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**Minimalist revision of *Mesochorus* Gravenhorst, 1829
(Hymenoptera: Ichneumonidae: Mesochorinae) from
Área de Conservación Guanacaste, Costa Rica, with 158 new species
and host records for 129 species**

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ABSTRACT

Introduction: Species of *Mesochorus* are found worldwide and members of this genus are primarily hyperparasitoids of Ichneumonoidea and Tachinidae.

Objectives: To describe species of Costa Rican *Mesochorus* reared from caterpillars and to a lesser extent Malaise-trapped.

Methods: The species are diagnosed by COI mtDNA barcodes, morphological inspection, and host data. A suite of images and host data (plant, caterpillar, and primary parasitoid) are provided for each species.

Results: A total of 158 new species of *Mesochorus*. Sharkey is the taxonomic authority for all.

Conclusions: This demonstrates a practical application of DNA barcoding that can be applied to the masses of undescribed neotropical insect species in hyperdiverse groups.

Keywords: Accelerated taxonomy; BIN code; conservation; COI DNA barcode; Ichneumonoidea; parasitoid host associations; tetra-trophic interaction.

RESUMEN

Revisión minimalista de *Mesochorus* Gravenhorst, 1829 (Hymenoptera: Ichneumonidae: Mesochorinae) del Área de Conservación Guanacaste, Costa Rica, con 158 especies nuevas y registros de hospedantes para 129 especies

Introducción: Las especies de *Mesochorus* se encuentran en todo el mundo y los miembros de este género son principalmente hiperparasitoides de las familias Ichneumonoidea y Tachinidae.

Objetivos: Describir las especies de *Mesochorus* costarricenses obtenidas de orugas y en menor medida por trampas Malaise.

Métodos: Las especies se diagnosticaron mediante el uso de código de barra molecular por COI del ADNmt, inspección morfológica y datos del huésped. Se proporciona un conjunto de imágenes y datos de los huéspedes (planta, oruga y parasitoide primario) para cada especie.

Resultados: Se encontró un total de 158 nuevas especies de *Mesochorus*. Sharkey es la autoridad taxonómica para todas las especies.

Conclusiones: Se demuestra una aplicación práctica del código de barras de ADN que se puede aplicar a grandes cantidades de especies de insectos neotropicales no descritas para grupos hiperdiversos.

Palabras clave: taxonomía acelerada; código BIN; conservación; código de barras molecular COI; ichneumonoida; asociaciones hospedador y parasitoide; interacción tetratrófica.

INTRODUCTION

The purpose of this research is to diagnose and name 158 new species of Costa Rican *Mesochorus* Gravenhorst, 1829 (Ichneumonidae) from Área de Conservación Guanacaste [ACG] in northwestern Costa Rica, and to provide host records for 129 of these.

Species of *Mesochorus* are found worldwide and all species for which the biology is known are hyperparasitoids, primarily of the larvae of endoparasitic Braconidae and Ichneumonidae (Hymenoptera), rarely Tachinidae (Diptera), and more rarely Hemiptera and Psocoptera. More than 900 species of *Mesochorus* have been described and these comprise about 80 % of all mesochorines (Yu et al., 2016). Members can

be distinguished from all other Mesochorinae by the presence of a transverse carina ventral to the antennal sockets (this carina is absent in all other genera), though this carina may be very weak and restricted to a small area medially.

Araujo (2018) corrected the key to the world genera of Mesochorinae published in Araujo et al., (2018). Dasch (1974) treated what he considered to be 245 species of Neotropical *Mesochorus*, including species he described under *Piestetron* Dasch, 1974, *Rhaibaspis* Dasch, 1974, and *Oncocotta* Dasch, 1974. This is one of the largest revisions of any ichneumonoid taxon. Although a few of the species described by Dasch may be redescribed in this Costa Rican *Mesochorus* study we choose to ignore his species concepts, and therefore we

do not attempt to coordinate with his names. There are four main reasons, which are expanded as follows. One: he described only a small fraction of the species that occur in Costa Rica. Two: his key does not work, leading the user to ambiguity. Three: it would take years to mimic his approach with the huge number of Costa Rican *Mesochorus*. Four: morphological differences are not sufficient to distinguish species of *Mesochorus* as demonstrated by their hosts and DNA barcodes.

One: Dasch (1974) treated a very small proportion of ACG *Mesochorus* species, therefore few synonyms will be generated in our current effort which does not attempt to match his names with Costa Rican specimens. The proportion of the total ACG *Mesochorus* species can be estimated by comparing the percentage of Malaise-trapped species with those reared by Janzen, Hallwachs and their team over 37 years (Fig. 1). 145 species were reared, and 37 species were captured in Malaise traps in the same forests. The overlap between these two collecting techniques is 12 species. Only 32.4 % (12/37) of the Malaise-trapped species were also reared. This suggests that the reared species represent only 32.4 % of the total number of ACG species of *Mesochorus* occurring in ACG. Extrapolating from this percentage (145/0.324) there are an estimated 447.5 species of *Mesochorus*

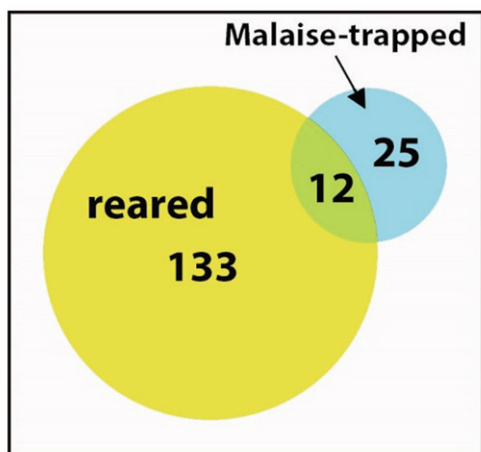


Fig. 1. Venn diagram comparing reared and Malaise-trapped species of *Mesochorus* in the ACG.

in ACG. ACG has 65 % or less of the Costa Rican fauna and flora of the well-documented taxa, e.g., birds, angiosperms, mammals, butterflies. Under the assumption that *Mesochorus* diversity follows this pattern there are a predicted 688 (447.5/0.65) species of *Mesochorus* in Costa Rica.

Dasch (1974) included 15 species with holotypes from localities in Costa Rica. However, Dasch's specimens are from all over Costa Rica and since the ACG contains only about 65 percent of the Costa Rican fauna, 65 % of Dasch's 15 species (~ ten) are likely to occur in ACG. The probability of any of these ten species being in the current revision can be estimated as the predicted fraction of *Mesochorus* species occurring in Costa Rica that are also in the present treatment, which is 23 % (158/688). In other words, it is likely that we are generating two or three synonyms (0.23 x 10) of these Dasch species. Taxapad lists 30 species recorded from Costa Rica, most of which were identified by Dasch so the number of estimated synonyms created may be four to six. This would only be true if the species concepts of each of the species with holotypes outside the country did not contain multiple species, as is our (MS) experience with strictly morphological approaches to species delimitation.

Dasch did not include any species whose holotypes are from Nicaragua and only one from Panama. However, there were a few from Honduras and many from Mexico. Some of these may also be included in our revision, but we estimate that the total number of synonyms generated by the current manuscript will be less than ten, and these can only be resolved later by obtaining barcodes from Dasch's holotypes or topotypic specimens that are identical morphologically.

Two: The Dasch (1974) key does not work. We ask the readers to carefully read the couplet from Dasch's key in Fig. 2. Imagine the futility of trying to identify the 158 species of ACG *Mesochorus* species knowing that only ten of them are likely to be included in the key. Our (MS) experience trying to do this, is that most



58. Face narrow, width 0.49-0.52x width of head; hind femur slender, length 5.35-5.85x height; ovipositor sheath length 6.25x height; areola elongate and very slender; groove lacking from eye to lateral ocellus 59
- Face narrow or wide, width 0.52-0.59x width of head; hind femur usually stouter, length 4.3-5.45x height; ovipositor sheath usually more slender, length 6.2-8.35x height; areola slender or short and broad; groove weak or strong between eye and lateral ocellus; combination of characteristics not as above 60

Fig. 2. Couplet 58 in the key to Neotropical *Mesochorus* (Dasch,1974).

83. Postpetiole strongly striate longitudinally; frons dull-shagreened; abdomen infuscate, tawny at apex of segment 2 and on all of segment 3 75. *incultus* Dasch (p. 172)
- Postpetiole smooth or faintly striate; frons variously sculptured; abdomen colored otherwise 84

Fig. 3. Couplet 83 in the key to Neotropical *Mesochorus* (Dasch,1974).

specimens fail the key at some point. They usually partially fit both parts of a couplet. Henry Townes (RIP) is the most prominent ichneumonologist of all time and founder of the American Entomological Institute. He knew that his species-level keys for large genera did not work for others, but he followed protocols/rules to validate his species assignments (personal communication to MS decades ago).

Many of the characters in Dasch's key use jargon that only a few entomologists know. For example, few of the general population understand the terms postpetiole and frons (Fig. 3). The key is almost impossible for professional taxonomists, and it is in an alien language for the vast majority of potential users. This raises the question of for whom we are writing keys. Until recently, identification of all but the most flamboyant of insects was exclusively the job of taxonomists. They were forced to use keys such as Dasch's or use direct comparisons with specimens scattered among the world's museums. COI barcodes do the job so much more simply, quickly, and cheaply. Imagine if all of the estimated 688 species of *Mesochorus* were included in a morphological key. The key would likely be over 700 couplets long and impossible to work

through, especially since many of the species would be represented by single specimens and morphological variation would be unknown.

We (MS) investigated the number of citations for Dasch (1974). According to a search in Google Scholar (October 19, 2021); this *Mesochorus* revision has 41 citations. The majority of the citations are geographical surveys that simply copy the distributional records that are in these papers and do not confirm any identifications. For example, Rodríguez-Berrío et al., (2009) surveyed the literature for all Ichneumonidae occurring in Peru and included a number of species cited as being present in Peru by Dasch (1974); the keys and descriptions were not employed. Only two citations were found (Janzen et al., 2003; González-Moreno & Bordera, 2012) that used the key to identify species, and both contain doubtful identifications due to the problems elucidated above. How can any reader have confidence that the identifications are correct? With barcodes associated with each species there would be far less doubt about these identifications.

With the advent of COI barcode libraries people no longer need to be taxonomic experts on the Ichneumonoidea. What were formerly

clients of taxonomic services would be enabled to identify specimens themselves. COI barcodes do the job so much more simply. Why do so many persist on archaic morphological approaches for megadiverse genera such as *Mesochorus*, or, for that matter, simply the hundreds of thousands of small and cryptic tropical species of insects, irrespective of the species-richness of their genera?

Three: Mimicking Dasch's approach, with all of its inherent weaknesses, for the species of *Mesochorus* treated here would take years, in contrast with the months it took by employing a primarily COI barcode approach. With approximately 1 % of Neotropical Ichneumonoidea described (Sharkey, Baker et al., 2021) there is a clear need for a faster approach for this taxon, and for other species-rich taxa.

Dasch did not include any species from Nicaragua and only one from Panama, however there were a few from Honduras and a number from Mexico. Some of these may also be included in our revision. Because Dasch's key does not work we would have had to borrow all holotypes from Mesoamerica. Mexico itself has 68 described species of *Mesochorus* (Yu et al., 2016). In order to accomplish these comparisons, we would have to write our own morphological key to the 158 species and then make a minimum of 15 900 comparisons, i.e., compare 100 holotypes with the 158 new species. But there is more. We have a great deal of confidence in our species concepts due to COI data and, to a lesser degree, rearing data. Because of these data sources, we have accurately determined morphological variation within species. Thus, we would need to compare a sample of paratypes to all published holotypes as well. All of the above would take years of work for the sake of a few synonymies, nearly all of which may be resolved by barcoding the Dasch holotypes. Such a glacial approach greatly slows taxonomic progress, to say nothing of impeding the use of taxonomic inference by other sectors of society (e.g., Janzen et al., 2020).

Four: Unlike the agathidine braconids (Braconidae: Agathidinae) that we (MS) are

accustomed to treating at the species level, sister-species of *Mesochorus* are sometimes remarkably alike morphologically. In the recent treatment of Costa Rican *Alabagrus* (Braconidae: Agathidinae) (Sharkey et al., 2018) there were three species that could not be differentiated morphologically and were included together in one couplet of the key. In the case of *Mesochorus* there are probably five or six species-pairs that cannot be differentiated morphologically by a hard-core taxonomist, and nearly all by lay persons. Without the degree of certainty that is associated with COI barcode data we would not feel comfortable using any of Dasch's names. Most of the species treated here have associated biological data that includes host primary parasitoid, host caterpillar and host plant (see Supplemental file 1). If we treated one of the species described herein as belonging to one of Dasch's species these biological data would be assigned to that species name. When and if someone has the desire, money, and authorization to barcode Dasch's holotypes, it may be discovered that there are in fact two species and the reared species would have to be renamed. This would cause confusion since the biological data would forever be incorrectly associated with the Dasch species. Therefore, although we may create a few species to be synonymized, we feel that it is better to fail by splitting species rather than combining species under one questionable name.

Biology

Broad et al. (2018) summarized the biology of mesochorines, which roughly translates into the biology of *Mesochorus*. Their basic points are that species of *Mesochorus* are mostly koinobiont hyperparasitoids of endoparasitic Ichneumonoidea (Hymenoptera) and rarely Tachinidae (Diptera). They state that secondary hosts (hosts of their hosts) include larval Lepidoptera, Symphyta and Coleoptera. They also report nymphal and adult Hemiptera and Psocoptera as secondary hosts citing Waloff (1967) and Carlson (1979:703) respectively. Finally, they mention that ectoparasitic



Ichneumonidae are also known to be parasitized citing Shaw (1993).

It is well documented that *Mesochorus* females deposit eggs directly into primary parasitoid larvae, e.g., Blunck (1944) and Yeargan and Braman (1989). We have numerous records in which more than 100 specimens were reared from a single caterpillar and for which none of the primary parasitoids survived. There are also rare cases in our rearings in which a very few primary parasitoids and other ichneumonid and chalcidoid hyperparasitoids eclose along with dozens or hundreds of specimens of *Mesochorus*. In cases where large numbers of *Mesochorus* emerge from one caterpillar, e.g., hundreds of specimens, the ovipositing *Mesochorus* may dump many eggs into the parasitized host to have the first instar larvae find the primary parasitoids. We state this simply on conjecture as we lack any direct evidence.

Of the 158 species treated here, 129 have host records. Two species have a tachinid larva as a primary host, nine species are exclusively on Ichneumonidae, 115 species are exclusively on Braconidae with a strong bias towards Microgastrinae, and nine species attack both ichneumonids and braconids. Most often multiple conspecific *Mesochorus* emerged from the host parasitoid cocoons from one caterpillar, one per cocoon, suggesting that many species select caterpillars attacked by gregarious primary parasitoids. All Ichneumonidae primary parasitoids that were attacked, resulted in the emergence from the caterpillar of a single primary parasitoid larvae that spun a cocoon, from which a single *Mesochorus* specimen emerged. This occurred even in the single event in which more than one ichneumonid primary parasitoid were in the host caterpillar (see data associated with *Mesochorus unouno* sp. nov.).

Mesochorus angustistigmatus (Dasch 1974) was reported to parasitize *Microplitis espinachi* Walker, 2003 and *Microplitis figueresi* Walker, 2003 from ACG-reared specimens (Janzen et al., 2003). It is difficult to ascertain the validity of the wasp species-level identification for this record because neither of the depositories was

given, nor were there voucher codes for the specimens reared prior to barcoding. The holotype of *M. angustistigmatus*, is from Brazil and this would normally make the Costa Rican identification doubtful; however, both of the sphingid host caterpillars *Erinnyis crameri* (Schaus, 1898) and *Erinnyis ello* (Linnaeus, 1758) are widespread from the southern USA through Brazil. Two of our species were reared from these same *Microplitis* hosts, i.e., *Mesochorus unocuatro* and *M. dosuno*. Neither species fits the description of *Mesochorus angustistigmatus* given by Dasch (1974) or the redescription by Janzen et al. (2003).

METHODS

General

Sharkey, Janzen et al. (2021) and Sharkey, Baker et al. (2021) present methods in great detail and these are summarized here. We started this revision by grouping our specimens into molecular unit trays based on their BIN placements (Ratnasingham & Hebert, 2013). One BIN (Barcode Index Number) = one molecular unit tray. The specimens in each tray were then investigated for general morphological consistency. This was followed by an inspection of a neighbor-joining (NJ) tree (not shown) that we generated on the BOLD (The Barcode of Life Data System) website (Ratnasingham & Hebert, 2007) using only those specimens with full or almost full barcodes, i.e., barcodes with more than 550 base pairs. We carefully examined the branching pattern of the specimens in each BIN. If there was any clumping or any outliers in the specimens within a BIN, we then looked at the rearing host data. We also looked at the morphology of the specimens, to see if they differed significantly and checked for concordance between these three data sources. In practice, all of these steps occur simultaneously with the NJ tree and the rearing database in hand. If these data sources were consistent with the hypothesis that any cluster of branches represents a separate species within the BIN,

we considered this possibility based on the degree of difference in morphology, sequence divergence, and host use. We then built a new NJ tree that included shorter barcodes to place those specimens into species formulated in the previous step and to add new species that may not be represented by specimens with full barcodes (Supplemental Material 2 [SM2]). In this supplemental material we have highlighted the records of the holotypes in red. Finally, we looked at the morphology and host data of the nearest neighbors (if they were included in the manuscript) for each BIN that was less than 3 % (p-distance) divergent from that neighbor. This was done to try to ensure that we were not describing the same species twice. If the distance was greater than 3 %, we considered the COI difference sufficient to confirm separate species status. If these do not differ morphologically, we might consider them to be cases where a pair of BINs split a species. For each of the 27 species described here that have a nearest neighbor that is less than 3 % divergent we illustrated one or more morphological traits that can be used to distinguish them. In most of these cases convincing characters were found but in several cases the differences seemed trivial, but we (MS) decided to maintain species status. Species concepts are hypotheses, some strong and others weak. More collecting, rearing, and barcoding will enable us or others to test these hypotheses. In all cases in which the nearest neighbor is a species that is included in the manuscript we identified the neighbor and gave the p-distance. In cases where the nearest neighbor is not included in the manuscript no information is provided here but it is easily accessible from BOLD. These neighbors are undescribed and therefore it is not relevant at this time and for this publication whether or not they represent the same or a different species.

Some readers have had difficulty understanding how our consensus barcodes act as diagnostic characters. An analogy might help. Imagine a segmented organism similar to a millipede with variable numbers of legs on

each segment. Each segment can be likened to a position on the COI barcode, and the number of legs on a segment is analogous to the base pair in a particular position on the COI barcode sequence. Morphologists will recognize that it would be possible to use a code like 0 1 4 3 2 to indicate the number of legs on each of the first five segments, with the understanding that the first number represents the number of legs on the first segment, the second number represents the number of legs on the second segment, etc. Two species of this imaginary genus could be differentiated as follows: Species A: 0 1 4 3 2. Species B: 0 1 5 3 2. Equally, the diagnosis could be more precise by stating only the differences, i.e., Species A: Four legs on segment three. Species B: Five legs on segment three. This latter approach was used by Meierotto et al. (2019), e.g., 72–75 GGGT, 163 G, 222–225 GGGG, 264 G. In either case the diagnostic will be little if ever used. To diagnose a species is to enable a user to identify it and this will be done by searching for matching and closely matching barcodes on BOLD.

Meier et al. (2021) criticized the minimalist approach, and a response to their criticisms was recently published (Sharkey et al., 2022). However, there is one criticism that we also address here. Meier et al., noted that a number of the species described in Sharkey, Janzen et al. (2021) had COI barcodes that coded for identical amino acids. Their conclusion was, “These BINs have no known, functionally significant biological differences because the biology of these wasp “species” is not at all affected by which triplet codons are used to code for identical proteins. Given that most biologists associate speciation with the origin of biologically meaningful differences, describing such BINs as species rests on the hope that the correlation between time of divergence and the origin of new species is strong enough that biologically meaningful differences will later be found. However, most biologists are rightfully skeptical of results based on correlations and we would argue that it would be healthy to adopt the same position here.” One could equally argue that the



Fig. 4. Images showing morphological differences between two species of *Mesochorus* whose slightly different COI barcodes generate identical amino acids, M. 127 (*M. unodosiete*) and M.139 (*Mesochorus unotresnueve*). Note the massive mandibles, relative to the width of the head, and smooth clypeus in *M. 127* and compare with the normal mandible and punctate clypeus of *M. 139*.

ratio between the lengths of the first and second flagellomeres (functions, if any, unknown), or most any other morphological character used to differentiate species, is simply the result of drift due to time of divergence. Nonetheless, to address this criticism, we produced a NJ tree based on barcode amino acids and identified all identical clusters that contained multiple species of *Mesochorus*. Just as with the nearest neighbors with divergences of less than 3 %, we include images that morphologically differentiate these species that the amino acids do not. Without exception, the proposed species that shared identical COI amino acids were different morphologically, and sometimes dramatically so (Fig. 4). In the case of Costa Rican species of *Mesochorus*, the BIN algorithm, as a measure of time of divergence, is a good estimator of species status.

Here we include several standardized images of each holotype specimen and, if available, an image of a specimen of the opposite sex. We also include at the end of the publication a frontal image of the head of each species (SM3, Figs. S1-S27). The purpose of these images is to help users confirm the identifications that

they arrived at using COI barcodes. Essentially, we expect that COI barcodes will be used to identify species; however, a check, for those fortunate enough to possess a quality microscope, will be to examine the images. The facial images at the end of this treatment are grouped because they offer perhaps the best diagnostic characters. The overall sculpture and color as well as the shape of the clypeus and mandibles may all be partly diagnostic. It is expected that, when someone barcodes a specimen of *Mesochorus* and has a hit on one of our species, they will examine these images to confirm their identification. This is a far better option than asking to borrow the holotype specimen which could be refused in many cases, e.g., taxonomists not affiliated with recognized institutions and those working in countries with unsecured postal services. In this revision the BINs all match the species concepts. With more intense sampling, a presumed “species” may be found to be more than one, as sometimes is the case for COI barcodes. This is occasionally anticipated by 1 % or less difference between two clusters of barcodes within a BIN; these are also hints for

a closer look at the ecology of the wasps, if such data are available.

Species etymologies

The specific epithets for all the 158 new species here described correspond to various combinations of the Spanish numbers zero to nine, i.e., cero, uno, dos, tres, cuatro, cinco, seis, siete, ocho, and nueve.

Specimens and generic placements

All of the species described here were collected by rearing wild-caught host caterpillars in ACG in northwestern Costa Rica (Janzen & Hallwachs, 2016) or caught in Malaise traps in the same forests. Holotypes of all newly described species are deposited in the Canadian National Collection of Insects (CNC), Ottawa. Paratypes will be deposited in the Museo Nacional de Costa Rica in Santo Domingo de Heredia, and the Los Angeles County Museum as duplicates become available. All other specimens, including hundreds of paratypes in alcohol, will also be deposited at the CNC. Undescribed but yet different species, generally with only one damaged specimen per BIN, are also deposited in the CNC until they are described and augmented with newly collected conspecifics as they are collected by the ongoing inventory.

Some host species treated here are awaiting full identification and are given interim names. For example, *Antaeotricha* Janzen233 is identified to the genus *Antaeotricha* Zeller by classical morphology-based criteria and to Janzen233 by barcode and ecological information. However, no formal scientific species name will be available until a barcode-match is obtained with an existing holotype or until it is described as new, or interim matched morphologically with a described species by a taxonomic specialist. Equally, *Antaeotricha* radicalisEPR03 is also an interim name based on what the species looks like. However, the species interim epithet it is not a scientific name which is why it is not italicized. It temporarily retains the information

that this species is recognized by similarity with its look-alike, *A. radicalis*, before barcoding the holotype and associating it with other ecological data. Finally, a name such as gelJanzen01 Janzen407 signifies a caterpillar in the family Gelechiidae for which even a generic name is not obtainable at present.

DNA extraction and sequencing

Molecular work was carried out at the Centre for Biodiversity Genomics (CBG) at the University of Guelph, using their standard protocols. A leg of each specimen was destructively sampled for DNA extraction using a glass fiber protocol (Ivanova et al., 2006). Extracted DNA was amplified for a 658-bp region near the 5' terminus of the cytochrome *c* oxidase subunit I (COI) gene using standard insect primers LepF1 (5'-ATTCAAC-CAATCATAAAGATATTGG-3') and LepR1 (5'-TAAACTTCTGGATGTCCAAAAAAT-CA-3') (Hebert et al., 2004). If initial amplification failed, additional amplifications were conducted following the established protocols using internal primer pairs: LepF1-C113R (130 bp) or LepF1-C_ANTMR1D (307 bp) and MLepF1-LepR1 (407 bp) to generate shorter overlapping sequences (Smith & Fisher, 2009). Amplified products were sequenced using Sanger technology, though the most recently barcoded were sequenced by SEQUEL II. Specimens that "failed" barcoding are not included here unless otherwise indicated. When included, they are usually identified by unambiguous morphological and ecological information equally possessed by others from ACG in that species.

Barcode sequences presented in the species descriptions herein are a consensus of the barcode sequences of all included individuals, meaning base pairs that differ between conspecific specimens are replaced by IUPAC ambiguity codes, but individual-based barcodes for every specimen are permanently recorded and retained in BOLD, which is publicly available and maintained by the Centre for Biodiversity Genomics (CBG).



Databases

Voucher codes are presented here for all holotype specimens (and all other barcoded individuals) treated herein. All host caterpillars are individually vouchered to their individual records (yy-SRNP-xxxxx). Codes beginning with DHJPARxxxxxxx are for the parasitoid (or hyperparasitoid) specimens reared from the caterpillar; therefore, each wasp carries two voucher codes, one for the rearing (host) record and one for the wasp itself. A hyperparasitoid also carries the host caterpillar voucher code, but only the host caterpillar record retains the primary parasitoid data, if there are any. In other words, if there were survivors of the primary parasitoid as well as the hyperparasitoid, both records are in the total caterpillar voucher in the Janzen and Hallwachs database (<http://janzen.sas.upenn.edu/caterpillars/database.lasso>), updated copies of which are periodically deposited in the Lepidoptera division of the National Museum of Natural History in the Smithsonian Institution, and will eventually be publicly available not only through the University of Pennsylvania, but other web sites as well. Specimen voucher codes beginning with BIOUG are generated by the CBG and stored in BOLD (<http://www.boldsystems.org>), and most of the specimens obtained from ACG Malaise traps have this prefix. The DHJPAR and their associated SRNP codes can also be found on the BOLD database. The abundant collateral information obtainable from these two databases complements the species treatments. See Sharkey, Janzen et al. (2021) for a brief introduction to what to look for and how the two databases supplement the species treatments herein. Instructions on how to use BOLD to identify a specimen are given in Sharkey, Baker et al. (2021). GenBank and BOLD were both searched to ensure that none of the species described herein having matching barcodes with named species.

Included in supplementary documentation (Supplemental Material 1 [SM1]) is an excel spreadsheet with information on 814 Costa

Rican *Mesochorus* specimens. The columns in the spreadsheet are as follows.

