mantis"
Lichtenstein, 1796: 80 *Mantis ochroptera*
Manuel, 1797: 637 *Mantis xanthoptera*
Lichtenstein, 1802: 29-30 *Mantis ochroptera* Lichtenstein, 1796
Houttuyn in Stoll, 1813: 77 "Nympha"

Remarks. In 1787, Stoll described "The Yellow-Winged Mantis" from the Coromandel Coast (southeastern coastal region of India) that was sourced from the Holthuizen collection. Stoll considered this specimen to be juvenile "given the smallness of the cases and the wings," which we now understand to be a sexually dimorphic character of adult females among many genera. In 1796, just prior to the partitioned sale of the Holthuizen collection to several different private parties, Lichtenstein assigned the Latin binomial *Mantis ochroptera* to this species. The following year, in 1797, Manuel republished Stoll's description of this species nearly verbatim and named it *Mantis xanthoptera*, which he noted meant "yellow wings". Lichtenstein subsequently published a brief redescription of *ochroptera* in 1802 and listed Stoll's brachypterous figure as a "pupa" with a query, along with an unrelated South African nymph as potentially a "larva" of the same species, which apparently suggested a progression of development with a yet to be discovered macropterous individual as an adult. Houttuyn did not list a binomial for this species within his register for the posthumous edition of Stoll's text, referring to it only as "Nympha," as he did with figure 12. Although Lichtenstein was the first author to publish a proper Latin binomial for this species, the ICZN ruled within Opinion 1820 that Lichtenstein's work from 1796 be suppressed for nomenclatural purposes. Therefore, the binomial provided by Manuel in 1797 takes priority.

Deiphobe xanthoptera (Manuel, 1797)
Mantis xanthoptera Manuel, 1797
Mantis xanthoptera Olivier, 1792 **attributio erroris**

= *Mantis ochroptera* Lichtenstein, 1802

"The Yellow-Winged Mantis" Stoll, 1787: 19, Plate VI, Figure 22 = *Deiphobe xanthoptera* (Manuel, 1797)

***Empusa* Illiger, 1798**

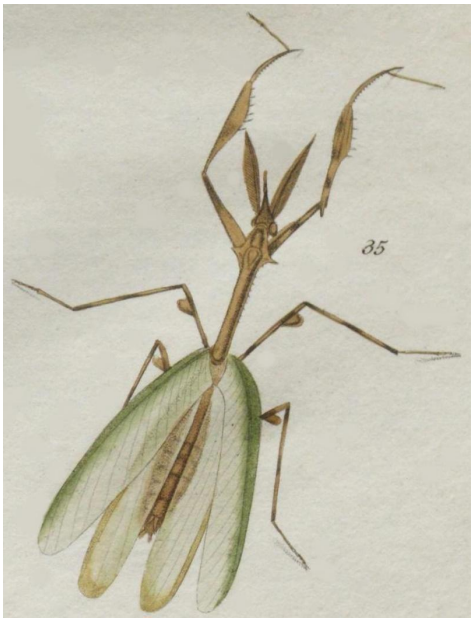
"The Russian Comb-Antennes Mantis" (male) Stoll, 1787: 30-31, Plate IX, Figure 34

Names attributed to Figure 34 between 1787-1813.
Stoll, 1787: 30-31 "The Russian Comb-Antennes Mantis" (male)
Manuel, 1797: 637-638 *Mantis pallasiana*
Lichtenstein, 1802: 22 *Mantis pectinicornis* Linne, 1767
Houttuyn in Stoll, 1813: 78 *Mantis pectinicornis* Linne, 1767

Remarks. Stoll described "The Russian Comb-Antennes Mantis" within the first edition of his text from 1787. He noted that this specimen was part of the Van Breukelerwaard collection but did not mention who collected it or where exactly the specimen originated from. From its given colloquial name, it is assumed that this specimen derived from 18th century Russia. Manuel assigned the Latin binomial *Mantis pallasiana* to this species in 1797. In 1802, Lichtenstein referred this species to *Mantis pectinicornis* of Linne and recorded a specimen being represented within the Holthuizen cabinet. In 1813, Houttuyn agreed with Lichtenstein's determination and listed this species as *pectinicornis* within the name register for the posthumous edition of Stoll's text. Kirby subsequently (1904b: 313) synonymized *pallasiana* with *pennicornis* Pallas, 1773. The status of Linne's *pectinicornis* has been in flux over the past century but it is currently listed by Roy (2004: 9) as a synonym of *hedenborgii* Stal, 1871– a distinct species that occurs in the Middle East.

Empusa pennicornis (Pallas, 1773)
Mantis pennicornis Pallas, 1773
= *Mantis pallasiana* Manuel, 1797
Mantis pallasiana Olivier, 1792 **attributio erroris**
= *Mantis pectinicornis* Lichtenstein, 1802 **partim**
= *Mantis pectinicornis* Houttuyn in Stoll, 1813 (figure 34)

"The Russian Comb-Antennes Mantis" (male) Stoll, 1787: 30-31, Plate IX, Figure 34 = *Empusa pennicornis* (Pallas, 1773)



"The Russian Comb-Antennes Mantis" (female) Stoll, 1787: 31, Plate IX, Figure 35

Names attributed to Figure 35 between 1787-1813.
Stoll, 1787: 31 "The Russian Comb-Antennes Mantis" (female)
Lichtenstein, 1802: 22 *Mantis pectinicornis* Linne, 1767
Houttuyn in Stoll, 1813: 78 *Mantis pectinicornis* Linne, 1767

Remarks. Stoll described another specimen from the cabinet of Van Breukelerwaard that he thought was the conspecific female of "The Russian Comb-Antennes Mantis," which he depicted in figure 34. Both Lichtenstein in 1802 and Houttuyn in 1813 list this species as *pectinicornis*, as have succeeding authors up until the present writing. However, given the differing description and illustration of this specimen, it is evident that it is actually a male of a distinct species. Direct comparison of figure 34 with figure 35, in conjunction with the characters noted by Stoll in regard to latter figure's larger habitus, fuller antennae, strongly rhomboidal supracoxal dilation, spinulous lateral margins of metazona, and much more pronounced ocellar process make it more aligned with *spinosa* Krauss, 1902.

Empusa spinosa Krauss, 1902
= *Mantis pectinicornis* Lichtenstein, 1802 **partim**
= *Mantis pectinicornis* Houttuyn in Stoll, 1813 (figure 35)

"The Russian Comb-Antennes Mantis" (female) Stoll, 1787: 31, Plate IX, Figure 35 = *Empusa spinosa* Krauss, 1902

"The Impoverished" Stoll, 1787: 33-34, Plate X, Figure 40

Names attributed to Figure 40 between 1787-1813.
Stoll, 1787: 33-34 "The Impoverished"
Lichtenstein, 1796: 79 *Mantis pauperata* Fabricius, 1781
Manuel, 1797: 627 *Mantis pauperata* Fabricius, 1781
Lichtenstein, 1802: 24 *Mantis pauperata* Fabricius, 1781
Houttuyn in Stoll, 1813: 78 *Mantis pauperata* Fabricius, 1781

Remarks. Stoll described a species from the Coromandel Coast that he called "The Impoverished" —seemingly due to its smaller stature. He asserted that this specimen represented that male of *Mantis pauperata* Fabricius, 1781, which was intricately illustrated by Herbst in 1786. Stoll did not indicate what cabinet he sourced this specimen from. Lichtenstein, Manuel, and Houttuyn all agreed with this assessment and referenced figure 40 as *pauperata* in their respective works. Manuel explained that the species epithet refers to an atrophied physique, "because these insects always seem not to have acquired all their growth and all their development" in comparison to other mantises.

"The Impoverished" Stoll, 1787: 33-34, Plate X, Figure 40 = *Empusa pauperata* (Fabricius, 1781)

"The Orange Flat-Horned Mantis" Stoll, 1813: 63, Plate XXI, Figure 79

Names attributed to Figure 79 between 1787-1813.
Stoll, 1813: 63 "The Orange Flat-Horned Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis fronticornis*

Remarks. Stoll described "The Orange Flat-Horned Mantis" from a female specimen that he sourced from the Van Breukelerwaard collection. There is no indication who the collector of the specimen was or from what country the specimen originated. The description of this species and its accompanying illustration were not made available until the posthumous edition of Stoll's text, wherein Houttuyn assigned to it the Latin binomial *Mantis fronticornis.* The type specimen is presently lost, rendering the illustration from Stoll's text as the iconotype. Kirby (1904b: 313) listed *fronticornis* as a senior synonym of *capensis*, Burmeister 1838. However, both Giglio-Tos and Ehrmann listed the two species as distinct within two separate genera. In 2004, Roy listed *fronticornis* as *nomen dubium* with a query as either being synonymous with *Hemiempusa capensis* or *Empusa spinosa* Krauss, 1902. Given the lack of elongated genicular spines, shorter pronotum, monochromatic legs, and more opaque forewings depicted within the illustration of *fronticornis*, the specimen is more aligned with *Empusa* Illiger, 1798. The potential synonymy with *spinosa*, as suggested by Roy, is rejected given the far different coloration scheme of *fronticornis* that is divergent from the well-characterized, consistent coloration of *spinosa.* Thus, *fronticornis* should be regarded as a distinct species.

Empusa fronticornis (Houttuyn in Stoll, 1813) **stat. rev.**
Mantis fronticornis Houttuyn in Stoll, 1813
Mantis fronticornis Stoll, 1813 **attributio erroris**

"The Orange Flat-Horned Mantis" Stoll, 1813: 63, Plate XXI, Figure 79 = *Empusa fronticornis* (Houttuyn in Stoll, 1813)

“The Up-Tailed Mantis” Stoll, 1813: 72, Plate XXIV, Figure 94

Names attributed to Figure 94 between 1787-1813.
Stoll, 1813: 72 “The Up-Tailed Mantis”
Houttuyn in Stoll, 1813: 78 “Nympha”

Remarks. Stoll briefly described “The Up-Tailed Mantis” for the second edition of his text. He noted that this specimen was a juvenile of the species featured in figure 79. Houttuyn did not list a binomial for this species within his register for the posthumous edition of Stoll’s text, referring to it only as “Nympha”.

“The Up-Tailed Mantis” Stoll, 1813: 72, Plate XXIV, Figure 94 = *Empusa fronticornis* (Houttuyn in Stoll, 1813)

***Euantissa* Giglio-Tos, 1927**

"The Little Yellow-Edged Dwarf" Stoll, 1787: 37, Plate XI, Figure 43

Names attributed to Figure 43 between 1787-1813.
Stoll, 1787: 37 "The Little Yellow-Edged Dwarf"
Lichtenstein, 1796: 80 *Mantis oratoria* Linne, 1758
Manuel, 1797: 641 *Mantis flavicincta*
Lichtenstein, 1802: 31 *Mantis caffrana*
Houttuyn in Stoll, 1813: 78 *Mantis marginalis*

Remarks. Stoll described "The Little Yellow-Edged Dwarf" from a female specimen that he documented as having originated from the Cape of Good Hope– the Cape Colony that was established by the Dutch East Indies Company in 1652 on the Cape Peninsula, near modern day Cape Town, South Africa. Stoll indicated that this specimen was sourced from the Van Breukelerwaard cabinet without a noted collector. The type specimen has been lost, leaving the illustration from Stoll's work as the iconotype. The type locality of this specimen is in error, as no South African species shares its characteristics. Rather, this specimen is believed to have derived from India (probably the Coromandel Coast). In the years following Stoll's description of this species, it was assigned four different Latin binomials. In 1796, Lichtenstein associated it with *Mantis oratoria* Linne, 1758. Manuel then named the species *flavicincta* in 1797. In 1802, after apparently realizing that this species had no relation to *oratoria,* Lichtenstein named it *caffrana*. Finally, in 1813, Houttuyn ignored all previous authors and named this species *marginalis*. In 1787, Fabricius described *Mantis pulchra* from a specimen that had been collected in Tranquebar. Kirby (1904b: 222) found that *pulchra* and *flavicincta* represent the same species so proposed a synonymy between the two names while also listing *caffrana* and *marginalis* as junior synonyms to Fabricius' earlier epithet. Kirby also noted at this time that Stoll's documented type locality for this species was likely in error.

Euantissa pulchra (Fabricius, 1787)
Mantis pulchra Fabricius, 1787

= *Mantis flavicincta* Manuel, 1797
Mantis flavicincta Olivier, 1792 **attributio erroris**
= *Mantis caffrana* Lichtenstein, 1802
= *Mantis marginalis* Houttuyn in Stoll, 1813
Mantis marginalis Stoll, 1813 **attributio erroris**

"The Little Yellow-Edged Dwarf" Stoll, 1787: 37, Plate XI, Figure 43 = *Euantissa pulchra* (Fabricius, 1787)

***Gongylus* Thunberg, 1815**

"The Green Gouty Mantis" Stoll, 1787: 46-48, Plate XVI, Figures 58-59

Names attributed to Figures 58-59 between 1787-1813.
Stoll, 1787: 46-48 "The Green Gouty Mantis"
Lichtenstein, 1796: 79 *Mantis gongylodes* Linne, 1758
Manuel, 1797: 626-627 *Mantis gongylodes* Linne, 1758
Lichtenstein, 1802: 21 *Mantis gongylodes* Linne, 1758
Houttuyn in Stoll, 1813: 78 *Mantis gongylodes* Linne, 1758

Remarks. Stoll described "The Green Gouty Mantis" in the first edition of his text from 1787. Although the illustrations depict the specimens as having a light brown to pale green coloration, Stoll explained that the specimens were "pure green" in life and gradually dried out to produce a brown-yellow color. Stoll reported that these specimens originated from Dutch Ceylon (modern day Sri Lanka) and were part of the Holthuizen collection. He does not note who the collector of the specimens was. Lichtenstein, Manuel, and Houttuyn all referred this species to *Mantis gongylodes* Linne, 1758.

