



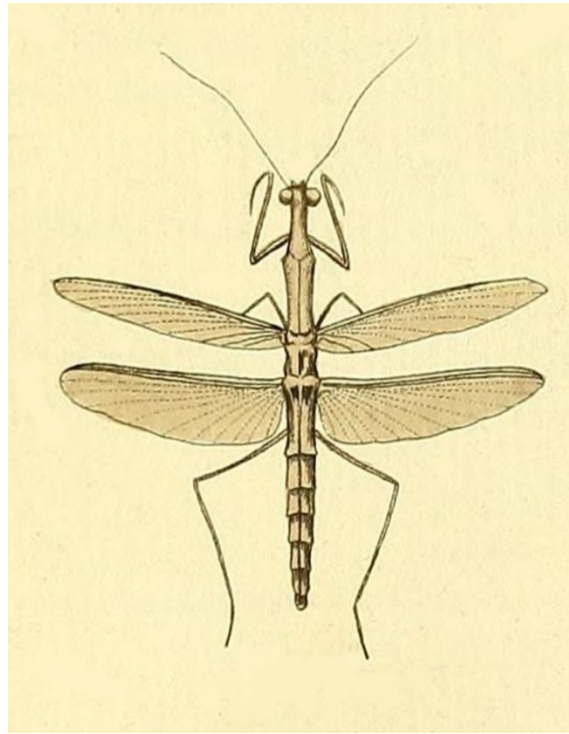
Dr. Fothergill's little gray American mantis: Taxonomic Revision of *Thespis* Serville, 1831

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Abstract. 1. Historical literature review of all nomenclature associated with *Oligonicella* Giglio-Tos, 1915 is charted. 2. *O. scudderi* Saussure, 1870 is synonymized under *Thespis parva* (Gmelin, 1790), thereby placing *Oligonicella* in synonymy with *Thespis* Serville, 1831 and necessitating the transfer of all four species of the former under *Thespis*. 3. *Paramusonia* Rehn, 1904 is reinstated as a valid genus to incorporate those species previously held under *Thespis* with *T. cubensis* Saussure, 1869 recognized as its type species. 4. *Paramusonia vicina* (Saussure, 1872) is regarded as a distinct species. 5. *Thespis parva* (Gmelin, 1790) is proposed as a species complex. 6. *Thespis* is redescribed with an inclusion of a dichotomous key to species (males only). 7. The four recognized species of the newly formulated *Thespis* genus are diagnosed and treated.

The British colonization of America provided the exciting opportunity for English naturalists to study and describe organisms that were previously unknown to science. Amid the political turmoil of early 18th century America, the transatlantic natural history trading circle thrived. A selection of American colonists, often on commission of wealthy professional Englishmen, collected thousands of plant and animal specimens from the New World and shipped this material back to England for study. Some proprietors of these foreign collections further invested their personal fortunes into hiring artisans to illustrate and engrave impressions of their unique specimens, thus documenting and preserving key segments of their scientific discoveries. Unfortunately, with the passing of time, many contributions of these early authors have been forgotten or confounded with significant errors in the replication of their findings. And as the decades pass, many modern authors have repeated the mistakes of those that came before them by creating checklists of names and taking taxonomic actions without first properly vetting the appropriate historical sources. As such, a large portion of the Mantodea taxonomy is corrupted—not from having a lack of knowledge but from the failure of modern authors to properly investigate the historic literature before providing their own contributions. The treatment of Dr. Drury's copper engraving of Dr. Fothergill's little gray American mantis is an excellent case in point.

Historical Literature Review.



Mantis parva Gmelin, 1790

-Drury (1773: 75) describes *Mantis minuta* from a single male specimen that he has on loan from Dr. Fothergill's private collection. Drury documents that the specimen "came from America" and provides a copper plate illustration of the spread specimen (Plate 39, Figure 5, shown above).

-Fabricius (1775: 278) describes a new species of Mantispid (Neuroptera) from a specimen of Joseph Banks' private collection. Fabricius confuses this Mantispid for a praying mantis that he names *Mantis minuta*.

-Goez (1778: 28) cites *minuta* from Drury as "the little gray American mantis" and offers a condensed description of the species.

-Fabricius (1781: 350) refers back to *minuta*, the Mantispid that he introduced six years earlier from Central America, and reiterates his original description.

-Fabricius (1787: 230) once more refers back to the Mantispid from 1775.

-Gmelin (1790: 2052) reiterates the brief description of Fabricius' *minuta* from Central America. Within this same document, Gmelin replaces *Mantis minuta* Drury, 1773 with the new name *Mantis parva* with no explicit justification offered.

-Olivier (1792: 631) reiterates the description of *minuta* Fabricius, 1775 and cites all three of Fabricius' previous references along with Gmelin. Olivier accepts and uses the replacement name *parva* for Drury's *minuta*, references Drury's figure, and presents a thorough redescription for the species.

-Fabricius (1793: 24) redescribes his Neuropteran *minuta* from Central America.

-Serville (1831: 55) establishes *Thespis* as a new genus to incorporate *parva* along with three other unrelated species.

-Westwood (1837: 83) offers a very thorough analysis of Drury's three-volume set throughout a parallel three-volume set of his own. He relegates *Thespis* to subgenus rank, citing Serville, and lists *parva* as a species therein.

-Burmeister (1838: 533) briefly describes *parva* and cites Goez, Olivier, and Drury. He erroneously lists this species "from Southamerica".

-Saussure (1869: 71) describes three new species of *Thespis*. He also establishes *Oligonyx* at this time, wherein he questions placing *minuta*. Saussure does not use the replacement name *parva* but cites Burmeister who did.

-Saussure (1871: 116) treats several species of *Miopteryx* Saussure, 1869 and questions placing *minuta* within this genus. He continues to not use the replacement name of *parva* but cites several previous authors who did so.

-Rehn (1904: 565) designates *parva* as the type species of *Thespis* based upon the elimination of the other three species that were originally assigned to the genus by Serville but were later transferred into different genera, leaving *parva* as the only remaining original species therein.

-Kirby (1904: 278) designates *parva* as the type species of *Oligonyx* and misattributes authorship of the name to Drury. He cites the distribution of this species as "S. America" after Burmeister.

-Giglio-Tos (1915: 190) argues that Kirby's designation of *parva* as the type species for *Oligonyx* was ill-founded.

-Giglio-Tos (1916: 6) establishes *Diamusonia* based upon a damaged museum specimen that he believed to be a match to Drury's illustration. He designates *parva* as the type species, failing to note Rehn's prior type fixation of this species for *Thespis*.

-Rehn (1920: 226) argues that *Diamusonia*, based on *Mantis parva*, must give place to *Thespis*, as he had "first definitely designated the type of *Thespis* Serville as *Mantis parva*".

-Hebard (1921: 154) reiterates Rehn's argument that *Diamusonia* is a synonym of *Thespis* and points out the misattribution of *parva* to Drury, in error for *minuta*.

-Giglio-Tos (1927: 220) follows the synonymization suggested by Rehn and lists *Diamusonia* as a junior synonym of *Thespis* and restores *parva* as the type species of the latter, as Rehn had designated in 1904.

-Beier (1935: 23) reiterates Giglio-Tos' conception of *Thespis* from 1927 but continues to misattribute authorship of *parva* to Drury.

-Terra (1995: 39) examined and illustrated a specimen from Paraguay that he determined to represent *parva*. He further misattributes authorship of *parva* to Drury.

-Cerdeña (1996: 82) published a photograph of a Thespid from Venezuela that he determined to represent *parva*. The misattribution of the authorship of *parva* continues.

-Ehrmann (2002: 354) provides a list of historical literature pertaining to *parva* and *minuta*. He cites the holotype of *parva* as being deposited within the British Museum and the type locality of this species as Colombia.

-Agudelo (2004: 53) lists *parva* among the registered Mantodea species of Colombia.

-Agudelo, et al. (2007: 122) continues to list *parva* as occurring in Colombia and continues to misattribute the name to Drury.

-Rivera & Svenson (2020: 72) cite both *minuta* Goeze, 1778 and *vicina* Saussure, 1872 as synonyms of *parva* Drury, 1773.

Remarks.

re: Drury 1773: Dru Drury was a wealthy silversmith from London who amassed an exclusive insect collection by way of sponsoring oversea voyages for his naturalist friends who secured specimens for him on commission. Drury employed engravers to illustrate his collection of exotic specimens upon copper plates that were published, along with fairly detailed descriptions of each specimen, in a three-volume set entitled "Illustrations of Natural History" (1770-1782). Drury did not use scientific names within the descriptions of these illustrated species. He did, however, supply a special index of binomial nomenclature, beginning with the second volume, that created an unambiguous link between the indexed names and the corresponding descriptions and plates in the main text. The International Commission on Zoological Nomenclature issued Opinion 474 in 1958 regarding the availability of Drury's nomenclature. This ruling stated that although Drury did not apply the principles of binomial nomenclature in the main text of his three volumes, he did apply those principles in the indexes that were annexed to each of those volumes. Therefore, the names contained within the indexes were accepted and made available. Most of the contention regarding this concern centered upon Drury's first volume from 1770, wherein no such index was included but was provided retroactively in the subsequent volume. The second volume's index cites *Mantis minuta* for the illustration found on Plate 39, figure 5 (shown earlier). It is important to note that the name *parva* is nowhere found within any of Drury's nomenclatural indexes.

Drury noted that the single specimen which was used to illustrate and describe *minuta* was not his own but rather belonged to Dr. Fothergill, who was another wealthy member of the transatlantic natural history circle. According to Hancock (2015), the entirety of Dr. Fothergill's insect collection was sold to William Hunter upon his death. The Hunter collection is currently housed at the University of Glasgow, where each drawer and individual specimen has been digitized and is available for study. The present author has carefully reviewed each of the Mantodea images from this collection and has not found any specimen that resembles that depicted in Drury's illustration. Further, although the labeling of the Mantodea material within this collection has been clearly disrupted from Fabricius' original curatorial work, there is no label with the name "*minuta*" or "*parva*" remaining. Therefore, the *minuta* holotype is deemed lost.

As for establishing provenance of the *minuta* holotype, Drury only noted that the specimen "came from America". We know from Fox (1919) that Dr. Fothergill neither traveled abroad nor collected himself but rather had several contacts in colonial America who secured many natural history objects for him. The chief among these collection suppliers was the botanist John Bartram, who sent Dr. Fothergill regular shipments of plants, insects, and other curiosities from Philadelphia to England. Bartram is known to have traveled most of the provinces from Nova Scotia to Florida in search of specimens for Dr. Fothergill. It cannot be confirmed with certainty, but it is most likely the case that the *minuta* holotype was collected by Bartram. Given that no Thespids occur in the Mid-Atlantic Region, it is safe to conclude that the *minuta* specimen derived from within the southern colonies of America, i.e. the Carolinas or Georgia. It is postulated that this specimen was then shipped to Fothergill among one of the many loads of collected material secured for the doctor by Bartram and was subsequently used by Drury for his book of illustrations.

re: Fabricius 1775: Due to the fact that Fabricius' *minuta* represents an entirely different taxa than Drury's *minuta*, the two names are considered homonyms, with Drury's being the senior.

re: Gmelin 1790: It is possible that Gmelin noticed here that the name *Mantis minuta* appears twice in the historical literature between 1773-1775, referring to two entirely different taxa that derived from separate locales. As such, he chose *parva* as a replacement name for Drury's specimen and retained *minuta* for Fabricius' specimen. Although Gmelin offered no explicit rationale for this name replacement, which may be regarded by some as making the nomenclatural act invalid, *Mantis minuta* Drury, 1773 has not been used since 1778 with Goez. Further, *parva* Gmelin, 1790 has been used as a replacement name and presumed valid in every work for the past two centuries. Therefore, even though *parva* is the junior synonym, this name has had prevailing usage and would thus fall under the reversal of precedence clause of the ICZN Article 23.9, designating *parva* Gmelin, 1790 a protected name and *minuta* Drury, 1773 a forgotten name.

re: Serville 1831: Serville established *Thespis* to incorporate four species that were all previously housed under *Mantis* Linne, 1758 by Olivier in 1792: *purpurascens*, *quinquemaculata*, *fasciata*, and *parva*. Olivier was misattributed by Serville as the author of *parva* but the other three species were in fact introduced by Olivier in 1792 as noted. Serville diagnosed *Thespis* as having a body that is, "very long, very narrow, filiform (of a form approaching that of Specters [Phasmatodea])." He described the thorax of *Thespis* as being, "very elongated, the length of the abdomen, slightly dilated at the sides anteriorly" and the

meso/metathoracic legs as “very close to the hind ones, very long to the fore ones.” This generic description fit well for three of the species that were originally included under *Thespis* but it did not align with *parva* whatsoever. The specimen illustrated by Drury has a subcompact habitus that is fairly robust. The pronotum is significantly shorter than the abdomen with a salient supracoxal dilation and the meso/metathoracic legs are more proportionate to the forelegs.