- A. **abb. (abbreviated) Species Name.** A numerical representation of the species of *Mesochorus*, e.g., 1 = *Mesochorus uno*, 23 = *Mesochorus dostres*.
- B. **Species Name.** The name of the species to which the specimen belongs, e.g., *Mesochorus uno*.
- C. **BOLD BIN.** This is the BOLD (Barcode of Life Database) BIN code to which the specimen belonged in December 2021. BINs are described in Ratnasingham and Hebert (2013) and are not fixed entities. They can merge, split, and disappear, just as can classical unit trays, but more than 95 % remain static in our experience. The BIN code can be searched for on BOLD to find all records and should prove useful in the future as more *Mesochorus* specimens are added from Costa Rica and other Neotropical countries.
- D. **Hyper (Hyperparasitoid) Voucher.** *Mesochorus* specimen voucher codes. These are of two types, DHJPAR and BIOUG. DHJPAR codes are voucher codes created for the Janzen database and almost all are reared (<http://janzen.sas.upenn.edu/caterpillars/database.lasso>). These can be entered in the aforementioned database, in the “DHJPAR hyperparasite code” field, to obtain much of the same material that is in the current database, plus extra information such as images of host caterpillars and their adults, as explained in Sharkey, Janzen et al. (2021). Most specimens that were Malaise-trapped have BIOUG voucher codes. These are not currently available on the Janzen-Hallwachs database but are in BOLD. Both BIOUG and DHJPAR voucher codes also act as sample IDs on BOLD and can be used to search for associated information on BOLD (http://www.boldsystems.org/index.php/MAS_Management_RecordSearch). Details of

- the type of information that can be found on BOLD are given in Sharkey, Janzen et al. (2021).
- E. Sex.** For all viewed specimens the sex is given, “m” for male and “f” for female.
- F. Specimen Status.** The categories include, “holotype”, “paratype”, “EtOH” and “not viewed”. EtOH refers to specimens that are still in vials and deposited in the Canadian National Collection. Not viewed, refers to specimens that are in BOLD but that have not yet crossed author Sharkey’s desk, since they go through the CBG processing before they arrive to Sharkey. Specimens that are “not viewed” or “EtOH” are not considered to be paratypes.
- G-O. Country, Conservation Área , Province, Sector, Locality, Latitude, Longitude, Elevation (in meters), Collector.**
- P. Collection Tech. (Technique).** There are two types of collecting techniques, rearing and Malaise trapping. The Malaise-trapped specimens are from ten different sites within ACG, representing the three major ecosystems (dry forest, cloud forest, rain forest) and various overlaps and intergrades among them.
- Q. Hyper. (Hyperparasitoid) Eclos. (Ecllosion) Date.** This is in the counterintuitive format month/day/year and refers to the date on which a reared specimen eclosed (emerged from the host cocoon), rather than the date when the caterpillar containing the primary host parasitoid was collected, because emergence date represents when free-flying adults would likely be collected. For Malaise-trapped specimens this date refers to the date they were captured.
- R. Cp. (Caterpillar) Collection Date.** For reared *Mesochorus* specimens this refers to the date that the host caterpillar was collected. For Malaise-trapped specimens no entry is given because there is no caterpillar collection.
- S. #(Number) Emerging.** Multiple when more than one specimen emerged from the host caterpillar (but always one per wasp cocoon), single if one specimen emerged from the host caterpillar.
- T. Caterpillar Voucher.** These codes are for the Janzen-Hallwachs database rearing records. (<http://janzen.sas.upenn.edu/caterpillars/database.lasso>). These can be entered in the aforementioned database, in the “VOUCHER CODE” field, to obtain much of the same material that is in the current database, plus extra information such as images of host caterpillars and their adults, as explained in Sharkey, Janzen et al. (2021) and, Sharkey, Baker et al. (2021)
- U. Caterpillar Family.** The family of the host caterpillar.
- V. Caterpillar species.** The species of the host caterpillar. (Names such as *Nycterotis xylinoides*DHJ02 refer to an unnamed or unidentified species that is close to *Nycterotis xylinoides*). Names such as *Antaeotricha* Janzen221 are temporary placeholders for species that are not described or are not identifiable further than genus.)
- W. Primary Parasitoid Species.** The species of the host primary parasitoid (Names such as *Alphomelon xestopyga*DHJ05 refer to an unnamed or unidentified species of Microgastrinae that is close to *Alphomelon xestopyga*. Names such as *Hypomicrogaster* OVRGDHJ03 are temporary placeholders for species that are not described or are not identifiable further than genus and the interim species OVRGDH03.) There is no name if no primary parasitoids survived the hyperparasitoids, and the primary parasitoid cocoon was not identifiable by its morphology and host caterpillar (and therefore it has no barcode or BIN as well).
- X. Primary Parasitoid Subfamily.** The subfamily of the primary parasitoid.



- Y. Primary Parasitoid Family.** The family of the primary parasitoid.
- Z. Primary Parasitoid Voucher.** In approximately one third of the rearings, specimens of both *Mesochorus* and their primary parasitoids emerged. In these cases, the primary parasitoid was destroyed by the hyperparasitoid, but siblings survived. These vouchers refer to the siblings. The DHJPAR codes can be searched for on the Janzen-Hallwachs database under the “DHJPAR parasite code” field and in BOLD they can be used as sample IDs.
- AA. Food Plant Species.** Names such as Orchidaceae 22039 are temporary identifiers for species that could not be fully identified.
- AB. Food Plant Family.** The family of the food plant.

TAXONOMIC SECTION

Family Ichneumonidae
Subfamily Mesochorinae
Genus *Mesochorus* Gravenhorst, 1829

The generic limits of *Mesochorus* follow Wahl (1993).

Mesochorus Gravenhorst, 1829: 960. Type-species: *Mesochorus splendidulus* Gravenhorst.

Stictopisthus Thomson, 1886: 327. Type-species: *Mesochorus bilineatus* Thomson. Synonymized by Townes (1945).

Edrisa Cameron, 1907: 111. Type-species: *Edrisa pilicornis* Cameron. Synonymized by Baltazar (1961).

Zamesochorus Viereck, 1912: 152. Type-species: *Zamesochorus orientalis* Viereck. Synonymized with *Edrisa* by Townes (1957).

Plectochorus Uchida, 1933: 163. Type-species: *Mesochorus iwatensis* Uchida. Synonymized by Wahl (1993).

Cryptochorus Aubert, 1965: 22. Type-species: *Cryptochorus obliterator* Aubert. Synonymized by Townes (1971).

Oncocotta Dasch, 1974: 33. Type-species: *Oncocotta depressa* Dasch. Synonymized by Wahl (1993).

Rhaibaspis Dasch, 1974: 389. Type-species: *Rhaibaspis bullata* Dasch. Synonymized by Wahl (1993).

Piestetron Dasch, 1974: 405. Type-species: *Piestetron nigrum* Dasch. Synonymized by Wahl (1993).

Note: All specimens were collected in Costa Rica, and all but one from Área de Conservación Guanacaste. Sharkey is the taxonomic authority for all of *Mesochorus* species treated below.

Mesochorus uno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:D4988F75-69B4-4128-947C-3A7B957190A7

Diagnosics: Fig. 5.

Consensus barcode (62 specimens).

```
GTATTATATTTTATTTTGGTATTGAGCTGGAATAATTGGATCAGCAATAAGATTAATTATCCGTATAGAATTAGG
GAATCCAGGGTTTTAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCTCATGCTTTTATTATAATTTTTTTTA
TAGTCATACCAATTATAATTGGAGGCTTTGGAAATTGATTAGTTTCCTTTAATGATTGGTGCCCTGATATGG
CATTTCGCCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCATTAATATTACTATTATTTAGAAGAATCATT
GGTAAAGGAGTAGGTACAGGATGAACTGTATACCCTCCATTATCATTAAATGTAAGCCATGAAGGAATRTCAGTA
GATTTATCAATTTTTTCATTACATTTAGCAGGAATATCTCAATTATAGGRGCAGTAAATTTTACTACTATTATAAA
TATACATTTATTTGGAATATCATTAGATCAATTGTCATTATTTACATGATCAATTTTATTACTACAATTTTATTATTATA
GCTGTCCCAGTTTTAGCTGGTGCAATTACTATATTATTAAGTACCAGAAATTTAAATACATCATTTTTTGACCCAACA
GGAGGAGGTGACCCAATTCTCTATCAACTTA
```

BOLD data: BIN: BOLD:AAA6111.

Holotype ♀: DHJPAR0020700, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Palo Alto, 10.88186, -85.38221, 570 m, eclosion date 11/14/2007, host caterpillar collection date 10/26/2007, 07-SRNP-4233 (CNC). GenBank accession code OM237688.

Holotype host data: Hyperparasitoid of *Cotesia* Whitfield24 (Braconidae: Microgastrinae), which is a primary parasitoid of *Hylesia aeneides* (Saturniidae) feeding on *Inga oerstediana* (Fabaceae). Multiple specimens eclosed.

Other host data: *Cotesia*, *Diolcogaster*, and *Parapanteles* (Braconidae: Microgastrinae). Most rearings produced multiple *Mesochorus* specimens, however those on *Diolcogaster*, which is a solitary parasitoid presumably, produced one *Mesochorus* specimen.

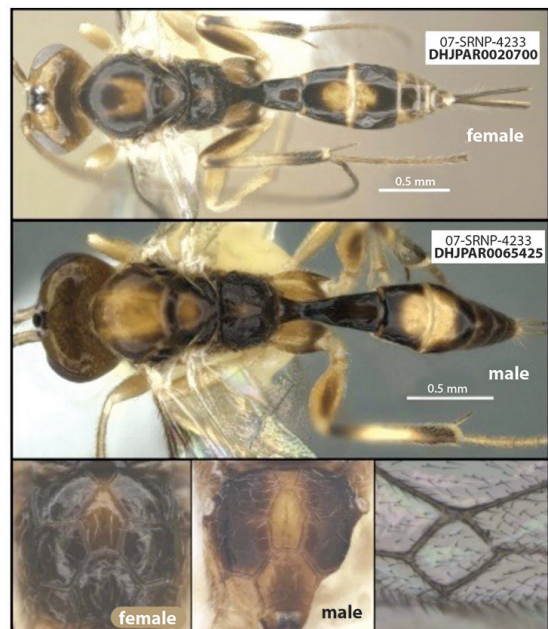


Fig. 5. *M. uno*, female holotype and male paratype; as indicated in the figure. Unlabeled image is of the holotype. The male (DHJPAR0065425) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the female holotype, both have the same rearing/caterpillar record, 07-SRNP-4233, that can be recovered from the Janzen/Hallwachs website.

Mesochorus dos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:C4327307-DC00-466B-A4E7-D65AB1AD1E83

Diagnosics: Fig. 6.

Holotype barcode.

```
AATTTTATATTTTATTTTGGAAATATGAGCAGGAATAATAGGATCATCAATAAGATTATTAATTCGTTTAGAAGCTAGGA  
AACCTGGTTACTTAATTAATAATGACCAAAATTTACAATTCATTTGTCAGTGCATGCTTTCGTAATAATTTTTTTTA  
TGTAATGCCAATTATAATTGGAGGATTTGGTAATTGATTAATCCCTTTAATAATTGGAGCCCTGATATAGCATTCC  
CGCGTATAATAATATAAGATTTGACTTCTACCCCTTCTCTATTTTTATTAATTTAAGAAGAATTACAAATAAA  
GGGGTAGGGACAGGTTGAACAGTTTACCACCTTTATCCTCAAATACTAGACATGAAGGAATATCTGTGACTTAT  
CAATTTTTCTCTTCATTTAGCAGGAATATCTCGATTATAGGAGCAATTAATTTTACTACAATTTATATTATAC  
GATGTATAGGAACATCTTTAGATCAAATATCATTATTTACTTGATCAATAAAAATTACAACATTTTACTTTTATTA  
GCTGTACCTGTACTCGCAGGGGCAATTACAATATTATTAGCTGATCGAAACTTAAATACTTCATTTTTTGACCCTCA  
GGGGGAGGAGACCCATTTTATACCAACATTTATTT
```

BOLD data. BIN: BOLD AAA6205.

Holotype ♂: DHJPAR0034198. Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Sendero Derrumbe, 10.92918, -85.46426, 1220 m., eclosion date 11/30/2008, caterpillar collection date 10/20/2008 (CNC). GenBank accession code OM237733.

Holotype host data:

Hyperparasitoid of *Hyphantrophaga virilis* (Tachinidae: Exoristinae), which is a primary parasitoid of *Quentalia chromana* (Bombycidae) feeding on *Sorocea trophoides* (Moraceae). There were six tachinid puparia from which one *Mesochorus* and five chalcidids eclosed; we assume it was a hyperparasitoid of a fly larva rather than one of the larva of the hyperparasitoid chalcidids.

Other host data: None.

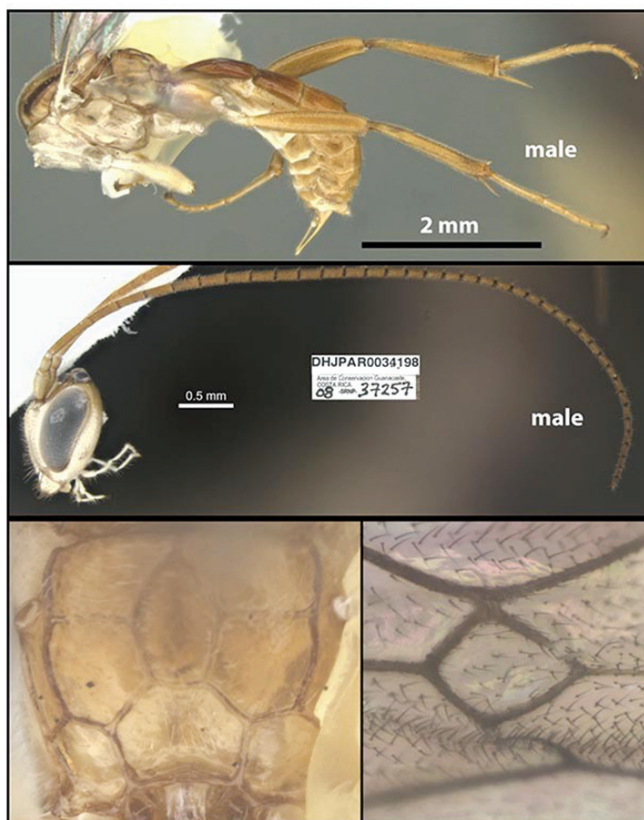


Fig. 6. *M. dos*, holotype male.



Mesochorus tres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:6889CFA3-D0E8-435B-9679-515DF10DB4C4

Diagnosics: Fig. 7.

Consensus barcode (62 specimens).

```
ATTTTATATTTWWTTTTTGGTATTTGAGCTGGRATAATTGGATCAGCAATAAGATTAATTATTCGTATAGAATTAGGA
AATCCGGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTAAGTGCRCATGCCTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATGGTTAGTACCTTTAATAATTGGTGCCCCAGATATAGCATTCC
CWCGAATAAATAATATAAGATTTTGATTATTACCCCATCACTTATATTATTATTATTAAGAAGAATTATTAATAARG
GAGTAGGAACAGGGTGAAGTGTACCCRCCTCTATCATTAAATGTAAGTCATGAAGGTATGCTGTGATTAT
CAATTTTTTCATTACATTAGCAGGAATATCTTCAATTATAGGTGCAGTAAATTTATTACCACAATTATAAATA
TACATTTATTTGGAATATCATTAGATCARTTATCATTATTTACTTGATCAATTTAATTACTACAATTTATTGTTATTA
GCAGTTCAGTTTTAGCAGGAGCMATYACAATAYTATTAAGTATGATCGGAATTTAATACATCATTTTTTGATCCTTCR
GGGGKGGGAGATCCAATCTTTATCAACATTTA
```

BOLD data: BIN: BOLD:AAA8075

Nearest neighbor: *M. unounocero*, BOLD:ACE9622, 1.6 % (p-dist) The dimensions of the central propodeal areolae are different in these neighbors as are the dimensions of the areolet of the forewings (Fig. 8).

Holotype ♀: DHJPAR0052942. Área de Conservación Guanacaste, Guanacaste, Sector Mundo Nuevo, Mamones, 10.77074, -85.42874, 365 m., eclosion date 08/17/2023, caterpillar collection date 07/30/2013 (CNC). GenBank accession code OM237724.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* OVRGDHJ06 (Braconidae: Microgastrinae), which is a primary parasitoid of *Nystalea ebalea* (Notodontidae) feeding on *Spondias mombin* (Anacardiaceae). Multiple *Mesochorus tres* specimens eclosed.

Other host data: *Hypomicrogaster* (Braconidae: Microgastrinae).

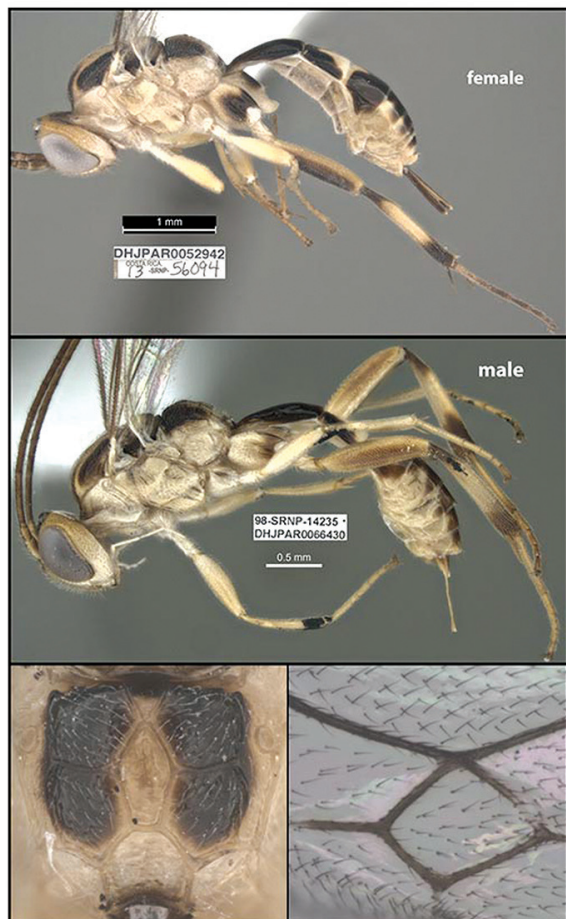


Fig. 7. *M. tres*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066430) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as a female paratype DHJPAR0020406, which was barcoded. They both have the same rearing/caterpillar record, 07-SRNP-4233, that can be recovered from the Janzen/Hallwachs website.

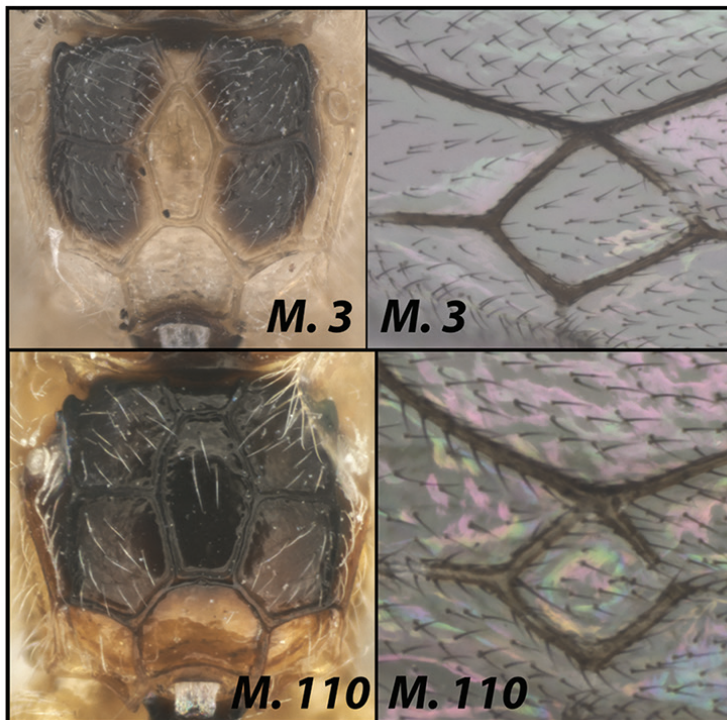


Fig. 8. Comparisons of *M. tres* with its nearest neighbor *M. ununocero*, whose barcodes code for identical amino acids.

Mesochorus cuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4E57C1C3-C4D2-4208-891E-0F83B4EB3A65

Diagnosics: Fig. 9.

Holotype and consensus barcode (7 specimens).

```
ATTTTATATTTTATTTTGGTATATGAGCAGGAATAATGGTCTTCTATAAGTATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACATCCCATGCTTTTATTATAATTTTTTTA
TAGTAATACCAATTATGATTGGTGGATTGGTAATTGAATAGTACCATTAATAATTGGTGCACCAGATATA
GCTTCCCTCGTATAAATAATAAGATTTTGATTATTACCTCCTTCAATTATACTATTATTATTAAGTGGAAATTT
GTCAAAAAGGTGTAGGAAGTGGCTGAACAGTTTACCCTCCTTTATCATTAAATATTAGACATGAAGGGTTAT
CAGTTGATTTATCAATTTTTTCATTACATTTAGCAGGTATATCTTCAATTATAGGAGCAATTAATTTATTACAAC
TATTATAAATATACGAATTTAAAAACATCATTAGATCAAATATCATTATTTGTTTGATCAATTTAATTACAACA
ATTTTATTATTACTTGCAGTTCAGTTTTAGCTGGAGCAATTACTATATTATTATCTGATCGAAATTTAAATACTT
CATTTTTGATCCTTCAGGAGGAGGAGATCCAATTTTATATCAACATTTA
```

BOLD data: BIN: BOLD:AAB0665.

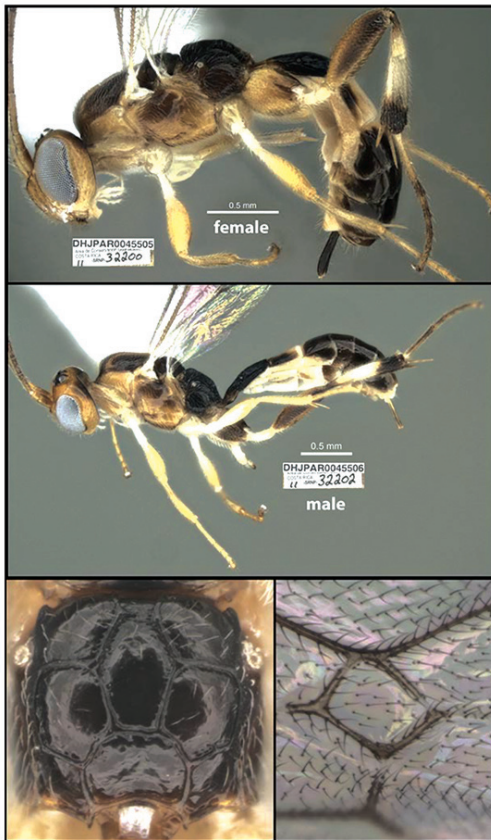


Fig. 9. *M. cuatro*, holotype female and paratype male. Unlabeled images are of the holotype.

Holotype ♀: DHJPAR0045505, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Carica, 10.99284, -85.42936660, eclosion date 8/25/2011, caterpillar collection date 08/08/2011 (CNC). GenBank accession code OM237725.

Holotype host data: Hyperparasitoid of *Dolichogenidea* Janzen30 (Braconidae: Microgastrinae) which is a primary parasitoid of *Antaeotricha* Janzen221 (Depressariidae) feeding on *Rhynchosia reticulata* (Fabaceae). One *Mesochorus* specimen enclosed.

Other host data: *Dolichogenidea* (Braconidae: Microgastrinae). One *Mesochorus* specimen enclosed.

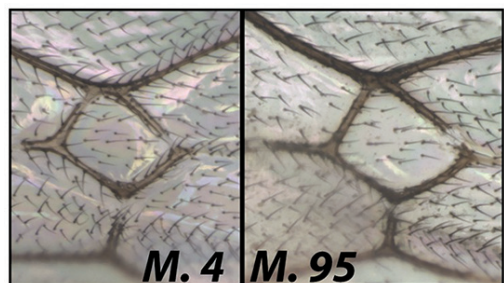


Fig. 10. Comparison of the areolet of two species of *Mesochorus* (*M. cuatro* and *M. nuevencinco*) whose COI barcodes code for identical amino acids.

Mesochorus cinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:11871F8A-57EE-4365-9702-EF8554EADA03

Diagnosics: Fig. 11.

Consensus barcode (21 specimens).

ATTTTATACTTTATTTTTGGTATATGAGCAGGAATAATTGGTTCTTCAATAAGAATAATTATTCGTATAGA
 ATTAGTACCCCAGGATTTTTAATTAATAATGACCAAATTTATAACTCATTGTAACCTCACATGCTTTTTATTA
 TAATTTTTTTTATAGTTATAACCAATTATAAATTGGAGGATTTGGAAATTGAATAGTTCATTAATAATTGGAGCTCCAGA
 TATAGCATTYCCTCGAATAAATAATATGAGATTTTGATTATTACCCCTTCAATTATATTACTTTTATTAAGAAGAATTT
 GTCAAAAGGGGGTAGGAACAGGATGAACTGTCTATCCTCTTTATCTCTTAATGTAAGTCATGAAGGATTATCAGTA
 GATTATCAATTTTTTCATTACATTTAGCAGGAATATCTTCAATTATAGGAGCCGTAATTTTATTACAACATTTATTAA
 TATACGTATTAATAAACATCATTGATCAAATATCTTTATTTGTTTGATCAATTTTAATTACAACAATTTTATTAC
 TATTAGCTGTACTGTACTAGCAGGGCAATTACTATATTATTATCTGATCGTAATTTAAATACATCATTTTTTGATC
 CATCTGGAGGAGGAGAYCCAATTTTATATCAACATTTA

BOLD data: BIN: BOLD:AAB3993.

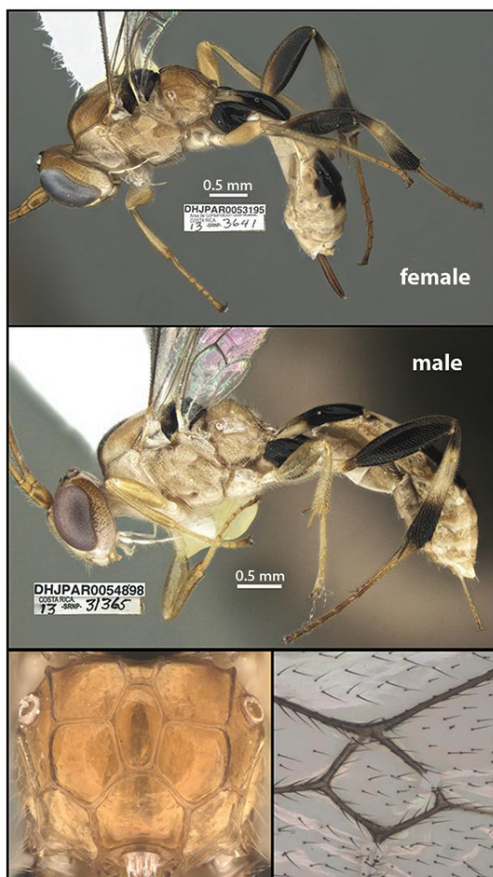


Fig. 11. *M. cinco*, holotype female and male paratype. Unlabeled images are of the holotype.