"The Green Gouty Mantis" Stoll, 1787: 46-48, Plate XVI, Figures 58-59 = *Gongylus gongylodes* (Linne, 1758)

"The Brown Gouty Mantis" Stoll, 1787: 49-50, Plate XVII, Figure 61

Names attributed to Figure 61 between 1787-1813.
Stoll, 1787: 49-50 "The Brown Gouty Mantis"
Lichtenstein, 1796: 79 *Mantis flabellicornis* Fabricius, 1793
Lichtenstein, 1802: 22 *Mantis flabellicornis* Fabricius, 1793
Houttuyn in Stoll, 1813: 79 *Mantis flabellicornis* Fabricius, 1793

Remarks. Stoll described a species in 1787 that he called "The Brown Gouty Mantis". He noted that the type specimen "has some resemblance" to those depicted in figures 58 and 59 with noticeable differences in the antennae and wings. Stoll reported that he had received this specimen from the northeast coast of Java within the Dutch East Indies colony and that others had been sent to him from the Coromandel Coast. The Indonesian type location seems to be in error and Stoll's specimen most likely originated from India. Stoll deposited this specimen within the Holthuizen collection, where Lichtenstein subsequently examined it in 1796 and matched it with *Mantis flabellicornis* Fabricius, 1793. Lichtenstein redescribed this species in 1802, when he reiterated Fabricius' sentiments that this species is likely the conspecific male of *gongylodes.* Houttuyn listed this species as *flabellicornis* within the register of the final edition of Stoll's text.

Gongylus gongylodes (Linne, 1758)
Gryllus gongylodes Linne, 1758
= *Mantis flabellicornis* Fabricius, 1793

"The Brown Gouty Mantis" Stoll, 1787: 49-50, Plate XVII, Figure 61 = *Gongylus gongylodes* (Linne, 1758)

***Hagiomantis* Saussure & Zehntner, 1894**

"The Yellow-Banded Purple" Stoll, 1813: 57, Plate XIX, Figure 69

Names attributed to Figure 69 between 1787-1813.
Stoll, 1813: 57 "The Yellow-Banded Purple"
Houttuyn in Stoll, 1813: 78 *Mantis ornata*

Remarks. Stoll described "The Yellow-Banded Purple" from a female specimen that was sourced from Van Breukelerwaard's cabinet. He reported that this specimen originated from India but it is clearly Neotropical. The Mantodea type collection at the Museum für Naturkunde Berlin, the current depository for the Van Breukelerwaard specimens, contains just one male specimen of *ornata*. As Stoll's illustration depicts a female with more ornate hindwing maculation, the specimen as the ZMB is clearly not the holotype. Thus, the holotype is presumed lost and the illustration from Stoll's text serves as the iconotype. In 1813, Houttuyn assigned the Latin binomial *Mantis ornata* to this species. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802. Houttuyn's nomenclatural designation has remained consistent throughout the past two centuries and *ornata* is still considered to be a valid species.

Hagiomantis ornata (Houttuyn in Stoll, 1813)
Mantis ornata Houttuyn in Stoll, 1813
Mantis ornata Stoll, 1813 **attributio erroris**

The type species for *Hagiomantis* is *Mantis ornata* Stoll, 1813 (now *Mantis ornata* Houttuyn in Stoll, 1813)

"The Yellow-Banded Purple" Stoll, 1787: 57, Plate XIX, Figure 69 = *Hagiomantis ornata* (Houttuyn in Stoll, 1813)

***Harpagomantis* Kirby, 1899**

"The Little Horned Mantis" Stoll, 1787: 29-30, Plate IX, Figure 33

Names attributed to Figure 33 between 1787-1813.
Stoll, 1787: 29-30 "The Little Horned Mantis"
Manuel, 1797: 641 *Mantis cornuta*
Lichtenstein, 1802: 25 *Mantis nasuta* Fabricius, 1787
Houttuyn in Stoll, 1813: 78 *Mantis lobata* Fabricius, 1781

Remarks. Stoll described "The Little Horned Mantis" within the first edition of his text. He noted that this specimen is a "variety" of the species featured in figure 48, both of which originated from the Cape of Good Hope (Dutch Cape colony in Southern Africa). Stoll documented that the specimen featured in figure 33 was part of the Burman collection. Engel (1939: 50) listed Nicolas Laurens Burman (c. 1733-1793) as a friend of Linnaeus and a physician and professor of botany who resided in Amsterdam. Burman's cabinet was well-known and included many other natural history objects in addition to insects, the contents of which were described/illustrated in a great many works of the era. The fate of this collection is unknown. Thus, the female holotype of "The Little Horned Mantis" is lost, leaving the illustration from Stoll's text as the iconotype. In 1797, Manuel republished Stoll's description of this species nearly verbatim and assigned to it the Latin binomial *Mantis cornuta*. In 1802, Lichtenstein assigned a different name to this figure, *Mantis nasuta* Fabricius, 1787. And finally, in 1813, Houttuyn assigned a third name to this figure, *Mantis lobata* Fabricius, 1781

In 1758, Linne described *Mantis tricolor* from a specimen that was recorded as having originated "in Indiis". As is the case of several other type species that were first described in the 18th century, the type locality of this species is in error and it is believed to have actually derived from the Dutch Cape colony. In 1781, Fabricius republished Linne's original description of *tricolor* and described a new species, *lobata*, from the Cape of Good Hope. Despite the very similar descriptions of these two species, Fabricius maintained that they were distinct. This was probably due to Fabricius examining an actual specimen of *lobata* from the Dutch Cape colony verses only having Linne's text description of *tricolor* for a specimen that was supposedly from

India. Fabricius noted that the type specimen of *lobata* was part of the cabinet belonging to Joseph Banks. Some of the natural history objects from the Banks cabinet were later incorporated into the collection of William Hunter, which was later acquired by the University of Glasgow. Fabricius' type specimen of *lobata* is currently deposited within The Hunterian and is available for study.

Beier (1934: 26) synonymized both *cornuta* and *lobata* under *tricolor*. Regarding Lichtenstein's designation of "The Little Horned Mantis" as *nasuta*, it was determined that *nasuta* belongs to *Oxypilus* Serville, 1831, whereas the specimen depicted in figure 33 belongs to an entirely unrelated genus, *Harpagomantis* Kirby, 1899.

Harpagomantis tricolor (Linne, 1758)
Mantis tricolor Linne, 1758
= *Mantis cornuta* Manuel, 1797
Mantis cornuta Olivier, 1792 **attributio erroris**
= *Mantis nasuta* Lichtenstein, 1802 **partim**
= *Mantis lobata* Fabricius, 1781

"The Little Horned Mantis" Stoll, 1787: 29-30, Plate IX, Figure 33 = *Harpagomantis tricolor* (Linne, 1758)

“The Little Crowned Mantis” Stoll, 1787: 41, Plate XII, Figure 48

Names attributed to Figure 48 between 1787-1813.
Stoll, 1787: 41 “The Little Crowned Mantis”
Manuel, 1797: 630 *Mantis lobata* Fabricius, 1781
Lichtenstein, 1802: 25 *Mantis nasuta* Fabricius, 1787
Houttuyn in Stoll, 1813: 78 *Mantis lobata* Fabricius, 1781

Remarks. Stoll noted in his description of “The Little Crowned Mantis” that the characters of this specimen are similar to those of the species depicted in figure 33, both of which originated from the Dutch Cape colony. He documented that the specimen featured in figure 48 was sourced from Van Breukelerwaard’s cabinet. In 1797, Manuel redescribed *Mantis lobata* and attributed this binomial to “The Little Crowned Mantis”. In 1802, Lichtenstein erroneously assigned the name *Mantis nasuta* to figure 48, just as he did with the specimen from the preceding figure. In 1813, Houttuyn assigned the name *Mantis lobata* to this figure, along with that from figure 33, listing them both as the same species.

“The Little Crowned Mantis” Stoll, 1787: 41, Plate XII, Figure 48 = *Harpagomantis tricolor* (Linne, 1758)

"The Variegated Crowned Mantis" Stoll, 1787: 42, Plate XII, Figure 50

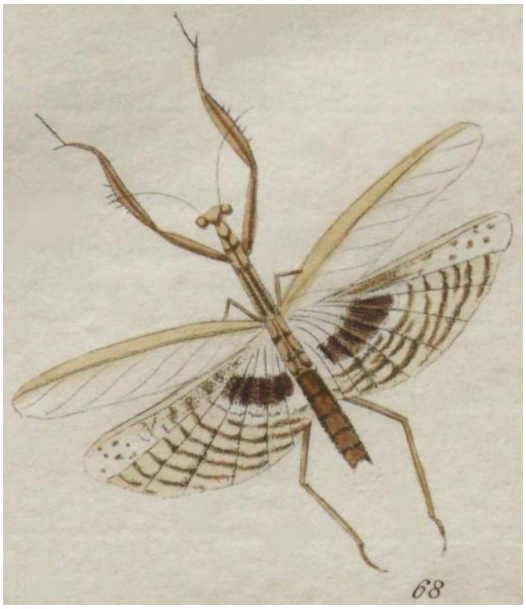
Names attributed to Figure 50 between 1787-1813.
Stoll, 1787: 42 "The Variegated Crowned Mantis"
Manuel, 1797: 638 *Mantis coronata*
Lichtenstein, 1802: 25 *Mantis lobata* Fabricius, 1781
Houttuyn in Stoll, 1813: 78 *Mantis quadricornis*

Remarks. In 1787, Stoll described a specimen from Van Breukelerwaard's cabinet that he named "The Variegated Crowned Mantis". This specimen was collected from the Dutch Cape colony and resembled the species featured in figure 48. Manuel included this specimen under the name *Mantis coronata*– a name that he used to denote an entirely unrelated species from the Dutch East Indies. In 1802, Lichtenstein attributed this specimen to *lobata*. Houttuyn then ignored the previous authors' submissions and suggested an entirely new name, *Mantis quadricornis*, to represent this species. It was later determined that this specimen is a conspecific male of the female specimen depicted in figure 33. It is speculated that these two specimens were collected together within the Cape of Good Hope and later accessioned into the Van Breukelerwaard collection.

Harpagomantis tricolor (Linne, 1758)
Mantis tricolor Linne, 1758
= *Mantis coronata* Manuel, 1797 **partim**
= *Mantis quadricornis* Houttuyn in Stoll, 1813
Mantis quadricornis Stoll, 1813 **attributio erroris**

"The Variegated Crowned Mantis" Stoll, 1787: 42, Plate XII, Figure 50 = *Harpagomantis tricolor* (Linne, 1758)

***Heterochaetula* Wood-Mason, 1889**



"The Banded Mantis" Stoll, 1787: 56, Plate XVIII, Figure 68

Names attributed to Figure 68 between 1787-1813.
Stoll, 1787: 56 "The Banded Mantis"
Manuel, 1797: 640 *Mantis fasciata*
Lichtenstein, 1802: 30-31 *Mantis fasciata* Manuel, 1797
Houttuyn in Stoll, 1813: 78 *Mantis strigosa*

Remarks. In 1787, Stoll described and provided an illustration for a species that he called "The Banded Mantis". He reported that this specimen originated from Surinam but did not indicate who the collector was or from what cabinet the specimen was sourced from. As is the case with several other of Stoll's treated species that had dubious/nonexistent collection records, the type locality of this species is clearly in error, as it is seemingly of Indian origin rather than Neotropical. Lichtenstein made no mention of this specimen within his review of the Holthuizen collection; thus, it was likely sourced from the Van Breukelerwaard cabinet. In 1797, Manuel redescribed this species and assigned to it the Latin binomial *Mantis fasciata*. Lichtenstein continued to use this name in 1802 but Houttuyn generated a synonym for this species in 1813, listing it as *Mantis strigosa* within the register for the posthumous edition of Stoll's text.

Both Latin binomials assigned to this species cite Stoll's description and illustration of "The Banded Mantis" as their only reference, making the two names synonyms, with *fasciata* being the senior. Manuel (1797: 640) assigned the *fasciata* epithet to two different species within the same publication from 1797. He first named the species depicted in figure 68 "Mante fasciée" in French and *Mantis fasciata* in Latin. Further down the same page of the same document, Manuel named the species depicted in figure 16 "Mante rayée" in French and *Mantis fasciata* in Latin. Although the French epithets are different ("fasciée" meaning banded and "rayée" meaning striped), the Latin binomials are identical, which has created nomenclatural confusion. Per ICZN article 24.2.1, it is hereby determined that the prevailing usage of *fasciata* as the type species of

Tenodera Burmeister, 1838 be sustained and the precedence of this name be fixed for "Mante rayée" (the specimen described by Stoll as "The Narrow-Winged Striped Mantis"), thereby rendering invalid the second usage of *fasciata* for "Mante fasciée" (the specimen described by Stoll as "The Banded Mantis"). Thus, the valid Latin name for Stoll's "Banded Mantis" is *Mantis strigosa*, as *fasciata* is preoccupied.