Serville redefined *Thespis* in 1839. He moved *fasciata* back into *Mantis* and established a new genus, *Angela*, to incorporate *quinquemaculata* and *purpurascens* (which he placed into synonymy under *brachyptera* Stoll, 1813). Serville then described two new species for *Thespis*, *sulcatifrons* and *livida*. These last two species were subsequently determined to have no relation to each other either, with *livida* being moved into *Eumusonia* Giglio-Tos, 1916 and *sulcatifrons* being transferred to *Solygia* Stal, 1877, leaving *parva* once more as the only remaining member of *Thespis*.

re: Westwood 1837: Within Westwood’s three-volume set of “Illustrations of Exotic Entomology,” wherein he carefully dissects the parallel work of Drury, he lists *Thespis* as a subgenus under *Mantis*. It is unclear if Westwood meant for this listing to be a taxonomic action or if he misinterpreted Serville’s establishment of this taxon as a full genus. When referring back to Serville’s original description of *Thespis* from 1831, it is evident that he established this taxon as a full genus, as he denoted it as such.

re: Burmeister 1838: Prior to the publication of his 1838 edition of “Handbuch der Entomologie,” Burmeister traveled about Europe to examine the insect collections of major museums and private collectors for reference material. In regard to his treatment of *Mantis* within his Handbuch, Burmeister notes that “the Royal Museum has over 60 different species”. The Royal Museum is presumed to refer to the British Museum (now the Natural History Museum), where Burmeister was known to have examined the institution’s Mantodea material. Among this material, he reportedly determined a certain South American specimen to represent *parva*. Burmeister described this specimen as: “brown, head rounded; posterior wings longer than elytra. Body 1" long.” This description could apply to any number of South American Thespids but the habitus measurement is too small to represent *parva*. Further, we have strong reason to believe that Drury’s *minuta* (*parva*) was described from the southeastern United States, as argued earlier, so the South American collection locale of Burmeister’s referent specimen does not match. Lastly, the Mantodea images from the Natural History Museum have been digitized and are available for study. The present author has reviewed each of the Mantodea images from this collection and has not found any specimen that resembles *parva*, nor is there any institutional labeling of any specimen as “*parva*” aside from the *Camelomantis parva* Beier, 1931 holotype from Malaysia. It is, therefore, unknown what actual specimen Burmeister was referencing by “*parva*” but it cannot be confirmed that his determination was correct and thus the assertion that this species is found in South America is highly suspect, if not outright contradicted.

re: Saussure 1869: Since its conception, *Thespis* has been used as a taxonomic dumping ground for numerous unrelated species. As these disparate species were reassigned to more appropriate genera over time, *parva* has remained a constant member of *Thespis* throughout, even though Serville’s original description of the taxon does not fit this species. Saussure evidently recognized this contradiction and considered placing *minuta* (*parva*) elsewhere. In 1869, he described three new species for *Thespis*: *cubensis*, *surinama* and *phthisica*. Saussure

did not list *minuta (parva)* among these but rather tentatively assigned this species to *Oligonyx*, indicating that it was not to be considered a congener of *cubensis*.

re: Saussure 1871: Saussure treats both *Thespis* and *Oligonyx* within this same work but does not include *minuta (parva)* among either of their listed constituents. Saussure's discontent with the generic placement of *minuta (parva)* from both his 1869 and 1871 works evidence his belief that this species does not belong with the then current members of *Thespis*.

re: Rehn 1904: Two pivotal works that impacted the taxonomy of *Thespis* were published this year— Rehn's paper entitled "Studies in American Mantids or Soothsayers" and Kirby's "Synonymic Catalogue of Orthoptera" text. In Rehn's paper, he upheld *Angela* Serville, 1839 as a valid genus and circumscribed *Thespis* as including only *parva*, which he designated as the type species, given the removal of the other three species that Serville originally included upon its establishment.

re: Kirby 1904: In contrast to Rehn, Kirby placed *Angela* as a junior synonym under *Thespis*, thereby recombining the seven known species of *Angela* under *Thespis* and excluding all others. Kirby designates *parva* as the type species of *Oligonyx* without advancing a justification for doing so. He attributes Drury as the author of *Mantis parva* even though the name *parva* is nowhere found within any of Drury's nomenclatural indexes. Kirby also cites South America as the distribution for this species even though the only other historical author suggesting such an occurrence was Burmeister who, as discussed earlier, confused *parva* with another Thespid from South America. Kirby's taxonomic actions with these taxa were not broadly accepted and were categorically ignored or discounted by subsequent authors. It is also worth noting that Kirby's catalog was published the same year as Rehn's paper, thereby likely preventing him from being aware of Rehn's action.

re: Giglio-Tos 1915: Given that *parva* had been simultaneously designated as the type species for two separate genera, Giglio-Tos selects *Oligonyx bicornis* Saussure, 1869 to represent *Oligonyx*, thereby rejecting Kirby's action and upholding Rehn's type species designation by implication.

re: Giglio-Tos 1916: Giglio-Tos reported that he found a damaged specimen within the insect collections at the Berlin Museum that represented *vicina* Saussure, 1872. He wrote that "Saussure under the name of *Thespis vicina* described a species that by the width of the pronotum (2 mm.) is undoubtedly to be referred to this same species". Giglio-Tos then suggested a synonymy between *vicina* and *parva*, asserting that his damaged specimen "for the size, shape, color exactly match the species figured by Drury". Giglio-Tos explained that the abdomen of his specimen was "broken at the apex where the elytra ends" and suggested that "oddly enough, even the one pictured by Drury was undoubtedly broken in the same way as it appears from the figure." He goes on to describe the head capsule characters of this museum specimen but the same cannot be comparatively assessed for Drury's 250-year-old illustration. However, the abdominal sternites that are depicted in Drury's illustration are six in number, which is the typical number of sternites that are usually visible. Further, given the tapered nature of the abdominal segments depicted in Drury's illustration, there is no indication that the abdomen of Dr. Fothergill's specimen is broken. Giglio-Tos does not document the collection locale of his damaged specimen and the specimen itself has not been located. Thus, the synonymy between these two names cannot be verified but there is enough reasonable doubt to reject it.

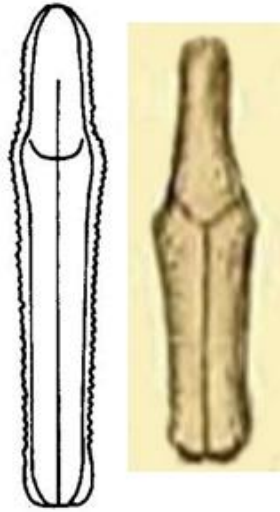


Figure Plate 1. Pronotum illustration of “*Thespis parva*” male from Terra, 1995 (left) vs. pronotum illustration of *Mantis minuta* male from Drury, 1773 (right).

re: Terra 1995: Terra provides an illustration of the head capsule and pronotum of a male Thespid from Paraguay that he identified as *parva*. The salient features of his pronotal illustration very clearly represent a different species that has no relation to Drury’s *minuta* (*parva*). When comparing the two illustrations (see Figure Plate 1 above), we find that the metazona depicted in Terra’s work is 2.24 times as long as the prozona, whereas the metazona is just 1.26 times as long as the prozona in Drury’s illustration. Additionally, Terra depicts the pronotal margin of his specimen as distinctly serrate, whereas Drury’s figure is entirely smooth. Lastly, as noted earlier, there is evidence that Drury’s *minuta* (*parva*) derived from the southeastern United States, so the Paraguay collection record of Terra’s specimen would further indicate that his specimen is representative of an entirely different species.

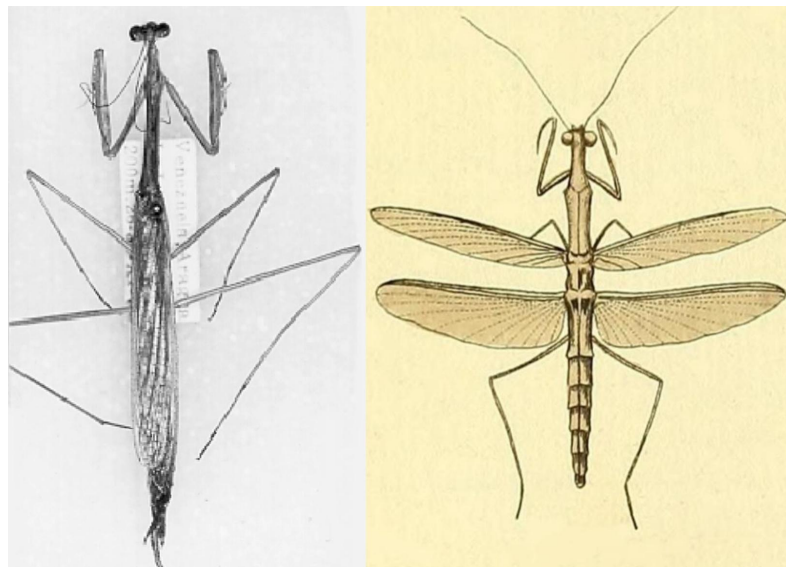


Figure Plate 2. Dorsal habitus image of “*Thespis parva*” male from Cerda, 1996 (left) vs dorsal habitus illustration of *Mantis minuta* male from Drury, 1773 (right).

re: Cerda 1996: Just as in Terra's figured specimen from Paraguay, Cerda's photographed specimen from Venezuela quite obviously represents a different species apart from Drury's *minuta* (*parva*). When comparing Cerda's photograph against Drury's illustration (see Figure Plate 2 above), we find that the metazona of the photographed specimen is ~2.96 times as long as the prozona. Contrastingly, the same character is 1.26 times as long in Drury's illustration. Additionally, Cerda's specimen has wings that are significantly shorter than the abdomen and metathoracic legs that are disproportionately elongated, as opposed to Drury's figure with wing length projectively reaching the apex of the abdomen and metathoracic legs being much shorter and proportional. Lastly, as with all Thespids attributed to *parva* from South America, the collection record of Venezuela of Cerda's specimen would align more with *vicina*— a legitimate species that has long been confused with the Nearctic *parva*.

re: Ehrmann 2002: Ehrmann aggregates several disparate accounts of *parva* and *minuta* within his summary. The listing of the *parva* holotype being deposited within the British Museum (now the Natural History Museum) is in error. As noted above, *parva* is a replacement name for *minuta* and has no type designation. The type specimen for *minuta* was part of Dr. Fothergill's insect collection, which was sold to William Hunter upon his death. Thus, the Hunter collection should be where the *minuta* holotype is deposited. This collection is currently housed at the University of Glasgow, where no specimen of *minuta* is included. A review of the Mantodea type images from the Natural History Museum also reveals no specimens of *parva* or *minuta*. Thus, the holotype of *minuta* (*parva*) is lost. The type locality of Colombia, as listed by Ehrmann, is believed to derive from the suggested synonymization of *vicina* with *parva*. Even if this synonymization were accurate, it should not alter the actual type location of (North) America for *parva*. Ehrmann also lists *cubensis* (from Saussure & Zehntner, 1894 and Kirby, 1904) as synonymous with *parva*. This listing apparently references back to Giglio-Tos (1916), who confusingly suggested the same, based upon his dubious, damaged museum specimen.

re: Rivera & Svenson 2020: As previously detailed, the name *parva* did not derive from Drury or Goeze but rather Gmelin. Drury's original specimen was named by him as *minuta*. Goeze coined *minuta* "the little gray American mantis" and clearly referenced Drury's authorship. Gmelin introduced *parva* as a replacement name for *minuta* (seemingly to avoid confusion with Fabricius' *minuta*). Although *minuta* was deemed valid by the ICZN, it has fallen out of use since 1778 and is therefore a forgotten name.

Oligonyx scudderi Saussure, 1870

-Saussure (1870: 239) describes *Oligonyx scudderi* from "America borealis" (North America).

-Saussure (1871: 121) offers a much more thorough description of *scudderi* and includes an illustration of the dorsal habitus and a closeup drawing of the foretibial spination. He writes that the habitat of *scudderi* is "probably South America" and speculates that the noted type locality of Georgia is "presumably mistaken".

-Stal (1877: 45) lists *scudderi* as occurring in Texas from a specimen found within the "Mus. Holm."

-Westwood (1889: 5) lists *scudderi* as occurring in "South America ? Georgia ?".

-Saussure (1894: 171) resolves his previous speculation by noting that *Oligonyx* is “peculiar to Central and North America” and cites *scudderi* as deriving from “North America, Georgia”.

-Scudder (1896: 212) reiterates previous authors’ citations of *scudderi* occurring in Georgia and Texas and lists the more complete distribution range of this species as including the entire southeastern United States.

-Scudder (1900: 13) charts the distribution range of *scudderi* as including the “southern U.S. east of the Rocky Mts.”

-Scudder (1901: 223) summarizes the historical literature of this species between 1870-1900.

-Rehn (1903: 329) lists *scudderi* as occurring in Arkansas, in addition to Texas.

-Kirby (1904: 278) notes “Georgia (?)” as the distribution range of *scudderi*.

-Scudder & Cockerell (1904: 20) include northeastern New Mexico to the distribution range of this species.

-Giglio-Tos (1915: 190) documents his belief that the *scudderi* species group does not follow the original meaning of *Oligonyx* as intended by Saussure and therefore requires a new generic name. He establishes *Oligonicella* to incorporate the *scudderi* lineage.

-Rehn & Hebard (1916: 122) continue to cite *scudderi* under *Oligonyx* and chart this species as occurring in South Carolina, Georgia and Florida. The authors refer back to Saussure’s questioning of the holotype’s collection label accuracy and write: “later knowledge of the species’ distribution shows conclusively that Saussure’s type was very probably correctly labeled”.

-Giglio-Tos (1919: 63) relists *Oligonicella* apart from *Oligonyx*. He summarizes seven different species as belonging to this genus, ranging between Central and North America.

-Blatchley (1920: 126) further ignores Giglio-Tos’ *Oligonicella* and cites *scudderi* under *Oligonyx*, just as Rehn & Hebard had done. Blatchley redescribes *scudderi* and documents that “this graceful little mantis occurs only in the Southern States”.

-Giglio-Tos (1927: 265) maintains *Oligonicella* as a valid genus and includes *scudderi* therein.

-Hebard (1931: 128) places *scudderi* within *Oligonicella* after Giglio-Tos and charts an expanded distribution range of this species as including Nebraska, Kansas and Oklahoma.

-Beier (1935: 12) lists *scudderi* under *Oligonicella* and charts the distribution range of this species as including Louisiana and Mexico.

-Hebard (1943: 282) details the distribution range of this species throughout Texas and the surrounding region.

-Terra (1995: 48) lists *scudderi* among the members of *Oligonicella* with a distribution range extending between the United States and Mexico.

-Jantsch (1999: 59) lists *scudderi* under *Oligonicella* with a distribution range that includes the United States and Mexico.

-Ehrmann (2002: 245) summarizes the taxonomic history and distribution range of this species.

-Otte & Spearman (2005: 371) list the relevant literature associated with *scudderi* and cite the correct depository of the holotype.

-Agudelo, et al. (2007: 117) lists the distribution range of this species as including Florida, Texas and Mexico.

-Patel, et al. (2016: 799) lists the distribution range of this species as including Florida, Texas, Louisiana and Mexico.

-Anderson (2019: 264) provides a thorough species treatment for *scudderi*.

-Rivera & Svenson (2020: 64) offer a taxonomic summary of *scudderi* and the other species that they consider to be synonymous with this name.

-Luna & Hernandez-Baltazar (2020: 160) chart *scudderi* from Aguascalientes, Guanajuato, and Nuevo Leon, Mexico.

Remarks.

re: Saussure 1870: The collection label of the holotype reads “Géorgie,” which is French for Georgia– the more refined location for Saussure’s documented “America borealis”.

re: Stal 1877: Mus. Holm. = the Entomological Collection at the Swedish Museum of Natural History.

re: Jantsch 1999: Jantsch cites the authorship of *scudderi* as “Saussure, 1790”. Saussure’s original description is actually from 1870. This notation error of the authored year could easily be dismissed as a simple typo. However, it is a highly interesting coincidence that 1790 is the year in which Gmelin introduced *Mantis parva* as a replacement name for *Mantis minuta* – the proposed senior synonym of *scudderi* within this present paper.

re: Ehrmann 2002: Ehrmann erroneously lists the depository of the holotype as the Natural History Museum of Geneva (MHNG). The holotype male of *scudderi* is actually located at the Muséum National d’Histoire Naturelle in Paris.

re: Luna & Hernández-Baltazar 2020: There have been no confirmed collection records of *scudderi* occurring within the Aguascalientes and Guanajuato provinces of Mexico. Neither the historical literature nor the thousands of reviewed photographic observations of Mantodea from this region corroborate these records. If proven accurate, the presence of *scudderi* within

these provinces would be well outside the ecological preferences of this species. Thus, these provincial records are highly suspect and require further evidence to confirm.