Nearest neighbor: *M. sieteseis*

BOLD: AAX4045 2.89 % (p-dist). The dimensions of the central propodeal areolae and the medioposterior areolae are different (Fig. 94).

Holotype ♀: DHJPAR0053195, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Finca San Gabriel, 10.87766, -85.39343, 645 m, eclosion date 8/03/2013, caterpillar collection date 07/12/2013 (CNC). GenBank accession code OM237742.

Holotype host data: Hyperparasitoid of *Eiphosoma macrum* DHJ02 (Ichneumonidae: Cremastinae), which is a primary parasitoid of *Desmia ploralis* (Crambidae) feeding on *Psychotria remota* (Rubiaceae). One *Mesochorus* enclosed.

Other host data: *Eiphosoma* (Ichneumonidae: Cremastinae), *Casinaria* (Ichneumonidae: Campopleginae), *Podogaster* (Ichneumonidae: Anomaloninae), *Apanteles*, *Prasmodon* (Braconidae: Microgastrinae). One *Mesochorus* specimen enclosed.

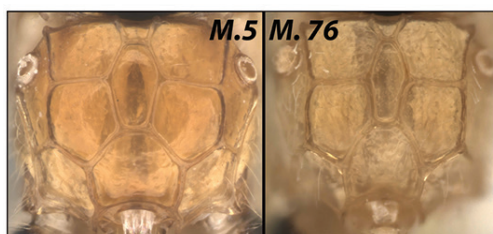


Fig. 12. Comparisons of *M. cinco* with its nearest neighbor, *M. sieteseis*.

Mesochorus seis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:008C792B-35A1-4FE8-8037-D49868BF825E

Diagnostics: Fig. 13.

Holotype barcode.

```
AATTTTATATTTTATTTTGGAAATATGATCTGGAATAATTGGTTCTTCTATAAGTATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTAACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCTATTATAATTGGTGGATTGGAAATTGAATAATCCATTAATAATTGGAGCACCAGATATAGCTTTTC
CACGAATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATATTATTATTATTGAGAAGAATTTGTCAAAAA
GGAGTAGGTACTGGATGAACAATTTACCCTCATTATCATAAACATTAGACATGAAGGATTATCAGTTGATTAT
CAATTTTTTCATTACATTTAGCTGGAATATCTTCAATTATAGGAGCAATTAATTTTATTACAATTTTTAAATATAC
GAATTTAATAACATCATTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACAATTTTTATTATTATTAG
CAGTTCCGGTTTTAGCTGGAGCAATTACTATATTATTATCTGATCGAAATTTAAATACTTCATTTTTTGATCCATCTG
GAGTGGTGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:AAB4680.

Nearest neighbor: *M. unotresnueve* BOLD:ADQ8339 3.85 % (p-dist).

Holotype ♀: DHJPAR0045502. Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, San Lucas, 10.91847, -85.30338, 320m., eclosion date 06/13/2011, caterpillar collection date 05/26/2011 (CNC). GenBank accession code OM237747.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Janzen238 (Braconidae: Microgastrinae), which is a primary parasitoid of *Macaria* BioLep11 (Geometridae) feeding on *Senegalia multipinnata* (Fabaceae). One *Mesochorus* specimen eclosed.

Other host data: None.

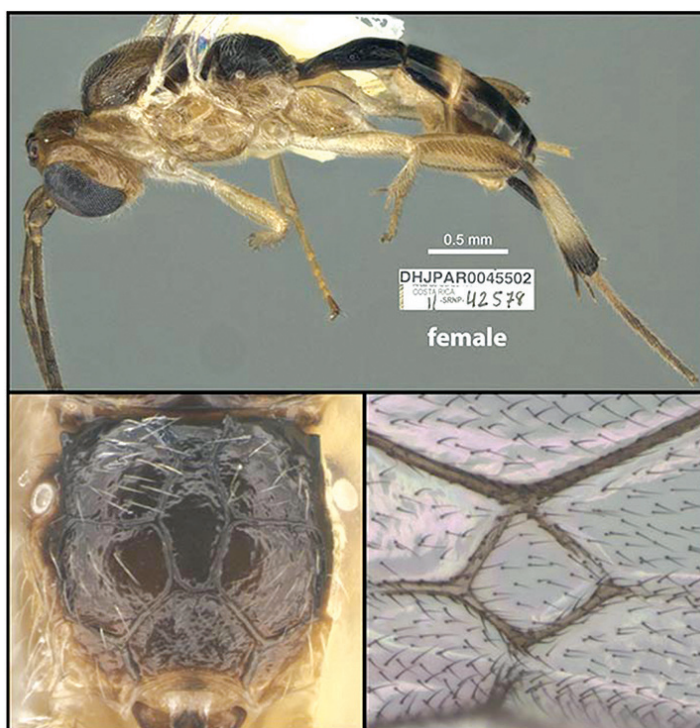


Fig. 13. *M. seis*, holotype female.

Mesochorus siete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:AE27D127-7A89-4229-B104-D7449E9083D4

Diagnostics: Fig. 14.

Consensus barcode (23 specimens).

```
ATTTTATATTTTATTTTTGGTATATGAGCAGGTATAATTGGTCTTCGATAAGAATAATTATTCGAATAGAGTTAGGA
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATGCCAATTATAATTGGAGGATTTGGAAATTGATTAATCCATTAATGATTGGAGCACCTGATATA
GCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATAATAAKTGGTGTATTCAA
AAAGGTGTTGGTACTGGATGAACCTGTTATCCACCRRTATCATTAAATATAGGTCATGAGGGATTATCAGTTGATTAT
CAATTTTTTCTTTACATTTAGCAGGTATATCTTCTATTATAGGAGCAATTAATTTTATTACAACAATTTAAATATACG
GATTTTAAAAACATCATTAGATCAAATAACTTTATTTGTTTGATCAATTTAATTACAACAATTTGTTATTATTAG
CAGTGCCAGTTTTAGCTGGTGCATTACTATATTATTATCAGATCGGAATTTAAATACTTCTTTTTTGTATCCATCAG
GAGGGGGGATCCTATTTTATATCAGCATTTA
```

BOLD data: BIN: BOLD:AAB8789.

Nearest neighbor: *M. dosdos*,
BOLD:AAE4006, 7.37 % (p-dist).

Holotype ♀: DHJPAR0058135.

Área de Conservación Guanacaste,
Alajuela, Sector San Cristobal,
Sendero Carmona, 10.87621,
-85.38632, 670 m, eclosion date
10/11/2015, caterpillar collection
date 09/26/2015 (CNC). GenBank
accession code OM237764.

Holotype host data: Hyperparasitoid
of *Alphomelon nanosoma*
(Braconidae: Microgastrinae), which
is a primary parasitoid of *Carystoides*
escalantei (Hesperiidae) feeding on
Chamaedorea tepejilote (Arecaceae).
Multiple *Mesochorus* specimens
eclosed.

Other host data: *Alphomelon*,
Cotesia (Braconidae: Microgastrinae).
Multiple *Mesochorus* specimens
emerged.

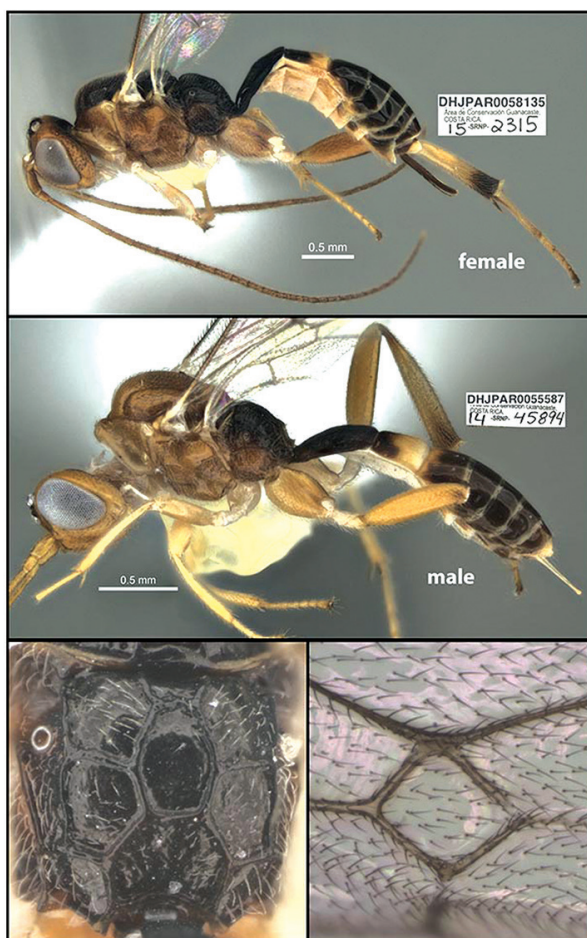


Fig. 14. *M. siete*, holotype female and male paratype. Unlabeled images are of the holotype.



Mesochorus ocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F78ABB7E-E3AA-48E8-8B71-E9816D0574F7

Diagnostics Fig. 15.

Consensus barcode (17 specimens).

ATTTTATATTTTATTTTTGGTATTTGAGCTGGAATAATTGGGTCAGCAATAAGATTAATTATTCGTATAGAATTA
GGTAATCCAGGATTTTAAATTAATAATGATCAAAATTTATAATTCATTTGTAAGTGCACATGCCTTTATTATAATTTTTT
CATAGTTATACCAATTATAATTGGGGGATTGGAAATTGGTTAGTACCTTTAATAATTGGTGCCCCAGATATAG
CATTCCACGAATAAATAATATAAGATTTTGATTATTACCCCATCACTTATATTATTATTATAAGAAGAATTATTAA
TAAAGGAGTAGGAACAGGATGAAGTGTACCCRCCTTATCATAAATGTAAGACACGAAGGTATATCTGTT
GATTATCAATTTTTTTCATTACATTTAGCAGGAATATCTCAATTATAGGCGCAGTAAATTTTATTACCACAATTA
TAAATATACATTTATTTGGAATATCATTAGATCAAATATCATTATTTACTTGGTCAATTTTAACTACTACAATTTTATT
GTTATTAGCAGTCCAGTTTTAGCGGGAGCAATTACAATATTATTAAGTACCGGAATTTAAATACATCATTTTTT
GATCCTTCAGGAGGTGGGGATCCAATCTTTATCAGCATTTA

BOLD data: BIN: BOLD:AAC0368.

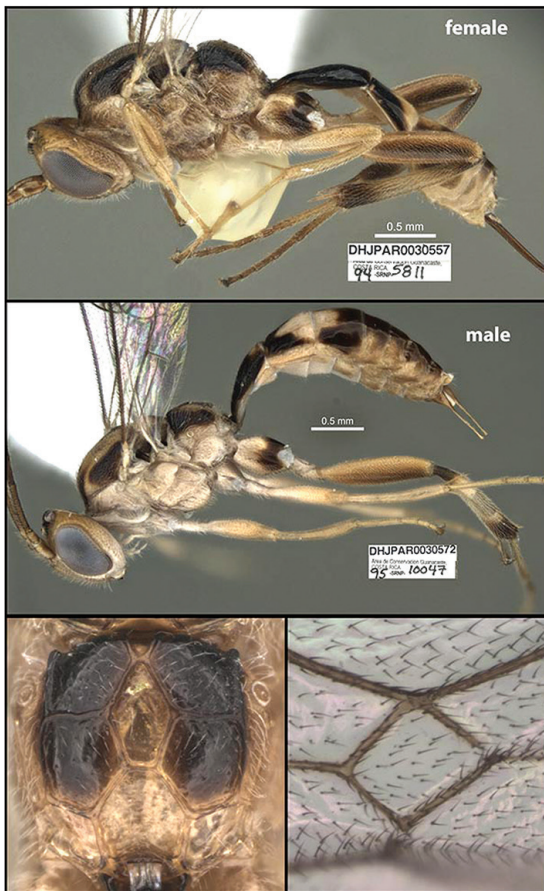


Fig. 15. *M. ocho*, holotype female and male paratype. Unlabeled images are of the holotype.

Nearest neighbor: *M. unounocero*, BOLD:ACE9622, 3.04 % (p-dist).

Holotype ♀: DHJPAR0030557. Área de Conservación Guanacaste, Guanacaste, Sector Santa Rosa, Vado Cuajiniquil, 10.94041, -85.68043, 275 m, eclosion date 08/06/1994, caterpillar collection date 07/19/1994 (CNC). GenBank accession code OM237741.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* OVRGDHJ05 (Braconidae: Microgasterinae), which is a primary parasitoid of *Nycterotis xylinoides* DHJ02 (Notodontidae) feeding on *Inga vera* (Fabaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Glyptapanteles* (Braconidae: Microgasterinae). Multiple *Mesochorus* specimens enclosed.

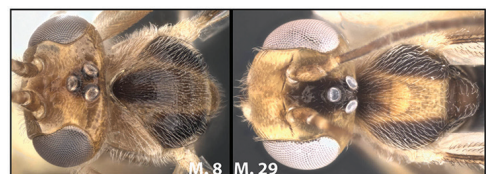


Fig. 16. Illustrating some of the morphological differences between *Mesochorus ocho* and *M. dosnueve* which have COI barcodes that code for identical amino acids.

Mesochorus neue

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:64DB672B-148F-4CFF-83F2-042021FF669F

Diagnosics: Fig. 17.

Consensus barcode (24 specimens).

```
ATTTTATATTTTATTTTTGGAATATGAGCAGGTATAATTGGATCTTCAATAAGAATAATTATTCGAATAGAATTAGGA
AATTCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTTGTAACATCACATGCTTTTATTATAATTTTTTTTA
TAGTAATACCAATTATAATTGGAGGATTTGGAAATGAATAGTACCTTTAATAATTGGTGCTCCAGATATAGCTTTTC
CACGAATAAATAATAAGATTTTGATTACTTCTCCTTCAATTATATTATTATTATTAAGAAGAATTTGTCAAAAA
GGTGTAGGAAGCTGGTTGAACAGTTTATCCTCCATTATCATTAAATATTAGTCATGAAGGACTTTCCGGTTGATTAT
CAATTTTTTCTTTACATTTAGCTGGAATATCATCAATTATAGGTGCAATTAATTTTATTACTACAATTTAAATATAC
GAATTATAAAAACCTATTGATCAAATAACATTATTTGTTTGGTCAATTTAATTACAACAATTTTATTATTATTAG
CAGTCCAGTTTTAGCTGGAGCAATTACTATATTATTATCTGATCGAAATTTAAATACTTCATTTTTTGATCCATCAG
GAGGAGGTGATCCAATTTTATATCAACATTTA
```

BOLD data: BIN: BOLD:AAC2766.

Holotype ♀: DHJPAR0030553. Área de Conservación Guanacaste, Guanacaste, Sector Pocosal, Puente Sontoli, 10.95119, -85.59750, 245 m, eclosion date 8/26/1994, caterpillar collection date 07/27/1994 (CNC). GenBank accession code OM237730.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi07 (Braconidae: Microgastrinae), which is a primary parasitoid of *Ianassa rustica* DHJ05 (Notodontidae) feeding on *Inga vera* (Fabaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Diolcogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

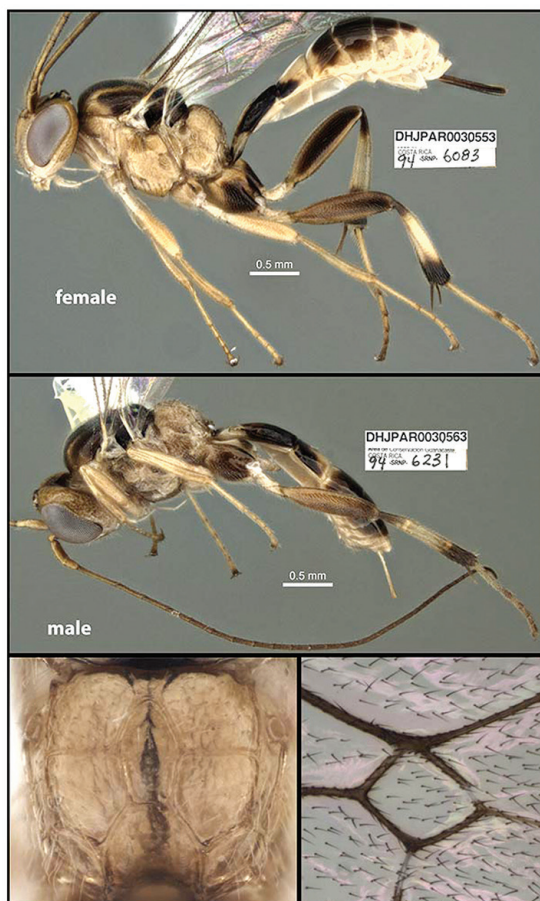


Fig. 17. *M. neue*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0030563) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the female DHJPAR0020406, which was barcoded. They both have the same rearing/caterpillar record, 07-SRNP-4233, which can be recovered from the Janzen/Hallwachs website.

Mesochorus unocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:EE4568B9-C287-4D65-A1F5-BD1CECAE60FA

Diagnostics: Fig. 18.

Holotype barcode.

```
TATTTATATTTTATTTTTGGTATTTGGGCTGGAATAATTGGATCATCAATAAGATTAATTATCCGAATAGAATTAGGA
AATCCTGGATATTTAATTAATAATGATCAAATTTATAATTCATTTGTGACAGCACATGCATTTATTATAATTTTTTTTA
TAGTGATACCAATTATAATTGGAGGATTTGGAACTGACTAATACCTTTAATAATTGGGGCTCCTGATATA
GCTTCCCTCGAATAAATAATATAAGATTTTGATTATTGCCCCCTCTTTATTATTACTTCTAAGAAGTATTATTAA
TAAAGTACTGGGACAGGGTGAACAGTTATCCCCATTATCATTAAATATTAGACACGAGGGTATATCAGTA
GATTTATCAATTTTTTCATTACATTTAGCGGGGATATCTTCAATCATAGGGGCCGTAATTTTCATTACTACTATTATTAA
TATAAATTAATGGGATATCTATAGATCAATTATCATTATTTACTTGGTCAATAAAATACAACAATTTATTATTAC
TAGCGGTCCCAGTTTTAGCAGGGGCTATTACTATATTAACTGACCGAAATTTAAATACATCTTTTTTTTGACCAT
CAGGAGGGGGAGACCAATTTTACCAACACTTATTT
```

BOLD data: BIN: BOLD:AAC6093.

Holotype ♀: DHJPAR0034220, Área de Conservación Guanacaste, Guanacaste, Sector Del Oro, Quebrada Salazar, 11.00217, -85.46337, 560 m, eclosion date 10/02/2008, caterpillar collection date 09/23/2008 (CNC). GenBank accession code OM237712.

Holotype host data: Hyperparasitoid of *Meteorus* Janzen23 (Braconidae: Euphorinae), which is a primary parasitoid of *Memphis pithyusa* (Nymphalidae) feeding on *Croton schiedeanus* (Euphorbiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.



Fig. 18. *M. unocero*, holotype female.

Mesochorus unouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:88216698-C911-4C9F-9AD7-093CA8CD526C

Diagnosics: Fig. 19.

Consensus barcode (7 specimens).

```

ATTTTATACTTTATTTTTGGAATATGATCAGGAATAATTGGYTCTTCAATAAGAATAATTATTTCGAATAGA
ATTAGTAATCCAGGATTTTAAATTAATAAYGATCAAATTTATAACTCATTTGTTACTTCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGRTTCGGAAATTGAATAGTTCCTTTAATAATTGGAGCCC
CAGATATAGCATTCCCACGAATAAATAATATAAGATTTTGACTTTTACCTCCTTCAATTATATTACTTTTACTAAGA
AGAATTTGTCAAAAAGGAGTAGGRACAGGGTGAAGTGTACCCTCCTTTATCTCTTAATGTTAGTCAYGAAG
GACTATCAGTAGATTTATCAATTTTTTCATTACATTTAGCAGGTATATCTTCAATTATAGGAGCAGTAAATTTATTA
CAACTATTATTAAYATACGTATTCATAAAACATCATTGATCAAATATCTTTATTTGTTGATCAATTTAATACAA
CAATTTTATTATTGGCTGTTCTGTTRTAGCTGGAGCAATTACTATATTACTATCTGATCGTAATTTAAATACAT
CATTTTTGATCCCTCRGGAGGYGGTGAYCCAATCTTTATCAACATTTA
    
```

BOLD data: BIN: BOLD:AAC6096.

Holotype ♀: DHJPAR0021752,

Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Pasmompa, 11.01926, -85.40997, 440 m, eclosion date 9/15/2005, caterpillar collection date 08/19/2005 (CNC). GenBank accession code JF793172.

Holotype host data: Hyperparasitoid of *Eiphosoma gollum* (Ichneumonidae: Cremastinae), which is a primary parasitoid of *Desmia benealis* DHJ02 (Crambidae) feeding on *Drymonia serrulata* (Gesneriaceae). A single *Mesochorus* specimen eclosed from a single *Eiphosoma gollum* cocoon.

Other host data: *Eiphosoma* (Ichneumonidae: Cremastinae). One caterpillar produced three *Eiphosoma* cocoons and only one of these produced a *Mesochorus* specimen. All other host caterpillars produced a single *Eiphosoma* cocoon and a single *Mesochorus* hyperparasitoid.

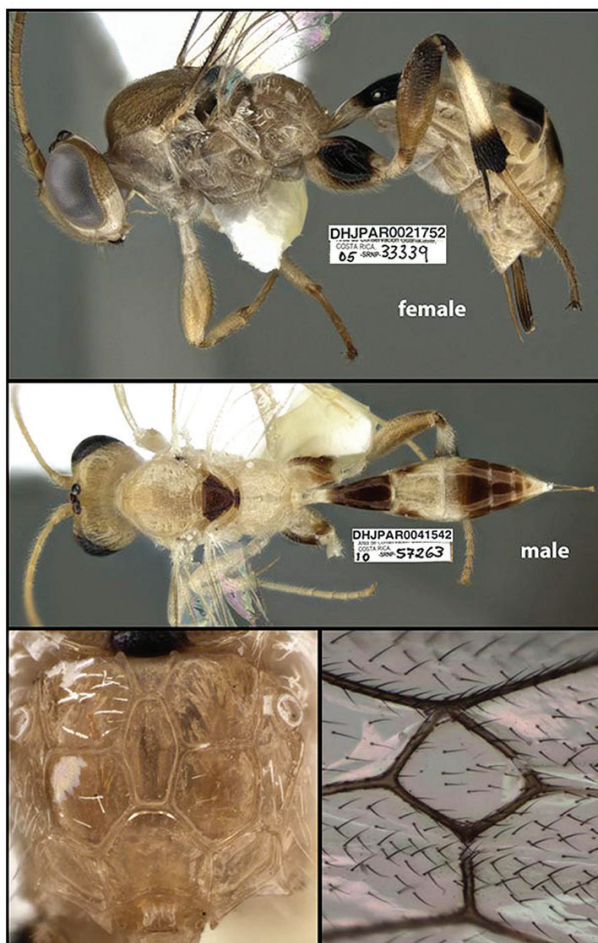


Fig. 19. *M. unouno*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unodos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:59295DE6-A1E9-42D1-A639-D597FE2222F0

Diagnostics: Fig. 20.

Consensus barcode (7 specimens).

ATTTTATATTTTATTTTTGGAATTTGAGCTGGAATAATTGGATCATCTATAAGATTAATTATTTCGAATAGAGTTA
GGAACCCAGGATTTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACAGCCCATGCATTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGRTTTGGAAATTGATTAATTCCTTTAATAATTGGAGCGCT
GATATAGCATTCCCTCGAATAAATAATATAAGATTTTGATTGTTACCACCTTCAATTATATATTATTATAAGAA
GAATTATTAATAAAGGAGTAGGAACAGGATGAACAGTTTATCCTCCTTTATCATTAAATATAAGACATGAAGGTA
TRTCAGTTGATCTTCAATTTTGCCTTACACTTAGCAGGAATATCTTCAATTATAGGGGCAGTAAATTTATTA
CAACTATTTTAAATATACATTTAATTGGGATAACAATAGATCAACTATCATTATTTACTTGATCTATTAATAA
CAACAATTTTATTATTATAGCAGTCCAGTTTTAGCTGGTGCTATTACAATATTATTAAGTATGATCGAAATTTAA
TACTTCTTTTTTGACCCATCAGGGGGGGTGATCCAATCTTTATCAACATTTA

BOLD data: BIN: BOLD:AAC6097.

Nearest neighbor: *M. cinconueve*,

BOLD:AAT8854, 6.57 % (p-dist).

Holotype ♀: DHJPAR0040049, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Estación Llanura, 10.93332, -85.25331, 135 m, eclosion date 09/12/2009, caterpillar collection date, 08/29/2009 (CNC). GenBank accession code JN281466.

Holotype host data:

Hyperparasitoid of *Parapanteles* Whitfield102DHJ01 (Braconidae: Microgastrinae), which is a primary parasitoid of *Napaea eucharila* (Riodinidae) feeding on *Weruuhia gladioliflora* (Bromeliaceae). The single caterpillar produced three *Parapanteles* cocoons and only one of these produced a *Mesochorus* specimen.

Other host data: *Parapanteles* (Braconidae: Microgastrinae). All other host caterpillars produced multiple *Parapanteles* cocoons and multiple *Mesochorus* hyperparasitoids.

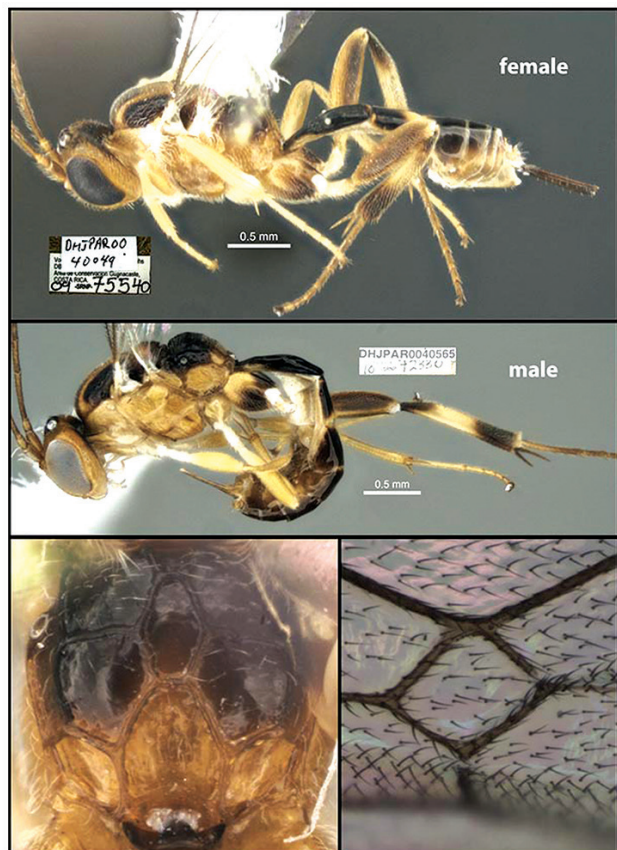


Fig. 20. *M. unodos*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:3903B570-C448-4860-A678-3AF8FE060278

Diagnostics: Fig. 21.

Consensus barcode (12 specimens).