The type specimen of *strigosa* has been lost and the depicted specimen is missing its abdominal terminalia. The description of this species and its accompanying illustration strongly suggest that it is a member of *Heterochaetula* Wood-Mason, 1889 and not *Iris* Saussure, 1869, to which this species had traditionally been assigned. It is surmised that this specimen derived from Dutch India, which if true, would make it the earliest example of *Heterochaetula fissispinis* Wood-Mason, 1889 ever documented. However, it remains possible that this specimen originated from a different locale and due to the lack of diagnostic characters available, it is indeterminable beyond genus level.

Heterochaetula **indet.**

= *Mantis fasciata* Manuel, 1797 (no. 4 *nec* no. 6)
Mantis fasciata Olivier, 1792 **attributio erroris**
= *Mantis strigosa* Houttuyn in Stoll, 1813
Mantis strigosa Stoll, 1813 **attributio erroris**

"The Banded Mantis" Stoll, 1787: 56, Plate XVIII, Figure 68 = *Heterochaetula*

***Hierodula* Burmeister, 1838**

"The Green-Edged Mantis" Stoll, 1787: 15, Plate V, Figure 19

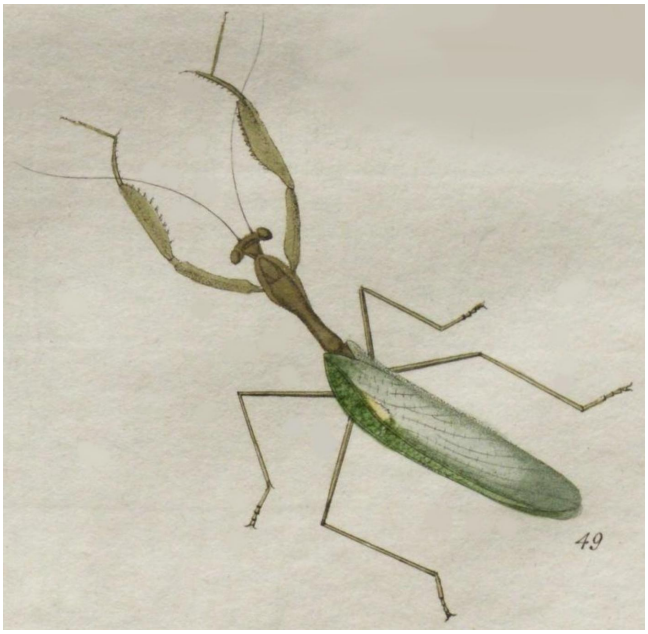
Names attributed to Figure 19 between 1787-1813.
Stoll, 1787: 15 "The Green-Edged Mantis"
Lichtenstein, 1796: 80 *Mantis hyalina* DeGeer, 1773
Lichtenstein, 1802: 28 *Mantis oratoria* Linne, 1758
Houttuyn in Stoll, 1813: 77 *Mantis vitrea*

Remarks. Stoll described "The Green-Edged Mantis" in 1787 for the first edition of his text. He noted that he sourced this specimen from the Holthuizen cabinet and that it originated from Surinam. The collector was not recorded. As with several other species that Stoll treated, the recorded derivation of this specimen is in error and the actual origin of the specimen is seemingly from southern India due to the fact that Holthuizen's collection only contained Mantodea from either Dutch Surinam or Dutch India. Of course, it is entirely possible that Holthuizen traded/purchased specimens from other locales but, as of yet, there is no evidence of this among the Mantodea portion of his collection. Unfortunately, after the specimens from Holthuizen's collection were sold at auction and redistributed among several European collectors, the type specimen has become irretrievably lost, leaving the illustration from Stoll's text as the iconotype. In 1796, Lichtenstein erroneously matched this specimen with *Mantis hyalina* DeGeer, 1773. Several years later, in 1802, he even more egregiously matched this specimen to *Mantis oratoria* Linne, 1758. Finally, in 1813, Houttuyn generated a new name for this species, and listed it as *Mantis vitrea* within the register for the posthumous edition of Stoll's text.

Hierodula vitrea (Houttuyn in Stoll, 1813)
Mantis vitrea Houttuyn in Stoll, 1813
Mantis vitrea Stoll, 1813 **attributio erroris**
= *Mantis hyalina* Lichtenstein, 1796

= *Mantis oratoria* Lichtenstein, 1802 **partim**

"The Green-Edged Mantis" Stoll, 1787: 15, Plate V, Figure 19 = *Hierodula vitrea* (Houttuyn in Stoll, 1813)



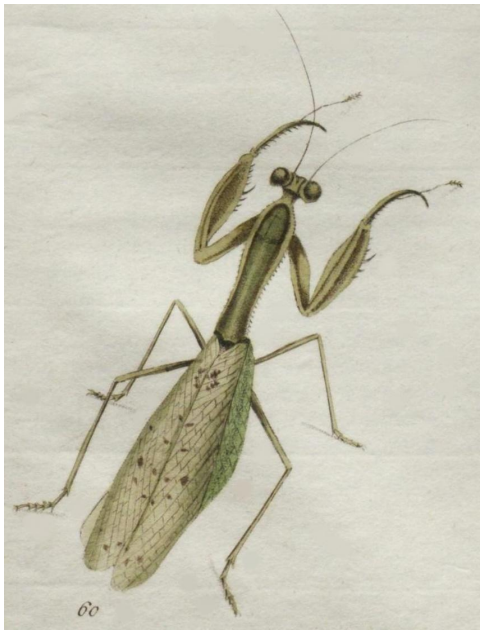
“The One-Spot Mantis” Stoll, 1787: 42, Plate XII, Figure 49

Names attributed to Figure 49 between 1787-1813.
Stoll, 1787: 42 “The One-Spot Mantis”
Manuel, 1797: 640-641 *Mantis unimaculata*
Lichtenstein, 1802: 28 *Mantis simulacrum* Fabricius, 1793
Houttuyn in Stoll, 1813: 78 *Mantis notata*

Remarks. In 1787, Stoll described a male specimen from Tranquebar (now modern day Tharangambadi, India). He called this species “The One-Spot Mantis” and reportedly sourced the specimen from the cabinet of Van Breukelerwaard. Manuel published a brief redescription of this species in 1797 and assigned to it the Latin binomial *Mantis unimaculata*. In 1802, Lichtenstein cited this species as *Mantis simulacrum* Fabricius, 1793. Although the type locality of Fabricius’ *simulacrum* is “America,” the original description fits well with that of Stoll. The type specimen of *simulacrum* is lost so it is impossible to confirm whether the type location listed by Fabricius is accurate or whether the specimen matches the “The One-Spot Mantis” that Stoll depicted in figure 49. Lastly, in 1813, Houttuyn assigned an entirely new Latin binomial to this species, *Mantis notata*.

Hierodula unimaculata (Manuel, 1797)
Mantis unimaculata Manuel, 1797
Mantis unimaculata Olivier, 1792 **attributio erroris**
= *Mantis simulacrum* Lichtenstein, 1802 **partim**
= *Mantis notata* Houttuyn in Stoll, 1813
Mantis notata Stoll, 1813 **attributio erroris**

“The One-Spot Mantis” Stoll, 1787: 42, Plate XII, Figure 49 = *Hierodula unimaculata* (Manuel, 1797)



"The Dotted Glass-Winged Mantis" Stoll, 1787: 49, Plate XVI, Figure 60

Names attributed to Figure 60 between 1787-1813.
Stoll, 1787: 49 "The Dotted Glass-Winged Mantis"
Lichtenstein, 1796: 79 *Mantis conspurcata*
Manuel, 1797: 639 *Mantis venosa*
Lichtenstein, 1802: 29 *Mantis conspurcata* Lichtenstein, 1796
Houttuyn in Stoll, 1813: 78 *Mantis punctata*

Remarks. Stoll described a species in 1787 that he called "The Dotted Glass-Winged Mantis". He reported that the type specimen derived from Tranquebar and was sourced from the Holthuizen collection. Lichtenstein assigned the Latin binomial *Mantis conspurcata* to this species in 1796 and suggested that the characteristic "small spots or dots of a tawny-black" as noted by Stoll were not natural but rather a result of bleeding wounds that occurred while the specimen was being killed. Manuel published a redescription of this species in 1797 and named it *Mantis venosa*. Lichtenstein continued to use the name *conspurcata* to refer to this species in 1802. Finally, in 1813, Houttuyn provided a third name for this species and listed it as *Mantis punctata* within the register of the posthumous edition of Stoll's work. Although Lichtenstein's name was published first among these names, the ICZN ruled within Opinion 1820 that Lichtenstein's work from 1796 be suppressed for nomenclatural purposes. Therefore, Manuel's name has seniority.

Bragg (2021: 33) considered *venosa* as a speculative name and regarded it as *nomen dubium*. The present author agrees with this determination. Stoll's type specimen is irretrievably lost, leaving only the illustration from his work as the iconotype. This illustration, and the accompanying combination of described characters, cannot be presently matched with any known existent species, although *venosa* seems more aligned with taxa from Africa than India, suggesting that the listed type locality is in error. Given that this name has doubtful application and the referent species cannot be readily diagnosed, the epithet has no present utility.

Hierodula venosa (Manuel, 1797) **nomen dubium**

Mantis venosa Manuel, 1797

Mantis venosa Olivier, 1792 **attributio erroris**

= *Mantis conspurcata* Lichtenstein, 1802

= *Mantis punctata* Houttuyn in Stoll, 1813

Mantis punctata Stoll, 1813 **attributio erroris**

"The Dotted Glass-Winged Mantis" Stoll, 1787: 49, Plate XVI, Figure 60 = *Hierodula venosa* (Manuel, 1797)

***Hymenopus* Serville, 1831**

"The Crowned Mantis" Stoll, 1787: 38, Plate XI, Figure 44, 44A

Names attributed to Figures 44, 44A between 1787-1813.
Stoll, 1787: 38 "The Crowned Mantis"
Manuel, 1797: 638 *Mantis coronata*
Lichtenstein, 1802: 24-25 *Mantis coronata* Manuel, 1797
Houttuyn in Stoll, 1813: 78 *Mantis bicornis*

Remarks. In 1787, Stoll described "The Crowned Mantis" from an adult female specimen and a juvenile. He reported that these specimens originated from Ambon Island, which is part of the Maluku Islands within the former Dutch East Indies colony (modern day Indonesia). Stoll indicated that these specimens were sourced from the Van Breukelerwaard cabinet but had an unknown collector. The present location of these type specimens is entirely unknown, rendering the illustrations from Stoll's text as the iconotypes. In 1797, Manuel provided the Latin binomial *Mantis coronata* for this species, a name that Lichtenstein also used for this species in 1802. In 1813, Houttuyn generated a synonym for this species and listed it in the register of Stoll's posthumous edition as *Mantis bicornis*.

Hymenopus coronatus (Manuel, 1797)
Mantis coronata Manuel, 1797
Mantis coronata Olivier, 1792 **attributio erroris**
= *Mantis bicornis* Houttuyn in Stoll, 1813
Mantis bicornis Stoll, 1813 **attributio erroris**

"The Crowned Mantis" Stoll, 1787: 38, Plate XI, Figure 44, 44A = *Hymenopus coronatus* (Manuel, 1797)

***Macromantis* Saussure, 1871**

"The Olive Leaf Mantis" Stoll, 1813: 58-59, Plate XIX, Figure 72

Names attributed to Figure 72 between 1787-1813.
Stoll, 1813: 58-59 "The Olive Leaf Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis ovalifolia*

Remarks. Stoll described "The Olive Leaf Mantis" after the first edition of his text was published in 1787. The illustration for this species was also finished after the publication of the first edition but Stoll died in 1795 before his last plates were published. Stoll documented that this specimen came from Surinam and was part of Van Breukelerwaard's "magnificent" cabinet. As previously noted, the insect collection portion of this cabinet was acquired by the Museum für Naturkunde Berlin several decades ago. As of 2013, the zoological collection at the Museum für Naturkunde Berlin contained four female specimens of *ovalifolia* within their type collection (Ehrmann pers. com. 2021). However, none of these specimens have their wings spread as in Stoll's illustration. Thus, it is unlikely that any of these specimens are the one used by Stoll for his treatment of *ovalifolia*, rendering the illustration from his text as the iconotype. Houttuyn assigned the Latin binomial *Mantis ovalifolia* to this species within the register for the second edition of the text that was published in 1813. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802.