Thespis vicina Saussure, 1872

-Saussure (1872: 276) describes *Thespis vicina* from a single Colombian specimen that he states is very similar to *cubensis*.

-Bolivar (1890: 138) lists *vicina* under *Musonia* Stal, 1877 and charts this species as occurring in San Esteban, Venezuela from a single male found at that locality.

-Kirby (1904: 276) continues to list *vicina* under *Musonia* and documents the distribution of this species as occurring in Colombia.

-Chopard (1916: 174) moves *vicina* under *Paramusonia* Rehn, 1904 and describes the spination of Bolivar's specimen from 1890 in great detail.

-Giglio-Tos (1916: 6) introduces a synonymy between *vicina* and *parva*, based upon a damaged museum specimen that he believed to "undoubtedly" represent *vicina* as well as a match to Drury's figured specimen. This synonymy has been accepted until the present writing.

-Otte & Spearman (2005: 391) list the *vicina* type specimen (presumably the holotype) as being deposited in the Natural History Museum of Geneva (MHNG).

Remarks.

re: Saussure 1872: Despite the repeated notation within Saussure's original description of his *vicina* holotype being female, he describes in detail the morphology and pigmentation of this specimen's wings. Given that all females of *Thespis*, *Oligonicella* and allied genera are apterous, it is evident that Saussure's holotype must have actually been a male.

re: Chopard 1916: Chopard reassessed the single male *vicina* specimen from the Bolivar collection that was harvested by M.E. Simon in San Esteban, Venezuela in 1888. This specimen was mentioned by Bolivar within his 1890 Memoirs of the Simon Voyage that took place between 1887-1888. Chopard points out Saussure's discrepancy of the holotype's sex, stating, "according to the description of Saussure, the type of this species would be a female; I think it is on the contrary of a male, because it would be, to my knowledge, the only example of a winged female, not only in *Paramusonia*, but in the whole subfamily of Miopteryginae".

re: Giglio-Tos 1916: Giglio-Tos' damaged museum specimen probably does in fact represent Saussure's *vicina*, given that it "closely resembles *cubensis*" and that Saussure described *vicina* as being "very similar to *cubensis*" as well. However, the suggested synonymy between *vicina* and *parva* is not compelling, as argued earlier, especially given the South American type locality of *vicina*.

re: Otte & Spearman 2005: According to Roy & Cuche (2008) and Pfauti & Hollier (2012), no type specimen of *vicina* Saussure, 1872 is found within the Geneva museum's holdings. Thus, this type is currently deemed lost and is unavailable for study.

Discussion. It stands to reason that Dr. Fothergill’s “little gray American mantis” is in fact *scudderi* and that *vicina* is an unrelated species from South America. The origin of the taxonomic confusion regarding *minuta* (now *parva*) first stems from Serville, who assigned this species to *Thespis*— a poorly formulated genus at its onset with disparate constituents. Serville’s description of *Thespis* from 1831 fit well for three of the species that he originally included within this new genus but the description did not align with *parva* whatsoever. Indeed, it was determined by subsequent authors that of the three species more aptly described, two of them were moved to *Angela* and the other to *Tenodera* Burmeister, 1838, thus leaving a complete mismatch between the original genus description and *parva*— its only remaining member.

Saussure described *cubensis* in 1869 and placed this species under *Thespis*. Realizing that *cubensis* has no relation to *minuta* (*parva*) but having a better fit with Serville’s description of the genus, Saussure considered moving this species into *Oligonyx* but made no overt taxonomic action to do so. Two years later, in 1871, Saussure cited several morphological discrepancies with the ongoing placement of *minuta* (*parva*) within *Thespis*, as the genus was currently described by Serville. He suggested another potential move of this species into *Miopteryx* but documented concerns that it also did not fit that genus. In 1904, Rehn designated *parva* as the type species of *Thespis* by elimination and in spite of Serville’s mismatched description. As all other species that were previously assigned to *Thespis* had been moved to new genera in 1904 or earlier, *parva* again became the sole representative of the genus (the proposed actions of Kirby notwithstanding). To accommodate *cubensis*, Rehn established *Paramusonia* and designated *cubensis* as its type species. Given this move, it is clear that Rehn shared Saussure’s position, in that *cubensis* and *parva* were not congeners. But given Serville’s original description of the genus, which did not match *parva*, the confusion over what species constitute this genus remained.

Oligonicella was established by Giglio-Tos in 1915 to demarcate *scudderi* and its allied species apart from *Oligonyx*. The following year, in 1916, Giglio-Tos established *Diamusonia* to incorporate *parva* along with two newly described Thespids from South America. He reassigned *parva* as the type species of this new genus. In 1927, Giglio-Tos reversed these actions by synonymizing *Diamusonia* with *Thespis* and restoring *parva* as the type species of the latter, just as Rehn had argued two decades prior.

Giglio-Tos’ separation of the *scudderi* species group from *Oligonyx* is well supported. However, what Giglio-Tos failed to realize was that Drury’s illustration of *minuta* (*parva*) represented the same species as *scudderi* and not his damaged *vicina* specimen. Therefore, rather than creating a new genus to incorporate *scudderi* and its related species, he should have placed this entire lineage under *Thespis* (as Rehn had provided for) and offered his description of *Oligonicella* as the new properly formulated description for this genus to replace the antiquated one provided by Serville. Also, rather than creating *Diamusonia* for *vicina* and its related species, Giglio-Tos should have placed this South American lineage into Rehn’s *Paramusonia*— just as Chopard had done for *vicina* in 1916. In other words, the creation of *Oligonicella* and *Diamusonia* were both unnecessary, as Rehn had already delineated the proper taxonomic structure to incorporate the *scudderi* species group under *Thespis* and the South American *vicina* group under *Paramusonia*.

Let us further examine the proposed synonymy between *parva* and *scudderi*. Given that the type specimen for *parva* is lost, we must resort to analyzing Drury’s illustration if we are to make any determinations about the status of this species. However, only a few salient features from the 250-year-old illustration are diagnosable. More refined characters, such as foreleg spination and head capsule morphology, are entirely indeterminable. But with the available salient features, in conjunction with those characters that are detailed from the text of the original description, we can draw some firm conclusions as to the proper status of *parva* and build a case that this species is more aligned with *scudderi* than it is with *vicina*.

The measurements from the original description of *vicina* detail a pronotal length of 11.2 mm, a pronotal dilation of 2 mm, and a forewing length of 21 mm. These measurements would give a pronotal width:pronotal length ratio of 0.18 and a pronotal length:forewing length ratio of 0.53. If we take digital measurements of the same characters from the *minuta* illustration, we yield ratios of 0.27 and 0.46 respectively. Digital measurements from the *scudderi* holotype yield ratios of 0.28 and 0.33 for these same characters. These results indicate that the *minuta* illustration depicts a species with a more robust pronotum that measures less than half the length of its forewings— a character combination parallel to *scudderi* but not *vicina*.

	pronotal width:pronotal length	pronotal length:forewing length
<i>vicina</i>	0.18	0.53
<i>minuta</i>	0.27	0.46
<i>scudderi</i>	0.28	0.33

The *vicina* species group is presently diagnosed by Rivera & Svenson (2020) as having a habitus that measures between 35–60 mm. The pronotum is long and slender, with the metazona measuring 2.4–2.6 times as long as the prozona. Comparatively, the *scudderi* species group is currently diagnosed by these same authors as having a habitus that measures between 25–40 mm. The pronotum is short and stocky, with the metazona measuring just 1.2–1.5 times as long as the prozona. The habitus length of *minuta* (*parva*) is documented by Drury in his original description as measuring “near an inch and three-eighths from head to anus”. This 1.375-inch measurement is equivalent to 34.93 mm, which would place it on the far low end of the size range for the *vicina* lineage but firmly within the variation range of those species associated with *scudderi*. When taking a careful digital measurement of the pronotal proportions demonstrated in Drury’s illustration, we find that the metazona is 1.26 times as long as the prozona. This metric would place *parva* well below the diagnosable proportions of the *vicina* group but squarely within the defined boundaries for *scudderi*.

Rivera & Svenson delineate the distribution of the *vicina* lineage as central Argentina, northern South America, and the Caribbean area. These authors define the distribution of the *scudderi* lineage as the southern US, ranging south through Central America to Costa Rica. Given our previous analysis concerning the provenance of *parva*, we can conclude that the “little gray

mantis from America” derived from the southeastern United States, whereas *vicina* is described from Colombia. This again would make *parva* more aligned with the *scudderi* lineage.

With these two lines of reason, the salient morphology of the *minuta* illustration and the deduced type locality of its referent type specimen, it becomes clear that *minuta* (*parva*) is more befitting of the smaller/stockier *Oligonicella* taxa from the Nearctic region than it is with the larger/slenderer *Thespis* taxa from the Neotropical region. Further, the original description of *minuta* perfectly aligns with *scudderi*, as do the type localities of the two species (*scudderi* from Georgia and *minuta* from the southern American colonies). Finally, when comparing Drury’s illustration to the *scudderi* holotype, the resemblance is unmistakable (see Figure Plate 3 below). A synonymy between these two species is, therefore, quite evident. Usually, such a revelation would not carry much taxonomic consequence, as *parva* would simply be reassigned under *Oligonicella*, possibly as a synonym of an already defined species of that genus. However, in this case, *parva* is the designated type species for *Thespis*, so its displacement apart from its current congeners requires that they are reassigned to a different genus. As *Thespis* is the older generic name between the two, *Oligonicella* should be placed as a junior synonym with all of its constituent species being recombined with *Thespis*. *Paramusonia* should then be used to incorporate those species previously held under *Thespis* with *cubensis* as its type species, just as Rehn had previously arranged prior to Giglio-Tos’ unneeded establishment of *Oligonicella*. Lastly, *vicina* is regarded as a distinct, valid species from Colombia and Venezuela that has no relation to *parva*.

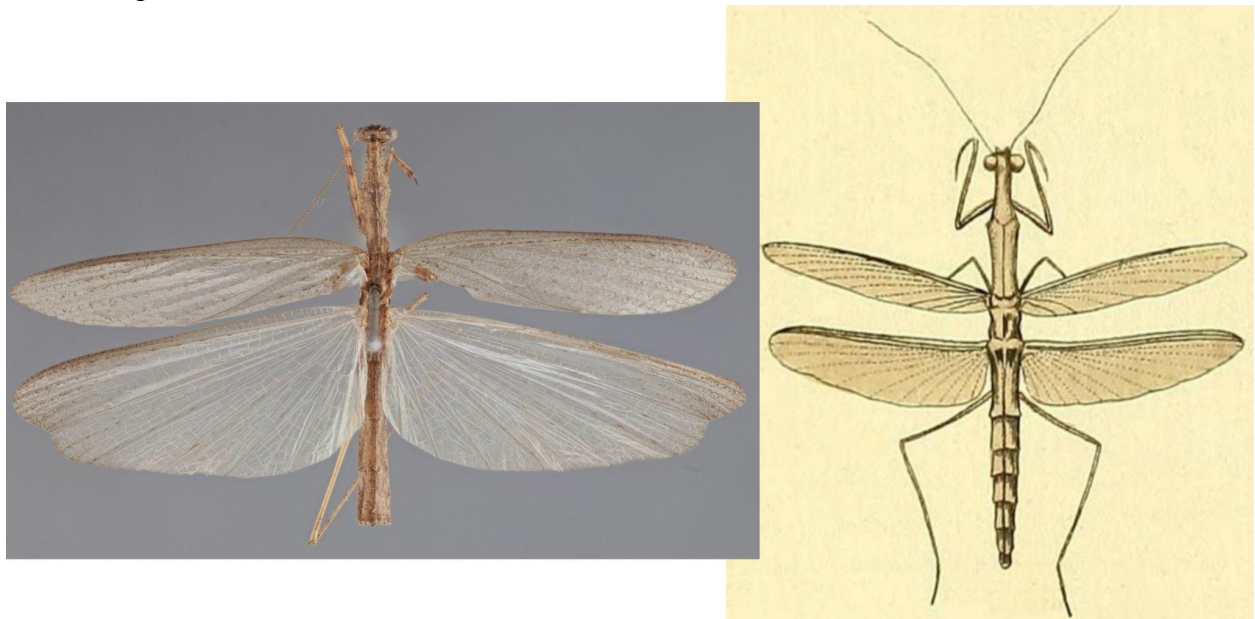


Figure Plate 3. Dorsal aspect photograph of *Oligonicella scudderi* male holotype (left) vs dorsal habitus illustration of *Mantis minuta* male from Drury, 1773 (right). (Holotype photograph used with permission.)

Let us now turn to the *scudderi* species group to analyze the historical literature of each name associated with this species in more detail.

Oligonyx bollianus Saussure & Zehntner, 1894

-Saussure & Zehntner (1894: 173) describe *bollianus* from a series of specimens that were collected in Texas. The authors indicate that this species is “closely allied to *scudderi*, which is a little more slender”.

-Scudder (1896: 212) offers a brief overview of the four species of *Oligonicella* that had thus far been described. He states that he is “inclined to believe” that *bollianus* and *missouriensis* are identical.

-Scudder (1900: 13) lists *bollianus* as a synonym of *scudderi* and charts the distribution range of this species as including the “southern U.S. east of Rocky Mts.”

-Scudder (1901: 223) indexes *bollianus* as a valid species.

-Scudder & Cockerell (1904: 20) cite under *scudderi* the figure reference from Saussure & Zehntner’s original description of *bollianus*, denoting a synonymy between the two names.

-Giglio-Tos (1915: 190) establishes *Oligonicella* and moves *bolliana* into this new genus. He changes the suffix of *bollianus* from -us to -a to conform with the gender of *Oligonicella*.

-Rehn & Hebard (1916: 122) suggest that *bollianus* “if sufficiently distinct to warrant racial separation” should be considered as a subspecies of *scudderi*. These authors continue to use *Oligonyx* to house this species, ignoring Giglio-Tos’ proposal for *Oligonicella*.

-Blatchley (1920: 126) also continues to use *Oligonyx* and records that *bollianus* is regarded by Rehn & Hebard as “only a variety of *scudderi*”.

-Giglio-Tos (1927: 266) continues to uphold *bolliana* as a valid species and provides a brief description of this species under *Oligonicella*.