```

ATTC TTATTTTATTTTGGTTTATGATCAGGAATAATTGGTGCTTCAATAAGTATAATTATTCGAATAGAATTAGG
GAATCCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATGAATAATTCCATTAATAATTGGAGCTCCCGATATAGCCTTCC
CACGAATAAATAATAAAGATTTTGATTATTACCCCATCAATTATACTATTATTAATGAGAAGAATTTGCCAAAAA
GGTGTGGAACTGGTTGAACAGTATACCCCTCTTATCATTAAATGTTAGACATGAAGGTTTATCAGTTGATTTATC
TATTTTTTCATTACATTTAGCTGGAATATCTCAATTATAGGAGCAATTAATTTATTCAACAATTTAAATATAC
GAATTATAAAATCATCATTTGATCAAATATCYTTATTTGTTTGATCAATTTAATCACAACAATTTATTATTACTAG
CAGTTCCAGTTTTAGCTGGTGCAATTACTATATTATTATCAGATCGAAATTTAAATACTTCATTTTTTGATCCTTCCG
GAGGTGGAGATCCAATTTTATACCAGCATTTA
    
```

BOLD data: BIN: BOLD:AAC6377.

Nearest neighbor: *M. ochocinco*, BOLD:AAX4065, 6.25 % (p-dist).

Holotype ♀: DHJPAR0012196, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Estación Caribe, 10.90187, -85.27495, 415 m, eclosion date 07/20/2006, caterpillar collection date 07/06/2006 (CNC). GenBank accession code JF793206.

Holotype host data: Hyperparasitoid of *Glyptapanteles ianyarrowi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Napata flaviceps* (Erebidae) feeding on *Cespedesia spathulata* (Ochnaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Glyptapanteles*, *Hypomicrogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

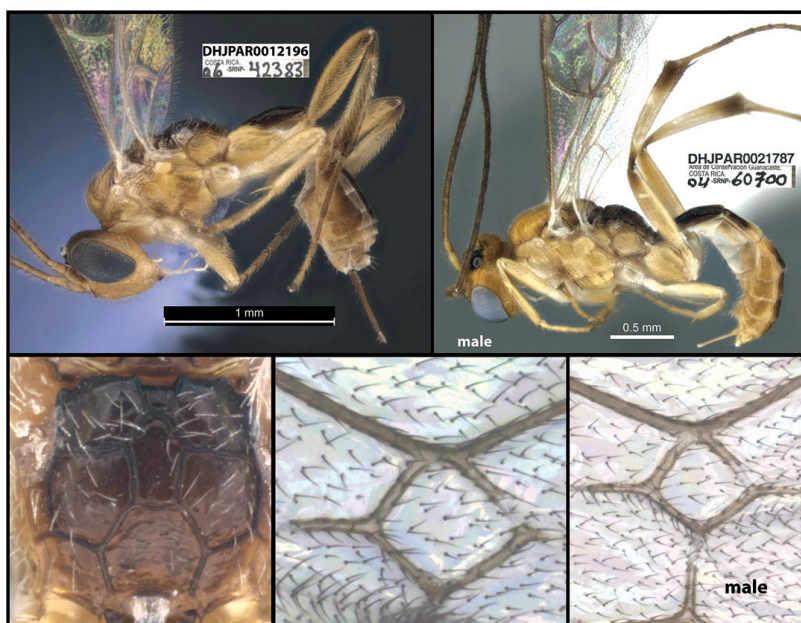


Fig. 21. *M. unotres*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:684CB2B8-4F72-4CDB-84FA-24060EE42202

Diagnosics: Fig. 22.

Consensus barcode (12 specimens).

```
ATTTTATATTTTCATTTTTGGGTATATGAGCAGGAATAATGGATCCGCAATAAGCTTAATTATYCGAATAGAATTAGGA
AATCCAGGATTCTTAATTAATAATGATCAAATTTATAATTCATTTGTTACAGCCACGCATTTGTAATAATTTTTTTTA
TAGTAATACCAGTAATAATGGAGGATTCGGAAATTGATTARTTCCATTAATAATCGGAGCTCCTGATATAG
CATTCCCCGAATAAATAATATAAGATTTTGATTACTACCCCATCATTAAATATTACTATTATTAAGAAGAATCATTAA
TAAAGGAGTAGGAACAGGATGAAGTGTATCCACCATTATCTTTAAATTCAGACATGAAGGTATATCAGTA
GATTTATCAATTTTCTCTTACATTTARCTGGTWTATCTTCAATTATAGGGGCCATTAATTTTACTACAATTTTAA
TATRCATTTATTTGGAATATCATTAGATCAATTATCATTATTTACGTGATCAATTATTATTACTACAATTTTATTATTATA
GCAGTCCAGTTTTAGCTGGRGAATTACAATATTATTAACCGATCGAAATTTAAATACTTCTTTTTTTGATCCTTCA
GGAGGRGGAGATCCAATTTTACCAACATTTA
```

BOLD data: BIN: BOLD:AAC8600.

Nearest neighbor: *M. sietecinco*,
BOLD:AAX4039, 6.89 % (p-dist).

Holotype ♀: DHJPAR0012191, Área de Conservación Guanacaste, Guanacaste, Sector Del Oro, Margarita, 11.03234, -85.43954, 380 m, eclosion date 08/09/2006, caterpillar collection date 07/15/2006 (CNC). GenBank accession code JF793161.

Holotype host data: Hyperparasitoid of *Microplitis francopupulini* (Braconidae: Microgastrinae), which is a primary parasitoid of *Xylophanes kaechi* (Sphingidae) feeding on *Palicourea guianensis* (Rubiaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Meteorus* (Braconidae: Euphorinae), *Cotesia Microplitis* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

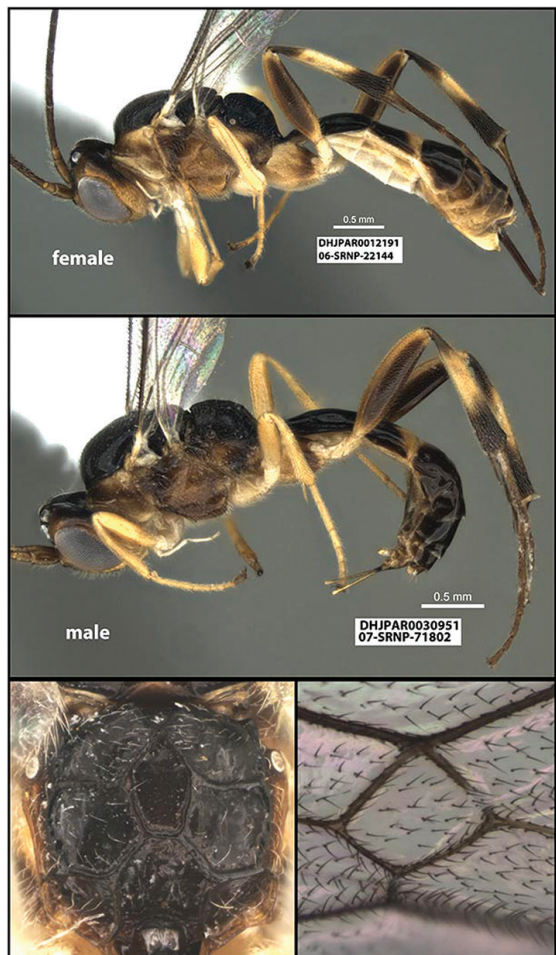


Fig. 22. *M. unocuatro*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8CDBE9E0-DFE3-4020-8BFA-4F641E9C96A4

Diagnostics: Fig. 23.

Consensus barcode (12 specimens).

```
GTTCTACTTTATTTTTGGTATATGAGCAGGAATAATTGGTTCATCTATAAGAATAATTATTCGTATAGAATTAGGA
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTACATCACATGCTTTTATTATAATTTTTTTTA
TAGTCATACCAATTATAATTGGAGGATTTGGAAATTGATTAATTCCATTAATAATTGGAGCACCTGATATA
GCCTTCCCTCGTATAATAATATAAGATTTTGATTATTACCACCATCAATTATATTATTATAATTAGAAGAATTTGT
CAAAAAGGTGTTGGTACTGGATGAACAATTTATCCACCATTATCTTTAAATATTAGTCATGAAGGATTATCAGTT
GATTTATCAATTTTTCTTTACATTTAGCTGGAATATCTTCTATTATAGGAGCAATTAATTTTATTACAACAATTTAAA
TATACGAATTTAAAATCATCATTAGACCAAATATCATTATTCGTTTGATCAATTAATAACAACAATTTTATTACTAC
TAGCAGTTCAGTTTTAGCTGGAGCTATTACTATATTATCTGATCGAAATTTAAATACTTCTTTTTTTGATCCATCT
GGAGGAGGAGATCCAATTTTATATCAACATTTA
```

BOLD data: BIN: BOLD:AAC8776.

Nearest neighbor: *M. doscero*, BOLD:AAD3078, 4.81 % (p-dist).

Holotype ♀: DHJPAR0020402, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Rancho Harold, 10.90475, -85.46803820, eclosion date 2/03/1997, caterpillar collection date 12/28/1996 (CNC). GenBank accession code JF793198.

Holotype host data: Hyperparasitoid of *Apanteles anabellecordobae* (Braconidae: Microgastrinae), which is a primary parasitoid of *Achlyodes pallida* (Hesperiidae) feeding on *Zanthoxylum caribaeum* (Rutaceae). Multiple specimens of *Mesochorus* enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed. Pteromalid specimens, presumably hyperparasitoids, sometimes enclosed along with *Mesochorus* specimens.

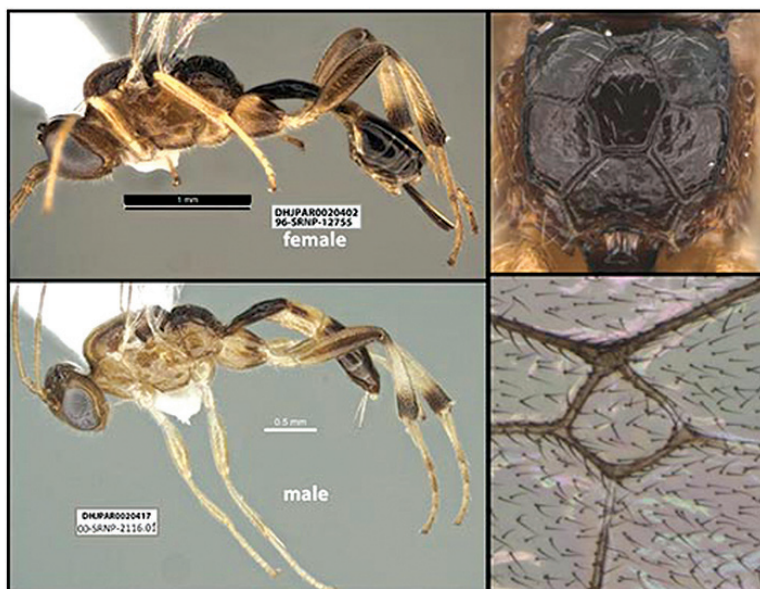


Fig. 23. *M. unocinco*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unoseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:30AB9DAD-0F32-4F92-9DA6-FA9311ED20D6

Diagnostics: Fig. 24.

Consensus barcode (13 specimens).

ATTTTATATTTTATTTTGGGATATGATCAGGRATAATTGGTTCATCTATAAGAATAATTATTCGTATAGAATTAGGA
AATCCAGGATTTTAAATAATAATGATCAAATTTATAATCTTTTGTAAACATCTCATGCTTTTATTATAATTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATAATTGGAGCTCCAGATATA
GCTTTTCTCGAATAAATAATAAGATTTTGATTATTACCACCATCAATTATATTATTATTGTTAAGTGGAAATTT
GTCAAAAAGGTGTAGGCACTGGATGAACARTTTATCCACCTTTATCTTTAAATATTAGACATGAAGGACTTT
CAGTAGATTTATCAATTTTTTCATTACATTTAGCTGGTATATCTTCAATTATAGGAGCAATTAATTTTATTACA
ACAATTTTAAATATACGAATTTTAAACATCTTTAGATCAAATATCTTATTTGTTTGATCTATTTAATTACA
ACAATTTATTATTATTAGCAGTACCAGTTTTAGCTGGTGCTATTACTATATTATTATCTGATCGTAATTTAA
TACATCTTTTTTGGACCCATCAGGTGGAGGTGACCCAATTTTATATCAACATTTA

BOLD data: BIN: BOLD:AAD0123.

Nearest neighbor: *M. ochocuato*,

BOLD:AAX4064, 4.49 % (p-dist).

Holotype ♀: DHJPAR0049478, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Selva, 10.92291, -85.31877, 410 m, eclosion date 02/24/2012, caterpillar collection date 02/07/2012 (CNC). GenBank accession code OM237721.

Holotype host data: Hyperparasitoid of *Apanteles jorgecortesi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenomoma Janzen07* (Depressariidae) feeding on *Vismia baccifera* (Hypericaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

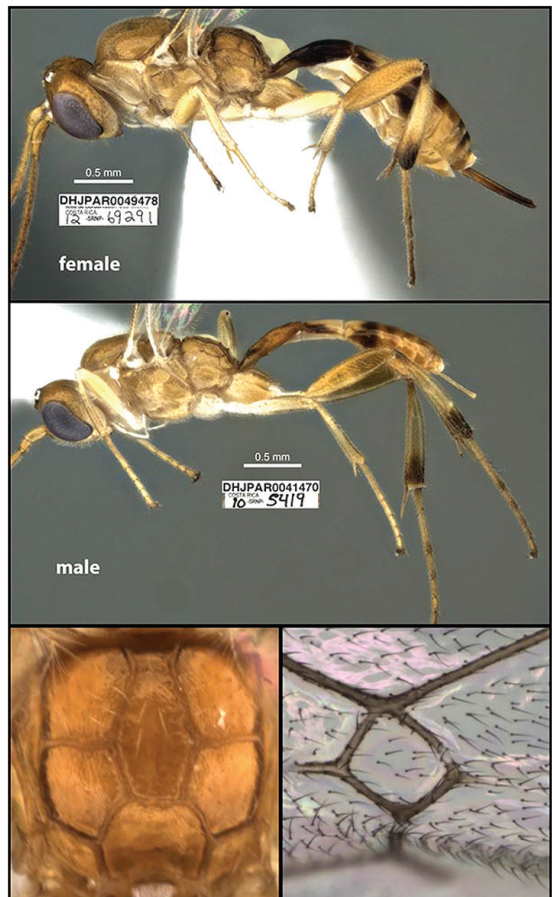


Fig. 24. *M. unoseis*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:679D5978-D9C7-4CF9-BB39-F7A61E164F5A

Diagnostics: Fig. 25.

Consensus barcode (8 specimens).

```
ATCTTATATTTTATTTTTGGTATTTGAGCTGGAATAATTGGATCTTCAATAAGATTAATTATTCGTATAGA
ATTAGTAATCCAGGTTATTTAATTAATAATGATCAAATTTATAATTCATTGTAAACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTAATACCTATTATGATTGGAGGATTGGGAATTGATTAATTCCTTAAATAATTGGAGCTCT
GATATAGCATTTCCTCGAATAAATAATATAAGATTTGATTATTACCTCCTTCATTGATATTATTATTATAAGAA
GATTARTTAATAAAGGAGTTGGAACAGGATGAACAGTTTATCCCCATTATCTTTAAATATTAGACATGAAGGA
ATATCAGTTGATTATCTATTTTTCATTACATTAGCAGGGATATCTTCAATTATAGGTGCAGTAAATTTATTAC
TACAATTTTAAATATACACTTACAAGGAATAAGTTTAGATCAGTTATCATTATTTACATGATCTATTTAAATAC
TACAATTTTATTATTATTAGCAGTCCCAGTATTAGCAGGAGCAATTACTATATTATAACAGATCGAAATTTAAA
TACATCTTTTTTTGATCCATCAGGAGGAGGAGATCCTATTCTTTTATCAACATTTA
```

BOLD data: BIN: BOLD:AAD1724.

Nearest neighbor: *M. unounouno*, BOLD:ACF3106, 1.28 % (p-dist). The dimensions of the three median areolae are different (Fig. 23).

Holotype ♀: DHJPAR0020415. Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Vochysia, 10.86666, -85.24528, 320 m, eclosion date 02/06/2007, caterpillar collection date, 01/26/2007 (CNC). GenBank accession code OM237691.

Holotype host data: Hyperparasitoid of *Parapanteles paradoxus*DHJ02 (Braconidae: Microgastrinae), which is a primary parasitoid of *Tithraustes seminigrata* (Notodontidae) feeding on *Asterogyne martiana* (Arecaceae). One *Mesochorus* enclosed from one of four *Parapanteles* cocoons.

Other host data: *Parapanteles* (Braconidae: Microgastrinae). Multiple specimens of *Mesochorus* enclosed.

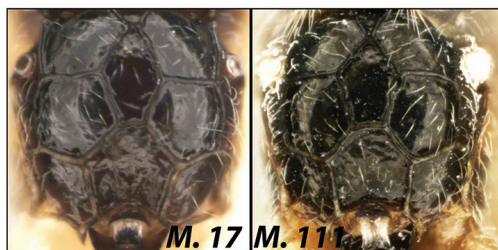


Fig. 26. Comparisons of *M. unosiete* with its nearest neighbor, *M. unounouno*. Their barcodes code for identical amino acids.

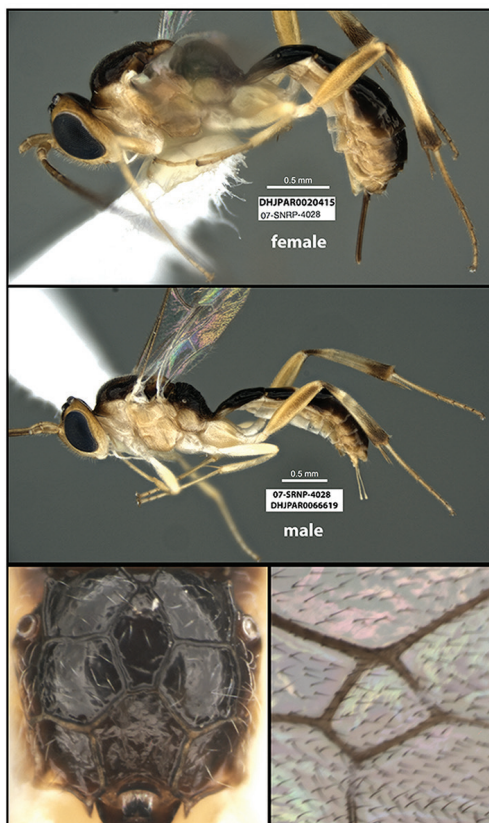


Fig. 25. *M. unosiete*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066619) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, DHJPAR0020415, which was barcoded. They both have the same rearing/caterpillar record, 07-SRNP-40281, that can be recovered from the Janzen/Hallwachs website.

Mesochorus unoocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:80EBD9A7-BF3A-4416-B61A-29EF2115D879

Diagnostics: Fig. 27.

Holotype barcode.

```
AATTCATATTTTTATTTTTGGTTTATGAGCAGGAATAGTAGGTGCTTCAATAAGAATAATTATTCGAATAGA
ATTAGGAAACCCAGGATTTCTAATTAATAATGATCAAATTTATAAATCTTTTTGTTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTTCATTAAATAATTGGAGCAC
CAGATATAGCTTCCCTCGTATAAATAATATAAGATTTTGATTATTACCCCATCAATTATATTATTATTAAAGA
GGAATTTGTCAAAAAGGTGTTGGAAGTGGTTGAACAGTATATCCACCTTTATCATAAATATTAGTCATGAAG
GATTATCAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGTATATCTTCAATTATAGGAGCAATTAATTTATCA
CAACAATTTTAAATATACGTATTTTAAATCATCTTTAGATCAAATATCATTATTTGTTTGATCTATTTTAAACTAC
TATTTTATTATTATTAGCAGTTCCAGTTTTAGCAGGTGCAATTACTATATTATTATCTGATCGAAACTTAAATACTT
CATTTTTGATCCATCAGGTGGAGGGGACCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ABU8004.

Holotype ♂: DHJPAR0045509, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Orosilito, 10.98332, -85.43623, 900 m, eclosion date 7/19/2011, caterpillar collection date 06/27/2011 (CNC). GenBank accession code OM237743.

Holotype host data: Hyperparasitoid of an unidentified microgastrine (Braconidae), which is a primary parasitoid of *Pyrinia* Janzen02 (Geometridae) feeding on *Miconia albertobrenesii* (Melastomataceae). A single *Mesochorus* eclosed.

Other host data: None.



Fig. 27. *M. unoocho*, holotype male.

Mesochorus unonueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:66249060-2480-4ADF-8B0F-0DB7E2B0D70D

Diagnostics: Fig. 28.

Holotype barcode.

```
AATTTTATATTTTATTTTTGGTATATGATCAGGAATGATTGGATCAGCAATAAGTTAATTATTCGAATAGA
ATTAGGTAATCCTGGATTTCTAATTAATAATGACCAAATTTATAATTCTTTTGTTACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCTATTATAATTGGAGGGTTTGGAAATTGAATAGTTCCTTTAATAATTGGTGACCT
GACATAGCATTTCCTCGAATAAATAATATAAGATTTTGACTTTTACCTCCTTCAATTATATTATTATTAAGAA
GAATTTGTCAAAAAGGTGTTGGAACGGATGAACTATTTACCCCCCTTTATCATTAAATAGAAGACATGAAG
GATTTTCAGTAGATTTATCTATTTTTTCATTACACTTAGCAGGTATATCTTCAATTATAGGTGCAGTTAATTTTATTA
CAACAATTTAAATATACGAATTAATGGTTCATCATTAGATCAAATATCTTTATTTGTATGATCAATAAAATTACAA
CAGTATTATTATTATAGCTGTACCTGTGTAGCAGGTGCAATTACTATATTATTAAGTATCGTAATTTAAACACA
ACTTTTTTTGACCCCTCAGGAGGAGGTGACCCAATTTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:ACJ3972.

Nearest neighbor: *M. cincotres*, BOLD:AAM1692, 8.33 % (p-dist).

Holotype ♀: DHJPAR0051851, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Jacobo, 10.94076, -85.31770, 461 m, eclosion date 03/01/2013, caterpillar collection date 02/11/2013 (CNC). GenBank accession code OM237714.

Holotype host data: Hyperparasitoid of *Glyptapanteles* Whitfield152 (Braconidae: Microgastrinae), which is a primary parasitoid of *Psaliodes* Janzen05 (Geometridae) feeding on *Salpichlaena volubilis* (Blechnaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

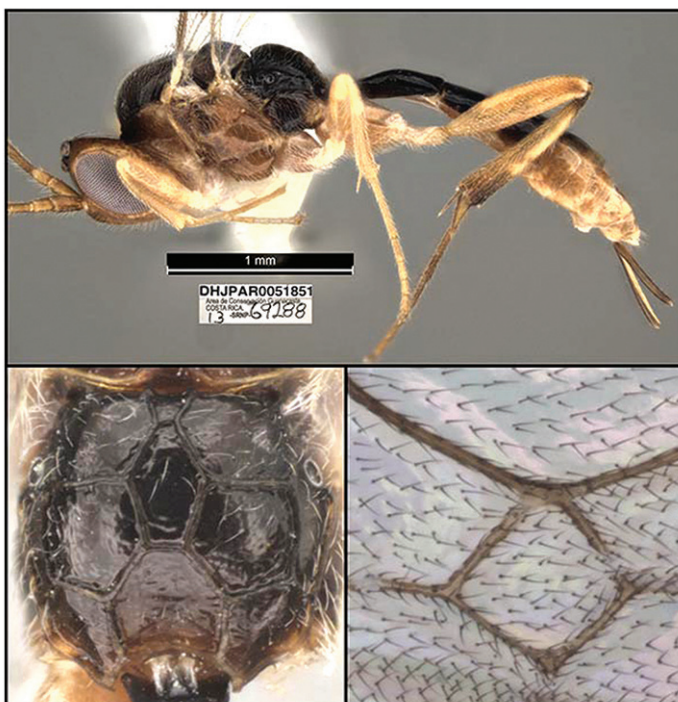


Fig. 28. *M. unonueve*, holotype female.

Mesochorus doscero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9DA02EA7-EABD-4B10-BB7C-D4AF64C79D9B

Diagnostics: Fig. 29.

Consensus barcode (12 specimens).