Macromantis ovalifolia (Houttuyn in Stoll, 1813)
Mantis ovalifolia Houttuyn in Stoll, 1813
Mantis ovalifolia Stoll, 1813 **attributio erroris**

The type species for *Macromantis* is *Mantis ovalifolia* Stoll, 1813 (now *Mantis ovalifolia* Houttuyn in Stoll, 1813)

"The Olive Leaf Mantis" Stoll, 1787: 58-59, Plate XIX, Figure 72 = *Macromantis ovalifolia* (Houttuyn in Stoll, 1813)

"The Glass-Winged Mantis" Stoll, 1813: 60, Plate XX, Figure 75

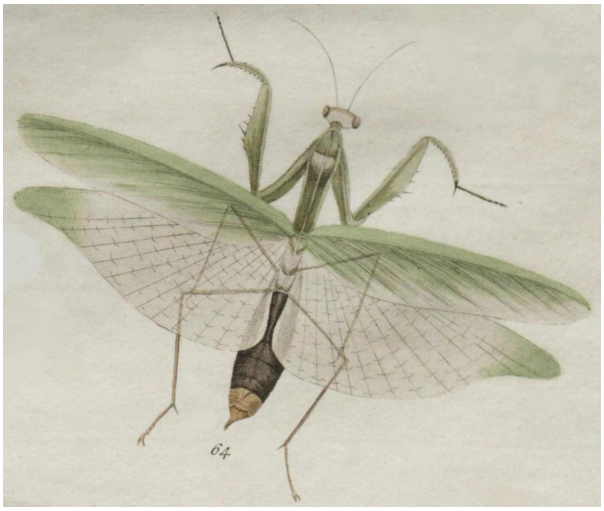
Names attributed to Figure 75 between 1787-1813.
Stoll, 1813: 60 "The Glass-Winged Mantis"
Latreille, 1807: 93 *Mantis precaria* Linne, 1758
Houttuyn in Stoll, 1813: 78 *Mantis hyalina* De Geer, 1773

Remarks. Stoll's description of "The Glass-Winged Mantis" was introduced in the second edition of his text that was published posthumously in 1813. He documented that this specimen came from Surinam and was part of "the very honorable" Van Breukelerwaard's cabinet. Stoll noted that this species was placed "under the suitable name of Hyalina" within Van Breukelerwaard's cabinet but pointed out that it "does not correspond completely with the *Mantis hyalina* of Sir Fabricius". In 1807, Latreille suggested an unsupported synonymy between the species represented by Stoll in figures 62 and 75 with *precaria* Linne, 1758. This synonymy was not recognized by succeeding authors and it was later determined that the specimen depicted in figure 75 belongs to *Macromantis* Saussure, 1871, whereas the specimen of figure 62 belongs to *Stagmatoptera* Burmeister, 1838. Given that figure 75 is found on Plate XX of the posthumous edition of Stoll's text from 1813, which was published six years after Latreille's work, it is evident that Latreille must have had access to these illustrations prior to their publication. There is some evidence of this, as Latreille cited these later plates by Stoll with a query (1807: 89), suggesting that he was unsure if they were part of Stoll's first edition or from a different work by the same author. If Latreille had access to these illustrations only and not their accompanying species descriptions or their referent specimens, especially if the images were not colored as in the final print version of the plates, it could explain why he erroneously lumped disparate species together under a single name. Houttuyn matched this species to De Geer's *Mantis hyalina* from 1773 and listed this species epithet within the register for the second edition of Stoll's text. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802.
Macromantis hyalina (De Geer, 1773)

Mantis hyalina De Geer, 1773
= *Mantis precaria* Latreille, 1807 **partim**

"The Glass-Winged Mantis" Stoll, 1787: 60, Plate XX, Figure 75 = *Macromantis hyalina* (De Geer, 1773)

***Mantis* Linne, 1758**



"The Green Glass-Winged Mantis" Stoll, 1787: 53, Plate XVII, Figure 64

Names attributed to Figure 64 between 1787-1813.
Stoll, 1787: 53 "The Green Glass-Winged Mantis"
Lichtenstein, 1796: 80 *Mantis hyalina* Fabricius, 1775
Lichtenstein, 1802: 29 *Mantis oratoria* Linne, 1758
Houttuyn in Stoll, 1813: 79 *Mantis oratoria* Linne, 1758

Remarks. Stoll described "The Green Glass-Winged Mantis" from a female specimen that originated from the Coromandel Coast. Although Stoll did not note which cabinet he sourced the specimen from, it was most likely part of the Holthuizen collection, as Lichtenstein reportedly examined it for his 1796 auction catalog, when he matched the specimen to *Mantis hyalina* Fabricius, 1775. In 1802, Lichtenstein switched the designation of this specimen to *Mantis oratoria* Linne, 1758, to which Houttuyn agreed and listed this specimen as such within the register for the 1813 edition of Stoll's text. Mukherjee (2014: 37) found that "The Green Glass-Winged Mantis" is actually a representative of *Mantis religiosa* Linne, 1758– a common Cosmopolitan species that regularly occurs in southern India

Mantis religiosa Linne, 1758
= *Mantis hyalina* Lichtenstein, 1796
= *Mantis oratoria* Lichtenstein, 1802: 29 **partim**
= *Mantis oratoria* Houttuyn in Stoll, 1813

"The Green Glass-Winged Mantis" Stoll, 1787: 53, Plate XVII, Figure 64 = *Mantis religiosa* Linne, 1758

***Miomantis* Saussure, 1870**

"The Glazed-Winged Mantis" Stoll, 1787: 4-5, Plate I, Figure 2

Names attributed to Figure 2 between 1787-1813.
Stoll, 1787: 4-5 "The Glazed-Winged Mantis"
Lichtenstein, 1796: 79 *Mantis monacha* Fabricius, 1787
Lichtenstein, 1796: 81 *Mantis crystallina*
Manuel, 1797: 639 *Mantis vitrata*
Lichtenstein, 1802: 30 *Mantis monacha* Fabricius, 1787
Houttuyn in Stoll, 1813: 77 *Mantis forsicata*

Remarks. In 1787, Stoll described "The Glazed-Winged Mantis" from a male specimen that was collected from the Cape of Good Hope within the Dutch Cape colony. During this same year, Fabricius described *Mantis monacha* from a male specimen that had also been collected from the Cape of Good Hope. This specimen was part of the Niels Tønder Lund collection and was examined by Fabricius during one of his annual visits to Copenhagen. (The type specimen is currently deposited within the insect collection at the natural history Museum of Denmark in Copenhagen.) In 1796, Lichtenstein matched Stoll's specimen with *monacha*. Curiously, he also attributed the name *crystallina* to this same species. In 1797, Manuel republished Stoll's description of "The Glazed-Winged Mantis" and named this species *Mantis vitrata*, citing Stoll's illustration as his only reference. Lichtenstein listed *monacha* once more in 1802, citing both Fabricius and Stoll, but *crystallina* was no longer mentioned. When the final edition of Stoll's treatise was published posthumously in 1813, the figure for "The Glazed-Winged Mantis" was assigned an entirely new name by Houttuyn, *Mantis forsicata*.

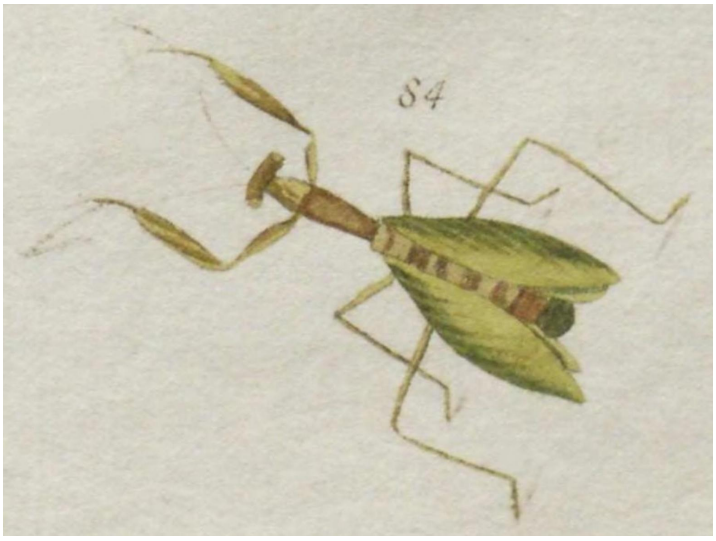
This last name has been consistently misspelled throughout the historic and modern literature since Saussure first referenced it in 1870. In 1813, Houttuyn printed the name thusly within his register (page 77):

From this script, it is easy to interpret the middle letter as an “F”. However, when we reference other names used by Houttuyn within this same register, it becomes clear that this letter is actually an “S”. For example, the following two names are used by Houttuyn in reference to two Phasmids within this same register:

The middle letter “F” within *flabelliformis* is printed with a shortened upper curve and a more pronounced perpendicular line through the shaft, whereas the letter “S” within *buprestoides* has a much more extended upper curve and a very subtle perpendicular impression on the shaft. When comparing Houttuyn’s name for figure 2 on Plate I, we can see that the middle letter matches the “S” within *buprestoides* and not the “F” within *flabelliformis*.

Miomantis monacha (Fabricius, 1787)
Mantis monacha Fabricius, 1787
= *Mantis crystallina* Lichtenstein, 1796
= *Mantis vitrata* Manuel, 1797
Mantis vitrata Olivier, 1792 **attributio erroris**
= *Mantis forsicata* Houttuyn in Stoll, 1813
Mantis forsicata Stoll, 1813 **attributio erroris**
Mantis forficata Saussure, 1870 *lapsus calami* of *forsicata* Houttuyn in Stoll, 1813

“The Glazed-Winged Mantis” Stoll, 1787: 4-5, Plate I, Figure 2 = *Miomantis monacha* (Fabricius, 1787)



"The Greenish Dwarf" Stoll, 1813: 66, Plate XXII, Figure 84

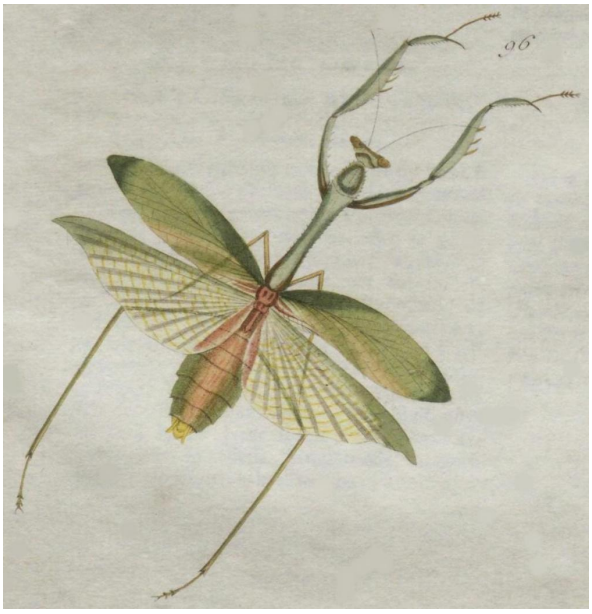
Names attributed to Figure 84 between 1787-1813.
Stoll, 1813: 66 "The Greenish Dwarf"
Houttuyn in Stoll, 1813: 78 *Mantis nana*

Remarks. Stoll's description and accompanying illustration for "The Greenish Dwarf" was published within the posthumous edition of his text from 1813. He documented that this specimen originated from Surinam but did not indicate who collected it or from what cabinet it was sourced. The South American type locality is seemingly in error and it is believed that the specimen actually derived from Dutch Loango-Angola in Equatorial Africa. Houttuyn was the only historical author who provided a Latin binomial for this species, naming it *Mantis nana* within the register of the final edition of Stoll's text. Beier (1935: 105) subsequently synonymized this species with *Miomantis fenestrata* (Fabricius, 1781).

Miomantis fenestrata (Fabricius, 1781)
Mantis fenestrata Fabricius, 1781
= *Mantis nana* Houttuyn in Stoll, 1813
Mantis nana Stoll, 1813 **attributio erroris**

"The Greenish Dwarf" Stoll, 1813: 66, Plate XXII, Figure 84 = *Miomantis fenestrata* (Fabricius, 1781)

***Oxyopsis* Caudell, 1904**



"The Little Green Mantis" Stoll, 1813: 73, Plate XXV, Figure 96

Names attributed to Figure 96 between 1787-1813.
Stoll, 1813: 73 "The Little Green Mantis"
Houttuyn in Stoll, 1813: 79 *Mantis rubicunda*

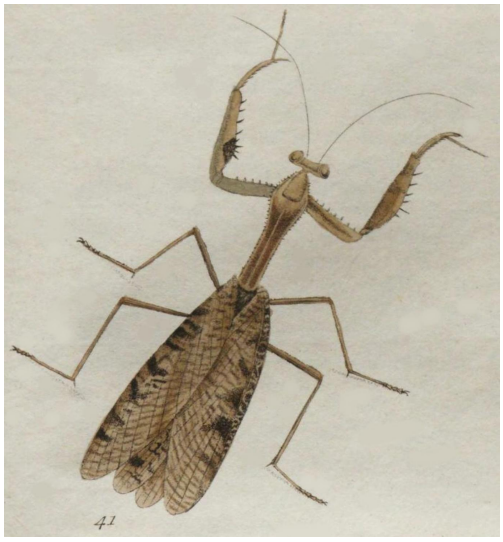
Remarks. Stoll's treatment of "The Little Green Mantis" was included in the posthumous edition of his work. He did not document the origin of this specimen but it is clearly South American. Stoll stated that this specimen was part of Calkoen's cabinet. We know from Engel (1939: 52) that Joan Calkoen (c. 1780-1812) was a young collector of insects and birds who lived in Amsterdam. His cabinet was reportedly sold in 1814 to an unidentified collector(s), rendering the current location of its natural history objects unknown. Thus, the female holotype of this species is lost, leaving the illustration from Stoll's text as the iconotype. Houttuyn assigned the name *Mantis rubicunda* to this species within his register for the final edition of Stoll's text. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802. Houttuyn's nomenclatural designation has remained consistent throughout the past two centuries and *rubicunda* is still considered to be a valid species.