-Hebard (1931: 128) adopts usage of *Oligonicella* and lists *bollianus* as a synonym under *scudderi*, stating that the specimens so determined “do not show sufficient or constant enough differences to warrant nominal recognition of any kind”.

-Beier (1935: 13) continues to consider *bolliana* as a legitimate species under *Oligonicella* and provides a colored illustration of an adult male.

-Terra (1995: 48) lists *bolliana* as a valid species that occurs in the United States and Mexico.

-Ehrmann (2002: 245) continues to list *bolliana* as a valid species.

-Battiston, et al. (2005: 205) identify a single male that was collected in Monterrey, Nuevo Leon, Mexico as *bolliana*. The authors provide a brief description of this specimen in addition to an illustration of its genitalia.

-Otte & Spearman (2005: 371) list *bolliana* as a valid species.

-Agudelo, et al. (2007: 117) list *bolliana* as a valid species that occurs in Texas and Mexico.

-Patel, et al. (2016: 799) list *bolliana* as a valid species that occurs in Texas and Mexico.

-Rivera & Svenson (2020: 183) uphold Hebard's synonymy of *bollianus* with *scudderi* and publish photographs of male and female syntypes from the type series.

-Reyes-Ibarra (2020: 10) reports *bolliana* as occurring in Nuevo Leon, Mexico and continues to recognize this species as valid.

Remarks.

re: Saussure & Zehntner 1894: According to Hebard (1931), Boll sent a series of specimens to Saussure that he had collected near Dallas, Texas. Saussure subsequently determined that these specimens represented a new species and named the insects after Boll. The original description of this species includes a diagnosis for the male and female without specifying the number or sex of each type specimen. The authors designated Boll's collection site of Dallas, Texas as the type locality in conjunction with "Northern Mexico," which was apparently nothing more than conjecture. The depository for the type series is the Natural History Museum of Geneva (MHNG). Roy & Cuche (2008) analyzed this series and noted that it includes five syntypes in total, two males and three females, all labeled "*Oligonyx Bolliana* Sauss" from Texas; none of the specimens were labeled as having been collected in Mexico. One male and one female syntype has been digitized by Svenson.

re: Ehrmann 2002: Ehrmann's summary of this species charts the male holotype as being deposited in the MHNG and having a type locality of northern Mexico. He lists the female allotype with a query and as having a type locality of Dallas, TX. As noted earlier, the entire type series of five syntypes all derive from Texas. None are labeled from Mexico and Saussure designated neither an allotype nor a holotype among the series.

re: Otte & Spearman 2005: These authors charted the same erroneous information concerning the type series after Ehrmann.



Mantis missouriensis Riley ex Glover, 1872

-Glover (1872) provides a copper plate illustration of *Mantis missouriensis* that is based upon a single male specimen that was named by and on loan from Charles Valentine Riley (Plate 13, Figure 11, shown above).

-Bruner (1893: 22) documents that this species is “quite common in the wooded portions of eastern Nebraska” and that he has “taken it quite frequently here at Lincoln at the electric lights”. Bruner lists this species within *Mantis* with a query, following Riley’s original placement.

-Scudder (1896: 212) offers a brief overview of the four species of *Oligonicella* that had thus far been described. He states that he is “inclined to believe” that *bollianus* and *missouriensis* are identical. Scudder also includes a list of names for the figures depicted in Glover’s 1872 book of plates.

-Scudder (1900: 13) lists *missouriensis* as a synonym of *scudderi* and charts the distribution range of this species as including the “southern U.S. east of Rocky Mts.”

-Scudder & Cockerell (1904: 20) cite under *scudderi* the figure references from Glover’s book of illustrations, implying a synonymy between this species and *scudderi*.

-Kirby (1910: 568) lists *missouriensis* as a synonym of *scudderi*.

-Hebard (1931: 128) synonymizes *missouriensis* with *scudderi*, stating “it is now evident that *missouriensis* represents the same insect”.

-Beier (1935: 13) lists *missouriensis* as a synonym of *scudderi* with a distribution range that includes Louisiana and Mexico.

-Terra (1995: 48) lists *missouriensis* as a synonym of *scudderi* with a distribution range that includes the United States and Mexico.

-Jantsch (1999: 59) lists *missouriensis* as a synonym of *scudderi*.

-Ehrmann (2002: 245) cites *missouriensis* as a synonym of *scudderi* with a distribution range that includes Florida, Louisiana, Texas and Mexico.

-Otte & Spearman (2005: 371) list *missouriensis* as a synonym of *scudderi*. These authors note that the type has been lost.

-Rivera & Svenson (2020: 64) continue to list *missouriensis* as a synonym of *scudderi*.

Remarks.

re: Glover 1872: In the introduction to Glover's 1872 "Illustrations of North American Entomology, Orthoptera," the author thanks Mr. C.V. Riley of St. Louis, MO for loaning specimens from his private collection to be featured in the work. The illustration on Plate XIII, fig. 11 is entitled "*Mantis* (Linn.) *missouriensis*. Riley. MSS." Although no locality is given for the featured specimen, the species epithet and the attributed authority would indicate that the voucher specimen derived from Missouri. Unfortunately, the unpublished Riley manuscript that Glover refers to has not been located and is believed to be personal correspondence to Glover that accompanied the loaned specimens and was probably retained by the author. The Smithsonian's Charles Valentine Riley Collection of manuscripts does not list any correspondence received from Glover, nor is there any reference to Mantodea other than *Stagmomantis carolina* among the manuscript summaries. Riley's contemporary work within his Annual Report of the insects of the state of Missouri also has no reference to other Mantodea aside from *carolina*.

At the time of Glover's writing, Riley was serving as the Missouri State Entomologist. He later moved to Washington D.C. and succeeded Glover as the entomologist to the U.S. Department of Agriculture in 1878. Riley was subsequently appointed the first curator of insects for the Smithsonian Institution. In 1885, Riley donated his private insect collection to the Smithsonian. Despite the massive amount of specimens that this collection reportedly held, the Department of Entomology database at the Smithsonian National Museum of Natural History currently lists just 13 recorded specimens from the C.V. Riley Collection. None of these are Mantodea. Therefore, the *missouriensis* holotype has apparently been lost (or possibly has not yet been entered into the database as of this writing).

re: Scudder 1896: The first and most common edition of Glover's "Illustrations of North American Entomology, Orthoptera" was published in 1872 and contains just fifteen plates. As we learn from Dodge (1888), Glover expanded this work for a second edition to include five additional plates in 1878. This second edition was never officially published for public access and only twelve copies were created and distributed. The current locations of the twelve copies of this second edition are unknown. However, Dodge notes that Scudder had access to the newly added plates in 1874, prior to their limited distribution, and he corresponded with Glover about the identifications of his depicted specimens. In Scudder's "Explanation of the figures of Mantidae" section of his 1896 Index, he notes that Glover's figure 11 on plate XVI represents a

female *scudderi*. Scudder explains earlier within his discussion under *Oligonyx* that this figure was named such by Glover.

Scudder was the last author to attribute Riley as the authority of *missouriensis*. Beginning in 1900, Glover was listed as the author of this species. Given that the referent Riley manuscript was never published, Glover is the appropriate authority of *missouriensis*. However, Riley's contribution to this epithet should be recognized.

re: Hebard 1931: Hebard notes "no locality given" in place of the type locality for *missouriensis*. This is technically true, although with a careful reading of Glover's work in conjunction with the historical provenance of Riley, we can deduce that the type locality of this species is Missouri.

Oligonyx punctulatus Saussure & Zehntner, 1894

-Saussure & Zehntner (1894: 174) describe *Oligonyx punctulatus* from a single male specimen that was collected by H.H. Smith in Dos Arroyos, Guerrero, Mexico around 1894.

-Scudder (1901: 223) lists *punctulatus* within his index to North American Orthoptera. The distribution range of this species was cited as being restricted to Mexico.

-Giglio-Tos (1915: 190) establishes *Oligonicella* and moves "*punctata*" into this new genus.

-Giglio-Tos (1927: 267) reiterates the original description of this species from Saussure & Zehntner. He changes the suffix of *punctulatus* from -us to -a to conform with the gender of *Oligonicella*.

-Beier (1935: 13) lists *punctulata* as a valid species under *Oligonicella* with a distribution range that is restricted to Mexico.

-Terra (1995: 48) repeats Giglio-Tos' *lapsus calami* from 1915 and lists this species as "*punctata*".

-Maes & Roy (1999: 61) document this species as occurring in Nicaragua.

-Ehrmann (2002: 245) documents this species as also occurring in Costa Rica.

-Otte & Spearman (2005: 371) list *punctulata* as a valid species under *Oligonicella* and take note of Terra's spelling error from 1995.

-Agudelo, et al. (2007: 117) list this species as occurring in Costa Rica and Mexico after Ehrmann.

-Patel, et al (2016: 799) follow after previous authors and list *punctulata* as occurring in Costa Rica and Mexico.

-Rivera & Svenson (2020: 215) list the holotype of this species among their examined material in addition to another specimen from Oaxaca, Mexico that may possibly represent the same taxon.

-Luna & Hernandez-Baltazar (2020: 160) chart *punctulata* from Guerrero and Oaxaca, Mexico.

-Varela-Hernandez, et al. (2022: 37) document a specimen of *punctulata* from Morelos, Mexico.

Remarks.

re: Giglio-Tos 1915: It is evident that Giglio-Tos was referring to *punctulatus* when he wrote “punctata” among a list of species that he included into his newly erected genus. A few years later, in 1927, Giglio-Tos cited this list from his 1915 work and denoted the correct spelling of this species name as *punctulatus*, although he made no explicit mention of his previous error.

re: Maes & Roy 1999: This paper represents a chapter within the three volume set “Insects of Nicaragua” (1998-1999) by Jean-Michel Maes. Maes corresponded with the present author and reported that the voucher specimens used for this work are no longer in his possession. A portion of Maes’ material was deposited within the Muséum National d’Histoire Naturelle in Paris via Roy and the remaining specimens were deposited within the National University of Agricultural in Managua. Fortunately, Maes took photographs of his voucher specimens prior to these donations. The photographed specimens have been re-evaluated as a match with the *striolatus* holotype. This new determination is also more aligned with the Guatemalan type locality of *striolatus*, as opposed to the western Mexico type locality of *punctulatus*. It should be noted that Rivera and Svenson examined a pair of *Oligonicella* specimens from the MNHN collection in Paris that were collected by Maes in 1998. It is believed that these specimens were part (perhaps all) of the vouchers from the aforementioned work by Maes. These authors did not identify this pair as either *punctulatus* or *striolatus* but rather left them undetermined (along with two other *Oligonicella* specimens from Nicaragua and one from El Salvador), suggesting that an undescribed species resides in the area.

re: Ehrmann 2002: Ehrmann did not cite any sources or examined material for the listed Costa Rican occurrence of *punctulatus*. Given that no collection records of this species have been confirmed for Central America, this citation is regarded as a confusion with *striolatus*, as in the case with Maes’ material. Nevertheless, Ehrmann’s Costa Rican record was repeated within Agudelo’s checklist from 2007, which was in turn replicated by Patel’s checklist in 2016.

Oligonyx striolatus Saussure & Zehntner, 1894

-Saussure & Zehntner (1894: 173) describe *Oligonyx striolatus* from two male specimens that were collected by Champion in San Jeronimo, Guatemala. The authors additionally describe a “variety” of *striolatus* from Dueñas, Guatemala, which was also collected by Champion.

-Scudder (1901: 224) lists *striolatus* within his index to North American Orthoptera. The distribution range of this species was cited as being restricted to Guatemala.

-Kirby (1904: 278) lists *striolatus* under *Oligonyx* with a distribution pertaining to Guatemala.

-Giglio-Tos (1915: 190) establishes *Oligonicella* and moves *striolata* into this new genus. He changes the suffix of *striolatus* from -us to -a to conform with the gender of *Oligonicella*.

-Giglio-Tos (1927: 266) reiterates the original description of this species from Saussure & Zehntner.

-Beier (1935: 13) lists *striolata* as a valid species under *Oligonicella* with a distribution range that is restricted to Guatemala.

-Rehn (1935: 188) refers two male specimens to *striolata*, one from Ocotlan, Oaxaca, Mexico and the other from Monte Redondo, San Jose, Costa Rica.

-Marshall (1975: 325) notes that the Natural History Museum in London has possession of three male syntypes of this species, two from San Jeronimo, Guatemala and the last from Dueñas, Guatemala.

-Terra (1995: 48) lists *striolata* under *Oligonicella* with a distribution range confined to Guatemala.

-Ehrmann (2002: 245) documents this species as occurring only in Guatemala.

-Otte & Spearman (2005: 371) offer a brief list of historic literature pertaining to this species.

-Agudelo, et al. (2007: 117) list this species as occurring in Guatemala after Ehrmann.

-Pfauti & Hollier (2012: 265) confirm a fourth male syntype of *striolatus* from the original Godman-Salvin Collection that had been deposited at the Muséum d'Histoire Naturelle de Genève (MHNG).

-Patel, et al (2016: 799) follow after previous authors and list *striolata* as only occurring in Guatemala.

-Rivera & Svenson (2020: 215) list *striolata* as a valid species under *Oligonicella* and provide illustrations of a female head capsule and pronotum, in addition to a male pronotum and foreleg.

Remarks.

re: Saussure & Zehntner 1894: The male syntypes of *striolatus* were collected by George C. Champion during his commissioned collecting trip to Guatemala while under the employ of Frederick DuCane Godman and Osbert Salvin. The latter two gentlemen began work on the *Biologia Centrali-Americana* project in 1876, in conjunction with Saussure, Zehntner, and several other contributors. Champion was sent to Guatemala in 1879 by Godman and Salvin to collect specimens for this work. The syntypes of *striolatus* were among the several thousand specimens of insects that Champion harvested and brought back to England in 1883 from Guatemala and Panama. These specimens became part of the Godman-Salvin Collection, which

was then used by Saussure & Zehntner to help compose the Orthoptera section within the *Biologia Centrali-Americana*.