```
ATTTTATACTTTATTTTTGGTATATGAGCTGGTATAATTGGTTCATCAATAAGAATAATTATTCGTATAGAATTAGGA
AATCCTGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTTGTGACATCACATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATTGATTAATTCCATTAATAATTGGAGCTCCTGATATA
GCTTCCCTCGTATAAATAATAAGATTTTGATTATACCCCATCAATATATATTATTAATAAGAGGAATTT
GCCAAAAGGTGTTGGTACCGGATGAACAATTTATCCCCATTCATTAAATATTGCCCATGAAGGAATAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCTGGAATATCATCTATTATAGGAGCAATTAATTTTATTACA
ACAATTTAAATATACGAATTTAAAATCATCATTAGACCAAATATCATTATTTGTATGATCAATATTAATTACA
ACAATTTATTATTATTAGCAGTTCCAGTTTAGCCGGGGCTATTACTATATTATTATCTGATCGTAATTTAAA
TACTTCTTTTTTGGATCCATCAGGAGGAGGTGACCCAATTTATACCAACATTTA
```

BOLD data: BIN: BOLD:AAD3078.

Nearest neighbor: *M. unocinco*,
BOLD:AAC8776, 4.81 % (p-dist).

Holotype ♀: DHJPAR0021720, Área de Conservación Guanacaste, Guanacaste, Sector Del Oro, Quebrada Raiz, 11.02865, -85.48669, 280 m, eclosion date 08/05/2004, caterpillar collection date 07/15/2004 (CNC). GenBank accession code OM237703.

Holotype host data: Hyperparasitoid of *Apanteles ruthfrancoae* (Braconidae: Microgastrinae), which is a primary parasitoid of *Staphylus vulgata* (Hesperiidae) feeding on *Achyranthes aspera* (Amaranthaceae). More than 100 *Mesochorus* specimens eclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

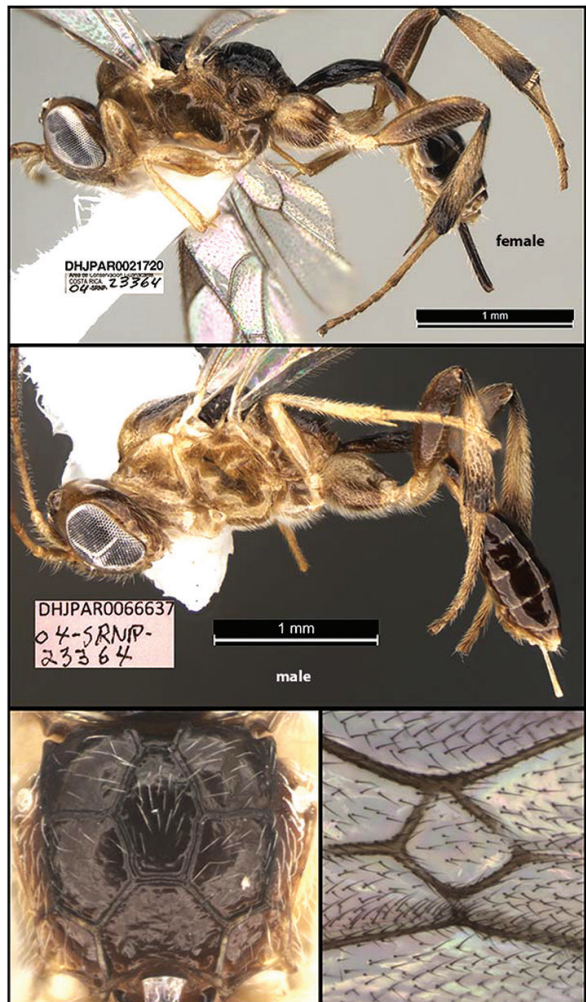


Fig. 29. *M. doscero*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066637) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, DHJPAR0021720, which was barcoded. They both have the same rearing/caterpillar record, 04-SRNP-23364, that can be recovered from the Janzen/Hallwachs website.

Mesochorus dosuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8BEE9D86-5E6C-4D05-B9D4-10C9DF9C3F96

Diagnostics: Fig. 30.

Consensus barcode (12 specimens).

ATTTTATATTTTATTTTGGTTTATGAGCAGGAATAATTGGAGCTTCAATAAGAATAATTATTCGAATAGAGTTA
 GGAAACCCAGGATTTCTAATTAATAATGATCAAATTTATAATCTTTTGT TACATCTCATGCCTTTATTA
 TAATTTTTTTATAGTAATACCTATTATAATTGGAGATTGGAAATTGAATAATCCCGTTAATAATTGGAGCCCCAGA
 TATAGCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCATCAATTATATTATTATTAAAGAGGAATTT
 GTCAAAAAGGAGTAGGAAGTGGTTGAACAGTTTATCCACCTTTATCCTTAAATGTTAGTCATGAAGGTCTTTCTGTA
 GATTTATCAATTTTTCCCTTCATTTAGCTGGTATATCTCAATTATAGGAGCTATTAATTTTATTACAACAATTTTAA
 ATATACGAATTTCAAAAACATCATTAGACCAAATATCATTATTTGTTTGATCTATTTAATTACAACAATTTTATTAC
 TATTAGCTGTCCAGTTTATAGCTGGTGCAATTACAATATTATTATCTGATCGAAATTTAAATACTTCATTTTTTGATC
 CGTCTGGAGGAGGAGACCCAATTTTATACCAACATTTA

BOLD data: BIN: BOLD:AAE3978.

Nearest neighbor: *M. seismueve*,
 BOLD:AAX4031, 7.33 % (p-dist).

Holotype ♀: DHJPAR0052931,
 Área de Conservación Guanacaste,
 Guanacaste, Sector Mundo Nuevo,
 Mamones, 10.77074, -85.42874,
 365 m, eclosion date 06/19/2013,
 caterpillar collection date 06/12/2013
 (CNC). GenBank accession code
 OM237694.

Holotype host data: Hyperparasitoid
 of *Cotesia* Whitfield32 (Braconidae:
 Microgastrinae), which is a primary
 parasitoid of *Eumorphia satellitia*
 (Sphingidae) feeding on *Cissus*
pseudosicyoides (Vitaceae). Multiple
Mesochorus specimens enclosed.

Other host data: *Cotesia*, *Microplitis*
 (Braconidae: Microgastrinae).
 Multiple *Mesochorus* specimens
 enclosed.

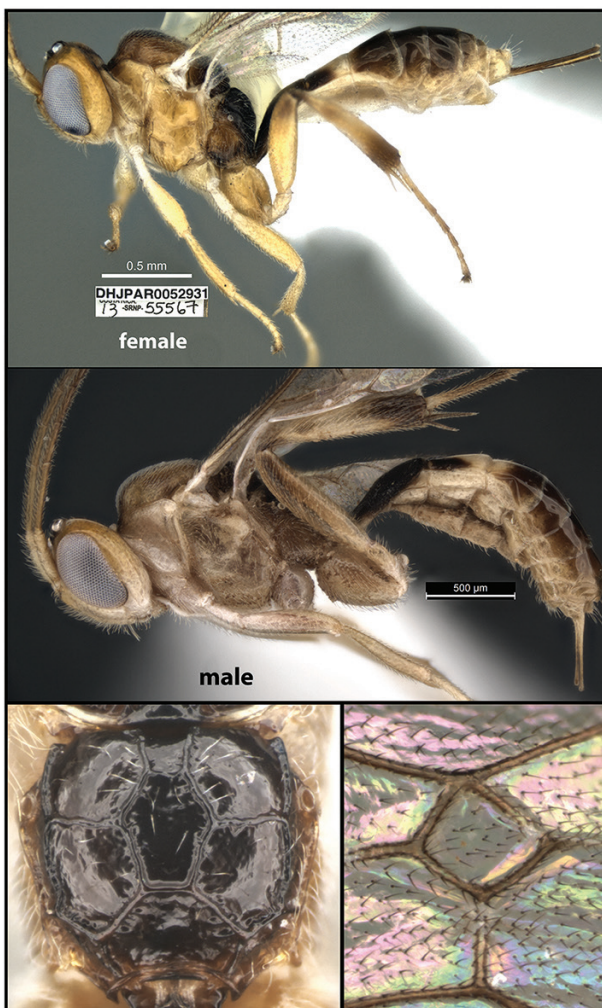


Fig. 30. *M. dosuno*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus dosdos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:ED065147-E385-4B40-84B5-6EC7FDC279C5

Diagnostics: Fig. 31.

Consensus barcode (10 specimens).

```

ATTTTATATTTMWTGTTGGTATATGAGCAGGAATAATTGGTTCATCRATAAGAATAATTATTCGTATAGA
ATTAGGAAATCCAGGATTTTAAATCAATAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTATTA
TAATTTTTTTATAGTAATRCCAATTATAATTGGAGGATTTGGAAATTGATTAATCCATTAATAATTGGAGCWCT
GATATAGCTTTCCTCGAATAAATAACATAAGATTTTGATTATTACCCCATCAATTATATTTAATAATWAGA
GGAATTTGTCAAAAAGGTGTAGGAACTGGATGAACAGTTTACCCACCATTATCATTAAATATTAGTCATGAAG
GATTATCAGTTGATTATCAATTTTTCTTTACATTTAGCAGGAATATCTTCTATTATAGGAGCAATTAATTTATTA
CAACAATTTAAATATACGAATTTAAAATCATCATTTGATCAAATATCATTATTTGCTTGATCAATATTAATTA
CAACAATTTATATTATTAGCAGTCCAGTTTTAGCAGGAGCTATTACTATATTATTATGTGATCGTAATTTAAA
TACTTCTTTTTTGGATCCATCGGGAGGAGGGGACCCAATTTTATACCAACATTTA
  
```

BOLD data: BIN: BOLD:AAE4006.

Nearest neighbor: *M. dostres*, BOLD:AAE9552, 4.21 % (p-dist).

Holotype ♀: DHJPAR0030588, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Estación Gongora, 10.88700, -85.47443, 570 m, eclosion date 07/08/1998, caterpillar collection date 08/29/1998 (CNC). GenBank accession code OM237736.

Holotype host data: Hyperparasitoid of *Alphomelon talidicida* (Braconidae: Microgastrinae), which is a primary parasitoid of *Talides sinois* (Hesperiidae) feeding on *Musa acuminata* (introduced) (Musaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Alphomelon* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.



Fig. 31. *M. dosdos*, holotype female.

Mesochorus dostres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:352F4AA9-99F8-4D94-9722-E5EBA7C504D5

Diagnostics: Fig. 32.

Consensus barcode (16 specimens).

```

WTTTTATATTTTATTTTGGTATATGAGCAGGAATAATTGGTTCATCAATAAGAATAATTATTCGTATAGAATTAGGA
AATCCTGGATTTTAAATYAATAATGATCAAATTTATAATCTTTTGTACATCYCATGCTTTTATTATAATTTTTTTTA
TAGTAATACCAATTATAATTGGAGGGTTTGGAAATTGATTAATTCCACTAATAATTGGRGCTCCTGATATA
GCTTTYCTCGAATAAATAATAAGATTCTGATTATTACMCCATCAATTATAYTATTAATAGTAAGARGRATTT
GTCAAAAAGGTGTTGGTACTGGATGAACAATTTAYCCMCCATTATCATTAATGTTAGTCATGAAGGATTAT
CARTTGATTTATCAATTTTTCTTTACATTTGGCAGGAGCATCTTCTATTATAGGAGCAATTAATTTTATTACA
ACAATTTTAAATATACGAATTTTAAATCATCATTWGATCAAATATCATTATTTGCTTGATCAATTAATTAAC
TACAATTTTATTATTATAGCAGTYCCAGTTTAGCAGGAGCTATTACTATATTATTATGTGATCGAAATTRA
TACTTCTTTTTTGGATCCATCAGGAGGRGGAGACCAATTTTGTATCAACATTTA
  
```

BOLD data: BIN: BOLD:AAE9552.

Nearest neighbor: *M. dosdos*, BOLD:AAE4006, 4.21 % (p-dist).

Holotype ♀: DHJPAR0030560, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Estación Gongora, 10.88700, -85.47443, 570 m, eclosion date 11/16/1994, caterpillar collection date 10/22/1994 (CNC). GenBank accession code OM237773.

Holotype host data: Hyperparasitoid of *Alphomelon nanosoma* (Braconidae: Microgastrinae), which is a primary parasitoid of *Carystoides escalantei* (Hesperiidae) feeding on *Chamaedorea costaricana* (Arecaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Alphomelon* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

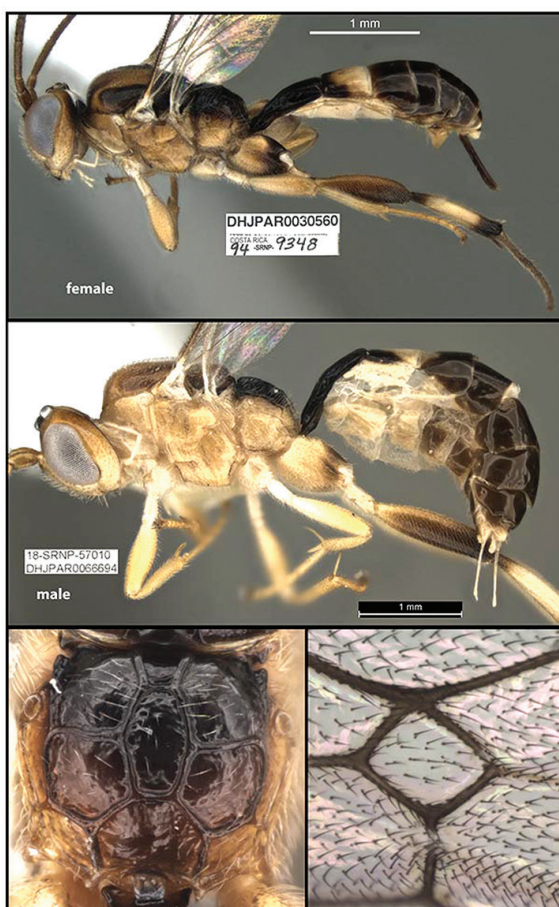


Fig. 32. *M. dostres*, holotype female and paratype male. Unlabeled images are of the holotype. The male (DHJPAR0066694) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as a barcoded paratype, DHJPAR0063976, which was barcoded. They both have the same rearing/caterpillar record, 18-SRNP-57010, that can be recovered from the Janzen/Hallwachs website.

Mesochorus doscuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:E49600B6-67C4-4F0C-A32A-614C2E9766EA

Diagnosics: Fig. 33.

Consensus barcode (4 specimens).

GTRTTATACTTTATTTTTGGAATTTGAGCTGGAATAATTGGCTCAGCAATAAGTTAATTATTCGAATAGA
ATTAGGAAACCCAGGATTTTTAATTAATAATGACCAAATTTATAATTCATTTGTAACAACACATGCTTTTTATTA
TAATTTTTTTTATAGTTATACCTATTATAATTGGGGGATTTCGGAAATTGATTAGTACCTTTAATAATTGGTGCCCT
GATATAGCATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCGCTTTAATATTATTATTATAAGAAGA
ATTATTAATAAAGGAGTAGGGACAGGGTGGACTATTTACCCTCCTTTATCATTAAATTTAAGCCATGAAGGAA
TATCAGTAGATTTATCAATTTTTTCATTACATTTAGCGGGTATATCCTCAATTATAGGTGCTGTAATTTTATTACTA
CAATTTTAAATATACATTTATTTGGAATATCATTAGATCAACTATCWTTATTTACGTGATCAATTATTATTACTACA
ATTTTATTATTATTAGCAGTTCAGTTTTAGCAGGAGCAATTACAATATTATTAAGTATCGGAATTTAAATACAT
CATTTTTGATCCCTCTGGAGGAGGTGATCCTATTCTTTATCAACATTTA

BOLD data: BIN: BOLD:AAE9748.

Holotype ♀: DHJPAR0012190,
Área de Conservación Guanacaste,
Alajuela, Sector San Cristobal,
Puente Palma, 10.91630,
-85.37869, 460 m, eclosion date
08/02/2006, caterpillar collection
date 07/14/2006 (CNC). GenBank
accession code JF793158.

Holotype host data:

Hyperparasitoid of *Diolcogaster*
Choi82 (Braconidae:
Microgastrinae), which is a primary
parasitoid of *Isanthrene echemon*
(Erebidae) feeding on *Mikania*
guaco (Asteraceae). Multiple
Mesochorus specimens enclosed.

Other host data: *Diolcogaster*
(Braconidae: Microgastrinae).
Multiple *Mesochorus* specimens
enclosed.

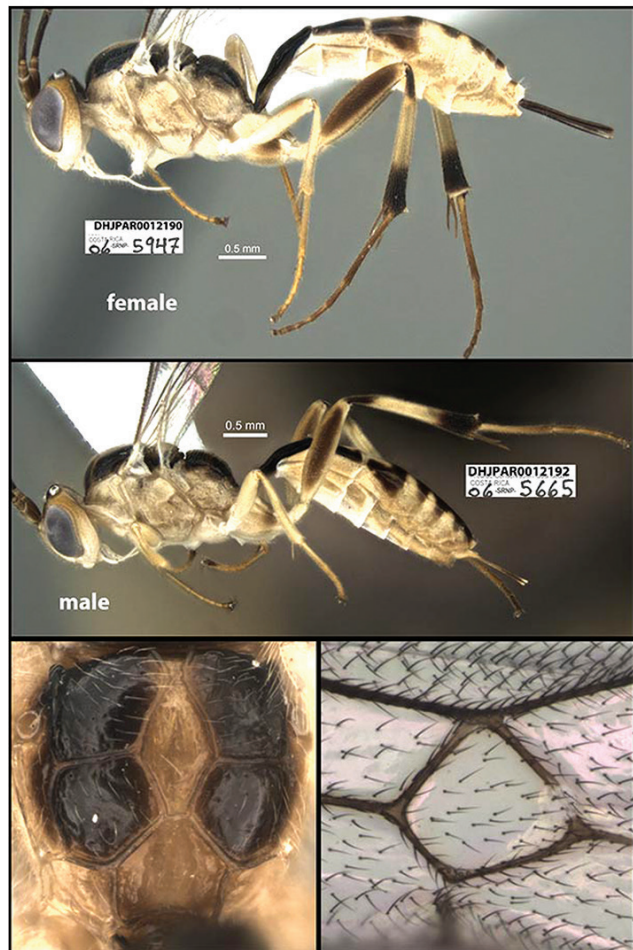


Fig. 33. *M. doscuatro*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus doscinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:0FDD7131-3B85-45AA-B5CD-2BA7A2EA3A04

Diagnostics: Fig. 34.

Consensus barcode (4 specimens).

GTTTTATATTTTATTTTTGGGAATTTGGGCCGGAATAATTGGGTCATCAATAAGCTTAATTATTCGAATAGA
 ACTTGGAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCTCATGCTTTTATTA
 TAATTTTTTTATAGTTATACCAATTATAATTGGAGGGTTTGGAAATTGATTAATTCCTTTAATAATTGGAGCCCT
 GATATAGCATTCCCTCGAATAAAACAATATAAGATTTTGACTTTTACCTCCTTCATTAATATTACTTCTATTAAGAA
 GAATTATTAATAAAGGAGTTGGAACAGGTTGAACCGTTTATCCACCTTTATCATTAAATGTCAGACATGAAGGTA
 TATCAGTAGATTTATCAATTTTTTCATTACATTTAGCCGGGATATCTTCAATTATAGGAGCAGTTAATTTTATTA
 CAACAATTTAAACATACATTTATTTGGCATATCAATAGATCAATATCTTTATTTACATGATCAATTAATAATAC
 TACAATTTTACTTTTAGCTGTTCCAGTTTTAGCTGGAGCAATTAATACTATTAACAGATCGAAATTTAA
 TACATCTTTTTTGACCCATCAGGTGGTGGTGACCAATCTTTATCAACATTTA

BOLD data: BIN: BOLD:AAE9757.

Nearest neighbor: *M. unocerocho*, BOLD:ACE7768, 1.4 % (p-dist). Central areola of *M. doscinco* petiolate apically, sessile in *M. unocerocho* (Fig. 35).



Fig. 34. *M. doscinco*, holotype female.

Holotype ♀: DHJPAR0021750, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Rio Blanco Abajo, 10.90037, -85.37254, 500 m, eclosion date 03/06/2006, caterpillar collection date 02/15/2006 (CNC). GenBank accession code JF793168.

Holotype host data: Hyperparasitoid of *Glyptapanteles* Whitfield54 (Braconidae: Microgastrinae), which is a primary parasitoid of *Semaepopus* Janzen08 (Geometridae) feeding on *Virola sebifera* (Myristicaceae). A single *Mesochorus* specimen enclosed.

Other host data: none.

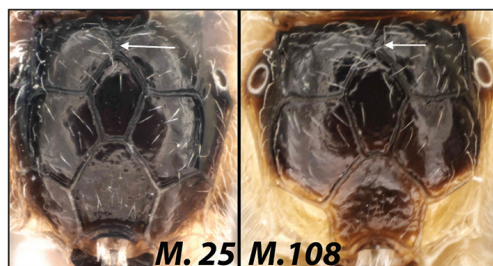


Fig. 35. Comparisons of *M. doscinco* with its nearest neighbor, *M. unocerocho*.

Mesochorus dosseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8EBDB703-B84E-4D3A-870C-46AD689397CF

Diagnostics: Fig. 36.

Consensus barcode (5 specimens).

```
ATTTTATATTTTATTTTGGGAATATGATCAGGAATAATGGTTCATCAATAAGAATAATTATTCGAATAGAATTAGGA
AATTCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACATCTCATGCTTTTATTATAATTTCTTTA
TAGTAATACCAATTATAATTGGAGGATTTGGTAATTGAATAGTTCCTTTGATAATTGGAGCCCCAGATATAGCTTTTC
CACGAATAAATAATAAGATTTTGATTATTACCTCCATCAATTATATTATTATTAATGAGAAATATTTGTAGTAAA
GGAGTAGGAAGTGGTTGAACAGTATACCCTCCTTTATCTTTAAATATTAGTCATGAAGGTATATCAGTTGATTAT
CAATTTTTCTTACATTTAGCTGGCATATCTTCAATTATAGGAGCAATTAATTTTATTACAACATTTATAAATATAC
GAATTTTAAAAACATCATTAGATCAGATATCTTTATTTATTTGATCAATTTAATTACAACATTTTATTATTATTAG
CAGTCCAGTTTTAGCAGGTGCTATTACTATATTACTTTCTGATCGAAATTTAAATACTTCATTTTTTGATCCTTCAG
GAGGTGGAGATCCAATTTTATTTCCAACATTTA
```

BOLD data: BIN: BOLD:AAE9780.

Holotype ♀: DHJPAR0012195, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Finca Hugo, 10.88068, -85.26968, 540 m, eclosion date 07/23/2006, caterpillar collection date 07/07/2006 (CNC). GenBank accession code JF793181.

Holotype host data: Hyperparasitoid of *Dolichogenidea melanimunozae* (Braconidae: Microgastrinae), which is a primary parasitoid of *Cerconota recurvella* (Depressariidae) feeding on *Vismia baccifera* (Hypericaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Dolichogenidea*, *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

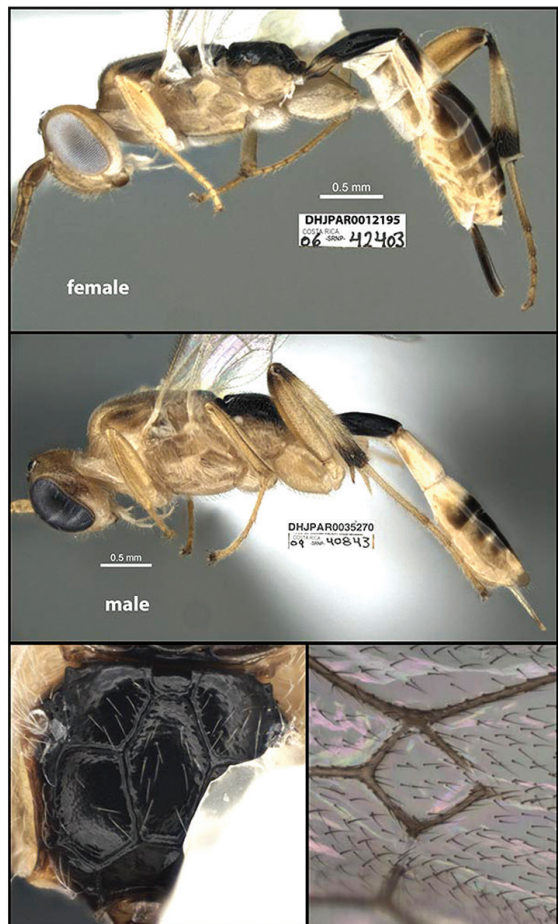


Fig. 36. *M. dosseis*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus dossiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:D1DA1FCA-CBAE-4789-B0BB-FCCC27400A43

Diagnostics: Fig. 37.

Consensus barcode (3 specimens).

```
ATTTTATATTTTATTTTGGGAATTTGAGCTGGAATAATTGGGTCAGCAATAAGCTTAATTATTGCAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCCCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGGGGATTTGGAAATTGGTTAGTACCCCTAATAATTGGGGCCCCTGATATAG
CATTCCCTCGAATAAATAACATAAGATTTTGATTATTACCTCCTTCACTAATATTATTAATATTAAGAAGAATTATTAA
CAAAGGAGTTGGAACAGGATGAAGTGTATCCCCCTTTATCATTAAATCTTAGTCATGAAGGAATATCAGTA
GATTTATCAATTTTTCATTACATTTAGCAGGGATATCATCAATTATAGGTGCAGTAAATTTTATTACTACTATTTTAAA
TATACATTTATTTGGAATATCATTAGATCAACTATCATTATTTACATGATCAATTTTATTACTACAATTTTATTATTATA
GCAGTACCAGTTTGTAGCTGGAGCAATCAATATTTAACTGATCGAAATTTAAATACATCTTTTTTTGATCCGTC
GGAGGGGGTGACCCCATCTTTATCAACATTTA
```

BOLD data: BIN: BOLD:AAF0551.

Holotype ♀: DHJPAR0030584,

Área de Conservación Guanacaste,
Guanacaste, Sector Cacao, Quebrada
Florcita, 10.93362, -85.47308, 860 m,
eclosion date 03/04/1997, caterpillar
collection date 02/06/1997 (CNC).

GenBank accession code OM628822.

Holotype host data: Hyperparasitoid
of *Hypomicrogaster plagiosDHJ01*
(Braconidae: Microgasterinae), which
is a primary parasitoid of *Nycterotis*
xylinoidesDHJ02 (Notodontidae)
feeding on *Inga longispica*
(Fabaceae). Multiple *Mesochorus*
specimens enclosed.

Other host data: *Hypomicrogaster*
(Braconidae: Microgasterinae).

Multiple *Mesochorus* specimens
enclosed.

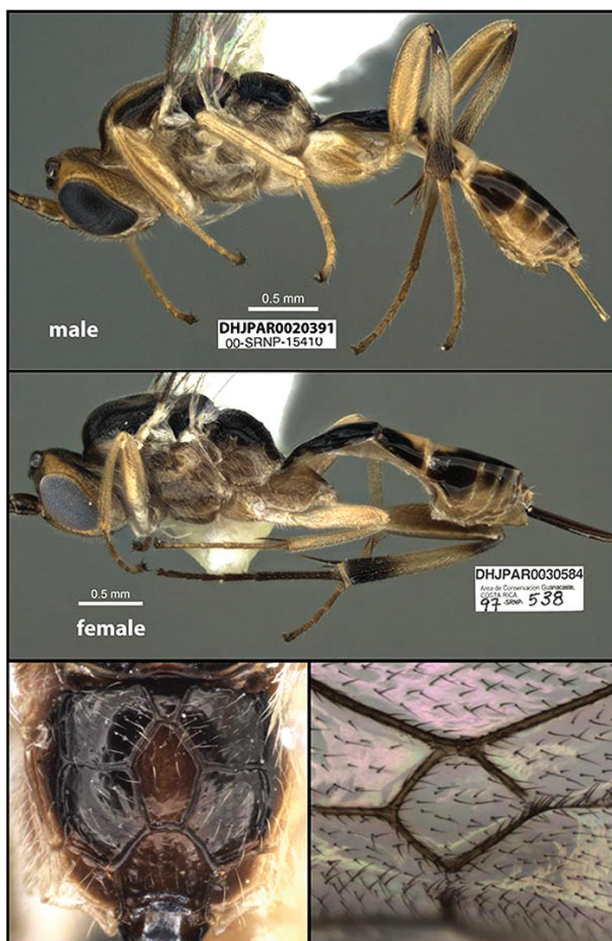


Fig. 37. *M. dossiete*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus dosocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:83791888-1A7B-432C-829E-D7EF7CAF23D3

Diagnostics: Fig. 38.

Consensus barcode (3 specimens).