Oxyopsis rubicunda (Houttuyn in Stoll, 1813)
Mantis rubicunda Houttuyn in Stoll, 1813
Mantis rubicunda Stoll, 1813 **attributio erroris**

The type species for *Oxyopsis* is *Mantis rubicunda* Stoll, 1813 (now *Mantis rubicunda* Houttuyn in Stoll, 1813)

"The Little Green Mantis" Stoll, 1813: 73, Plate XXV, Figure 96 = *Oxyopsis rubicunda* (Houttuyn in Stoll, 1813)

***Polyspilota* Burmeister, 1838**



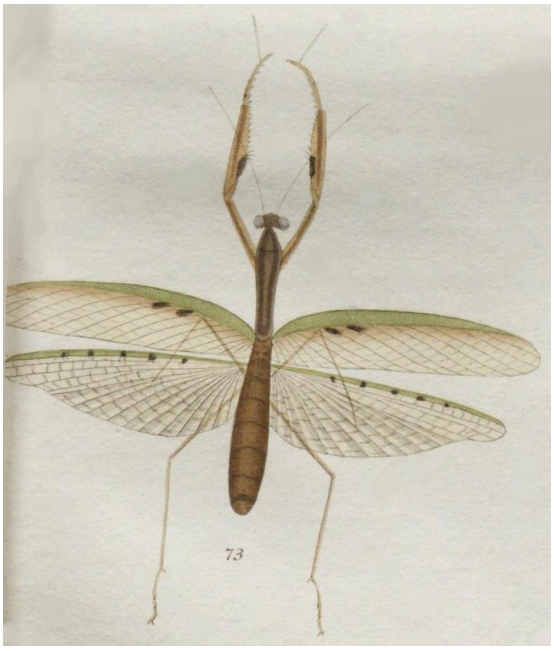
"The Variegated Mantis" Stoll, 1787: 34-35, Plate XI, Figure 41

Names attributed to Figure 41 between 1787-1813.
Stoll, 1787: 34-35 "The Variegated Mantis"
Manuel, 1797: 638 *Mantis variegata*
Lichtenstein, 1802: 30 *Mantis adspersa*
Palisot, 1805: 62 *Mantis variegata* Manuel, 1797
Houttuyn in Stoll, 1813: 78 *Mantis striata*

Remarks. In 1787, Stoll described "The Variegated Mantis" from a female specimen that he sourced from the Van Breukelerwaard cabinet. He documented that this specimen originated from the coast of Angola but did not indicate who the collector was. The type specimen has been lost, leaving only the illustration from Stoll's text as the iconotype. In 1797, Manuel published a redescription of this species and provided its first Latin binomial, *Mantis variegata*. In 1802, Lichtenstein generated a new synonym for this species, naming it *Mantis adspersa.* Palisot provided a very detailed, colored illustration of this species in 1805 and referred back to Manuel's original name, *variegata*, citing Stoll as his only reference. Lastly, in 1813, Houttuyn listed this specimen as *Mantis striata* within the register for the posthumous edition of Stoll's text.

Polyspilota aeruginosa (Goeze, 1778)
Mantis aeruginosa Goeze, 1778
= *Mantis variegata* Manuel, 1797
Mantis variegata Olivier, 1792 **attributio erroris**
= *Mantis adspersa* Lichtenstein, 1802
= *Mantis striata* Houttuyn in Stoll, 1813
Mantis striata Stoll, 1813 **attributio erroris**

"The Variegated Mantis" Stoll, 1787: 34-35, Plate XI, Figure 41 = *Polyspilota aeruginosa* (Goeze, 1778)



"The Dotted Mantis" Stoll, 1813: 59, Plate XX, Figure 73

Names attributed to Figure 73 between 1787-1813.
Stoll, 1813: 59 "The Dotted Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis pustulata*

Remarks. Stoll described "The Dotted Mantis" for what was to be the second edition of his text. He reported that this specimen originated from Ambon Island, which is part of the Maluku Islands within the former Dutch East Indies colony (modern day Indonesia). This collection location is in error, as the specimen is clearly of Afrotropical origin. Stoll indicated that this specimen was part of Van Breukelerwaard's cabinet but did not cite who the collector was. As such, the present location of the type specimen is entirely unknown, rendering the illustration from Stoll's text as the iconotype. In 1813, Houttuyn provided the Latin binomial *Mantis pustulata* for this species within the register of the final edition of Stoll's text. In 1871, Saussure placed this species within *Polyspilota* Burmeister, 1838.

Polyspilota aeruginosa (Goeze, 1778)
Mantis aeruginosa Goeze, 1778
= *Mantis pustulata* Houttuyn in Stoll, 1813
Mantis pustulata Stoll, 1813 **attributio erroris**

"The Dotted Mantis" Stoll, 1813: 59, Plate XX, Figure 73 = *Polyspilota aeruginosa* (Goeze, 1778)

***Pseudovates* Saussure, 1869**

"The Belted Mantis" Stoll, 1787: 29, Plate IX, Figure 32

Names attributed to Figure 32 between 1787-1813.
Stoll, 1787: 29 "The Belted Mantis"
Lichtenstein, 1796: 79 *Mantis cingulata* Drury, 1773
Manuel, 1797: 635 *Mantis cingulata* Drury, 1773
Lichtenstein, 1802: 27 *Mantis cingulata* Drury, 1773
Houttuyn in Stoll, 1813: 77 *Mantis cingulata* Drury, 1773

Remarks. In 1787, Stoll described a species that he called "The Belted Mantis". He documented that the female type specimen was sent to him from Surinam inside a bottle of Killdevil rum together with the specimen depicted in figure 31. Stoll advised that he deposited this specimen within the Holthuizen cabinet, as he is believed to have done with all other specimens that were sent to him. As such, the present condition and whereabouts of this specimen is unknown, leaving only the illustration of this species as the iconotype. In 1796, Lichtenstein designated Stoll's figure 32 as *cingulata*, referencing Gmelin (1790), who in turn cited Drury's original description of *cingulata* from 1773. In 1797, Manuel published a redescription of *cingulata* while citing Gmelin, Drury and Stoll before him. Lichtenstein repeated this designation in 1802, as did Houttuyn in 1813. Anderson (2021: 189-191) argued that the species treated by Stoll is in fact *Pseudovates stolli* (Saussure & Zehntner, 1894), which may be distinguished from *cingulata* by having simple mesothoracic tibiae and the costal area of the female forewings expanding distally then abruptly sloping inward to terminate into acute apical point.

Pseudovates stolli (Saussure & Zehntner, 1894)
Theoclytes stolli Saussure & Zehntner, 1894

= *Mantis cingulata* Manuel, 1797
= *Mantis cingulata* Lichtenstein, 1802
= *Mantis cingulata* Houttuyn in Stoll, 1813

"The Belted Mantis" Stoll, 1787: 29, Plate IX, Figure 32 = *Pseudovates stolli* (Saussure & Zehntner, 1894)

***Pseudoxyops* Saussure & Zehntner, 1894**

"The Yellow Corpulent Mantis" Stoll, 1813: 66, Plate XXII, Figure 83

Names attributed to Figure 83 between 1787-1813.
Stoll, 1813: 66 "The Yellow Corpulent Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis diluta*

Remarks. As part of his second batch of illustrated plates that were not published until well after his death, Stoll described a species from "Surinam" that he called "The Yellow Corpulent Mantis". The name refers to the gravid state of the female specimen with seemingly discolored pigmentation due to desiccation. Stoll noted that this specimen was part of Van Breukelerwaard's cabinet. Houttuyn assigned this specimen the Latin binomial of *Mantis diluta* within his register for the 1813 edition of Stoll's text. As with the other species that were newly treated in this final edition, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802. Houttuyn's nomenclatural designation has remained consistent throughout the past two centuries and *diluta* is still considered to be a valid species.

Pseudoxyops diluta (Houttuyn in Stoll, 1813)
Mantis diluta Houttuyn in Stoll, 1813
Mantis diluta Stoll, 1813 **attributio erroris**

"The Yellow Corpulent Mantis" Stoll, 1813: 66, Plate XXII, Figure 83 = *Pseudoxyops diluta* (Houttuyn in Stoll, 1813)

***Pseudoxypilus* Giglio-Tos, 1915**

"The Lacewing Mantis" Stoll, 1787: 40, Plate XII, Figure 46

Names attributed to Figure 46 between 1787-1813.
Stoll, 1787: 40 "The Lacewing Mantis"
Manuel, 1797: 638 *Mantis hemerobius*
Lichtenstein, 1802: 31 *Mantis neuroptera*
Houttuyn in Stoll, 1813: 78 *Mantis fenestrata*

Remarks. In 1787, Stoll described "The Lacewing Mantis" from a specimen that reportedly derived from Ceylon (modern day Sri Lanka) and was sourced from the Van Breukelerwaard cabinet. Stoll noted that "the neck is much longer than usual in these insects" and depicted the specimen within the accompanying illustration as having an elongated prozona. In 1797, Manuel assigned the Latin binomial *Mantis hemerobius* to this species. In 1802, Lichtenstein provided a separate name for this species, *Mantis neuroptera*. Finally, in 1813, Houttuyn generated a third name for this species by listing it as *Mantis fenestrata* within the register for the posthumous edition of Stoll's text. The type specimen from the Van Breukelerwaard collection has been lost, rendering the illustration from Stoll's text as the iconotype. As all three names refer back to the same iconotype, they are synonyms, with Manuel's name being the senior.

Mantis hemerobius was first assigned to *Miopteryx* Saussure, 1869 by Saussure (1871b: 273) and then to *Nanomantis* Saussure, 1871 by Kirby (1904: 256). In 1915, Giglio-Tos noted that *hemerobius* "may not be a Mantis, but, if it is a Mantis, it certainly does not belong to *Nanomantis* because it has a cone-shaped vertex." He went on to erect a new genus, *Pseudoxypilus*, for this species and pointed out that *hemerobius* "has never been found since Stoll onwards". In 1927, Giglio-Tos reiterated this sentiment by documenting that *hemerobius* is "known only from the insufficient figure and description given by Stoll". At present, there have been no recorded specimens that match *hemerobius* from Sri Lanka or southern India. Giglio-Tos (1915: 136) pointed out that some of the characters of Stoll's specimen resemble members of the African genus *Oxypilus* Serville, 1831. Although it is entirely possible that the documented collection locale of this specimen is in error, as we've seen with several other species treated by Stoll, the combination of characters described and illustrated for *hemerobius*

are not represented among any extant taxa. Thus, *hemerobius* cannot be assigned with certainty to any taxonomic group and is therefore *nomen dubium*.

Pseudoxypilus hemerobius (Manuel, 1797) **nomen dubium**
Mantis hemerobius Manuel, 1797
Mantis hemerobius Olivier, 1792 **attributio erroris**
= *Mantis neuroptera* Lichtenstein, 1802
= *Mantis fenestrata* Houttuyn in Stoll, 1813
Mantis fenestrata Stoll, 1813 **attributio erroris**

"The Lacewing Mantis" Stoll, 1787: 40, Plate XII, Figure 46 = *Pseudoxypilus hemerobius* (Manuel, 1797)

***Raptrix* Terra, 1995**

"The Little Brown Mantis" Stoll, 1787: 9, Plate III, Figure 10

Names attributed to Figure 10 between 1787-1813.
Stoll, 1787: 9 "The Little Brown Mantis"
Lichtenstein, 1796: 81 *Mantis truncata* Fabricius, 1793
Manuel, 1797: 635 *Mantis fusca*
Lichtenstein, 1802: 31 *Mantis truncata* Fabricius, 1793
Houttuyn in Stoll, 1813: 77 *Mantis truncata* Fabricius, 1793

Remarks. In 1787, Stoll described a species from "Surinam" that he called "The Little Brown Mantis". Six years later, in 1793, Fabricius described *Mantis truncata*, the description of which matches very well to Stoll's specimen. In 1796, Lichtenstein recognized this match, and listed Stoll's "Little Brown Mantis" as *truncata*. Manuel proposed a separate name for this species in 1797, *Mantis fusca*. He referred to this species as the "brown mantis with dilated abdomen" and republished Stoll's original 1787 description nearly verbatim. In 1802, Lichtenstein ignored the additional name brought forth by Manuel and continued to use the name *truncata*. Houttuyn followed Lichtenstein by registering *truncata* as the name for figure 10 within the final 1813 edition of Stoll's book. As both names refer back to the same iconotype, they are synonyms, with Fabricius' name being the senior. Saussure & Zehntner determined that *perspicua* Fabricius, 1787 represents the male conspecific of *truncata*. As *perspicua* is the earliest name, it takes priority over *truncata*.

Raptrix perspicua (Fabricius, 1787)
Mantis perspicua Fabricius, 1787
= *Mantis truncata* Fabricius, 1793
= *Mantis fusca* Manuel, 1797
Mantis fusca Olivier, 1792 **attributio erroris**

"The Little Brown Mantis" Stoll, 1787: 9, Plate III, Figure 10 = *Raptrix perspicua* (Fabricius, 1787)

"The Little Dark Mantis" Stoll, 1813: 57, Plate XIX, Figure 70

Names attributed to Figure 70 between 1787-1813.
Stoll, 1813: 57 "The Little Dark Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis fuscata*

Remarks. Stoll described "The Little Dark Mantis" for the second edition of his text. In this posthumous edition, Houttuyn assigned the Latin binomial *Mantis fuscata* to this species within his authored portion of the text's register. Stoll documented that this specimen came from Surinam and was part of Van Breukelerwaard's cabinet. We know from Stoll's original description of this species that he believed it was distinct. He writes:

> This resembles in some way the Mantis of Fig. 10, called the little brown Mantis, especially since it is also brought from Surinam; but it differs remarkably from it, by its blackish gray color & because the elytra are variegated, the wings are adorned with small white stripes. She is also a little smaller, but the stature is quite similar.