The locality of “Dueñas” refers to San Miguel Dueñas, Sacatepéquez, Guatemala, where Osbert Salvin leased a farm with his wife in 1873. This farm became the base of operations for Salvin’s collecting expeditions within Guatemala. It is believed that when Champion arrived in 1879, five years after the Salvins had returned to England, he used this same location to carry on Salvin’s expeditionary work.

re: Marshall 1975: Marshall notes that there are three male syntypes of *striolatus* that are deposited at the Natural History Museum in London. This series includes two specimens from San Jeronimo and one from Dueñas, all of which were collected by Champion. Marshall described one of the San Jeronimo specimens as missing its abdomen while the other is presumed intact. The Dueñas specimen is reportedly missing its head capsule. These three syntypes were part of the Godman-Salvin Collection that has remained in London since its inception.

re: Ehrmann 2002: Ehrmann lists here that there is a male syntype of *striolata* deposited within the Muséum d'Histoire Naturelle de Genève (MHNG).

re: Otte & Spearman 2005: The type locality is incorrectly listed as “Guatemala: South Geronimo”. This should read “Guatemala: San Jeronimo”.

re: Pfauti & Hollier 2012: This specimen was also collected by Champion in Dueñas, Guatemala and is evidently the type specimen of the “variety” within Saussure & Zehntner’s original description. The authors note that Saussure commonly exchanged or bought other specimens from foreign museums to augment the holdings of the MHNG. The derivation of this specimen is most likely from such an exchange. The type specimen has its prothorax assembly disarticulated from the rest of the body and it is separately carded/pinned. Its head capsule is intact and does not exhibit any signs of repair. Thus, given Marshall’s description of the London museum’s Dueñas specimen missing its head capsule, we know that the Geneva museum’s specimen from Dueñas is not the same.

Oligonyx tessellatus Saussure & Zehntner, 1894

-Saussure & Zehntner (1894: 174) describe *Oligonyx tessellatus* from a single male specimen that was collected by H.H. Smith in Omilteme, Guerrero, Mexico. The authors provide illustrations of the specimen’s pronotum, wings, and foretibial spination.

-Scudder (1901: 224) lists *tessellatus* within his index to North American Orthoptera. The distribution range of this species was cited as being restricted to Mexico.

-Kirby (1904: 278) lists *tessellatus* under *Oligonyx* with a distribution pertaining to Mexico.

-Giglio-Tos (1915: 190) establishes *Oligonicella* and moves *tessellata* into this new genus. He changes the suffix of *tessellatus* from -us to -a to conform with the gender of *Oligonicella*.

-Hebard (1922: 185) determines a series of four females, all collected in Venvidio, Sinaloa, Mexico to represent *tessellata*. He suggests that the variation demonstrated in the series might

indicate a synonymy of this species with *punctulatus* but notes that the later is “a decidedly more slender insect”.

-Giglio-Tos (1927: 265) reiterates the original description of this species from Saussure & Zehntner.

-Hebard (1932: 210) documents an immature female of this species from Michoacan, Mexico. He stated that this specimen was previously misidentified under a different genus by Rehn.

-Beier (1935: 13) lists *tessellata* as a valid species under *Oligonicella* with a distribution range that is restricted to Mexico.

-Marshall (1975: 325) notes that the Natural History Museum in London has possession of the male holotype of this species.

-Terra (1995: 48) lists *tessellata* under *Oligonicella* with a distribution range confined to Mexico.

-Cerdeña (1996: 94) redescribes *Oligonicella* and provides a photograph of a pair of specimens from Mexico that he determines to represent *tessellata*.

-Jantsch (1999: 59) reportedly examined a Guatemalan specimen that he determined to be *tessellata*. This specimen is presently deposited at the University of Minnesota.

-Ehrmann (2002: 246) documents this species as occurring only in Mexico.

-Otte & Spearman (2005: 372) offer a list of historic literature pertaining to this species.

-Agudelo, et al. (2007: 117) list this species as occurring in Mexico and Guatemala after Jantsch.

-Patel, et al (2016: 799) follow after previous authors and list *tessellata* as occurring in Mexico and Guatemala.

-Rivera & Svenson (2020: 215) list *tessellata* as occurring in Guerrero, Sinaloa, and Michoacan, Mexico. The authors further provide an illustration of a male pronotum for this species.

-Luna & Hernandez-Baltazar (2020) chart *tessellata* from Guanajuato and Nayarit, in addition to Guerrero, Michoacan, and Sinaloa, Mexico.

Remarks.

re: Saussure & Zehntner 1894: We know from Ayers & Boufford (1988) that Herbert Huntingdon Smith was a devoted collector who spent 1889 in Mexico collecting specimens for Godman and Salvin in preparation for their *Biologia Centrali-Americana* project. Many specimens that Smith procured became part of the Godman-Salvin Collection, from which Saussure & Zehntner sourced material for writing their portion of the *Biologia Centrali-Americana*.

The high rain forests of the Omiltemi Ecological State Park where the *tessellatus* holotype was collected are located approximately nine miles from Chilpancingo, in the Guerrero province, within the Sierra Madre del Sur. This park has been historically noted as the type locality of many precinctive plants, insects, birds and mammals.

re: Hebard 1922: In 1974, Cohn & Cantrall determined that “Venvidio,” as recorded by Hebard, is a misspelled transliteration of El Venadillo, a small village located 6 miles north of Mazatlan, Sinaloa. Hebard also states that he has in his personal collection an immature female of *tessellata* from Baja California Sur. No further specimens of *Oligonicella* have been documented from this region, which is well outside the known distribution range of the genus.

re: Cerda 1996: Cerda’s summary of the Mantodea of Venezuela includes *Oligonicella brunneri* (Saussure, 1871) as occurring in the region. Cerda mentioned that this species was not found among the studied material and he instead included a photograph of a pair of *tessellata* to represent the genus summary. Rivera & Svenson (2020) subsequently transferred *brunneri* to *Thrinaconyx* Giglio-Tos, 1915. The collection label of the male specimen that Cerda imaged reads “Compostela, Nayarit, Mexico”.

re: Jantsch 1999: Jantsch has a well established reputation for misidentifying specimens. Agudelo & Rivera noted in 2015 that “both Jantsch and Piza frequently classified their species in the wrong genera, sometimes even in the wrong family or subfamily.” These authors concluded within their paper concerning the many taxonomic and nomenclatural changes necessitated by the egregious errors of Jantsch (and Piza) that “future workers must also be cautious at resorting to Piza and Jantsch’s works and collections when exploring praying mantis biodiversity for both basic and applied research.” In the present case concerning *tessellata*, Jantsch reportedly examined a specimen of *Oligonicella* from Guatemala that he assigned to this species. Given the multitude of confirmed records of *tessellata* occurring within the mountainous regions of Mexico no further south than Oaxaca, it is highly unlikely that this species occurs in Guatemala. This concern, in addition to Jantsch’s inability to accurately identify specimens in general, suggests that the Guatemalan record for *tessellata* is unreliable and must not be used without further corroboration. Until such corroboration can be established, it is suggested that this record be referred to *striolata* – the well documented member of this species group that has a Guatemalan type locality.

re: Rivera & Svenson 2020: The authors denote three different spellings of the species name throughout their monograph. On page 65, the species list denotes “*tessellata*” – the correct spelling– as does the legend for figure 7 on page 165. The legend for figure 26, however, denotes “*tesellata*” and in the Examined Material Appendix this species is listed as “*tesselatta*”. These later two spellings are in error.

Oligonyx uhleri Stal, 1877

-Stal (1877: 66) describes *Oligonyx uhleri* from a single male specimen that was collected in Louisiana. He notes that this species is “extremely near *scudderi*, something larger, tegmina and wings more obscure, distinctly infuscated, limbs longer.”

-Westwood (1889: 5) lists *uhleri* under *Oligonyx* with a distribution range restricted to Louisiana.

-Scudder (1896: 212) notes that the other species assigned to *Oligonicella* up to this point are “probably distinct from Stal’s darker *O. uhleri*, which I have not seen.”

-Scudder (1900: 13) includes *uhleri* within *Oligonyx* with a distribution range restricted to Louisiana.

-Scudder (1901: 224) charts *uhleri* within his index to North American Orthoptera along with the short list of historic literature pertaining to this species.

-Kirby (1904: 278) lists *uhleri* under *Oligonyx* with a distribution range restricted to Louisiana.

-Caudell (1913: 608) considers *uhleri* a “variety” of *scudderi*, stating “the only essential difference seeming to be the hyaline wings and elytra of *scudderi* as compared with the infuscated ones of *uhleri*.”

-Giglio-Tos (1915: 190) establishes *Oligonicella* and moves *uhleri* into this new genus.

-Rehn & Hebard (1916: 122) ignore Giglio-Tos’ new genus and retain *Oligonyx*. They place *uhleri* as a junior synonym of *scudderi*, stating that “none of [the] characters are of sufficient importance in this insect to be considered of specific value, for the size and limb length are shown to be variable”.

-Blatchley (1920: 126) continues to use *Oligonyx* rather than *Oligonicella* and offers a redescription of the genus. He notes that Caudell considered this species to be “only a dark form of *scudderi*” and points out that this opinion was upheld by Rehn & Hebard.

-Giglio-Tos (1927: 267) reiterates the original description of this species from Stal. He notes Rehn & Hebard’s suggested synonymy of this species with *scudderi* but continues to consider it a valid species under *Oligonicella* with no noted justification.

-Sjöstedt (1930: 8) further ignores Giglio-Tos’ *Oligonicella* and lists *uhleri* as a valid species under *Oligonyx*. He offers an illustration of a male pronotum and head capsule within this work.

-Beier (1935: 13) lists *uhleri* as a synonym of *scudderi* with a distribution range that includes Louisiana and Mexico.

-Terra (1995: 48) recognizes *Oligonicella* as a valid genus and lists *uhleri* as a synonym of *scudderi*.

-Jantsch (1999: 59) lists *uhleri* as a synonym of *scudderi*.

-Ehrmann (2002: 245) further lists *uhleri* as a synonym of *scudderi*.

-Otte & Spearman (2005: 371) include *uhleri* as a synonym of *scudderi* and offer a list of historic literature pertaining to this species. The NHRS in Stockholm is noted as the type repository.

-Rivera & Svenson (2020: 65) continue to list *uhleri* as a synonym of *scudderi*.

Remarks.

re: Stal 1877: Stal cites that the male holotype of this species is deposited within the “Mus. Holm” (NHRS or Entomological Collection at the Swedish Museum of Natural History in Stockholm). The search portal for the natural history collections in Sweden yields no results for “*Oligonyx*” and only non-Mantodea species named “*uhleri*”. Thus, the *uhleri* holotype has apparently been lost (or possibly has not yet been entered into the database as of this writing).

re: Terra 1995: Terra introduces a misspelling of the original genus here by listing *uhleri* under “*Oliogonyx*”.

Discussion. In 2020, Rivera & Svenson noted that “*scudderi* exhibits conspicuous disparity in color, general body size, and pronotal proportions” across its distribution range. This extreme variation of external morphology has been the basis for historic authors advancing *bollianus*, *missouriensis*, and *uhleri* as distinct species. Hebard synonymized both *bollianus* and *missouriensis* under *scudderi* in 1931. But as Anderson detailed in 2019, *bollianus* somehow persisted in the literature as being valid while the synonymy of *missouriensis* was accepted, even though both names were dispatched in the same paper and with the same rationale. There has been no literary justification as to why one of these synonyms was accepted and the other was not. Anderson upheld the synonymy once more and explained that the problem had been historically resolved and that the continual listing of *bollianus* as a valid species was merely literary oversight on behalf of more modern authors.

The primary crux of the argument in support of *bollianus* being a valid species is the salient morphological differences between the male syntype of *bollianus* and the male holotype of *scudderi*, specifically in regard to the pronotum length to forewing length ratios of each specimen. In *scudderi*, the pronotal length to forewing length value is 0.33. This same measure of the *bollianus* syntype is 0.38. Thus, the forewings of *scudderi* are 3.04 times as long as its pronotum and the forewings of *bollianus* are just 2.64 times as long as its pronotum. Of further consideration is the Georgia type locality of *scudderi*, which is a region characterized by eastern temperate forests, versus the Dallas, TX type locality for *bollianus*, which is a region characterized by semi-arid prairies. These two ecoregions present different seasonal and climatic pressures that influence the number of broods and the available developmental time period of their respective nymphs. Given these data, it would appear that *scudderi* and *bollianus* demonstrate reproductive isolation to some degree, with the former occupying the southern/southeastern US and *bollianus* replacing this species in the Great Plains and northern Mexico. However, Rivera & Svenson’s 2020 genitalic analysis of *scudderi* specimens that were sampled from Arkansas, Florida, Kansas, Oklahoma, and Texas found no significant variation that would evidence that more than one species was involved.

It is the present author’s belief that the intrasexual polymorphism exhibited by *parva* males is not fully accounted for by intraspecific morphological variation and is, on the contrary, suggestive of a species complex that cannot be resolved by genitalic analysis alone. There is currently not enough data to confidently conclude that only one species is involved with *parva* or if a more

complicated evolutionary process is presently at work. To resolve this query, many more female specimens are needed to be analyzed in conjunction with their conspecific males from the same locale to determine the presence and/or extent of polymorphism among the opposite sex. Ootheca analysis across the known distribution range of this species needs to be undertaken in addition to life history comparisons of representatives from the southeastern US and those from the Great Plains. Until such data can be accumulated and properly assessed, it is recommended that *parva* be regarded as an assemblage of presently indistinguishable species rather than a single, plastic species.

The taxonomy of the *Thespis* representatives from western Mexico and Central America are also in need of further analysis. Rivera & Svenson list material from Nayarit and Oaxaca that is comparable to *tessellatus/punctulatus* or altogether undetermined. These authors also left several examined specimens from Nicaragua and El Salvador undetermined. This would indicate that there are multiple species involved in western Mexico and Central America beyond those currently described. For the extent of the present paper, only *tessellatus*, *punctulatus* and *striolatus* are treated here until a more thorough analysis of additional material can be undertaken.

Taxonomic Summary. *Thespis* currently comprises four described species. There are several undescribed species that occur in tropical Mexico and Central America. *Thespis parva* is provisionally considered a species complex.