```

ATTTTATATTTTATTTTAGGAATTTGATCAGGTATRATTGGATCTTCAATAAGATTAATTATTTCGAATAGA
ATTAGGTAATCCTGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATRCCAATTATAATTGGAGGGTTTGGAAATTGATTAATCCATTAATAATTGGAGCCCT
GATATAGCATTCCCTCGAATAAATAATATAAGATTTGATTACTTCCCCCTTCATTAATATATATTATTAAGAA
GAATTATTAATAAAGGAGTAGGAACAGGTTGAACAGTATATCCTCCATTATCTTAAATATTAGTCATGAAGGTA
TATCTGTAGATTTATCTATTTTTCTTTACATTTAGCAGGTATATCTCAATTATAGGAGCTATTAATTTTATTAC
TACAATTTTAAACATACATTTATTTGGAATAACTATAGATCAATTAACCTTTATTTACTTGATCAATTAATTAACA
ACAATTTTATTATTATTAGCAGTACCAGTATTAGCAGGAGCAATACAATATTATTAACCTGATCGRAATTTAAA
TACATCTTTTTTTGATCCATCAGGAGGAGGAGACCCYATTCTTTATCAACATTTA
  
```

BOLD data: BIN: BOLD:AAF0566.

Holotype ♀: DHJPAR0022166,

Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Quebrada Otilio, 10.88996, -85.47966, 550 m, eclosion date 10/27/2007, caterpillar collection date 10/13/2007 (CNC). GenBank accession code JF793167.

Holotype host data: Hyperparasitoid of *Microcharops tibialis* (Ichneumonidae: Campopleginae), which is a primary parasitoid of *Hemiceras nigrescens* (Notodontidae) feeding on *Inga punctata* (Fabaceae). One *Mesochorus* enclosed.

Other host data: Two records.

Microcharops (Ichneumonidae: Campopleginae) and *Glyptapanteles* (Braconidae: Microgastrinae). Multiple specimens enclosed from the caterpillar attacked by specimens of *Glyptapanteles*. One *Mesochorus* enclosed from the sole *Microcharops* cocoon.

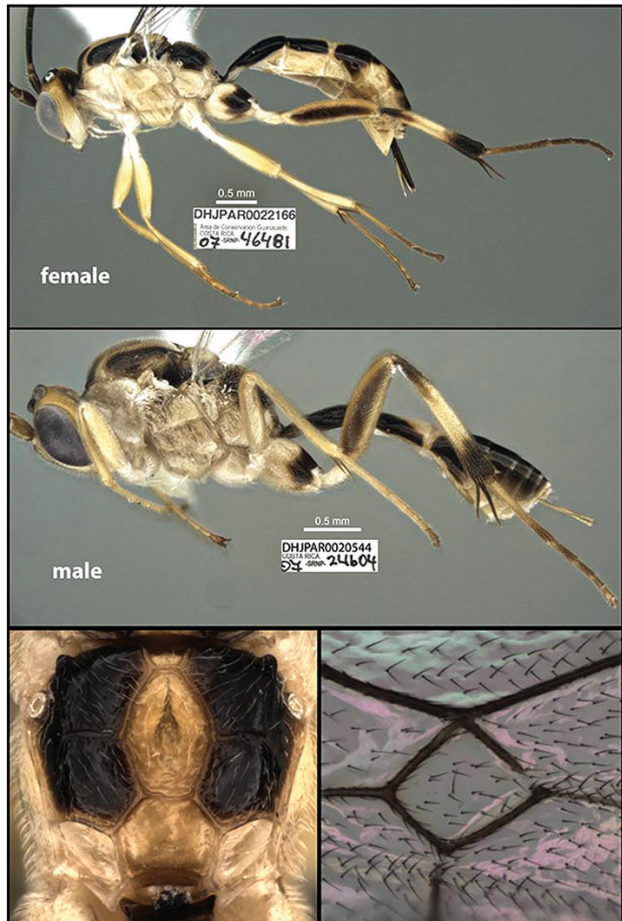


Fig. 38. *M. dosocho*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus dosnueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F38B7375-1F77-4AFE-8153-A876C7E1EAA5

Diagnostics: Fig. 39.

Consensus barcode (3 specimens).

ATTTTATATTTTATTTTTGGTATTTGGGCTGGAATAATTGGATCAGCAATAAGATTAATTATTCGTATAGA
 ATTAGGTAATCCAGGATTTTTAATTAATAACGATCAAATTTATAATTCATTTGTAAGTGCACATGCCTTTATTA
 TAATTTTTTTTATGTTTATACCAATTATAATTGGAGGATTGGAAATTGATTAGTACCTTTAATAATTGGTGCCCA
 GATATAGCATTCCCACGAATAACAATATAAGATTTTGATTATTACCCCATCACTTATATTATTATTAAGAAGA
 ATTATTAATAAAGGAGTAGGGACAGGATGAACTGTTTATCCACCTTATCATTAAATGTAAGWCATGAAGGTA
 TATCTGTTGATTTATCAATTTTTTCATTACATTTAGCGGAATATCTCAATTATAGGAGCGGTAATTTTATTAC
 CACAATTATAATATACATTTATTTGGAATATCATTAGATCAAATATCATTATTTACYTGATCAATTTAATTACTACA
 ATTTTATTATTATTGGCAGTACCAGTTTTAGCAGGAGCAATTACAATATTATTAACCGACCGGAATTTAAATACTT
 CATTTTTGATCCTTCAGGAGGTGGAGATCCAATCTTTATCAACATTTA

BOLD data: BIN: BOLD:AAF0585.

Holotype ♀: DHJPAR0021802,

Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Mismo, 10.98758, -85.41967, 680 m, eclosion date 07/21/2004, caterpillar collection date 07/01/2004 (CNC). GenBank accession code OM237766.

Holotype host data: Hyperparasitoid of *Glyptapanteles bobhanneri* (Braconidae: Microgastrinae), which is a primary parasitoid of *Scotura leucophleps* DHJ05 (Notodontidae) feeding on *Rinorea deflexiflora* (Violaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Glyptapanteles* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

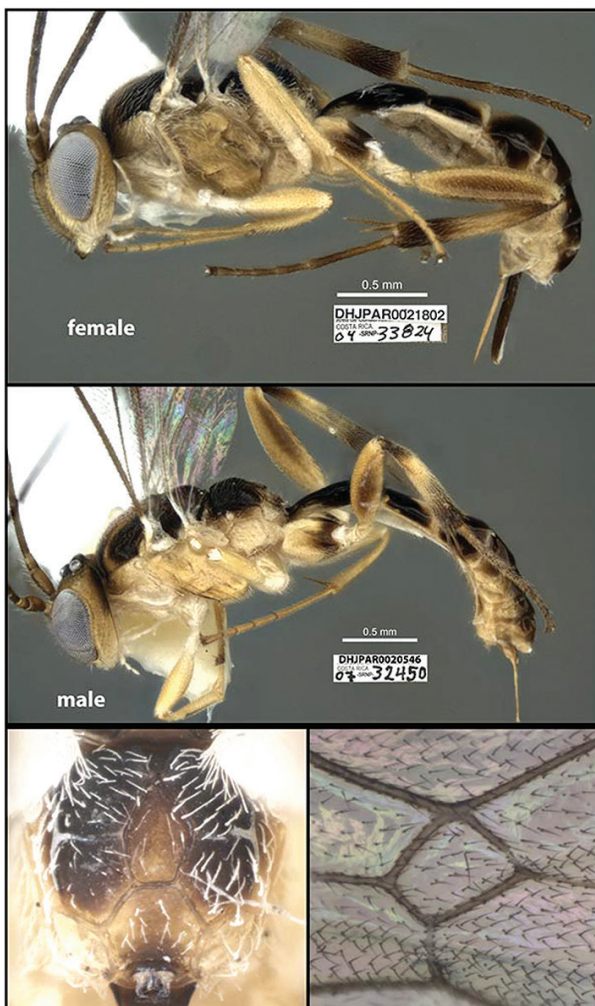


Fig. 39. *M. dosnueve*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus trescero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:3318E5D3-C567-45D7-B8AE-BC6CAD578033

Diagnostics: Fig. 40.

Consensus barcode (4 specimens).

```
ATTTTATATTTTATTTTAGGAATATGGTCAGGAATAATTGGTGCATCAATAAGTTTAATTATTCGATTAGAATTAGGA
AATCCTGGTTATTTAATTAATAATGATCAAATTTATAATCTTTTTGTACAGCTCATGCTTTTATTATAATTTTTTTTA
TAGTAATACCAATTATAATTGGAGGATTTGGAAATTGATTAATTCCTTTAATAATTGGAGCTCCTGATATA
GCTTTCCTCGAATAAATAATATAAGATTTTGACTTCTTCTCTCTTTAATACTATTAATTTTAGAAGAATTATTCA
TAAAGGTGTAGGAACAGGTTGAACGTATATCCCCATTATCATAAATATTAGACATGAAGGTATATCAGTTGATC
TATCAATTTTTTTCATTACATTTAGCTGGTATATCTCAATTATAGGAGCAATTAATTTTATTCAACTATTTAAATATAC
GATTTAAAGGGACATCATTAGATCAAATATCATTATTTTCATGATCAATTAATAACTATTTTACTTTTATTAG
CAGTCCAGTTTTAGCAGGTGCAATTACAATATTATTATCAGATCGAAATTTAAATACTTCTTTCTTTGATCCCTCAG
GAGGAGGAGATCCAATTTTATACCAACATTA
```

BOLD data: BIN: BOLD:AAF0625.

Holotype ♀: DHJPAR0021745, Área de Conservación Guanacaste, Guanacaste, Sector Del Oro, Quebrada Raiz, 11.02865, -85.48669, 280 m, eclosion date 06/23/2005, caterpillar collection date 06/03/2005 (CNC). GenBank accession code OM237752.

Holotype host data: Hyperparasitoid of *Campoplex* Gauld08DHJ01 (Ichneumonidae), which is a primary parasitoid of gelJanzen01 Janzen485 (Gelechiidae) feeding on *Rinorea deflexiflora* (Violaceae). One *Mesochorus* specimen enclosed.

Other host data: *Cardiochilinae* sp. (Braconidae), *Apanteles* (Braconidae), Microgastrinae). A single *Mesochorus* specimen enclosed.

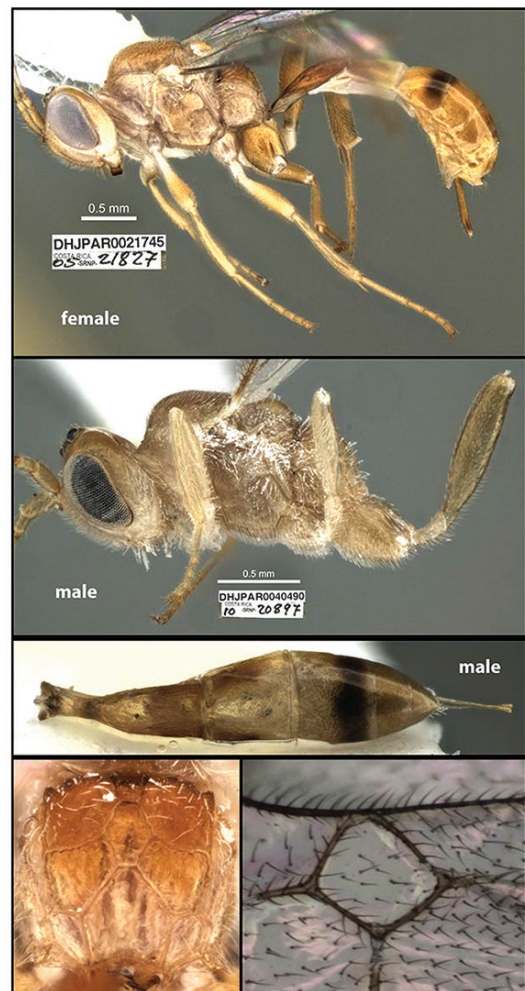


Fig. 40. *M. trescero* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus tresuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:A362F007-BFC3-446F-A4B1-DB1E7238A432

Diagnostics: Fig. 41

Consensus barcode (6 specimens).

ATTTTATATTTTATTTTGGGATATGAGCAGGAATAATTGGTTCTTCAATAAGAATAATTATTCGAATAGAATTAGGA
AATTCAGGATTTTAATTAACAATGATCAAATTTAYAATTCATTTGTTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTAATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTACCTTTAATAATTGGTGCACCAGATATA
GCTTTTCTCGTATAAATAATAAGATTTTGATTATTACCACCTTCAATTATATTATTATTATAAGAAGAATTT
GTCAAAAAGGTGTTGGTACTGGTTGAACAGTTTATCCTCCTTTATCATTAAATATTAGTCATGAAGGACTTT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCTGGGATATCATCAATTATAGGTGCAATTAATTTTATTACAACA
ATTTTAAATATACGAATTATAAAAACCTCTTTAGATCAAATAACATTATTTGTTTGATCAATTTTAATTACAACA
ATTTTATTATTATTAGCAGTACCAGTTTAGCTGGAGCAATTACTATATTACTTTCTGATCGAAATTTAAACTT
CATTTTTGATCCATCAGGGGGTGGAGATCCAATTTTATACCAACATTTA

BOLD data: BIN: BOLD:AAF0637.

Nearest neighbor: *M. nueve*,
BOLD:AAC2766, 4.65 % (p-dist).

Holotype ♀: DHJPAR0063475,
Área de Conservación Guanacaste,
Guanacaste, Sector Pitilla, Sendero
Nacho, 10.98445, -85.42481, 710 m,
eclosion date 08/23/2018, caterpillar
collection date 08/08/2018 (CNC).
GenBank accession code OM237735.

Holotype host data: Hyperparasitoid
of *Diolcogaster* Choi117 (Braconidae:
Microgastrinae), which is a primary
parasitoid of *Desmia* BioLep06
(Crambidae) feeding on *Hoffmannia*
longipetiolata (Rubiaceae). Multiple
Mesochorus specimens eclosed.

Other host data: *Diolcogaster*,
Hypomicrogaster (Braconidae:
Microgastrinae). Multiple *Mesochorus*
specimens eclosed.

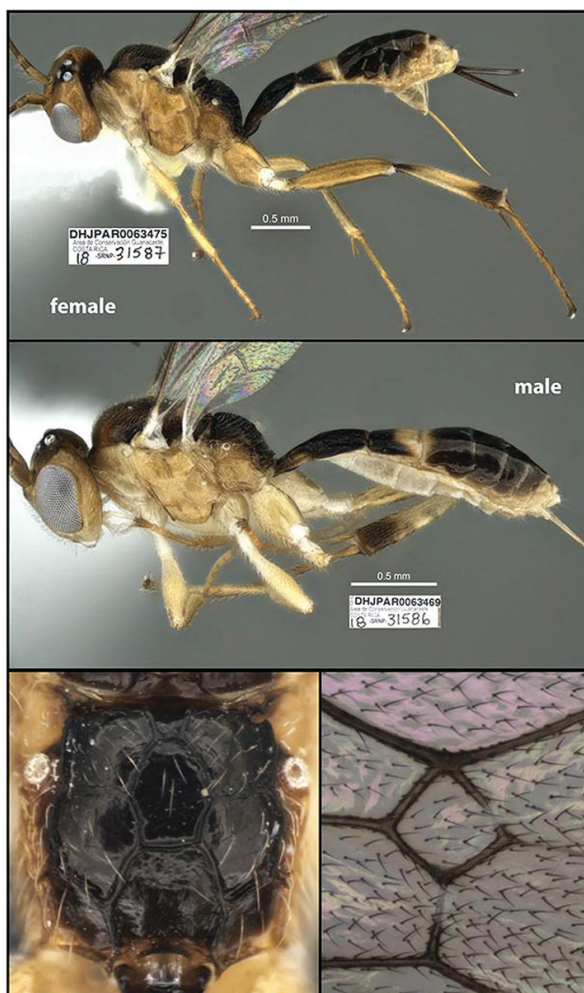


Fig. 41. *M. tresuno* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus tresdos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8A1EB8A7-326F-4137-AA17-D9091F9D09EF

Diagnostics: Fig. 42.

Consensus barcode (17 specimens).

```
ATTTTATATTTTATTTTGGGTATATGAGCTGGGATAATTGGRTCATCAATAAGATTAATTATTTCGAATAGA
ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGTGGATTGGAAATTGAATGTTCCTTTAATAATTGGAGCACCA
GATATAGCTTTYCCTCGAATAAACAATATAAGATTTTGATTATTACCTCCATCAATTATATTATTATTAAAGAGGA
ATTTGTCAAAAAGGTGTTGGAAGTGGTTGAACAGTMTATCTCCATTATCATTAAATGTTAGTCATGAAGGTTTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGAATRTCATCAATTATAGGTGCTATTAATTTTATTACAAC
TATTTTAAATATACGAATTTAAAAACATCTTTAGATCAAATATCATTATTTGTTTGATCAATTTTAAATACAACA
ATTTTATTATTATTAGCTGTTCCAGTTTTAGCAGGTGCAATTACAATATTACTTTCTGATCGAAATTTAAATACTT
CATTTTTGATCCATCAGGAGGAGGKATCCAATTTTATATCAACATTTA
```

BOLD data: BIN: BOLD:AAF0643.

Nearest neighbor: *M. nueveseis*, BOLD:ABX4997, 3.04 % (p-dist).

Holotype ♀: DHJPAR0038931, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Leonel, 10.99637, -85.40195, 510 m, eclosion date 04/06/2010, caterpillar collection date 03/23/2010 (CNC). GenBank accession code HM882332.

Holotype host data: Hyperparasitoid of *Apanteles anamartinezae* (Braconidae: Microgastrinae), which is a primary parasitoid of *Atteva zebra* (Attevidae) feeding on *Simarouba amara* (Simaroubaceae). Multiple

Mesochorus specimens enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae).

Multiple *Mesochorus* specimens enclosed.

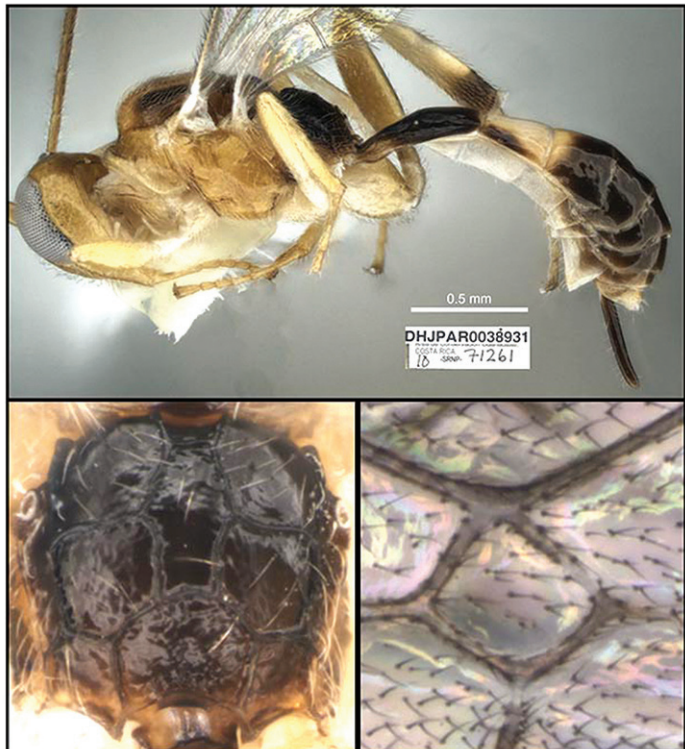


Fig. 42. *M. tresdos* holotype female.

Mesochorus trestres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F861AC1C-4406-4392-9229-B9DE076F7450

Diagnostics: Fig. 43.

Consensus barcode (6 specimens).

```
ATTTTATATTTTATTTTGGGAATATGAGCCGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGAATTAGGA
AATCCTAGATTTTTAATTAATAATGATCAAATTTATAATCTTTTTGTAACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCATTAATAATTGGTGCTCCAGATATA
GCTTTCCTCGAATAAATAATATAAGATTTTGATTATACCTCCTCAATTATATTATTATTATAAGAAGAGTTTGCA
AAAAGGAGTAGGAACGGGTGAACAGTATATCCACCATTATCATTAAATATTAGACATGAAGGATTATCTGTTGATC
TATCAATTTTTCTTTACATTTAGCAGGAATATCATCAATTATAGGAGCAATTAATTTATTACAACATTTTAAATA
TACGAATTTAATAACATCATTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACTACAATTTTACTATTA
GCAGTTCCAGTTTAGCGGGTGAATTACAATATTATTATCTGATCGAAATTTAAATACTTCATTTTTGATCCATCA
GGTGGAGGGGATCCAATTTTATATCAACATTTA
```

BOLD data: BIN: BOLD:AAF0671.

Holotype ♀: DHJPAR0012199, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Nacho, 10.98445, -85.42481, 710 m, eclosion date 08/06/2006, caterpillar collection date 07/15/2006 (CNC). GenBank accession code JF793183.

Holotype host data:

Hyperparasitoid of *Diolcogaster* Choi64 (Braconidae: Microgastrinae), which is a primary parasitoid of *Trichaea pilicornis* (Crambidae) feeding on *Psychotria grandis* (Rubiaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Diolcogaster*, *Hypomicrogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

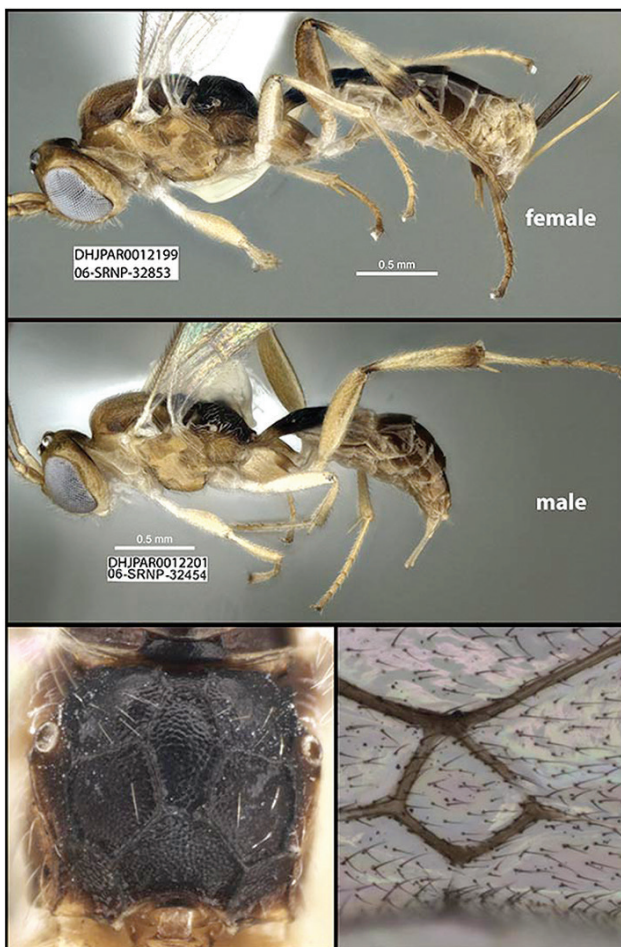


Fig. 43. *M. trestres* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus trescuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8B6AEAEC-5121-4B59-88AB-1591CFB87C3C

Diagnostics: Fig. 44.

Consensus barcode (5 specimens).

```

WTTTTATATTTTATTTTGGTATATGATCAGGAATAATTGGATCTTCAATAAGAATAATTATCCGAATAGAATTAGGA
AATTCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTAAATCYCATGCTTTTATTATAATTTCTTTA
TAGTTATACCAATTATAATTGGAGGATTCGGAAATTGAATAGTACCATTAATAATTGGTGCCCCAGATATA
GCTTCCCTCGAATAAATAATATAAGATTTTGATTACTACCACCTTCAATTATATATTATTATTAAGAAATTTT
GTCAAAAAGGTGTAGGAAGCTGGTTGAACAATTTATCCCCATTATCATAAATATTAGACATGAAGGACTTT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCTGGAATATCTTCAATTATAGGAGCAATTAATTTCTACTA
CAATTTAAATATACGAATTATAAAACTTCATTTGATCAAATAACATTATTTGTTTGATCAATTTAATCACTACA
ATTTTATTATTATTAGCAGTACCAGTTTTAGCTGGAGCAATTAATTAATTTACTTTTCAGACCGAAATTTAAATACTT
CATTTTTGATCCATCAGGAGGTGGAGACCCAATTTTATAYCAACATTTA
  
```

BOLD data: BIN: BOLD:AAF0739.

Nearest neighbor: *M. sietecero*,
BOLD:AAX4033, 5.32 % (p-dist).

Holotype ♀: DHJPAR0057726, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Sendero Rincon, 10.89620, -85.27769, 430 m, eclosion date 05/07/2015, caterpillar collection date 04/19/2015 (CNC). GenBank accession code OM237748.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi70 (Braconidae: Microgastrinae), which is a primary parasitoid of *Poliopastea* Janzen02 (Erebidae) feeding on *Allomarkgrafia plumeriiflora* (Apocynaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Diolcogaster* (Braconidae: Microgastrinae). Some rearings produced single specimens of *Mesochorus* and others multiple specimens.

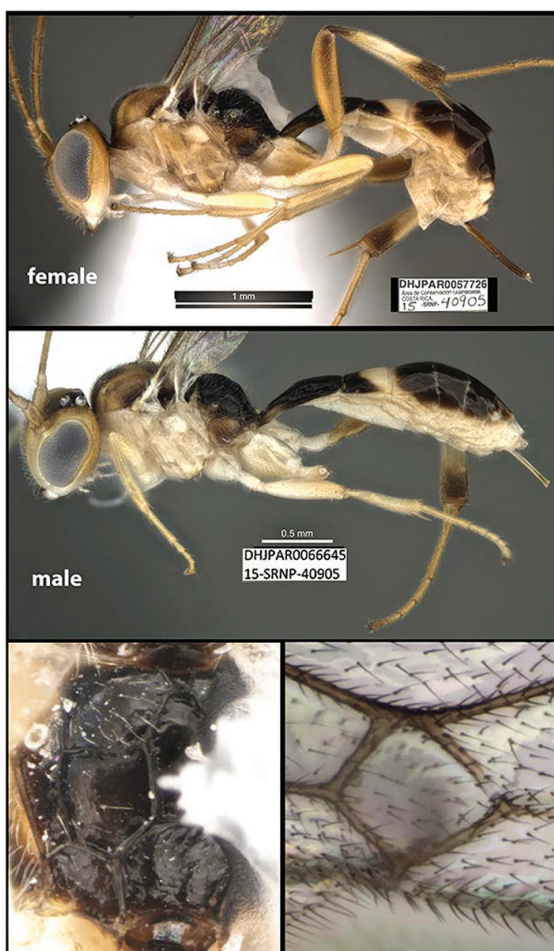


Fig. 44. *M. trescuatro* holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066645) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 15-SRNP-40905, that can be recovered from the Janzen/Hallwachs website.

Mesochorus trescinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9DA31F41-0128-4A61-B54F-531BA00D5B51

Diagnostics: Fig. 45.

Consensus barcode (2 specimens).