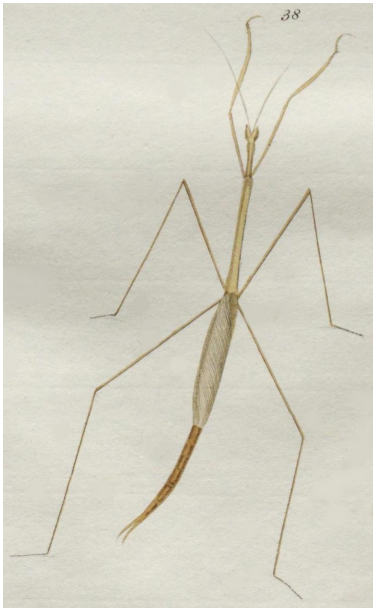
Direct comparison of the two figures reveals some divergent morphological characters in addition to chromatic differences. Figure 70 is proportionally more compact and robust with the pronotum being roughly equal in length to the abdomen, the forewings have more acute apices, and the hindwings are infuscate throughout. Although the two illustrated specimens are clearly related, figure 70 is superficially more aligned with *Acontista* Saussure, 1869, whereas figure 10 represents *Raptrix*. However, all *Acontista* females are greenish in coloration and have some degree of red pigmentation on the hindwing. Despite Stoll's illustration of figure 70 having a dirty olive tone, the description denotes that the coloration of the original specimen is "blackish gray". Indeed, the name chosen by Stoll for this species is "The Little Dark Mantis". Further, the wings are entirely infuscate with no trace of red pigmentation. (The "small white stripes," which are not featured in the illustration, are the pale-colored venules that are placed throughout the anal area of the hindwing membrane.) Thus, neither the description nor the illustration of *fuscata* possesses the diagnostic characters of *Acontista.* In 2004, Lombardo & Marletta

suggested a synonymy between *fuscata* and *perspicua* Fabricius, 1787, finding that the chromatic differences between the two species are accounted for by intraspecific variation.

Raptrix perspicua (Fabricius, 1787)
Mantis perspicua Fabricius, 1787
= *Mantis fuscata* Houttuyn in Stoll, 1813
Mantis fuscata Stoll, 1813 **attributio erroris**

"The Little Dark Mantis" Stoll, 1787: 57, Plate XIX, Figure 70 = *Raptrix perspicua* (Fabricius, 1787)

***Schizocephala* Serville, 1831**



"The Narrow-Horned Mantis" Stoll, 1787: 32-33, Plate X, Figure 38

Names attributed to Figure 38 between 1787-1813.
Stoll, 1787: 32-33 "The Narrow-Horned Mantis"
Lichtenstein, 1796: 81 *Mantis oculata* Fabricius, 1781
Manuel, 1797: 641 *Mantis stricta*
Lichtenstein, 1802: 20 *Mantis oculata* Fabricius, 1781
Latreille, 1807: 93 *Mantis fausta* Thunberg, 1784
Houttuyn in Stoll, 1813: 79 *Mantis oculata* Fabricius, 1781

Remarks. Stoll described "The Narrow-Horned Mantis" for the first edition of his text in 1787. He documented that the type specimen originated from Tranquebar on the Coromandel Coast but did not cite who collected the specimen or from which cabinet he sourced it from. In 1796 and again in 1802, Lichtenstein attributed this species to *Mantis oculata* Fabricius, 1781. Manuel redescribed this species in 1797 and assigned to it a new name, *Mantis stricta*. In 1807, Latreille confused this specimen with *Mantis fausta* Thunberg, 1784– a mantispid (Neuroptera). Houttuyn agreed with Lichtenstein and listed this species as *oculata* within the register of the final edition of Stoll's work.

Schizocephala bicornis (Linne, 1758)
Mantis bicornis Linne, 1758
=*Mantis oculata* Fabricius, 1781
= *Mantis stricta* Manuel, 1797
Mantis stricta Olivier, 1792 **attributio erroris**
= *Mantis fausta* Latreille, 1807 **partim**

"The Narrow-Horned Mantis" Stoll, 1787: 32-33, Plate X, Figure 38 = *Schizocephala bicornis* (Linne, 1758)

"The Narrow-Horned Chinese Mantis" Stoll, 1787: 43, Plate XIII, Figure 53

Names attributed to Figure 53 between 1787-1813.
Stoll, 1787: 43 "The Narrow-Horned Chinese Mantis"
Latreille, 1807: 93 *Mantis fausta* Thunberg, 1784
Houttuyn in Stoll, 1813: 79 *Mantis oculata* Fabricius, 1781

Remarks. Stoll described another specimen that he thought was a "variety" of the species depicted in figure 38, the only noted difference being its Chinese origin. Stoll reported that he sourced "The Narrow-Horned Chinese Mantis" from the "rich collection of Mr. Holthuizen." In 1807, Latreille attributed this specimen to *fausta*, as he did for the other specimen depicted in figure 38. Houttuyn listed this figure under *oculata* within the register for the posthumous edition of Stoll's work.

"The Narrow-Horned Mantis" Stoll, 1787: 32-33, Plate X, Figure 38 = *Schizocephala bicornis* (Linne, 1758)

***Sphodromantis* Serville, 1831**

"Nymph of a Cape Mantis" Stoll, 1787: 11, Plate IV, Figure 13

Names attributed to Figure 13 between 1787-1813.
Stoll, 1787: 11 "Nymph of a Cape Mantis"
Lichtenstein, 1802: 29-30 *Mantis ochroptera* Lichtenstein, 1796
Houttuyn in Stoll, 1813: 78 "Nympha"

Remarks. Stoll treated an immature specimen within the first edition of his text that he referred to as "The Nymph of a Cape Mantis". He documented that he had received this specimen from the Cape of Good Hope along with other insects that had been preserved in arrack– a liquor that is distilled from coconut palms or rice. Stoll speculated that the specimen was originally green in coloration and that it had turned yellowish-brown due to the alcohol exposure. This specimen was deposited within the Holthuizen collection and later reviewed by Lichtenstein, who did not immediately provide a proper name for the species due to it being a juvenile. The present whereabouts and condition of this specimen is entirely unknown. In 1796, Lichtenstein assigned the Latin binomial *Mantis ochroptera* to an Indian species that Stoll depicted on Plate VI, Figure 22 of the first edition of his text. Several years later, in 1802, Lichtenstein published a brief description of *ochroptera* and listed the nymph of Stoll's figure 13 as a "larva" of this species with a query. Given the more robust and wider pronotum of the nymph that is depicted in figure 13, in conjunction with its laterally dilated abdomen, the specimen is a much closer match to *Sphodromantis* Stal, 1871 than it is to *Deiphobe* Stal, 1877. Stoll also wrote that "the figure is very similar to a species which is very common at the Cape". Indeed, present day specimens of *Sphodromantis gastrica* (Stal, 1858) that inhabit the region around Cape Town, South Africa share all of the characters that are illustrated and described by Stoll for "The Nymph of a Cape Mantis". Houttuyn did not list a binomial for this species within his register for the final edition of Stoll's text, referring to it only as "Nympha" – a designation that he used for all of the juvenile specimens depicted by Stoll.

Sphodromantis gastrica (Stal, 1858)
Mantis gastrica Stal, 1858

= *Mantis ochroptera* Lichtenstein, 1802 **partim**

“Nymph of a Cape Mantis” Stoll, 1787: 11, Plate IV, Figure 13 = *Sphodromantis gastrica* (Stal, 1858)

***Stagmatoptera* Burmeister, 1838**

"The Fat Belly" Stoll, 1787: 28, Plate IX, Figure 31

Names attributed to Figure 31 between 1787-1813.
Stoll, 1787: 28 "The Fat Belly"
Lichtenstein, 1796: 79 *Mantis urbana* Fabricius, 1775
Manuel, 1797: 640 *Mantis abdominalis*
Lichtenstein, 1802: 27-28 *Mantis urbana* Fabricius, 1775
Houttuyn in Stoll, 1813: 77 *Mantis birivia*

Remarks. Stoll described a unique specimen in 1787 that he called "The Fat Belly". He documented that this female specimen was sent to him from Surinam inside a bottle of Killdevil rum together with the specimen depicted in figure 32. Stoll advised that he deposited this specimen within the Holthuizen cabinet. In 1796, Lichtenstein drew connection between this species and *Mantis urbana* Fabricius, 1775, asserting that Stoll's female specimen was conspecific with the male specimen of Fabricius. This conjecture was seemingly based upon Lichtenstein's interpretation of the forewing maculation of *urbana* being similar to that of Stoll's specimen– the obvious size discrepancy and collection location differences between the two specimens notwithstanding. In 1797, Manuel provided a redescription of this species and named it *Mantis abdominalis* after its large abdomen. Lichtenstein continued using the name *urbana* in 1802, this time citing the species as being from India. When the final edition of Stoll's treatise was published posthumously in 1813, Houttuyn introduced *Mantis birivia* as an entirely new name for this species.

Saussure transferred *urbana* to *Creobroter* Serville, 1839 in 1871 and Manuel's *abdominalis* was transferred by Kirby to *Stagmatoptera* in 1904. Rodrigues & Cancello (2016: 70-71) pointed out

that no additional specimens of *abdominalis* have been found for over two centuries. It is the present author's opinion that *abdominalis* represents an extinct lineage of *Stagmatoptera* that has a more distant phylogenetic relationship from its congeners, given its divergent appearance.

Stagmatoptera abdominalis (Manuel, 1797) **gx- presumed extinct**
Mantis abdominalis Manuel, 1797
Mantis abdominalis Olivier, 1792 **attributio erroris**
= *Mantis urbana* Lichtenstein, 1802
= *Mantis birivia* Houttuyn in Stoll, 1813
Mantis birivia Stoll, 1813 **attributio erroris**

"The Fat Belly" Stoll, 1787: 28, Plate IX, Figure 31 = *Stagmatoptera abdominalis* (Manuel, 1797)

"The Devout Mantis" Stoll, 1787: 51-52, Plate XVII, Figure 62

Names attributed to Figure 62 between 1787-1813.
Stoll, 1787: 51-52 "The Devout Mantis"
Lichtenstein, 1796: 79 *Mantis precaria* Linne, 1758
Manuel, 1797: 628 *Mantis precaria* Linne, 1758
Lichtenstein, 1802: 26 *Mantis precaria* Linne, 1758
Latreille, 1807: 93 *Mantis precaria* Linne, 1758
Houttuyn in Stoll, 1813:78 *Mantis precaria* Linne, 1758

Remarks. In 1787, Stoll described a species that he referred to as "The Devout Mantis". He noted that this female specimen came from Surinam but did not mention who collected it or where it was deposited. It is likely that Dr. Renaud, who sent Stoll many specimens from Dutch Surinam, was the source of this specimen and that it was subsequently deposited into the Holthuizen collection along with the other Mantodea material that Stoll personally received. Although Stoll did not provide a Latin binomial for this species, he cited Linne's *Mantis precaria* from 1758 within his description. Lichtenstein listed Stoll's figure 62 under *precaria* in 1796 and 1802, as did Manuel in 1797, Latreille in 1807, and Houttuyn in 1813. "The Devout Mantis" was considered to represent *precaria* for several decades until Burmeister recognized it as a distinct species, *supplicaria*, in 1838. As *precaria* was the only described species of *Stagmatoptera* for seventy-five years, several different species were confounded under this name within the early literature.

Stagmatoptera supplicaria (Burmeister, 1838)
Mantis (Acontistes) supplicaria Burmeister, 1838
= *Mantis precaria* Manuel, 1797 **partim**
= *Mantis precaria* Lichtenstein, 1802 **partim**
= *Mantis precaria* Latreille, 1807 **partim**

= *Mantis precaria* Houttuyn in Stoll, 1813

"The Devout Mantis" Stoll, 1787: 51-52, Plate XVII, Figure 62 = *Stagmatoptera supplicaria* Burmeister, 1838

"The Way-Showing Mantis" Stoll, 1787: 52, Plate XVII, Figure 63

Names attributed to Figure 63 between 1787-1813.
Stoll, 1787: 52 "The Way-Showing Mantis"
Lichtenstein, 1796: 79 *Mantis hodegetica*
Manuel, 1797: 641 *Mantis indicator*
Lichtenstein, 1802: 26-27 *Mantis hodegetica* Lichtenstein, 1796
Houttuyn in Stoll, 1813:79 *Mantis sancta* Fabricius, 1787

Remarks. In 1787, Stoll described a species from "Surinam" that he called "The Way-Showing Mantis". Stoll made no mention of who procured the female specimen for him but, as with the other specimens of no documented collector from Dutch Surinam, it is believed to have been collected by Dr. Renaud. The voucher specimen became part of the Holthuizen collection, as noted by Lichtenstein, who assigned the Latin binomial *Mantis hodegetica* to this species in 1796. In 1797, Manuel introduced another name for this species, *Mantis indicator*, citing Stoll as his only reference. Manuel postulated that *indicator* resembles Stoll's Devout Mantis (figure 62) and may only be a "variety" of this species. Lichtenstein used the name *Mantis hodegetica* once more in 1802, when he briefly redescribed Stoll's figure. When the final edition of Stoll's treatise was published posthumously in 1813, Houttuyn ignored the previous authors and cited figure 63 within his register as *Mantis sancta* Fabricius, 1787. The present condition and whereabouts of the specimens from the Holthuizen collection are unknown, leaving only the illustration of this species as the iconotype.