Thespis Serville, 1831

= *Oligonicella* Giglio-Tos, 1915 **n. syn.**

Thespis parva (Gmelin, 1790) **complex**

Mantis parva Gmelin, 1790 **nomen protectum**

Mantis minuta Drury, 1773 **nomen oblitum**

= *Oligonyx scudderi* Saussure, 1870 **n. syn.**

= *Mantis missouriensis* Riley ex Glover, 1872 **n. syn.**

= *Oligonyx uhleri* Stål 1877 **n. syn.**

= *Oligonyx bollianus* Saussure and Zehntner, 1894 **n. syn.**

Thespis punctulatus (Saussure and Zehntner, 1894) **n. comb.**

Oligonyx punctulatus Saussure and Zehntner, 1894

Oligonicella punctata Giglio-Tos, 1915 *lapsus calami* of *punctulatus* Saussure and Zehntner, 1894

Oligonicella punctata Terra, 1995 *lapsus calami* of *punctulatus* Saussure and Zehntner, 1894

Thespis striolatus (Saussure and Zehntner, 1894) **n. comb.**

Oligonyx striolatus Saussure and Zehntner, 1894

= *Oligonicella punctulata* (Saussure and Zehntner, 1894) *sensu* Maes & Roy, 1999

= *Oligonicella tessellata* (Saussure and Zehntner, 1894) *sensu* Jantsch, 1999

Thespis tessellatus (Saussure and Zehntner, 1894) **n. comb.**

Oligonyx tessellatus Saussure and Zehntner, 1894

Oligonicella tessellata Rivera & Svenson, 2020 *lapsus calami* of *tessellatus* Saussure and Zehntner, 1894

Oligonicella tessellata Rivera & Svenson, 2020 *lapsus calami* of *tessellatus*
Saussure and Zehntner, 1894

Paramusonia Rehn, 1904 **stat. rev.**

Paramusonia boliviana (Beier, 1930) **n. comb.**

Musonia boliviana Beier, 1930

= *Leptomiopteryx argentina* Beier, 1930

Paramusonia cubensis (Saussure, 1869) **n. comb.**

Thespis cubensis Saussure, 1869

Paramusonia exposita (Beier, 1963) **n. comb.**

Thespis exposita Beier, 1963

Paramusonia major (Giglio-Tos, 1916) **n. comb.**

Diamusonia major Giglio-Tos, 1916

Paramusonia media (Giglio-Tos, 1916) **n. comb.**

Diamusonia media Giglio-Tos, 1916

Paramusonia metae (Hebard, 1921) **n. comb.**

Thespis metae Hebard, 1921

Paramusonia pacifica (Salazar, 2002) **n. comb.**

Thespis pacifica Salazar, 2002

Paramusonia seclusa Rehn, 1913

Paramusonia vicina (Saussure, 1872) **stat. rev. n. comb.**

Thespis vicina Saussure, 1872

= *Thespis parva* (Drury, 1773) *sensu* Cerda, 1996

= *Thespis parva* (Drury, 1773) *sensu* Agudelo, 2004

= *Thespis parva* (Drury, 1773) *sensu* Agudelo, et al., 2007

Oligonyx Terra, 1995 *lapsus calami* of *Oligonyx* Saussure, 1869

Zeugomantispa minuta (Fabricius, 1775)

= *Mantis minuta* Fabricius, 1775 – Neuroptera nec Mantodea

Redescription. Habitus slender. Body coloration yellowish-brown, brown, or various shades of gray with dark brown to blackish punctulation. Occasionally pigmentation is mottled with golden brown, light gray, or whitish.

Head capsule relatively small, pigmented same as body. Compound eyes large, elliptical, light brown to gray in coloration, vertically striped with whitish bands that run perpendicular to a single band of whitish coloration. Vertex relatively straight, level with dorsal surface of compound eyes in male or elevated in female. Juxtaocular lobes distinctly produced and rounded into blunt points. Lower frons small, superior margin shallowly arched. Center of head capsule concave between compound eyes in male with ocellar cluster produced into a thickened stalk; ocelli black. Center of head capsule flattened in female. Both sexes often with dark band across lower frons that extends into compound eyes, which either runs just below whitish bisecting band or entirely obscures whitish coloration of bisecting band. Male antennae long, reaching to middle of forewings, dark brown to blackish; antennae much shorter in female, reaching to metazona.

Pronotum short, slightly granular, margins often outlined with line of lighter coloration, ciliated. Pronotum pigmented same as body color with sparse brownish-black punctulation, occasionally mottled with lighter gray or with darkened transverse maculations along humeral areas that generate banded appearance. Supracoxal dilation pronounced, placed slightly forward of middle. Distal margin of prozona elongated, convergent, dilated proximally toward supracoxal sulcus. Metazona strongly keeled, measuring twice as wide as prozona, margins parallel.

Prothoracic legs. Forecoxae longer than metazona, apical lobes produced into salient triangular-shaped expansion on anteroventral margin. Forefemora bearing 4 posteroventral, 7-8 anteroventral, and 4 discoidal spines in distal half of limb. Proximal half of forefemora with series of 8-10 blunted anteroventral tubercles. Coloration of forefemora typically of uniform body color with blackish punctulation and blackish maculations near proximal margin on interior surface. Occasionally, forefemora demonstrate striped appearance with contrasting golden brown and gray pigmentation. Foretibiae one-third as long as forefemora, bearing 1 posteroventral, 3-5 anteroventral and 1 dorsal spine. First 1-3 anteroventral spines significantly reduced and placed near base of foretibiae; last 2 much larger spines respectively placed approximately in middle and distal portion of limb. Single posteroventral spine smaller and upturned in male. Tibial spur strong, twice as long as other spines. Foretibiae of body color, occasionally punctulated with blackish points or lined with black. Prothoracic tarsi nearly as long as forefemora with basitarsi much longer than remaining segments combined.

Meso/metathoracic legs of body color or, less often, contrastingly lighter with darkened apices. Base pigmentation stippled with dark brown throughout and often with 3-4 incomplete, dark brown annulations. Tarsi pubescent.

Wings. Male forewings narrow, apices narrowly rounded, discoidal area subhyaline, washed with brownish-gray throughout with greater concentration of pigmentation along costal area. Venation of forewings hyaline to dark brown, smaller venules may be darkened at point of insertion. Costal ridge typically whitish but may be darkened with alternating brownish-black and whitish dashes. Hindwings extended past forewings in repose, narrow with raised veins, subhyaline with brownish-gray coloration along costal area, apices, and small portion of anal area. Length of male wings variable. Forewing may just reach to tergite V or extend to tip of

abdomen, whereas hindwings may just reach to tergite VII, leaving last few abdominal segments exposed, or occasionally more lengthy, concealing entire abdomen. Female wingless, rudimentary pads present only as lateral prolongations of meso/metanotum, often shaded contrastingly lighter than body color at apices, forming a whitish band at base of tergite I, or with darker striations.

Abdomen. Male abdomen elongated, margins parallel; female abdomen roughly fusiform. Coloration of abdomen brownish with darker transverse striations extending down each tergite on either side of blackish median band. Distal margin of each tergite with raised, triangular-shaped, darkened tubercle on median. Male supra-anal plate triangular, significantly longer than wide, apices rounded to acute. Cerci elongated, measuring at least twice as long as supra-anal plate.

Biological Notes. *Oothecae* are elliptical in shape, measuring 3-3.5 mm wide and 5-7 mm long. Distal end vertically flattened with emergence area extended forward to form an elongated point that may be hooked in shape. Proximal end rounded. Lateral surface saliently ribbed, delimiting approximately 6-8 egg chambers. External wall light tan to golden brown with somewhat lighter-colored emergence area consisting of 16-20 tear-shaped openings lining center of dorsal ridge, all of which are sealed with dried froth. *Oothecae* are attached along ventral surface with emergence area parallel to the substrate. Oviposition sites include thin twigs, tree bark, broad leaves, or thick grass stalks.

Development. *Oothecae* require no diapause period; eggs will develop within approximately 1 month of oviposition. Early instar nymphs have compacted, stout habitus and forelegs that gradually become more elongated throughout each successive instar. Head capsule of early instar nymphs is rather large and rotund with vertex arched and sculpted. Younger nymphs have golden-brown body coloration with grayish-white margins and mottling. Meso/metathoracic legs pigmented dirty grayish-white, banded and punctated with black. Later instars transition into being monochromatic brownish or gray. Cannibalism amongst nymphs is not indicated.

Ethology. Males fly regularly and are attracted to lights at night. Both sexes often rest with their forelegs outstretched in front of their bodies. Despite having a relatively small surface area within their raptorial forelegs in which to confine other insects, females are capable of capturing and holding aloft prey that are equal to half their body length and a large portion of their own body weight.

Type Species: *Mantis parva* Gmelin, 1790

Species Checklist:

- *Thespis parva* (Gmelin, 1790) **complex**
- *Thespis punctulatus* (Saussure and Zehntner, 1894) **n. comb.**
- *Thespis striolatus* (Saussure and Zehntner, 1894) **n. comb.**
- *Thespis tessellatus* (Saussure and Zehntner, 1894) **n. comb.**

Key to *Thespis* Males:

- | | |
|----|--|
| 1 | Pronotum short, nearly rhomboidal. Costal area of forewings subopaque ... <i>T. tessellatus</i> |
| 1' | Pronotum elongated, linear. Costal area of forewings hyaline 2 |
| 2 | Supra-anal plate elongate-triangular, extending to terminal segment of or surpassing styli, apex acute. Occurs in the southern United States/northern Mexico <i>T. parva</i> |

- 2' Supra-anal plate broadly triangular, measuring shorter than styli, apex rounded. Occurs in tropical Mexico or Central America 3
- 3 Forewings measure 3.23 times longer than pronotum. Longitudinal veins of forewings well spaced apart, moderately curved; transverse venules hyaline. Occurs in coastal western Mexico *T. punctulatus*
- 3' Forewings measure 3.41 times longer than pronotum. Longitudinal veins of forewings placed in close proximity, nearly straight; transverse venules whitish-hyaline, brownish-black at points of insertion. Occurs in tropical southern Mexico and Central America *T. striolatus*

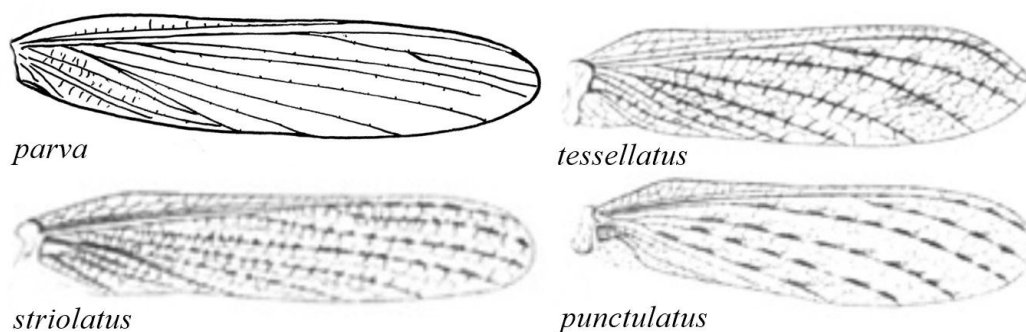


Figure Plate 4. Forewings of *Thespis* males, demonstrating venation. (Illustrations of *tessellatus*, *striolatus* & *punctulatus* sourced from Saussure & Zehntner, 1894.)



Figure Plate 5. Distribution range map of *Thespis*.

	<i>T. parva</i>	<i>T. punctulatus</i>	<i>T. striolatus</i>	<i>T. tessellatus</i>
MEXICO				
Aguascalientes				X
Baja California				
Baja California Sur				
Campeche				
Chiapas			X	
Chihuahua				
Coahuila	X			
Colima		X		
Durango				
Guanajuato				X
Guerrero		X		
Hidalgo				X
Jalisco		X		X
Mexico				X
Mexico City				X
Michoacan		X		X
Morelos				X
Nayarit				X
Nuevo Leon	X			
Oaxaca		X	X	X
Puebla				X
Queretaro				X
Quintana Roo				
San Luis Potosi	X			
Sinaloa				X
Sonora				
Tabasco				
Tamaulipas	X			
Tlaxcala				X
Veracruz				
Yucatan				
Zacatecas	X			X
BELIZE				
COSTA RICA			X	
EL SALVADOR			X	
GUATEMALA			X	
HONDURAS			X	
NICARAGUA			X	
PANAMA			X	

Figure Plate 6. Occurrence of different *Thespis* species in the provinces of Mexico and countries of Central America.

	<i>T. parva</i>	<i>T. punctulatus</i>	<i>T. striolatus</i>	<i>T. tessellatus</i>
UNITED STATES				
Alabama	X			
Alaska				
Arizona				
Arkansas	X			
California				
Colorado	X			
Connecticut				
Delaware				
Florida	X			
Georgia	X			
Hawaii				
Idaho				
Illinois				
Indiana				
Iowa				
Kansas	X			
Kentucky				
Louisiana	X			
Maine				
Maryland				
Massachusetts				
Michigan				
Minnesota				
Mississippi	X			
Missouri	X			
Montana				
Nebraska	X			
Nevada				
New Hampshire				
New Jersey				
New Mexico	X			
New York				
North Carolina				
North Dakota				
Ohio				
Oklahoma	X			
Oregon				
Pennsylvania				
Rhode Island				

	<i>T. parva</i>	<i>T. punctulatus</i>	<i>T. striolatus</i>	<i>T. tessellatus</i>
UNITED STATES				
South Carolina	X			
South Dakota				
Tennessee				
Texas	X			
Utah				
Vermont				
Virginia				
Washington				
West Virginia				
Wisconsin				
Wyoming				

Figure Plate 7. Occurrence of different *Thespis* species in the United States of America according to state.



Voucher Specimen Photographs. *Thespis parva*: A, light phase male dorsal habitus. Rosharon, Brazoria Co, TX 10.02.21; B, dark phase male dorsal habitus. Rosharon, Brazoria Co, TX 10.02.21; C, male dorsal habitus. College Station, Brazos Co, TX 10.09.01; D, female dorsal habitus. Woodlake Reservoir, Brazos Co, TX 10.05.99

Thespis parva (Gmelin, 1790) complex

Diagnosis. Male pronotum elongated, linear. Forewings measuring 2.78 times longer than pronotum, costal area hyaline. Longitudinal veins of forewings placed in close proximity, nearly straight, pigmented light brownish-hyaline, interrupted with darker brown segments; transverse venules hyaline, brownish at points of insertion. Supra-anal plate elongate-triangular, extending to terminal segment of or surpassing styli, apex acute. Occurs in the southern United States and northern Mexico.

Measurements. (All measurements are in millimeters and rounded to nearest 0.5) *Male*. Body length 26-40; pronotum length 6.5-9; forewing length 18-25; prothoracic coxa length 4.5-5.5; prothoracic femur length 6-9; metathoracic femur length 9-13. *Female*. Body length 26-40; pronotum length 8-9; forewing length N/A; prothoracic femur length 7.

Biological Notes. *Adulthood.* This species is bivoltine throughout much of its distribution range with spring generation adult males being found from late March to early August and adult females occurring somewhat later between late June and early August. Fall generation adult males are encountered from mid-September to early November with adult females being found from early October to mid-November. Broods may overlap in some areas with females being found throughout the summer and fall. Adults are found running along the ground or lurking within low vegetation, shrubbery, and grasses in a wide range of habitats from desert scrub to swampy wetlands to the interior of pine forests.

Reproduction. Females can produce 10 or more oothecae during their lifespan, with multiple deposits, up to 3, in a single night. Each ootheca contains between 10-20 eggs.