```
GTTTTATATTTTATTTTTGGAATTTGAGCAGGAATAATTGGTTCATCTATAAGTTAATTATTCGTATAGA
ATTAGGAAATCCTGGATTTTTAATTAATAATGATCAAATTTATAAYTCATTTGTAAGTCTCACGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATCATAATTGGAGGATTTGGRAATTGATTAATCCAYTAATAATTGGAGCTCT
GATATAGCATTTCCTCGGATAAATAATATAAGATTTTGACTTTTACCTCCATCATTAATATTATTATTAATAAGAA
GAATTATTAATAAAGGGGTAGGYACAGGATGAACAGTTTATCCRCATTATCATAAATGTTAGRCATGAAGGA
ATATCYGTAGACTTATCAATTTTTTCATTACATTTAGCAGGTATGTCATCAATTATAGGAGCAGTTAATTTTATTA
CAACAATTATAAATATACATTTATATGGAATATCAATAGATCAATTATCATTATTACATGATCAATTAATAATAC
TACTATTTTATTATTATTAGCAGTTCCCGTTTTAGCAGGAGCAATTACAATATTATTAACAGATCGAAATTTAAA
TACATCTTTTTTTGATCCATCAGGAGGAGGAGATCCTATTCTTTTCAACATTTA
```

BOLD data: BIN:BOLD:AAF8905.

Nearest neighbor: *M. unodosocho*,

BOLD:ACZ6907 7.49 % (p-dist).

Holotype ♀: DHJPAR0021738, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Estación Cacao, 10.92691, -85.46822, 1 150 m, eclosion date 04/29/2002, caterpillar collection date 04/09/2002 (CNC). GenBank accession code JF793165.

Holotype host data: Hyperparasitoid of *Meteorus* Janzen08 (Braconidae), which is a primary parasitoid of *Mythimnia sequax* (Noctuidae) feeding on *Cynodon nlemfuensis* (introduced) (Poaceae). One *Mesochorus* specimen eclosed.

Other host data: *Cotesia* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.



Fig. 45. *M. trescinco* holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066638) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as a paratype, DHJPAR0020409, which was barcoded. They both have the same rearing/caterpillar record, 03-SRNP-3469, that can be recovered from the Janzen/Hallwachs website.

Mesochorus tresseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:69F03DD6-411C-4813-B55D-194FCD5FED72

Diagnostics: Fig. 46.

Consensus barcode (2 specimens).

ATTTTATATTTTATTTTNGGTATATGAGCTGGTATAATTGGATCATCTATAAGAATAATTATTTCGAATAGA
ATTAGGTAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTACTTCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGTGGATTGGAAATTGAATAGTTCATTAAATAATTGGAGCTC
CAGATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATAT TATTATTAAAGA
GGAATTTGTCAAAAAGGTACAGGAAGTGGTTGAACAGTTTATCCTCCTTTATCATTAAATATAAGACATGAA
GGTTTATCTGTTGATTATCTATTTTTCTTTACATATAGCAGGTATATCTCAATTATAGGTGCAATTAATTTATTA
CAACAATTTAAATATACGAATTTAAAAACATCATTAGATCAAATATCATTATTTGTTTGATCAATTTAATTACAA
CAATTTTATTATTAGCTGACCAGTTTAGCAGGTGCTATTACAATATTATTATCTGATCGAAATTTAAATACAT
CATTTTTGACCCATCAGGTGGT

BOLD data: BIN: BOLD:AAG9050.

Holotype ♀: DHJPAR0030751, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Sendero Circular, 10.92714, -85.46683, 1 185 m, eclosion date 05/02/2008, caterpillar collection date 04/15/2008 (CNC). GenBank accession code OM237745.

Holotype host data: Hyperparasitoid of microgastrine (Braconidae), which is a primary parasitoid of *Pseudatteria volcanica* (Tortricidae) feeding on *Mollinedia viridiflora* (Monimiaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: Unidentified microgastrine. Multiple *Mesochorus* specimens enclosed.

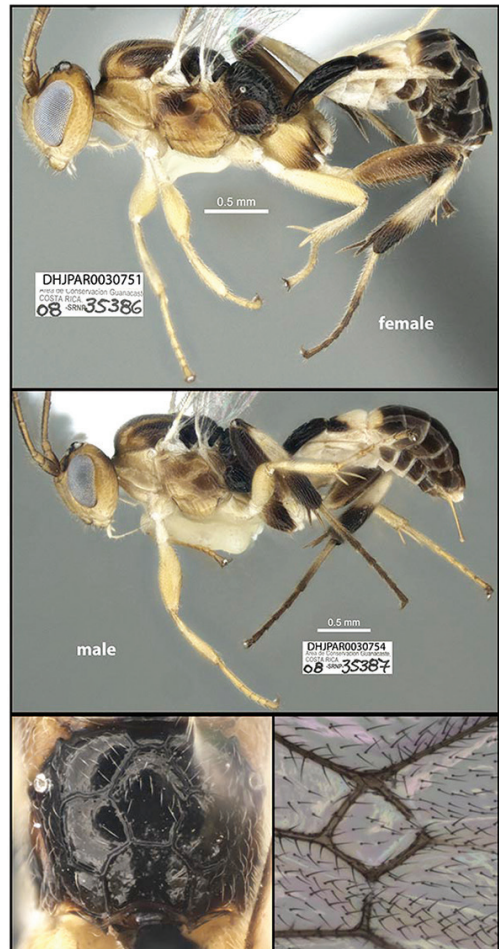


Fig. 46. *M. tresseis* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus tressiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:E777C1C2-520A-497A-8358-D9084D0B8044

Diagnostics: Fig. 47.

Consensus barcode (10 specimens).

```
ATTTTATTTTTATTTTTGGTATATGAGCAGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGAATTAGGA  
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTAAACATCTCATGCATTTATTATAATTTTTTTTA  
TAGTTATACCAATTATAATTGGTGGATTTGGAAATTGAATAATCCTTTAATAATTGGAGCCCCCTGATATA  
GCCTTTCCTCGAATAAATAATAAGATTTTGATTACTACCACCTTCAATTATATTATTATTATTAAGAAATATTTGT  
CAAAAAGGAGTAGGAACTGGATGAACAATTTATCCACCTTTATCATAAACATAAGTCATGAAGGATTATCTATT  
GACTTATCAATTTTTCTTTACATTTAGCGGGTATATCATCAATTATAGGAGGAATTAATTTTATTACAACAATTTTAA  
ATATACGTATTTTAATCTTCATTTGATCAAATATCCTTATTTGTTTGATCAATTTTAATTACAACAATTTTAC  
TATTATTAGCTGTTCCAGTTTTTGCTGGTGCAATTAATTAATTAATTAATTAATTAATTAATTAATTAATTAATTA  
GATCCTTCTGGAGGAGGTGATCCAATTTTATTCCAACATTTA
```

BOLD data: BIN: BOLD:AAG9324.

Nearest neighbor: *M. sieteuno*, BOLD:AAX4034, 7.39% (p-dist).

Holotype ♀: DHJPAR0058819, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Jacobo, 10.94076, -85.31770, 461 m, eclosion date 01/17/2016, caterpillar collection date 12/22/2015 (CNC). GenBank accession code OM237757.

Holotype host data: Hyperparasitoid of *Alphomelon* Deans29 (Braconidae: Microgastrinae), which is a primary parasitoid of hespJanzen01 Janzen55 (Hesperiidae) feeding on *Cryptochloa concinna* (Poaceae). One *Mesochorus* specimen eclosed.

Other host data: *Alphomelon* (Braconidae: Microgastrinae). Most rearings produced a single primary parasitoid cocoon and a single *Mesochorus* specimen; one rearing produced multiple cocoons and multiple *Mesochorus* specimens.

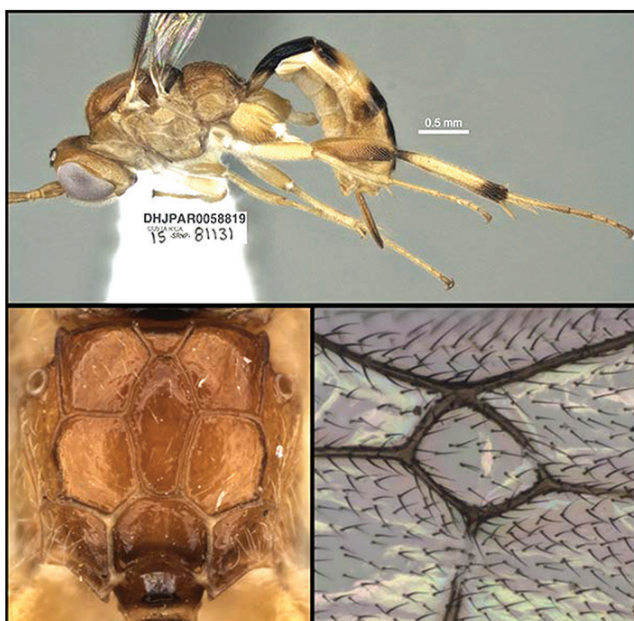


Fig. 47. *M. tressiete* holotype female.

Mesochorus trescho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:EC5C48AC-B365-4C65-B736-04A301B8E1A1

Diagnostics: Fig. 48.

Consensus barcode (2 specimens).

```

ATTTTATATTTTATTTTGGGAATTTGATCAGGAATAATTGGATCATCAATAAGATTAATTATTCGTATAGAATTAGGA
AATCCAGGTTTCTTAATTAATAATGATCAAATTTATAATCTTTTGTACCCTCATGCATTTATTATAATTTTTTTTA
TAGTGATGCCAATTATAATTGGTGGGTTTGGAAATTGATTAATTCCATTAATAATTGGAGCTCCAGATATA
GCTTTTCCCCGAATAAATAATAAGATTCTGACTTTTACCCCTTCATTAATTTATTATTGGCCAGATCGATTA
CAAGAAAAGGTGTAGGGACAGGATGAACAGTGTATCCCCATTATCTTTAAATGTAAGTCATGAAGGTATGT
CAGTAGATTTATCAATTTTTCCCTTCATTTAGCAGGTATATCTCAATTATAGGAGCAATTAATTTATTACAA
CAATTTAAATATACATTTACATGGAATATCAATAGATCAATTATCATTATTTACATGGTCAATAAAATTACAACA
ATTTACTTTTATTAGCAGTACCTGTATTAGCAGGGGCAATTACTATATTATTAAGTATCGTAATTTAAACTT
CATTTTTGATCCATCTGGAGGTGGAGACCCTATTCTTTATCAACATTTA
  
```

BOLD data: BIN: BOLD:AAG9508.

Holotype ♀: DHJPAR0021754, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Cerro Pedregal, 10.92767, -85.47449, 1 080 m, eclosion date 07/15/2005, caterpillar collection date 06/18/2005 (CNC). GenBank accession code JF793166.

Holotype host data: Hyperparasitoid of *Stantonia* Janzen05-35548 (Braconidae: Orgilinae), which is a primary parasitoid of immidJanzen01 Janzen15 (Immididae) feeding on *Arachnothryx buddleioides* (Rubiaceae). One *Mesochorus* specimen enclosed.

Other host data: *Stantonia* (Braconidae: Orgilinae). One *Mesochorus* specimen enclosed.

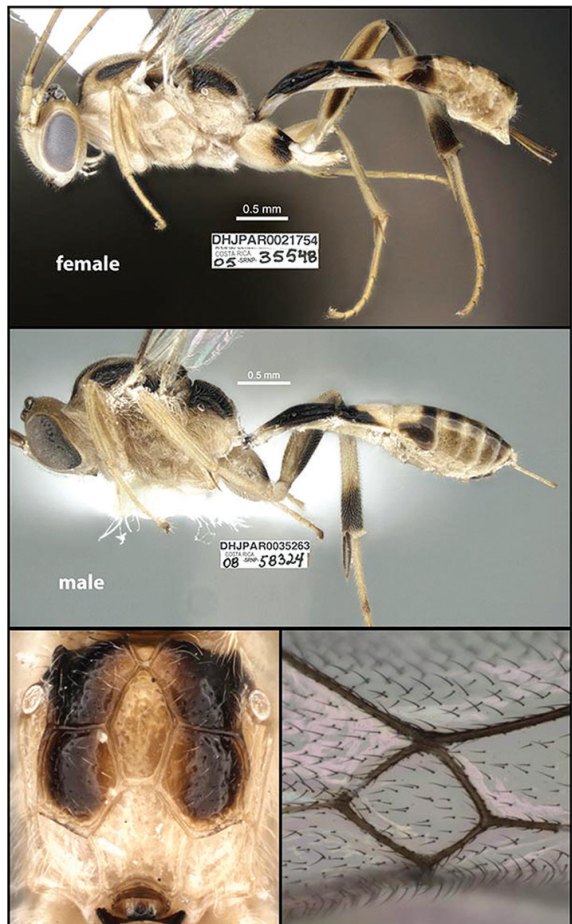


Fig. 48. *M. trescho* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus tresnueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:6C7C49ED-193A-45FB-80F3-F89BFEDEAA0F

Diagnostics: Fig. 49.

Consensus barcode (2 specimens).

```
ATTTTATATTTTATTTTTGGTTTTATGAGCAGGAATAGTAGGTGCTTCAATAAGAATAATTATTTCGAATAGAATTAGGA
AATCCAGGATTCCTAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTATA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATGAATAATTCCATTAATAATTGGAGCACCAGATATA
GCTTCCCTCGAATAAATAATATAAGATTTTGATTACTACCCCATCAATTATATTATTATTATTAAGAGGAATTTGT
CAAAAAGGTGTTGGAACCTGGTTGAACAGTATATCCACCTTTATCATTAAATATTAGTCATGAAGGACTATCAGTT
GATTTATCAATTTTTCTTTACATTTAGCAGGTATATCCTCAATTATAGGAGCAATTAATTTTATTACAACAATTTAAA
TATACGTATTTAAATCATCTTTAGACCAAATATCATTATTTGTTTGATCAATTTAATCACTACTATTTTATTATTATA
GCAGTTCAGTTTTAGCAGGGGCAATTACTATATTATTATCTGATCGAAATTTAAATACTTCATTTTTGATCCATCA
GGTGGAGGAGATCCAATTTTATACCAACATTTA
```

BOLD data: BIN: BOLD:AAG9894.

Holotype ♀: DHJPAR0021777, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Carmona, 10.87621, -85.38632, 670 m, eclosion date 01/02/2006, caterpillar collection date 12/19/2005 (CNC). GenBank accession code JF793205.

Holotype host data: Hyperparasitoid of *Parapanteles paradoxus*DHJ02 (Braconidae: Microgastrinae), which is a primary parasitoid of *Tithraustes noctiluces*ICG02 (Notodontidae) feeding on *Chamaedorea tepejilote* (Arecaceae). One *Mesochorus* specimen enclosed.

Other host data: *Parapanteles* (Braconidae: Microgastrinae). One *Mesochorus* specimen enclosed.



Fig. 49. *M. tresnueve* holotype female.

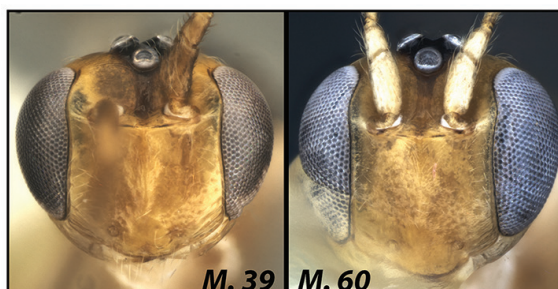


Fig. 50. Comparisons of the heads of two species of *Mesochorus* (*M. tresnueve* and *M. seiscero*) whose COI barcodes code for identical amino acids. Note the colors of the scapes and pedicels and the microsculpture of the face.

Mesochorus cuatrocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:71622B4F-86FB-4F0B-BC78-B2DC69A8C0DD

Diagnosics: Fig. 51.

Consensus barcode (4 specimens).

```
AATTTTATATTTTATTTTGGAAATTTGAGCAGGAATAAYTGGATCATCCATAAGATTAATCATTTCGAATAGA
ATTAGGTAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTACAGCCCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGGGGATTTGGAAATTGATTAGTTCTTTAATAATTGGAGCACCT
GATATAGCATTCCCCGAATAAATAATATAAGATTTGACTTTTACCCCTTCATTAATACTTTTATTATTAAGAA
GAATCATAATAAGGGGGTTGGGACTGGGTGAACGTATACCCTCCGTATCATTAAATATCAGTCATGAAGGA
ATATCTGTAGATTTATCTATTTTTCATTACATTTAGCTGGAATATCTTCAATTATGGGAGCAATTAATTTATTACA
ACAATTTTAAATATACATTTATTTGGGATGCTATAGATCAATATCTTTATTACATGATCAATTAATAATACAA
CAATTTTATTATTAGCTGTTCCAGTTTGGTGGTGAATTAATTAATTAATTAATTAATTAATTAATTAATTAATTAAT
CATTTTTTGACCCTTCAGGAGGAGGAGATCCAGTCTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:AAH2888.

Nearest neighbor: *M. cuatrouno*,
BOLD:AAH3285, 5.93% (p-dist).

Holotype ♀: DHJPAR0030755, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Orosilito, 10.98332, -85.43623, 900 m, eclosion date 04/23/2008, caterpillar collection date 04/09/2008 (CNC). GenBank accession code OM237693.

Holotype host data: Hyperparasitoid of *Meteorus* Janzen01 (Braconidae: Euphorinae), which is a primary parasitoid of *Natada* 02-SRNP-19195 (Limacodidae) feeding on *Ocotea gomezii* (Lauraceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Triraphis* (Braconidae: Rogadinae). Two *Mesochorus* specimens enclosed from three host cocoons, the other produced an adult *Triraphis*. Some rearings produced single *Mesochorus* specimens, others produced multiple specimens.

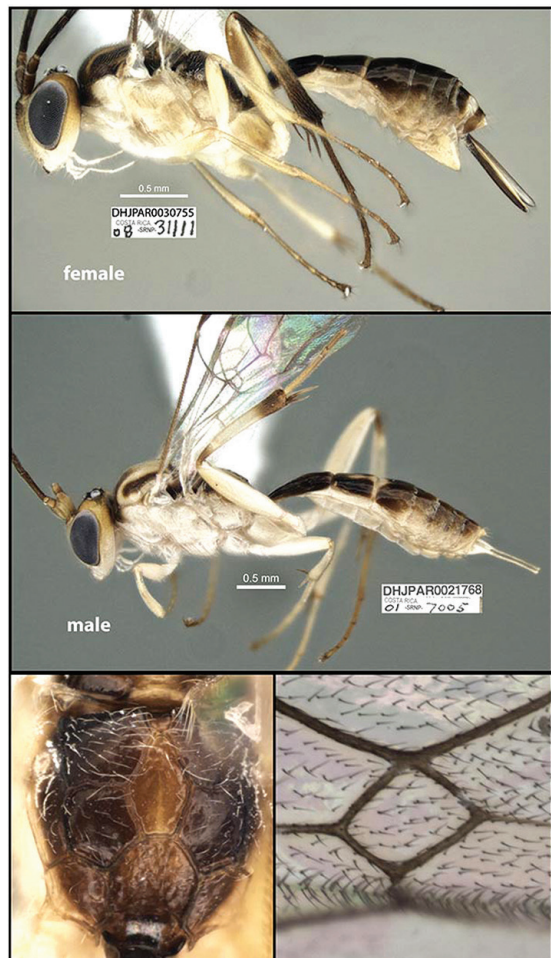


Fig. 51. *M. cuatrocero* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cuatrouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4EF63F59-1315-4F9A-A30D-7763CD1C9364

Diagnostics: Fig. 52.

Consensus barcode (4 specimens).

```
AATTTTATATTTTATTTTGGGAATTTGAGCAGGAATAATTGGTTCATCAATAAGATTAATTATCCGAATAGA
ATTAGGAAATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCTTTTGTTACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGGGGATTTGGAAATTGATTAATTCCTTTAATAATTGGAGCTCT
GATATAGCATTTCCTCGTATAAACAATATAAGATTTTGACTTTTACCACCTTCATTAATACTTTTACTATTAAGAA
GAATTATTAATAAAGGAGTTGGAACAGGATGAAGTGTATCCTCCATTATCATTAAATATTAGACATGAAGGAA
TATCAGTAGATTTATCTATTTTTTTCATTACATTTAGCTGGAATATCTTCAATTATAGGAGCAATTAATTTATTACA
ACAATTTTAAATATACATTTATTTGGAATATCAATAGATCAATATCCTTATTTACATGATCAATTAATAATACAA
CAATTTTATTATTATAGCTGTACCAGTTTGTAGCTGGAGCAATTACTATATTATTAATGATCGTAATTTAAATACAT
CATTTTTTGATCCTTCAGGAGGTGGAGACCCAGTTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAH3285.

Nearest neighbor: *M. cuatrocero*, BOLD:AAH2888, 5.93% (p-dist).

Holotype ♀: DHJPAR0040035, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Cuestona, 10.99455, -85.41461, 640 m, eclosion date 08/28/2009, caterpillar collection date 08/17/2009 (CNC). GenBank accession code OM237713.

Holotype host data: Hyperparasitoid of *Triraphis billfreelandi* (Braconidae: Rogadinae), which is a primary parasitoid of *Vipsophobetron davisii* (Limacodidae) feeding on *Asterogyne martiana* (Arecaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Triraphis* (Braconidae: Rogadinae), *Fornicia* (Braconidae: Microgastrinae). All four rearings produced a single *Mesochorus* specimen.

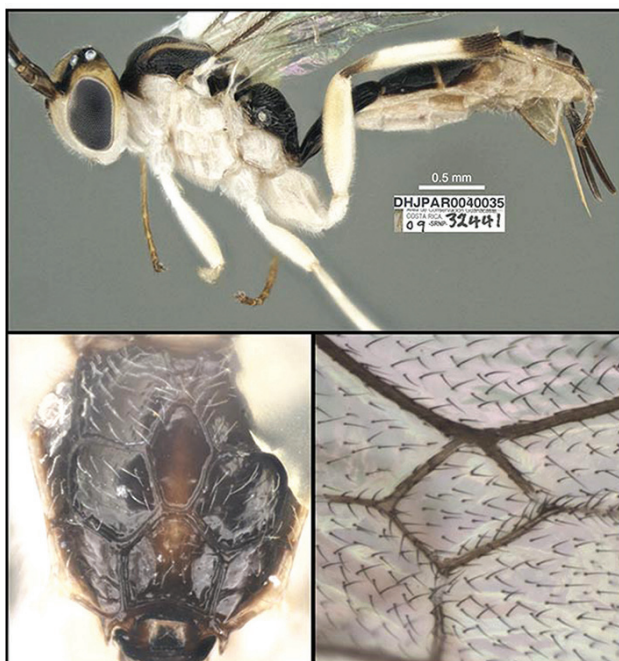


Fig. 52. *M. cuatrouno* holotype female.

Mesochorus cuatrosdos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:FC3D04E0-2015-4D03-BAD7-BB139F19496B

Diagnostics: Fig. 53.

Consensus barcode (5 specimens).

```
AGTTTTTACTTTTATTTTTGGAAATGAGCAGGTATAATTGGATCATCTATAAGATTATTATTCGCATAGA
ATTAGGTAACCCTGGTTATTTAATTAATAATGATCAAATTTATAATTCCTTTGTTACAGCCCATGCATTTATTA
TAATTTTTTTTATAGTTATACCTATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATAATYGGTGCCYCT
GATATAGCATTCCCTCGAATAAATAATATAAGATTCTGATTACTGCCTCCATCTCTTATATTTTTACTATTAAGA
AGAATCTGTCAAAAAGGYGTAGGYACTGGGTGAAGTGTTCCTCCATTATCTTTAAATATCAGTCATGAAG
GATTATCTGTTGATCTATCTATTTTCTCCTTACATCTAGCAGGAATATCCTCAATTATAGGGCAATCAATTTATTA
CAACAATTTAAATATACGAATTATAAATACTTCATTAGATCAAATATCATTATTTGTCTGATCTATTTAATACAA
CAATCTATTACTTTTAGCAGTTCAGTTTTAGCTGGAGCTATTACAATACTATTATCAGATCGAAATTTAAATACAT
CATTTTTGACCCATCAGGAGGRGGAGACCCTATCTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAH7479.

Nearest neighbor: *M. unounoseis*,
BOLD:ACK4344, 10.42% (p-dist).

Holotype ♀: DHJPAR0020370,
Área de Conservación Guanacaste,
Guanacaste, Sector Pitilla,
Pasmompa, 11.01926, -85.40997,
440 m, eclosion date 02/13/2007,
caterpillar collection date 01/22/2007
(CNC). GenBank accession code
JF793180.

Holotype host data: Hyperparasitoid
of *Eiphosoma gollum*
(Ichneumonidae: Cremastinae),
which is a primary parasitoid
of *Herpetogramma salbialis*
(Crambidae) feeding on *Zexmenia*
virgulta (Asteraceae). A single
Mesochorus specimen eclosed.

Other host data: *Eiphosoma*
(Ichneumonidae: Cremastinae),
Occia (Ichneumonidae: Banchinae).
A single *Mesochorus* specimen
eclosed.

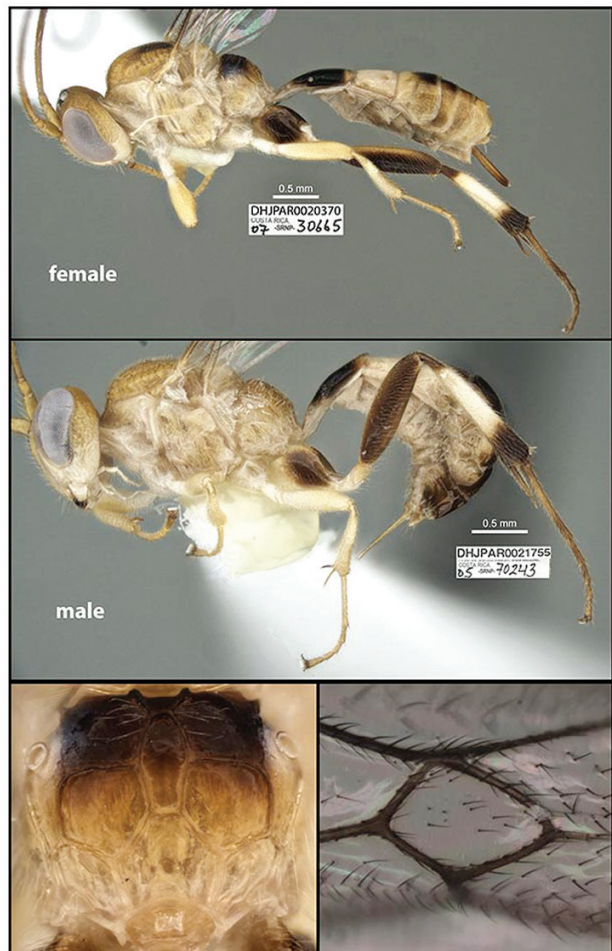


Fig. 53. *M. cuatrosdos* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cuatrotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:13C28170-6430-4541-9A14-DC63003C1A92

Diagnostics: Fig. 54.

Consensus barcode (19 specimens).

```
AATTTTATACTTTATTTTTGGTATATGGGCAGGAATAATTGGATCATCTATAAGAATAATTATTCGTATAGA
ATTAGGAAACCCWGGATTTTTAATTAATAATGATCAAATTTAYAATTCTTTTTGTAACATCACATGCTTTTTATTA
TAATTTTTTTTATAGTTATRCCAATTATAATTGGTGGATTTGGAAATTGAATGTTCCATTAATAATTGGAGCTCCT
GATATAGCCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCYTCAATTATACTTTTTATTATTGAGARGA
ATTTGYCAAAAAGGRGTAGGAACAGGATGAACAGTTTAYCCACCATTATCATTAAATATTAGTCATGAAGGTTTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCTGGAATATCTTCTATTATAGGAGCTATTAATTTTATTWCA
ACAATTTTAAATATACGAATTTTTAAACATCTTTAGACCAAATATCTTTATTTGTGTGATCAATTTTTATCAC
CACAATTTTATTATTATTAGCTGTACCAGTTTAGCTGGTGCAATTACAATATTATRTCTGATCGAAATTTAA
TACTTCTTTTTTTGAYCCATCAGGAGGAGGAYCCTATTTTATACCAACACTTATT
```

BOLD data: BIN: BOLD:AAK7532.