Lichtenstein suggested *Mantis carolina* Linne, 1763 as a possible synonym of this species with a query in 1796 and with the query removed in 1802. This suggestion was not accepted by succeeding authors, as there is great morphological disparity between Stoll's species from Surinam and *carolina*, which is distributionally restricted to North America. Houttuyn's

assignment of this specimen to *sancta* is also unfounded, as *sancta* was subsequently determined to be synonymous with *Mantis religiosa* (Linne, 1758), which is an entirely distinct species that does not occur in South America and is only distantly related to *Stagmatoptera*. Regarding the two remaining epithets, *hodegetica* and *indicator*, both names refer to the same iconotype and are therefore synonyms, with Lichtenstein's first usage of *hodegetica* being the senior by one year. However, per Opinion 1820 of the ICZN, the names from Lichtenstein's earlier work have been suppressed so the second usage of this name from 1802 becomes the actual introduction date of this epithet. Therefore, *indicator* is the senior synonym between the two names.

There are just two known species of *Stagmatoptera* that occur in Surinam– *supplicaria* and *femoralis* Saussure & Zehntner, 1894. Females of *supplicaria* have a large habitus, elongated pronotum and a prominent circular maculation below the forewing stigma, whereas *femoralis* females are smaller, have a more robust pronotum and a comparatively very small maculation below the forewing stigma. Of these two, the illustration and description of Stoll's "Way-Showing Mantis" completely matches *femoralis*, save the missing stigma maculation. In regard to this issue, Rodrigues & Cancello (2016: 71-72) noted:

> Specimens identified as *S. indicator* in collections were females of other species initially preserved in ethanol, and later pinned. Because they were first preserved in ethanol, they lost most of their original color along with the spot on the stigma, the lack of which is the distinguishing characteristic of *S. indicator*. However, a more careful examination shows that the spot is present though nearly completely erased. It is possible that the specimen studied by Stoll and used to describe this species also presented this problem; however, this is mere speculation.

We know from the other species treatments by Stoll that he had specimens sent to him from Surinam within a bottle of Killdevil rum– a beverage that was distilled throughout the colonial Caribbean and Dutch Surinam which contained an exceptionally high alcohol content. It is quite likely that other specimens were sent to Stoll inside bottles of rum or arrack for the sake of preserving them during their long voyage back to Europe. As such, the stigma maculation of "The Way-Showing Mantis" may have faded away just as Rodrigues & Cancello speculated. In either case, more recently collected specimens of *Stagmatoptera* exhibit this same condition and align very well with Stoll's figure, which further supports the idea that a faded stigma is not species determinative in itself.

With the principle of parsimony in mind, it follows that Stoll's figure represents a female *femoralis* with a faded stigma rather than a unique species of *Stagmatoptera* that has never been collected or recorded since, thus establishing a synonymy between *femoralis* and *indicator*. Since *indicator* has been used as a valid name as recently as 2002 (Ehrmann, 2002: 329), the condition of ICZN Article 23.9.1.1 is not met, which demotes *femoralis* to a junior synonym.

Kirby introduced two different misspellings of *hodegetica*, citing this species as "bodegetica" in 1904 and "hogeditica" in 1910. The first spelling error was replicated by Terra (1995: 64) and continues to remain present within the modern literature.

Stagmatoptera indicator (Manuel, 1797)

Mantis indicator Manuel, 1797
Mantis indicator Olivier, 1792 **attributio erroris**
= *Mantis hodegetica* Lichtenstein, 1802
= *Mantis sancta* Houttuyn in Stoll, 1813
= *Stagmatoptera femoralis* Saussure & Zehntner, 1894 **n. syn.**
Mantis bodegetica Kirby, 1904 *lapsus calami* of *hodegetica* Lichtenstein, 1802
Mantis hogeditica Kirby, 1910 *lapsus calami* of *hodegetica* Lichtenstein, 1802

"The Way-Showing Mantis" Stoll, 1787: 52, Plate XVII, Figure 63 = *Stagmatoptera indicator* (Manuel, 1797)

"The Red and White-Eyed Mantis" Stoll, 1787: 55, Plate XVIII, Figure 66

Names attributed to Figure 66 between 1787-1813.
Stoll, 1787: 55 "The Red and White-Eyed Mantis"
Manuel, 1797: 639 *Mantis ocellata*
Lichtenstein, 1802: 28 *Mantis obsecraria*
Houttuyn in Stoll, 1813: 78 *Mantis annulata*

Remarks. Stoll described "The Red and White-Eyed Mantis" within the first edition of his text. He noted that this specimen was a female that originated from the Cape of Good Hope (Dutch Cape colony). It is evident from the description and illustration, however, that this specimen is actually a male. The specimen's documented origin is in error, as no South African species shares the characters depicted for this species. Rather, it is believed to have derived from the Dutch Surinam colony of South America. Stoll does not list the collector of this specimen or from what cabinet he sourced it from but Lichtenstein noted that it was part of the Van Breukelerwaard collection. In 1797, Manuel provided the Latin binomial *Mantis ocellata* for this species. Lichtenstein provided his own name, *Mantis obsecraria*, for this species in 1802. In 1813, Houttuyn suggested a third name, *Mantis annulata*, to represent this species. Kirby synonymized all three of these names under *precaria* in 1904.

Stagmatoptera precaria (Linne, 1758)
Mantis precaria Linne, 1758
= *Mantis ocellata* Manuel, 1797
Mantis ocellata Olivier, 1792 **attributio erroris**
= *Mantis obsecraria* Lichtenstein, 1802
= *Mantis annulata* Houttuyn in Stoll, 1813
Mantis annulata Stoll, 1813 **attributio erroris**

"The Red and White-Eyed Mantis" Stoll, 1787: 55, Plate XVIII, Figure 66 = *Stagmatoptera precaria* (Linne, 1758)

"The Great Green Mantis" Stoll, 1813: 73, Plate XXV, Figure 95

Names attributed to Figure 95 between 1787-1813.
Stoll, 1813: 73 "The Great Green Mantis"
Houttuyn in Stoll, 1813: 79 *Mantis rogatoria*

Remarks. Stoll's treatment of "The Great Green Mantis" was included in the posthumous edition of his work. He did not document the origin of this specimen but it is clearly of South American origin (most likely from Portuguese Brazil). Stoll stated that this specimen was part of the "beautiful cabinet of the famous Mr. J. Calkoen". As with the other natural history objects that were part of this cabinet, the current location of this specimen is unknown. Houttuyn assigned the name *Mantis rogatoria* to this species within his register for the final edition of Stoll's text. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802. In 1904, Kirby synonymized *rogatoria* with *precaria* Linne, 1758.

Stagmatoptera precaria (Linne, 1758)
Mantis precaria Linne, 1758
= *Mantis rogatoria* Houttuyn in Stoll, 1813
Mantis rogatoria Stoll, 1813 **attributio erroris**

"The Great Green Mantis" Stoll, 1813: 73, Plate XXV, Figure 95 = *Stagmatoptera precaria* (Linne, 1758)

***Stagmomantis* Saussure, 1869**

"The Devot Lace Mantis" Stoll, 1813: 70, Plate XXIV, Figure 91

Names attributed to Figure 91 between 1787-1813.
Stoll, 1813: 70 "The Devot Lace Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis carolina* Linne, 1763

Remarks. The specimen depicted in figure 91 was considered by Stoll to be the conspecific female of the species illustrated in figure 92. Stoll indicated that both of these specimens originated from New Georgia or Virginia– two former British colonies in North America that declared independence in 1776, eleven years prior to Stoll's writing. Stoll did not document who collected these specimens but noted that they were both sourced from the Van Breukelerwaard collection. As there was no Dutch colony in the referent region, it can only be assumed that these specimens were traded or purchased by Van Breukelerwaard. Lastly, Stoll noted that this species "might belong" to Linne's *Mantis carolina*. Houttuyn charted this species as such within his register for the final edition of Stoll's text.

Stagmomantis carolina (Linne, 1763)
Mantis carolina Linne, 1763

"The Devot Lace Mantis" Stoll, 1813: 70, Plate XXIV, Figure 91 *Stagmomantis carolina* (Linne, 1763

"The Devot Lace Mantis" Stoll, 1813: 71, Plate XXIV, Figure 92

Names attributed to Figure 92 between 1787-1813.
Stoll, 1813: 71 "The Devot Lace Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis carolina* Linne, 1763

Remarks. The specimen depicted in figure 92 was considered by Stoll to be the conspecific male of "The Devot Lace Mantis" illustrated in figure 91. He wrote: "There is so little difference in shape & size between this & the preceding one that we can, with reason, take this one, which is a Male, for the peer of the previous one, which is a Female." It was later learned that both of these illustrations represent females, as this species demonstrates marked sexual dimorphism with highly variable pigmentation patterns. Houttuyn also charted this figure as *Mantis carolina* within his register for the final edition of Stoll's text. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel assigned names to this species in Stoll's stead between 1796-1802.

Stagmomantis carolina (Linne, 1763)
Mantis carolina Linne, 1763

"The Devot Lace Mantis" Stoll, 1813: 71, Plate XXIV, Figure 92 *Stagmomantis carolina* (Linne, 1763

***Tenodera* Burmeister, 1838**

"The Narrow-Winged Striped Mantis" Stoll, 1787: 13, Plate V, Figure 16

Names attributed to Figure 16 between 1787-1813.
Stoll, 1787: 13 "The Narrow-Winged Striped Mantis"
Lichtenstein, 1796: 80 *Mantis leptelytra*
Manuel, 1797: 640 *Mantis fasciata*
Lichtenstein, 1802: 20 *Mantis leptelytra* Lichtenstein, 1796
Latreille, 1807: 93 *Mantis fausta* Thunberg, 1784
Houttuyn in Stoll, 1813: 79 *Mantis attenuata*

Remarks. In 1787, Stoll described "The Narrow-Winged Striped Mantis" from a male specimen that he sourced from the Holthuizen cabinet. Stoll wrote that this specimen originated from Surinam. However, with the genus designation of this specimen clearly being that of *Tenodera*, the surmised South American derivation is precluded. Given that all of the other Mantodea specimens of Holthuizen cabinet either originated from Dutch Surinam or Dutch India, this specimen more likely derived from southern India. In 1796, Lichtenstein analyzed this same specimen during the auction of Holthuizen collection and assigned the "nobis" binomial *Mantis leptelytra* to this species. In 1797, Manuel published a near verbatim redescription of Stoll's specimen and provided a new binomial for this species, *Mantis fasciata*. Lichtenstein addressed this species once more in 1802 and continued to use his *leptelytra* epithet. For the posthumous edition of Stoll's text, Houttuyn used an entirely new name for this species, *Mantis attenuata.* As all three of these names refer to the same iconotype from Stoll's original work, they are synonyms. Of the three binomials assigned to this species, *leptelytra* takes precedence. However, Lichtenstein's 1796 work has been suppressed under the plenary powers of the ICZN so *fasciata* becomes the senior synonym.

Tenodera fasciata (Manuel, 1797)

Mantis fasciata Manuel, 1797

Mantis fasciata Olivier, 1792 **attributio erroris**

= *Mantis leptelytra* Lichtenstein, 1802

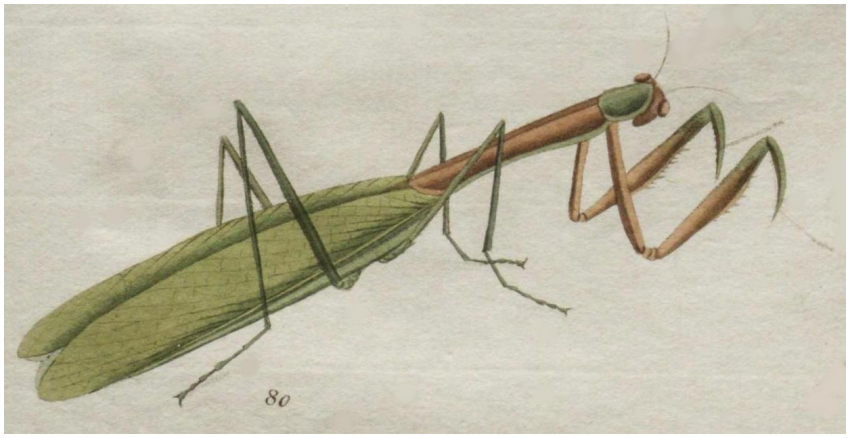
= *Mantis fausta* Latreille, 1807 **partim**

= *Mantis attenuata* Houttuyn in Stoll, 1813

Mantis attenuata Stoll, 1813 **attributio erroris**

The type species for *Tenodera* is *Mantis fasciata* Olivier, 1792 (now *Mantis fasciata* Manuel, 1797)

"The Narrow-Winged Striped Mantis" Stoll, 1787: 13, Plate V, Figure 16 = *Tenodera fasciata* (Manuel, 1797)



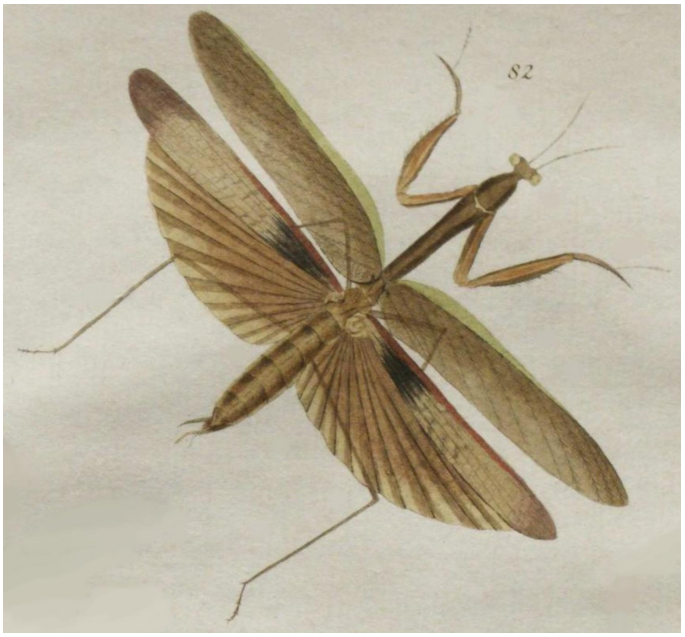
"The Praying Mantis" Stoll, 1813: 63-64, Plate XXI, Figure 80

Names attributed to Figure 80 between 1787-1813.
Stoll, 1813: 63-64 "The Praying Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis religiosa* Linne, 1758

Remarks. Stoll states that the specimen depicted in figure 80 "fits perfectly with the species, which Mr. Linnaeus proposed under the name of *Mantis religiosa*, residing according to him in Africa & also in Austria." He reports, however, that the specimen was obtained from Surinam and not the Old World. Stoll also seemingly contradicts himself by citing character differences between this specimen and the traditionally conceived *religiosa*, which would suggest that the two species do not perfectly correspond. He writes that, "in Europe there are similar ones, which are smaller, but of similar shape, but the wings are less green". Stoll does not provide any further information concerning who collected this specimen or what cabinet it was sourced from. As with the other specimens that suffered a similar dearth of data, it was likely part of the Holthuizen collection and its origins were likely confounded due to poor record keeping. Given the morphological dimensions of the featured specimen, it is most likely a member of *Tenodera* and as such it likely derived from one of the other Dutch colonies in the Afrotropical or Oriental realm.