01, *Thespis parva* adult male. Vivian, Caddo Parish, LA 10.20.17 (Photo: Royal Tyler)



02, *Thespis parva* adult male. Throckmorton, Throckmorton Co, TX 10.08.21 (Photo: Luke Padon)



03, *Thespis parva* adult female. Hamilton, Hamilton Co, TX 09.11.21 (Photo: Missy McAllister Kerr)



04, *Thespis parva* adult female. Wichita Falls, Wichita Co, TX 09.30.20 (Photo: Gabe)



05, *Thespis parva* immature nymph. Mission, Hidalgo Co, TX 04.26.20 (Photo: Joseph Connors)



06, *Thespis parva* mature nymph. Shive, Hidalgo Co, TX 08.29.20 (Photo: Missy McAllister Kerr)



07, *Thespis parva* ootheca. Sun City, Williamson Co, TX 11.06.19 (Photo: Isaac Lord)

Material Examined.

Type Specimen: The holotype male of *scudleri* is deposited at the Muséum National d'Histoire Naturelle in Paris. This type specimen has been digitized by Svenson and is available online for study: <https://specimens.mantodearesearch.com/specimen/222>

Pinned Specimens: UNITED STATES: 10 ♂♂ Rosharon, Brazoria Co, TX 10.02.21-10.18.21; 4 ♂♂ Whitsett, Live Oak Co, TX 10.22.17-10.10.21; 1 ♂ Dolan Falls, Val Verde Co, TX 10.15.93; 1 ♂ Del Rio, Val Verde Co, TX 10.08.93; 1 ♂ Baytown, Harris Co, TX 09.60; 1 ♂ Walterboro, Colleton Co, SC 08.03.96; 1 ♂ Laurel, Sarasota Co, FL 04.01.97 Anderson Collection Las Vegas. 4 ♂♂ Chaparral Wildlife Management Area, Dimmit Co, TX 10.10.00; 1 ♂ Rivera, Kleberg Co, TX 03.17.89; 4 ♂♂ College Station, Brazos Co, TX 10.09.01; 1 ♀ Woodlake Reservoir, Brazos Co, TX 10.05.99; 1 ♂ Bastrop State Park, Bastrop Co, TX 10.21.90; 2 ♂♂ Orozimbo, Brazoria Co, TX 11.16.06; 2 ♂♂ Flynn, Leon Co, TX 10.17.05; 3 ♂♂ Kerrville, Kerr Co, TX 09.05.64-09.24.98; 1 ♂ Field Station, Kimble Co, TX 10.12.01 Texas A&M University.

Live Habitus Observations: For those specimens that were photographed *in situ*, the hyperlink to the image begins with “inaturalist.org/observations/”, followed by the unique number string identifier noted in parentheses after the date of the listed observation. UNITED STATES: ♂ Auburn, Lee Co, AL 09.29.19 (33673717); ♂ Fort Gibson, Cherokee Co, OK 10.06.19 (33960013); ♂ Echola, Tuscaloosa Co, AL 09.24.16 (4262891); ♂ Lloyd, Jefferson Co, FL 07.30.16 (4107146); Tumbling Shoals, Cleburne Co, AR 10.22.20 (63516178); Lizella, Bibb Co, GA 10.04.20 (69269311); ♀ Rockwall, Rockwall Co, TX 09.15.17 (7985059); ♀ Auburn, Lee Co, AL 07.14.18 (14395195); ♀ Mt. Croghan, Chesterfield Co, SC 10.29.20 (63958804); ♀ Bristol, Franklin Co, FL 05.09.21 (78204612); ♀ Vance, Tuscaloosa Co, AL 08.29.21 (93121443); ♀ Coleman Lake Rec Area, Cleburne Co, AL 09.28.21 (96555907). MEXICO: ♂ San Pedro Garza, Nuevo Leon 05.14.19 (25124097); ♂ Grecia, Nuevo Leon 03.21 (73083641); ♂ Guadalupe, Nuevo Leon 02.25.18 (10788680); ♂ San Pedro Garza, Nuevo Leon 08.01.21 (89574832); ♂ Guadalupe, Nuevo Leon 10.04.16 (4301011); ♂ Lampazos de Naranjo, Nuevo Leon 10.26.21 (101758184); ♀ Apodaca, Nuevo Leon 06.02.18 (13066674); ♀ Arteaga, Coahuila 05.25.17 (6363146); ♀ Garcia, Nuevo Leon 03.24.16 (41393361); ♀ General Escobedo, Nuevo Leon 04.23.17 (8885621); Monterrey, Nuevo Leon 07.01.19 (28087389); ♀ Nuevo Laredo, Tamaulipas 05.12.17 (49675894).

Thespis punctulatus (Saussure and Zehntner, 1894) **n. comb.**

Diagnosis. Male pronotum elongated, linear. Forewings measuring 3.23 times longer than pronotum, costal area hyaline. Longitudinal veins of forewings well spaced apart, moderately curved, pigmented brownish, interrupted with hyaline segments; transverse venules hyaline. Supra-anal plate broadly triangular, measuring shorter than styli, apex rounded. Occurs in coastal western Mexico.

Measurements. (All measurements are in millimeters and rounded to nearest 0.5) *Male*. Body length 28-29; pronotum length 5.5; forewing length 17-18; prothoracic femur length 5.



01, *Thespis punctulatus* adult male. La Unión de Isidoro Montes de Oca, Guerrero, Mexico 12.19.21 (Photo: Victor Alvear)



02, *Thespis punctulatus* adult female. Ixtlahuacan, Colima, Mexico 09.27.20 (Photo: Irma Ramos)

Material Examined.

Type Specimen: The holotype male of *punctulata* is deposited at the Natural History Museum in London. This type specimen has been digitized by Svenson and is available online for study: <https://specimens.mantodearesearch.com/specimen/222>

Live Habitus Observations: For those specimens that were photographed *in situ*, the hyperlink to the image begins with “inaturalist.org/observations/”, followed by the unique number string identifier noted in parentheses after the date of the listed observation. MEXICO: ♂ Manzanillo, Colima 11.11.19 (35572720); ♂ San Pedro Pochutla, Oaxaca 03.08.18 (10148326); ♂ Santa Maria Huatulco, Oaxaca 01.26.22 (105936849).



Voucher Specimen Photograph. *Thespis striolatus*: A, male dorsal habitus. Rancho Hannia, Guanacaste, COSTA RICA 05.04.95

Thespis striolatus (Saussure and Zehntner, 1894) **n. comb.**

Diagnosis. Male pronotum elongated, linear. Forewings measuring 3.41 times longer than pronotum, costal area hyaline. Longitudinal veins of forewings placed in close proximity, nearly straight, pigmented brownish, interrupted with hyaline segments; transverse venules whitish-hyaline, brownish-black at points of insertion. Supra-anal plate broadly triangular, measuring shorter than styli, apex rounded. Occurs in tropical southern Mexico and Central America.

Measurements. (All measurements are in millimeters and rounded to nearest 0.5) *Male*. Body length 24-32; pronotum length 4.5-6.5; forewing length 17-22; prothoracic coxa length 3.5-4; prothoracic femur length 4.5-6; metathoracic femur length 7.5-8.



01, *Thespis striolatus* adult male. San Cristobal de las Casas, Chiapas, Mexico 03.23.13 (Photo: Lauren Zarate)



02, *Thespis striolatus* adult male. Santa Catarina Cuixtla, Oaxaca, Mexico 08.15.21 (Photo: Uriel Cuixtlena)



03, *Thespis striolatus* adult female. Carrillo, Guanacaste, Costa Rica 08.12.11 (Photo: M. Schmitt)



04, *Thespis striolatus* adult female. Santa Domingo Tehuantepec, Oaxaca, Mexico 09.23.18 (Photo: Abel Jossafat)

Material Examined.

Type Specimen: Three of the male syntypes of *striolatus* are deposited at the Natural History Museum in London. A fourth syntype is deposited at the Natural History Museum of Geneva. Svenson has digitized one of the London museum syntypes (the individual that has a missing abdomen) as well as the rediscovered syntype that is deposited in Geneva, making both specimens available online for study: <https://specimens.mantodearesearch.com/specimen/222>

Pinned Specimens: COSTA RICA: 2 ♂♂ Rancho Hannia, Guanacaste, Costa Rica 05.04.95 Anderson Collection Las Vegas.

Live Habitus Observations: For those specimens that were photographed *in situ*, the hyperlink to the image begins with “inaturalist.org/observations/”, followed by the unique number string identifier noted in parentheses after the date of the listed observation. MEXICO: ♂ Acala, Chiapas 08.01.21 (91605452); ♂ San Cristóbal de las Casas, Chiapas 04.25.21 (75233836); ♂ Santa Catarina Cuixtla, Oaxaca 08.15.21 (91662737); ♀ Santa Domingo Tehuantepec, Oaxaca 09.23.18 (17758602); ♀ Villa Corzo, Chiapas 07.04.21 (88091879). COSTA RICA: ♂ Santa Cruz, Guanacaste 05.26.21 (80369675); ♀ Carrillo, Guanacaste 08.12.11 (87026658). HONDURAS: ♂ San Antonio de Oriente, Francisco Morazan 05.13.20 (46709627); ♂ San Antonio de Oriente, Francisco Morazan 08.31.19 (34683899); ♀ San Pedro Sula, Cortes 07.29.10 (101883818); ♀ Santa Ana, Francisco Morazan 08.16.20 (56638920). NICARAGUA: ♂ Granada, Granada 05.16.21 (79088312); ♂ Managua, Managua 03.22.21 (71806975); ♀ Tipitapa, Managua 01.06.20 (37343156).



Voucher Specimen Photograph. *Thespis tessellatus*: A, male dorsal habitus. Surutato, Sinaloa, MEXICO 10.17

Thespis tessellatus (Saussure and Zehntner, 1894) **n. comb.**

Diagnosis. Male pronotum short, nearly rhomboidal. Forewings measure 4.76 times longer than pronotum, costal area subopaque. Longitudinal veins of forewings well spaced apart, strongly curved, pigmented brownish, interrupted with hyaline segments; transverse venules hyaline, brownish at points of insertion. Supra-anal plate broadly triangular, measuring shorter than styli, apex rounded. Occurs throughout central Mexico.

Measurements. (All measurements are in millimeters and rounded to nearest 0.5) *Male*. Body length 24-29; pronotum length 4.5-5.5; forewing length 21-22.5; prothoracic coxa length 5-5.5; prothoracic femur length 4.5-5.



01, *Thespis tessellatus* adult male. Coeneo, Michoacan, Mexico 09.16.19 (Photo: Ricardo T.)



02, *Thespis tessellatus* adult male. Cabo Corrientes, Jalisco, Mexico 01.01.17 (Photo: Laura Gaudette)



03, *Thespis tessellatus* adult female. Valle de Bravo, Mexico, Mexico 06.26.20 (Photo: Ana Fernandez)



04, *Thespis tessellatus* adult female. Jungapeo, Michoacan, Mexico 07.27.18 (Photo: Juan Morales)



05, *Thespis tessellatus* nymph. Zapopan, Jalisco, Mexico 10.12.21 (Photo: Omar Martin)

Material Examined.

Type Specimen: The holotype male of *tessellata* is deposited at the Natural History Museum in London. This type specimen has been digitized by Svenson and is available online for study: <https://specimens.mantodearesearch.com/specimen/222>

Live Habitus Observations: For those specimens that were photographed *in situ*, the hyperlink to the image begins with “inaturalist.org/observations/”, followed by the unique number string identifier noted in parentheses after the date of the listed observation. MEXICO: ♂ Cadereyta de Montes, Queretaro 08.14.20 (56438905); ♂ Valle de Bravo, Mexico 10.16.21 (98796020); ♂ Coeneo, Michoacan 08.30.20 (59524774); ♂ Cabo Corrientes, Jalisco 01.01.17 (111994922); ♂ Iztapalapa, Distrito Federal 04.22.17 (6267687); ♂ Zapotitlan, Puebla 06.26.21 (85866578); ♀ Colon, Queretaro 10.08.21 (97585853); ♀ Coyoacan, Distrito Federal 07.01.21 (85959411); ♀ Huamantla, Tlaxcala 06.23.19 (31947295); ♀ Valle de Bravo, Mexico 06.26.20 (51032919); ♀ Jungapeo, Michoacan 07.27.18 (15007113); ♀ Ocuilan, Mexico 07.18.10 (10711478)

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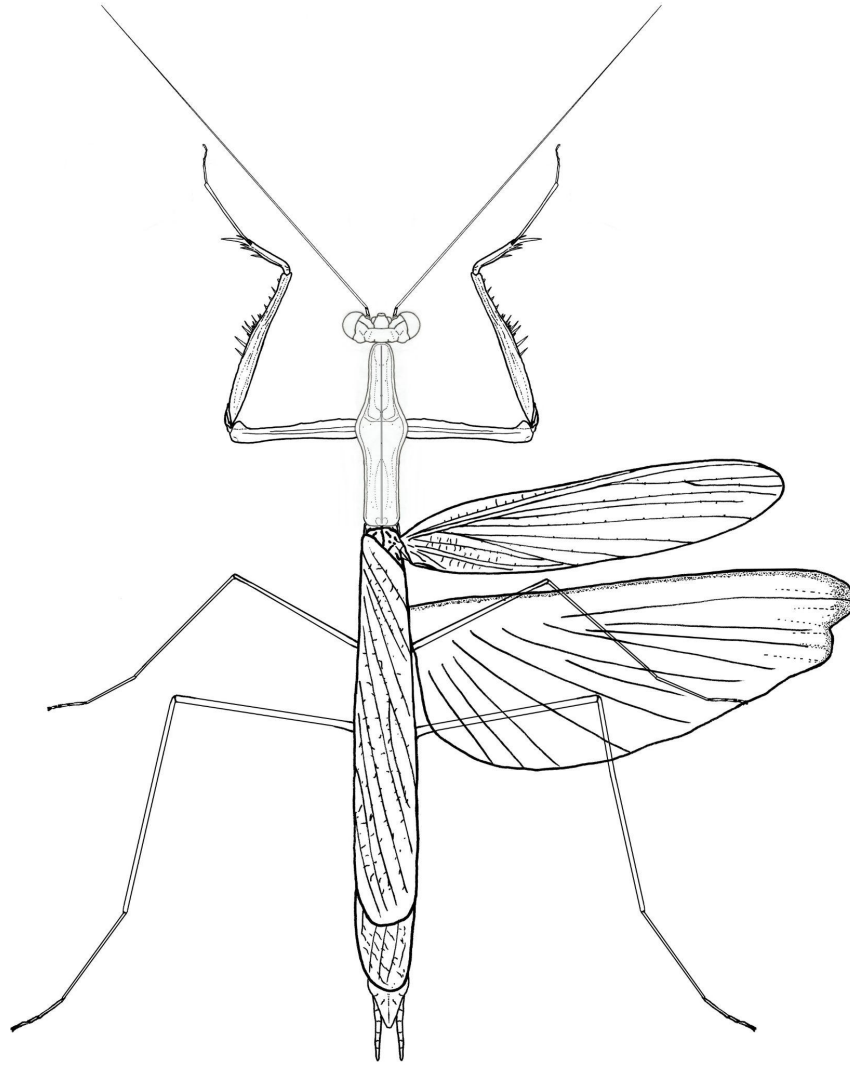
References.

- AGUDELO, A. A. In: FERNÁNDEZ C., F., GONZALO ANDRADE-C, M. & AMAT G., G. D. (2004): Insectos de Colombia. Mántidos de Colombia (Dictyoptera: Mantodea). – Universidad Nacional, Facultad de Ciencias, 3: 602 (43-60), Abb. 3.1-3.3; Bogotá.
- AGUDELO, A., LOMBARDO, F. & JANTSCH, L. (2007): Checklist of the Neotropical mantids. – Biota Colombiana. 8 (2): 105-158.
- ANDERSON, K. (2019): Praying Mantises of the United States and Canada. 2nd edition. Las Vegas: Kris Anderson.
- AYERS, T. & BOUFFORD, D. (1988): Index to the Vascular Plant Types Collected by H.H. Smith near Santa Marta, Colombia. – Brittonia. 40 (4): 400-432.
- BATTISTON, R., FONTANA, P., AGABITI, B. & GARCIA, P. (2005): Mantodea Collected in Mexico during an 8800 km Orthopterological Trip. Atti della Accademia Roveretana degli Agiati. Ser. VIII, vol, V, B: 199-215.
- BEIER, M. (1935): Genera Insectorum. Fam. Mantidae. Subfam. Thespinae.
- BLATCHLEY, W. S. (1920): Orthoptera of Northeastern America. – The Nature Publ. Comp. Indianapolis, : 114-147, 4 Abb.; Indianapolis.
- BOLIVAR, I. In: SIMON, E. (1890b): Voyage de M. E. SIMON au Venezuela (Décembre 1887-Avril 1888). Orthoptères. – Ann. Soc. Ent. France, (10): 137-146 (138), Abb. 1-6; Paris.
- BRUNNER VON WATTENWYL, K. (1893): Révision du système des Orthoptères et description des espèces rapportées par M. LEONARDO FEA de Birmanie. – Ann. Mus. Stor. Nat. Genova, 13(33): 1-230 (5-8, 54-76), Taf. 1-5 (2); Genua
- BURMEISTER, H. C. (1838): Handbuch der Entomologie. Fangschrecken, Mantodea. – Handbuch der Entomologie, 2: V-VIII, 517-552; Berlin.
- CAUDELL, A. N. (1913): Notes on Nearctic Orthopterous Insects. I.- Non-saltatorial forms. – Proc. U. S. Nat. Mus., 44(1970): 595-614, 10 Abb.; Washington.
- CERDÁ, F. J. (1996): Mantodea de Venezuela. Géneros y lista preliminar de especies. Parte 2: Familia Mantidae (Subfamilias Liturgousinae y Thespinae). – Bol. Entomol. Venez., (N. S.), 11(2): 73-87, 6 Abb.; Maracay.
- CHOPARD, L. (1916): Étude des Mantides Américains. Collection I. BOLIVAR. – Ann. Soc. Ent. France, 85: 161-187, 13 Abb.; Paris.
- COHN, T. J. & CANTRALL, I. J. (1974): Variation and Speciation in the Grasshoppers of the Conal Carini: the Lowland Forms of Western Mexico, the Genus *Barytettix*. 6: 1-131.
- DODGE, C.R. (1888): The life and work of the late Townend Glover, first entomologist of the U. S. Department of Agriculture. U. S. Dept. Agr., Div. Entomol., Bull. 18: 1-68.
- DRURY, D. (1773): Illustrations of Natural History of exotic Insects. – Illust. nat. Hist., White, 2: 9 + 89 (75, 88-89) S. Farbtafel. 1-50 (39: 5 (m); 49: 2 (f)); London.
- EHRMANN, R. (2002): Mantodea, Gottesanbeterinnen der Welt.
- FABRICIUS, J. C. (1775): Systema Entomologiae. Mantodea & Phasmodea. –Korte, Flensburgi

- et Lipsiae, 30 + 832 (268-279) S.; Flensburg & Leipzig.
- FABRICIUS, J. C. (1781): *Species Insectorum Mantodea & Phasmodea*. – Bohn, Hamburgi et Kilonii, 1: 8 + 552 (340-351) S.; Hamburg & Kiel.
- FABRICIUS, J. C. (1787): *Mantissa Insectorum Mantodea & Phasmodea*. – Prost, Hafniae, 1: 20 + 348 (224-231) S.; Copenhagen.
- FABRICIUS, J. C. (1793): *Entomologia Systematica. Mantodea & Phasmodea*. – Prost, Hafniae, 2: 8 + 519 (12-25); Copenhagen.
- FOX, R. H. (1919): *Dr. John Fothergill and his Friends. Chapters in Eighteenth Century Life*; Macmillan and Co., London
- GIGLIO-TOS, E. (1915): *Mantidi esotici. Generi e specie nuove*. – Bull. Soc. Ent. Ital. Firenze, 46: 134 -200; Florenz.
- GIGLIO-TOS, E. (1916): *Mantidi esotici. Generi e specie nuove*. – Bull. Soc. Ent. Ital. Firenze, 47: 3-44; Florenz.
- GIGLIO-TOS, E. (1919): *Saggio di una nuova classificazione dei Mantidi*. – Bull. Soc. Ent. Ital. Firenze, 49: 50-87; Florenz.
- GIGLIO-TOS, E. (1927): *Das Tierreich. Orthoptera-Mantidae*. – Walter de Gruyter & Co., 50. Lfg., 707 S., 25 Abb.; Berlin.
- GLOVER, T. (1872): *Illustrations of North American Entomology, (United States and Canada,)* Orthoptera
- GMELIN, J. F. (1790): *Systema Naturae. Insecta. Coleoptera bis Hemiptera*. – Beer, Lipsiae, 13. Aufl., 1(4): 1517-2224 (2048-2055); Leipzig.
- GOEZE, J. A. E. (1778): *Entomologische Beiträge zu des RITTER LINNÉ zwölften Ausgabe des Natursystems*. – Weidmanns Erben und Reich, 2: 1-352 (16-37); Leipzig.
- HANCOCK, E. G. In: HANCOCK, E. G., PEARCE, N. & CAMPBELL, M. (2015): *William Hunter's World: The Art and Science of Eighteenth-Century Collecting*. Ashgate Publishing.
- HEBAR, M. (1921): *Studies in the Dermaptera and Orthoptera of Colombia. 2.- Dermaptera and Orthopterous families Blattidae, Mantidae and Phasmidae*. – Trans. Amer. Ent. Soc. Phil., 47(2): 107-169, Taf. 8-10; Philadelphia.
- HEBAR, M. (1922): *Dermaptera and Orthoptera from the State of Sinaloa, Mexico. Part I. Dermaptera and Non-saltatorial Orthoptera*. – Transactions of the American Entomological Society. 48 (3): 182-191.
- HEBAR, M. (1931): *The Orthoptera of Kansas*. – Proceedings of the Academy of Natural Sciences of Philadelphia. 83: 119-227.
- HEBAR, M. (1932): *New Species and Records of Mexican Orthoptera*. – Transactions of the American Entomological Society. 58 (3): 201-371.
- HEBAR, M. (1943): *The Dermaptera and Orthopterous families Blattidae, Mantidae and Phasmidae of Texas*. – Trans. Amer. Ent. Soc. Phil., 68: 239-311, Taf. 12-13; Philadelphia.
- JANTSCH, L. J. (1999): *Estudos filogenéticos em Mantódeos americanos (Insecta: Pterygota: Mantodea)*. – PUCRS, Doutorado, 1-138, 6 Tab., 7 Abb.; Porto Alegre.
- KIRBY, W. F. (1904): *A synonymic Catalogue of Orthoptera. (Forficulidae, Hemimeridae, Blattidae, Mantidae and Phasmidae)*. – British Museum, Nat. Hist., 1: I-X, 1-501 (207-316); London.
- KIRBY, W. F. (1910): *A synonymic Catalogue of Orthoptera*. – British Museum, Nat. Hist., 3:

- 567-569; London.
- LUNA, M. & HERNANDEZ-BALTAZAR, E. (2020): Diversidad de Mantis de Norteamérica, con una clave de Identificación Ilustrada para Familias y Géneros. – Boletín de la Sociedad Entomológica Aragonesa, 67: 156-164.
- MAES, J.-M. 2022. Personal communication, 04 Apr 2022.
- MAES, J.-M. & ROY, R. In: MAES, J.-M. (1999): Insectos de Nicaragua. – Maes, J.-M. (Ed.), Setab Bosawas, Marena, 3: 60-63, 2 Abb.; Managua.
- MARSHALL, J. A. (1975): Catalogue of the Primary Types of Mantodea in the British Museum (Natural History). Bulletin of the British Museum (Natural History) Entomology. 31: 309–329
- OLIVIER, A. G. (1792): Histoire Naturelle. Insectes (Mantodea). – Encycl. Méthodique, Dictionnaire des Insectes. Panckouke, 7: 616-642, Taf. 132-133; Paris.
- OTTE, D. & SPEARMAN, L. (2005): Mantida Species File. Catalog of the Mantids of the World.
- PATEL S., SINGH, G. & SINGH R. (2016): A Checklist of Global Distribution of Liturgusidae and Thespidae. – Journal of Entomology and Zoology Studies, 4 (6): 793-803.
- PFAUTI, P. & HOLLIER, J. (2012): Additions to the Catalogue of Mantid Type Material Deposited in the Muséum d'Histoire Naturelle de Genève. – Revue Suisse de Zoologie, 119 (3): 261-267.
- REHN, J. A. G. (1903): Notes and remarks on North American Blattidae, Mantidae and Phasmidae, with a catalogue of the Forficulidae, Blattidae, Mantidae and Phasmidae recorded from Texas. – Entomol. News, 14: 325-331; Philadelphia.
- REHN, J. A. G. (1904): Studies in American mantids or Soothsayers. – Proc. U. S. Nat. Mus., 27 (1364): 561-574; Washington.
- REHN, J. A. G. (1920): Records and descriptions of Brazilian Orthoptera. – Proc. Acad. Nat. Sci. Phil., 72: 219-237, Taf. 10-11; Philadelphia.
- REHN, J. A. G. (1935): The Orthoptera of Costa Rica. Part I.- Mantidae. – Proc. Acad. Nat. Sci. Phil., 87: 167-271, Taf. 7-10; Philadelphia.
- REHN, J. A. G. & HEBARD, M. (1916): Studies in the Dermaptera and Orthoptera of the Coastal Plain and Piedmont region of the Southeastern United States. – Proc. Acad. Nat. Sci. Phil., 68: 87-127, 3 Kte., 1 Taf.; Philadelphia
- REYES-IBARRA, A. (2020): Listado Estatal de la Diversidad de Mantodea en Nuevo León. – Boletín de la Sociedad Mexicana de Entomología (N.S.), 6: 8-12.
- RIVERA, J. & SVENSON, G. (2020): The Neotropical “Polymorphic Earless Praying Mantises” Part II: Taxonomic Review of the Genera and Checklist of Species. – Entomological Society of America.
- ROY, R. & Cuche, T. (2008): Catalogue du Matériel Type des Mantes Conserve au Museum d'Histoire Naturelle de Genève. – Revue Suisse de Zoologie, 115 (1): 3-24.
- SAUSSURE, H. De. (1869): Essai d'un Système des Mantides. Mitteilungen der Schweizerischen Entomologischen Gesellschaft. 3.
- SAUSSURE, H. (1870): Additions au Système des Mantides. – Mitt. Schweiz. Ent. Ges., 3(5): 221-244; Schaffhausen.
- SAUSSURE, H. (1871): Mémoires pour servir à l'histoire naturelle du Mexique, des Antilles et des États-Unis – IV.- Synopsis des Mantides américains. – Genève & Bâle, 1(4): 5-186, Taf. 1-2; Genf.

- SAUSSURE, H. (1872): Recherches Zoologiques pour servir à l'histoire de la Faune de l'Amérique Centrale et du Mexique. Études sur les Myriapodes et les insectes, famille des Mantides. – Mission Mexico, 6(4): 202-295, Taf. 5-6; Paris.
- SAUSSURE, H. & ZEHNTNER, L. (1894): Biologia Centrali - Americana. Insecta - Orthoptera - Mantidae. – Soc. Entomol., 1: 123-197, Taf. 6-10; Zürich.
- SCUDDER, S. H. (1896): Index to the Mantidae of North America, North of Mexico. *The Canadian Entomologist*. 28: 206-215.
- SCUDDER, S. H. (1900): Catalogue of the described Orthoptera of the United States and Canada. – Proc. Davenport Acad. Nat. Sc., 8: 1-101; Davenport.
- SCUDDER, S. H. (1901): Alphabetical Index to North American Orthoptera Described in the Eighteenth and Nineteenth Centuries. – Occasional Papers of the Boston Society of Natural History, 6: 1-401
- SCUDDER, S. H. & COCKERELL, T. D. A. (1904): A first list of the Orthoptera of New Mexico. – Proc. Acad. Natural Sci., 9: 1-60, Taf. 1-4; Davenport.
- SERVILLE, J. G. A. (1831): Revue méthodique des Insectes de l'ordre des Orthoptères. – Ann. Sci. Nat., 22: 1-101 (17-29); Paris.
- SJÖSTEDT, Y. (1930): Orthopterentypen im Naturhistorischen Reichsmuseum zu Stockholm. – Arkiv för Zoologi, 21A(32): 1-43, 18 Taf.; Stockholm.
- STAL, C. (1877): Systema Mantodeorum. Essai d'une Systematization Nouvelle des Mantidees. Bihang till K. svenska Vetenskapsakademiens Handlingar. 4 (10): 1-91.
- TERRA, P. S. (1995): Revisão Sistemática dos gêneros de louva-a-deus da região Neotropical (Mantodea). – Revista Brasil. Ent., 39(1): 13-94.
- VARELA-HERNANDEZ, F., MARTINEZ-LUQUE, E. O., VAZQUEZ-FRANCO, C. M., & PEDRAZA-LARA, C. (2022): Contribution to the Knowledge of Mantids in Central Mexico: A Morphological and Molecular Approach. – Southwestern Entomologist, 47 (1): 27-44.
- WESTWOOD, J. O. (1837): Illustrations of Exotic Entomology. – Bohn, 3: 58-59, Farbtafel. 43; London.
- WESTWOOD, J. O. (1889): Revisio Insectorum Familiae Mantidarum, speciebus novis aut minus cognitis descriptis et delineatis. – Gurney and Jackson, 55 S., 14 Taf.; London.



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