Tenodera **indet.**
= *Mantis religiosa* Houttuyn in Stoll, 1813

"The Praying Mantis" Stoll, 1813: 63-64, Plate XXI, Figure 80 = *Tenodera*



"The Brown Mantis" Stoll, 1813: 65-66, Plate XXII, Figure 82

Names attributed to Figure 82 between 1787-1813.
Stoll, 1813: 65-66 "The Brown Mantis"
Houttuyn in Stoll, 1813: 78 *Mantis aridifolia*

Remarks. Stoll described a male specimen from the Dutch India colony that he called "The Brown Mantis". He reported that this specimen was sourced from the Holthuizen collection but did not note who the collector was (as it was likely not recorded on the label). Houttuyn assigned to this species the Latin binomial *Mantis aridifolia* within his register for the final edition of Stoll's text. Because this species treatment was not made available until 1813, neither Lichtenstein nor Manuel had the opportunity to assign names to this species in Stoll's stead between 1796-1802.

Tenodera aridifolia (Houttuyn in Stoll, 1813)
Mantis aridifolia Houttuyn in Stoll, 1813
Mantis aridifolia Stoll, 1813 **attributio erroris**

"The Brown Mantis" Stoll, 1813: 65-66, Plate XXII, Figure 82 = *Tenodera aridifolia* (Houttuyn in Stoll, 1813)

***Theopompa* Stal, 1877**

"The Brown-Big-Eyed Mantis" Stoll, 1787: 19-20, Plate VI, Figure 23

Names attributed to Figure 23 between 1787-1813.
Stoll, 1787: 19-20 "The Brown-Big-Eyed Mantis"
Lichtenstein, 1796: 80 *Mantis grisea* Fabricius, 1793
Lichtenstein, 1802: 29 *Mantis grisea* Fabricius, 1793
Houttuyn in Stoll, 1813: 77 *Mantis oratoria* Linne, 1758

Remarks. Stoll described "The Brown-Big-Eyed Mantis" within the first edition of his text from a female specimen that originated from the Coromandel Coast of India. This specimen was reportedly sourced from the Holthuizen collection with an undocumented collector. In 1796, Lichtenstein attributed a Chinese specimen to *Mantis grisea* Fabricius, 1793 and cited Stoll's figure 23 as a reference. He followed this up in 1802 when he again cited this same figure under *grisea*. Although there are some superficial similarities between the two species, *grisea* females possess much shorter wings and have more sinuate pronotal margins and also do not occur outside of the Neotropical region. In 1797, Manuel published a near verbatim redescription of "The Brown-Big-Eyed Mantis" from Stoll, although he did not reference any of Stoll's figures. He named this species *Mantis ophthalmica*. Finally, in 1813, Houttuyn assigned this species to *Mantis oratoria* Linne, 1758– which is quite obviously in error.

Theopompa ophthalmica (Manuel, 1797)
Mantis ophthalmica Manuel, 1797
Mantis ophthalmica Olivier, 1792 **attributio erroris**
= *Mantis grisea* Lichtenstein, 1802
= *Mantis oratoria* Houttuyn in Stoll, 1813

"The Brown-Big-Eyed Mantis" Stoll, 1787: 19-20, Plate VI, Figure 23 = *Theopompa ophthalmica* (Manuel, 1797)

***Vates* Burmeister, 1838**

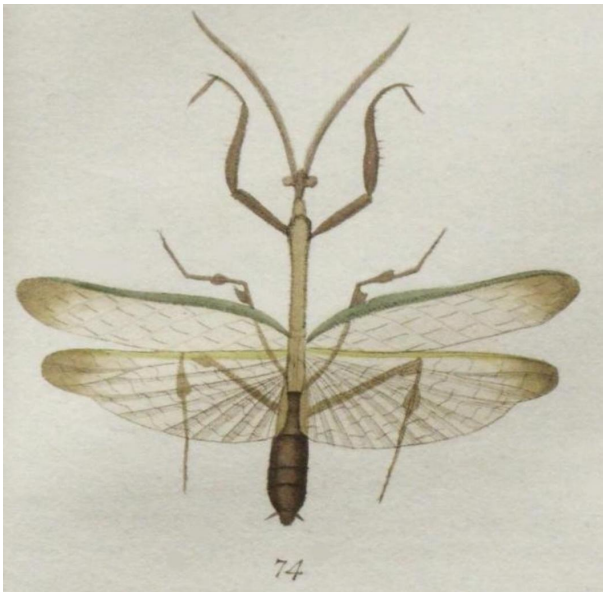
"The Leafed Mantis" Stoll, 1787: 55-56, Plate XVIII, Figure 67

Names attributed to Figure 67 between 1787-1813.
Stoll, 1787: 55-56 "The Leafed Mantis"
Lichtenstein, 1802: 24 *Mantis foliata*
Houttuyn in Stoll, 1813: 78 *Mantis subfoliata*

Remarks. Stoll described "The Leafed Mantis" within the first edition of his text from 1787. He noted that this specimen originated from Bengal (modern day Bangladesh and northeastern India) but did not indicate who the collector was or from which cabinet he sourced the specimen. In 1798, Fabricius described *Mantis lobata* from French Guiana. The description of this species perfectly aligns with Stoll's treatment of "The Leafed Mantis". In 1802, Lichtenstein redescribed Stoll's specimen and named it *Mantis foliata*. Houttuyn then provided a new synonym for this species by listing it as *Mantis subfoliata* within the register for the posthumous edition of Stoll's text. The type location of Stoll's specimen seems to be in error, as this species is clearly of Neotropical origin.

Vates lobata (Fabricius, 1798)
Mantis lobata Fabricius, 1798
= *Mantis foliata* Lichtenstein, 1802
= *Mantis subfoliata* Houttuyn in Stoll, 1813
Mantis subfoliata Stoll, 1813 **attributio erroris**

"The Leafed Mantis" Stoll, 1787: 55-56, Plate XVIII, Figure 67 = *Vates lobata* (Fabricius, 1798)



"The Little Black Buttock" Stoll, 1813: 59-60, Plate XX, Figure 74

Names attributed to Figure 74 between 1787-1813.
Stoll, 1813: 59-60 "The Little Black Buttock"
Houttuyn in Stoll, 1813: 78 *Mantis sphingicornis*

Remarks. Stoll described a species that he called "The Little Black Buttock" for the second edition of his text. He noted that this specimen was part of Van Breukelerwaard's cabinet and that it originated from Ambon Island, which is part of the Maluku Islands within the former Dutch East Indies colony (modern day Indonesia). The collector of this specimen was not recorded. Houttuyn provided the Latin binomial *Mantis sphingicornis* for this species within the register of the second edition of Stoll's text that was published posthumously in 1813. As with several other species that were treated by Stoll, the type location of this specimen seems to be in error, as it is of Neotropical origin. In 1927, Giglio-Tos synonymized this species with *Vates lobata* (Fabricius, 1798) but it is clearly a separate taxon, given the salient lobation of the mesothoracic legs, which *lobata* entirely lacks per its original description.

Vates sphingicornis (Houttuyn in Stoll, 1813) **stat. rev.**
Mantis sphingicornis Houttuyn in Stoll, 1813
Mantis sphingicornis Stoll, 1813 **attributio erroris**

"The Little Black Buttock" Stoll, 1813: 59-60, Plate XX, Figure 74 = *Vates sphingicornis* (Houttuyn in Stoll, 1813)

***Zoolea* Serville, 1839**

"The Lobe Leg" Stoll, 1787: 26-27, Plate VIII, Figure 30

Names attributed to Figure 30 between 1787-1813.
Stoll, 1787: 26-27 "The Lobe Leg"
Lichtenstein, 1796: 79 *Mantis undata* Fabricius, 1793
Manuel, 1797: 637 *Mantis lobipes*
Lichtenstein, 1802: 23 *Mantis lobipes* Manuel, 1797
Houttuyn in Stoll, 1813: 77 *Mantis macroptera*

Remarks. In 1787, Stoll described a specimen that he referred to as "The Lobe Leg" in reference to the salient lobes present on the specimen's meso/metathoracic legs. Stoll wrote that he had received this specimen from Tranquebar on the Coromandel Coast of India and that it was deposited in Holthuizen's collection. As figure 30 clearly represents a member of *Zoolea*, which is a genus that is precinctive to the Neotropical realm, we know that the Dutch India type location is one of several examples of erroneous documentation by Stoll (or possibly the collector of the specimen, which was not recorded). This same conclusion has also been reached by Roy & Ehrmann (2009: 8). Fabricius described *Mantis undata* in 1793 from a single female specimen that was collected from Tranquebar, India. Three years later, in 1796, Lichtenstein gained access to the Holthuizen collection that contained "The Lobe Leg" type specimen and posited that Stoll's specimen was the "somewhat different" male form of *undata*– a determination that was seemingly based entirely upon the erroneous collection location that was recorded by Stoll. In 1797, Manuel redescribed this species and named it *Mantis lobipes*. Lichtenstein later used Manuel's *lobipes* epithet to refer to this species in his text from 1802 but continued to suggest that it was the conspecific female of *undata*. He hypothesized that the dark coloration of *undata* was perhaps due to the specimen being stored in wine. Houttuyn introduced *macroptera* as a new name for this species within the second edition of Stoll's text from 1813.

Serville erected *Zoolea* in 1839 for which to include *lobipes* and Fabricius' *undata* was transferred to *Popa* Serville, 1839 by Bates (1863: 473). Given the opaque, contrastingly striped forewings, the bifurcated ocellar process and shortened antennae of the specimen depicted in Stoll's figure 30, it is clear that this species is of a female *Zoolea* from the Neotropical realm and not a male *Popa* from the Afrotropical realm as Lichtenstein proclaimed.

Zoolea lobipes (Manuel, 1797)
Mantis lobipes Manuel, 1797
Mantis lobipes Olivier, 1792 **attributio erroris**
= *Mantis macroptera* Houttuyn in Stoll, 1813
Mantis macroptera Stoll, 1813 **attributio erroris**

The type species for *Zoolea* is *Mantis lobipes* Olivier, 1792 (now *Mantis lobipes* Manuel, 1797)

"The Lobe Leg" Stoll, 1787: 26-27, Plate VIII, Figure 30 = *Zoolea lobipes* (Manuel, 1797)

species incertae sedis

"The Dwarf" Stoll, 1813: 73, Plate XXV, Figure 97

Names attributed to Figure 97 between 1787-1813.
Stoll, 1813: 73 "The Dwarf"
Houttuyn in Stoll, 1813: 77 *Phasma acicularis*

Remarks. Stoll briefly described this species for the final edition of his text and called it "The Dwarf". He wrote that this name designation was in contrast to "The Giant" (*Phasma gigas*) featured on Plate I of the first edition of his work. Stoll documented that he sourced this specimen from the cabinet of Van Breukelerwaard. There is no country of origin listed for this species but there is reason to believe that it is Neotropical and thus probably originated from Dutch Surinam. The present location and condition of this specimen is unknown, rendering the illustration from Stoll's text as the iconotype. In 1813, Houttuyn assigned to this species the Latin binomial *Phasma acicularis*, placing it among Phasmatodea. It was later determined by Gray (1835: 44) that this species belongs within Mantodea. The overall habitus characters, apterous condition and smooth pronotal margins depicted for the iconotype match well with adult females and mature nymphs of *Macromusonia* Hebard, 1922 and *Paramusonia* Rehn, 1904. It is postulated that *acicularis* represents an adult female of *Macromusonia major* (Saussure & Zehntner, 1894), which would give priority to Stoll's treatment of this species over Saussure & Zehntner, who described it several decades later. However, given the multiple uncertainties regarding the provenance of this specimen, the lost state of the type, and the interpretive nature of the illustration, *acicularis* is to be regarded as *nomen dubium***.**

Phasma acicularis (Houttuyn in Stoll, 1813) **nomen dubium**
Phasma acicularis Stoll, 1813 **attributio erroris**

"The Dwarf" Stoll, 1813: 73, Plate XXV, Figure 97 = *Phasma acicularis* (Houttuyn in Stoll, 1813)

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