Holotype ♀: DHJPAR0041478, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Garzasol, 10.89666, -85.29003, 400 m, eclosion date 01/07/2011, caterpillar collection date 12/17/2010 (CNC). GenBank accession code JQ575297.

Holotype host data: Hyperparasitoid of agaJanzen01 Janzen4951 (Braconidae: Agathidinae), (based on a *M. cuatrotres* paratype, probably *Lytopylus* sp.) which is a primary parasitoid of *Ategumia lotanalis*DHJ10 (Crambidae) feeding on *Triolena hirsuta* (Melastomataceae). A single *Mesochorus* specimen eclosed.

Other host data: *Hypomicrogaster*, *Apanteles*, *Dolichogenidea* (Braconidae: Microgastrinae), *Lytopylus* (Braconidae: Agathidinae). All rearings produced a single *Mesochorus* specimen.

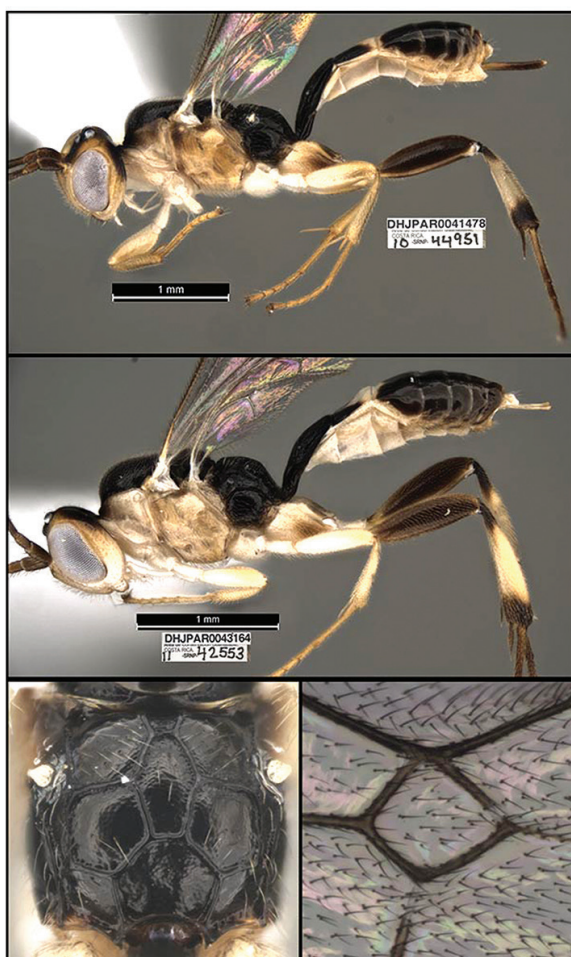


Fig. 54. *M. cuatrotres* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cuatrocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:751C0A18-8A66-4CDC-87B9-82AF78BE439F

Diagnostics: Fig. 55.

Holotype barcode.

```
ATTTTATATTTTATTTTGGGAATATGAGCAGGAATAATTGGTTCTTCTATAAGTATAATTATTTCGAATAGA
ATTAGGAAATCCAGGTTTTTAAATTAATAATGATCAAATTTATAATTCATTCTTACTTCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGTGGATTGGAAATTGAATAATCCATTAATAATTGGAGCACCA
GATATAGCTTTTCCCGAATGAATAATATAAGATTTTGATTATTACCTCCATCAATTATATATTATTATTAAGAAGA
ATTTGTCAAAAAGGAGTTGGTACTGGATGAACAGTTTATCCACCATTATCATTAAATGTTAGTCATGAAGGATTAT
CAGTTGATTTATCAATTTTTTCTTTACATTTAGCAGGAATATCATCAATTATAGGTGCAATTAATTTATTACAAC
TATTTTAAATATACGAATTTAAAAACATCATTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACAAC
TATTTTATTATTATTAGCAGTACCAGTTTTAGCTGGAGCAATCACCATATTATATCTGATCGAAATTTAAATACTT
CATTTTTGATCCATCGGGAGGAGGAGATCCAATTTTATAC
```

BOLD data: BIN: BOLD:AAK7548.

Nearest neighbor: *M. unotresnueve*,
BOLD:ADQ8339, 2.12% (p-dist).

Propodeum paler posteriorly
and more rugose laterally in *M.*
cuatrocuatro (Fig. 56).

Holotype ♂: DHJPAR0021800,
Área de Conservación Guanacaste,
Guanacaste, Sector Del Oro, Canyon
Rio Mena, 10.99616, -85.45562,
560 m, eclosion date 03/15/2004,
caterpillar collection date 02/24/2004
(CNC). GenBank accession code
JF793202.

Holotype host data: Hyperparasitoid
of *Hypomicrogaster rugosus*
(Braconidae: Microgastrinae), which
is a primary parasitoid of *Phanus*
vitreus (Hesperiidae) feeding on
Inga longispica (Fabaceae). Multiple
Mesochorus specimens enclosed.

Other host data: None.

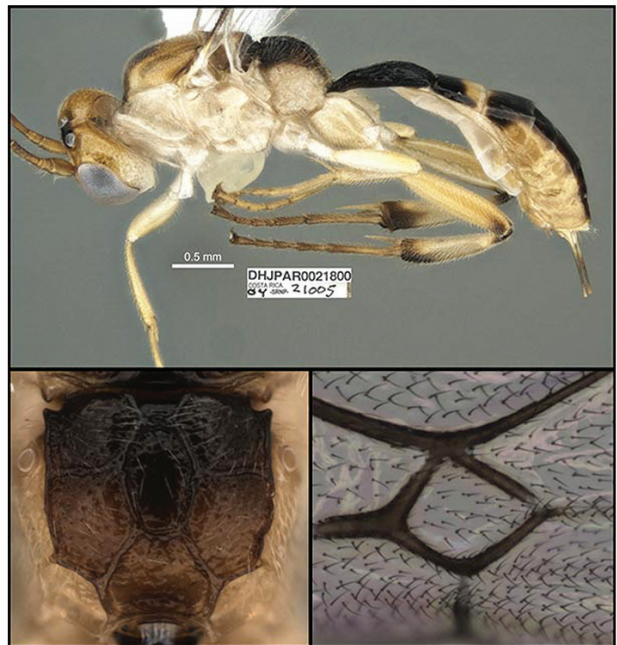


Fig. 55. *M. cuatrocuatro* holotype male.

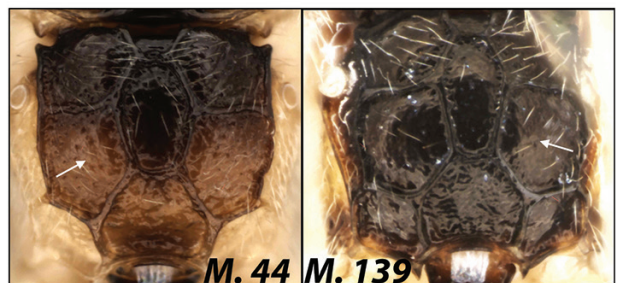


Fig. 56. Comparisons of *M. cuatrocuatro* with
its nearest neighbor, *M. unotresnueve*.

Mesochorus cuatrocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4DD715E6-D3F9-42E8-BF59-6CC9A96EC11C

Diagnostics: Fig. 57.

Consensus barcode (8 specimens).

TATTTTATACTTTATTTTGGCATATGATCCGGAATAATTGGYTCATCAATAAGCTTTATTATTGGAATAGAATTAGGA
 AACCCGTTGTTATTTAATTAATAATGATCAAATTTATAATTCATTAGTTACTTCTCACGCATTTATTATAATTTTTTTTA
 TAGTTATACCAATTATAATTGGAGGATTTGGAACTGAATAATCCCTTAATAATCGGAGCTCCTGACATAGCTTTCC
 CACGTATAATAATATAAGATTTTGACTACTACCCCTTCAATTTCTTTTATTATTAAGAAGAATTACCCATAAA
 GGAAGTGGTACAGGATGAACGGTATATCTCCATTATCATTAAATATTAGACACGAAGGAATATCTGTTGATTTATC
 TATTTTTTCATTACATTTAGCAGGAATATCTCAATTATAGGAGCTATTAATTTATTACAACAATTTAAATATAC
 GAGTAATAAATACTTCTTTAGACCAAATATCATTATTTGTRTGATCAATTTAATTACAACAATTTCTTTACTYTTAG
 CAGTCCAGTTTTAGCAGGAGCTATTACAATATTATTATCTGATCGAAATTTAAATACATCTTTTTTGATCCATCAG
 GAGGRGGAGATCCTATYCTTTATCAACATTTATTT

BOLD data: BIN: BOLD:AAK7554.

Nearest neighbor: *M. unounoseis*,
 BOLD:ACK4344, 11.71% (p-dist).

Holotype ♀: DHJPAR0038404,
 Área de Conservación Guanacaste,
 Alajuela, Sector Rincon Rain Forest,
 Sendero Juntas, 10.90661, -85.28784,
 400 m, eclosion date 01/09/2010,
 caterpillar collection date 12/24/2009
 (CNC). GenBank accession code
 HQ549148.

Holotype host data: Hyperparasitoid
 of *Hyposoter* INB-13
 (Ichneumonidae), which is a primary
 parasitoid of *Anacrusis nephrodes*
 (Tortricidae) feeding on *Palicourea*
berteroana (Rubiaceae). A single
Mesochorus eclosed.

Other host data: *Prasmodon*
 (Braconidae: Microgastrinae),
Alabagrus (Braconidae: Agathidinae),
Hyposoter (Ichneumonidae:
 Campopleginae), *Eiphosoma*
 (Ichneumonidae: Cremastinae). All
 are solitary primary parasitoids, and
 each produced a sole *Mesochorus*
 specimen.

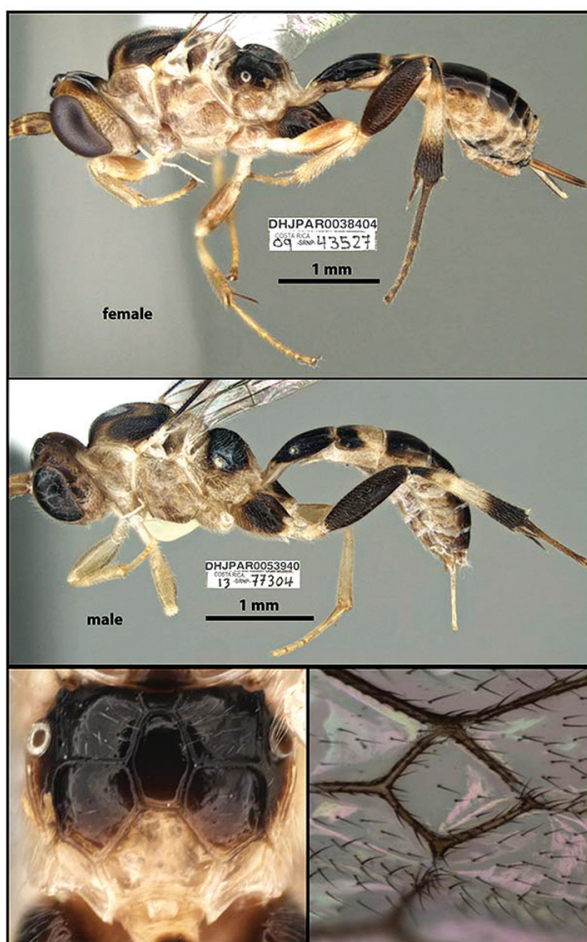


Fig. 57. *M. cuatrocinco* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cuatroseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:B8EF8D2D-5884-41EC-BD02-55E02598A37F

Diagnostics: Fig. 58.

Consensus barcode (8 specimens).

```
AATTTTATATTTTATTTTGGTATATGAGCTGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTTACATCTCATGCTTTTATCATAATTTTTTTTA
TAGTAATACCAATTATAATTGGAGGTTTTGGAAATTGAATAGTACCATTAATAATTGGTGCACCAGATATA
GCTTCCCTCGTATAAATAATATAAGTTTTGATTATTACCRCTTCAATTATATATTATTATTAAGAGGAATTTGT
CAAAAAGGTGTTGGTACAGTTGAACAATTTATCCTCTTTATCTTTAAATATTAGTCATGAAGGTTTATCWGTA
GATTTATCAATTTTTTCATTACATTTAGCTGGGATATCTTCWATTATAGGAGCAATTAATTTTATTACAAC
TATTTTAAATATGCGAATTYAAAACTCTTTTGATCAAATATCTTTATTTGTATGATCAATTCTAATTACAACA
ATTTTATTATTATAGCTGYCCAGTTTTAGCCGGTGCATTACTATATTATTATCAGATCGAAATTTAAACTT
CATTTTTGATCCATCAGGAGGAGGATCCAATTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAK7558.

Nearest neighbor: *M. cuatrosiete*,
BOLD:AAK7559, 3.8% (p-dist).

Holotype ♀: DHJPAR0050159,
Área de Conservación
Guanacaste, Alajuela, Sector
San Cristobal, Quebrada Garcia,
10.86069, -85.42558, 495 m,
eclosion date 10/07/2012,
caterpillar collection date
09/23/2012 (CNC). GenBank
accession code OM237770.

Holotype host data:

Hyperparasitoid of *Apanteles felixcarmonai* (Braconidae: Microgastrinae), which is a primary parasitoid of *Phostria latiapicalis* (Crambidae) feeding on *Chimarrhis parviflora* (Rubiaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

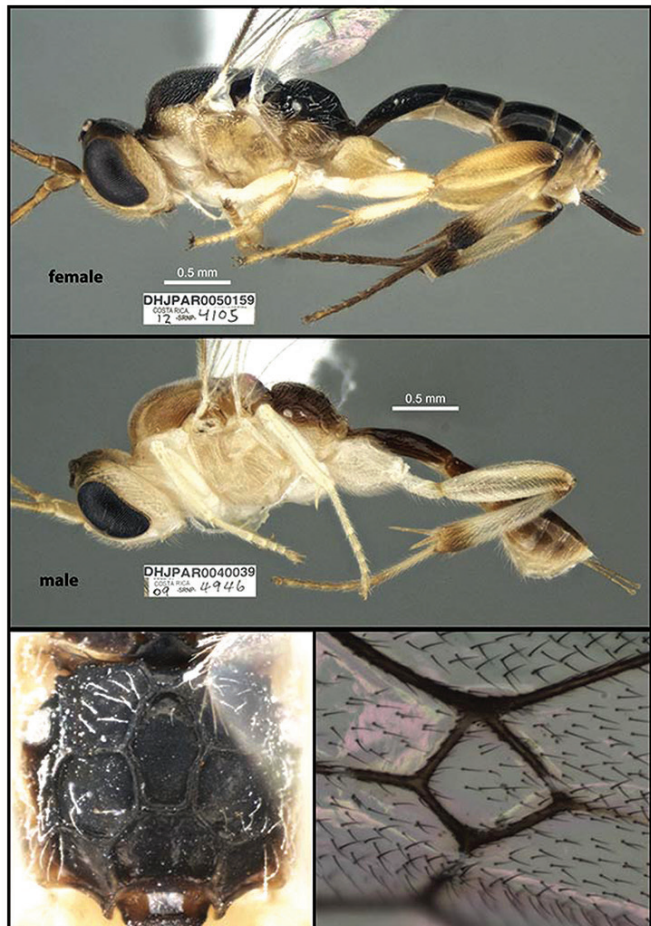


Fig. 58. *M. cuatroseis* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cuatrosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:7B444BE6-4DAE-4184-B824-B9486A6D8EDF

Diagnostics: Fig. 59.

Consensus barcode (5 specimens).

```
AATTTTATATTTTATTTTGGTATATGAGCTGGTATAATTGGATCATCTATAAGAATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGACAAATTTATAATTCATTTGTTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGTTTTGGAAATGAATAGTACCATTAATAATTGGTGCACCAGATATGGCTTTCC
CWCGAATAAAACAATATAAGTTTTGATTATTACCACCTTCAATTATAYTATTACTATTAAGAGGAATTTGTCAAAAA
GGTGTGGTACAGTTGAACAGTTTATCCTCCTTTATCTTTAAATRRTAGTCATGAAGGTTTATCAGTAGATTTATCA
ATTTTTCTTTACATTTAGCTGGRATATCTTCTATTATAGGGCAATTAATTTTATTACAACAATTTTAAATATACGA
ATTTACAAAACCTCTTTTGATCAAATATCTTTATTTGTTTGATCAATTYAATTACAACAATTTTATTATTATTAGCT
GTCCAGTTTTAGCTGGTGCAATTACTATATTATTATCTGAYCGAAATTTAAATACTTCATTTTTTGAYCCATCAGGAG
GAGGWGAYCCAATTTTATAYCAACATTTATTT
```

BOLD data: BIN: BOLD:AAK7559.

Nearest neighbor: *M. cuatroseis*, BOLD:AAK7558, 3.8% (p-dist).

Holotype ♂: DHJPAR0021758, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Rio Blanco Abajo, 10.90037, -85.37254, 500 m, eclosion date 02/28/2002, caterpillar collection date 02/14/2002 (CNC). GenBank accession code OM237770.

Holotype host data: Hyperparasitoid of *Macrocentrus gustavogutierrezii* (Braconidae: Macrocentrinae), which is a primary parasitoid of *Asturodes fimbriauralis* (Crambidae) feeding on *Colubrina spinosa* (Rhamnaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Apanteles*, *Papanteles* (Braconidae: Microgastrinae), *Chelonus* (Braconidae: Cheloninae). All rearings produced a single *Mesochorus* specimen.

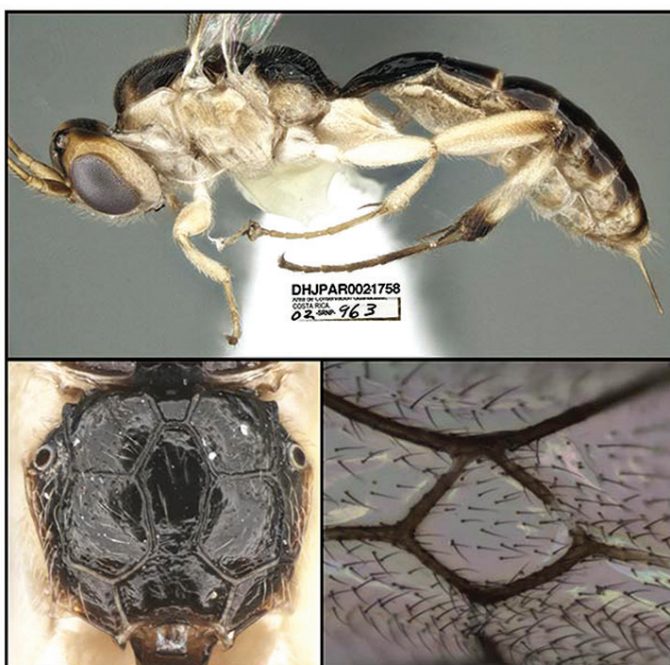


Fig. 59. *M. cuatrosiete*, holotype male.

Mesochorus cuaturocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:35868C71-6C75-442E-820A-DDE20B03DC5A

Diagnosics: Fig. 60.

Consensus barcode (4 specimens).

TATTTTATACTTTATTTTGGGTATATGATCCGGAATAATTGGCTCTTCAATAAGAATAATTATTCGTATAGA
ATTAGGTAAYCCAGGATTTTAAATTAATAATGACCAAATTTATAATTCATTTGTTACTTCACATGCTTTTATTA
TAATTTTTTTTATAGTTATAACCAATTATAATTGGAGGATTCGGAATTTGAATAATTCCTTTAATAATTGGTGCCCCAGA
TATAGCATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCCCTCAATTATATTACTTTTATTAAGAAGAATTT
GTCAAAAAGGAGTAGGAACAGGATGAACTGTTTATCCCCCTTATCACCTAATATAAGTCATGAAGGATTATCAGTA
GATTATCAATTTTCTCATTACATTTAGCAGGAATATCTTCAATTATAGGAGCAGTAAATTTTATTACAACATTTATTA
TATACGTATTTATAAACATCATTGATCAAATATCTTTATTTGTTTGATCAATTCTAATTACAACAATTYTATTATTAC
TAGCTGTACCTGTATTAGCTGGYGCAATCACTATATTATCTGATCGTAATTTAAATACATCATTTTTTGATCCATCA
GGAGGTGGAGATCCAATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:AAK7574.

Nearest neighbor: *M. nuevenueve*,
BOLD:ABX5838, 3.53% (p-dist).

Holotype ♂: DHJPAR0051420, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Camino Rio Francia, 10.90425, -85.28651, 410 m, eclosion date 01/08/2013, caterpillar collection date 12/14/2012 (CNC). GenBank accession code OM237732.

Holotype host data: Hyperparasitoid of *Eiphosoma maculicoxa*DHJ32 (Ichneumonidae: Cremastinae), which is a primary parasitoid of *Ategumia lotanalis*DHJ07 (Crambidae) feeding on *Aciotis caulialata* (Melastomataceae). A single *Mesochorus* specimen enclosed.

Other host data: *Eiphosoma* (Ichneumonidae: Cremastinae). All rearings produce a single *Mesochorus* specimen.

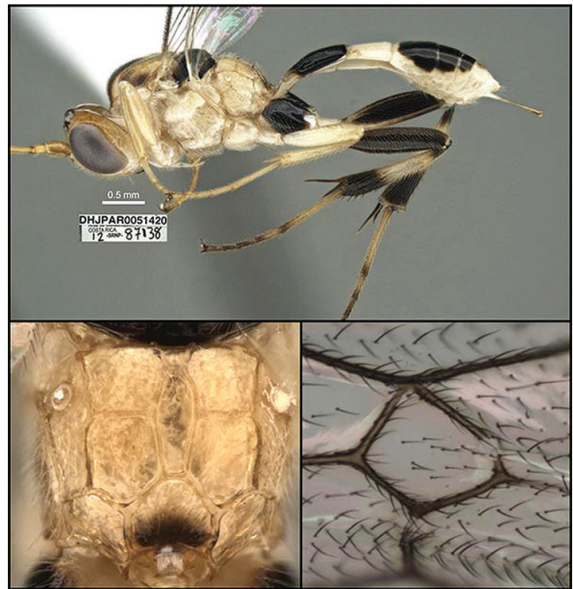


Fig. 60. *M. cuaturocho*, holotype male.

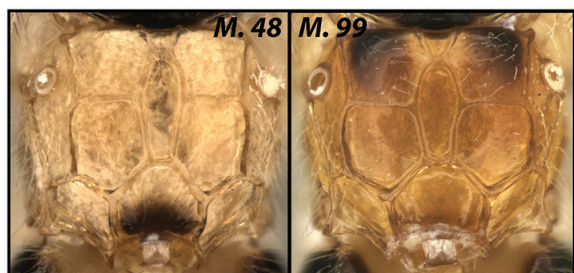


Fig. 61. Comparisons of the propodea of two species of *Mesochorus* (*M. cuaturocho* and *M. nuevenueve*) whose COI barcodes code for identical amino acids. Note the colors and the shapes of the median areolae, the areola is narrower and longer in *M. cuaturocho*.

Mesochorus cuatronueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:AEDC8037-15AA-4D52-BA65-54411911D21E

Diagnostics: Fig. 62.

Holotype barcode.

```
AATTTTATATTTTATTTTGGGAATATGAGCAGGAATAATTGGTTCATCAATAAGAATAATTATTCGTATAGA
ATTAGGTAATCCTGGATTTTAAATTAATAATGACCAATTTATAATTCTTTGTAACATCTCATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTTCATTAAATAATTGGAGCAC
CAGATATAGCCTTTCCTCGAATAAATAATATAAGATTCTGATTATTACCACCATCAATTATATTATTATTAAGTA
GAATTTGTCAAAAAGGAGTAGGAAC TGTTGAACAATTTATCCCCCTTTATCATTAAATGTAAGACATGAAG
GATTATCTGTTGATTATCAATTTTTTCATTACATCTAGCTGGAATATCATCAATTATAGGGGCAATTAATTTATTA
CAACAATTTAAATATACGTATTTAAAAACATCATTAGATCAAATATCTTTATTTGTTTGATCAATTTAATCA
CAACTATTTTATATTATTAGCAGTTCCAGTTTTAGCTGGTGCAATTACTATATTATTATCTGATCGAAATCTAAA
TACTTCTTTTTTGGACCCATCAGGAGGTGGAGATCCAATTTTATACCAACATTATT
```

BOLD data: BIN: BOLD:AAM1067.

Nearest neighbor: *M. unodoscuatro*, BOLD:ACW5260, 4.87% (p-dist).

Holotype ♀: DHJPAR0038216, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Huerta, 10.93050, -85.37223, 527 m, eclosion date 11/21/2009, caterpillar collection date 11/01/2009 (CNC). GenBank accession code HQ548865.

Holotype host data: Hyperparasitoid of *Apanteles raulacevedoi* (Braconidae: Microgastrinae), which is a primary parasitoid of gelJanzen01 Janzen180 (Gelechiidae) feeding on *Heliocarpus appendiculatus* (Malvaceae).

One *Mesochorus* specimen enclosed.

Other host data: None.



Fig. 62. *M. cuatronueve*, holotype female.

Mesochorus cincocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:53D3F298-B6B2-4216-AE78-5E3EB36FE89A

Diagnosics: Fig. 63.

Consensus barcode (4 specimens).

```
AATTTTATATTTTATTTTGGAAATATGATCAGGAATAATTGGATCATCTTTAAGAATAATTATTCGTATAGA
ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGAGTTTTGGTAATTGATTAATCCATTAATAATTGGAGCTC
CAGATATAGCTTCCCTCGTATAAATAATATAAGATTTTGATTACTTCCCTCCTCAATTATGTTATTATTATTAAGA
GGAATTTGCCAAAAGGAGTAGGAACAGGATGAAGTGTATCCACCATTATCATAAATGTAAGTCATGAAG
GAATATCAGTAGATTTATCAATTTTTCATTACATCTTGCTGGAATATCATCAATTATAGGTTCAATTAATTTATTA
CAACAATTATAAATATACGAATTTAAATACATCTTATGATCAAATATCTTTATTTGTCTGATCAATTTAATTAC
TACAATTTTATTATTATAGCAGTTCCAGTTTAGCAGGTGCAATTACTATATTATATCTGATCGTAATCTAAA
TACTTCTTCTTTGATCCATCAGGTGGAGGAGATCCAATTTATACCAACACTTATTT
```

BOLD data: BIN: BOLD:AAM1074.

Nearest neighbor: *M. sietenueve*, BOLD:AAX4050, 5.93% (p-dist).

Holotype ♂: DHJPAR0040089, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Jardín Estrada, 10.86546, -85.39694, 722 m, eclosion date 01/29/2010, caterpillar collection date 01/15/2010 (CNC). GenBank accession code JQ574588.

Holotype host data: Hyperparasitoid of *Apanteles zeneidabolanosae* (Braconidae: Microgastrinae), which is a primary parasitoid of *Lethata trochalosticta* (Depressariidae) feeding on *Syzygium aromaticum* (introduced) (Myrtaceae). Multiple *Mesochorus* specimens eclosed.

Other host data:

Apanteles (Braconidae: Microgastrinae), *Chelonus* (Braconidae: Cheloninae). Multiple *Mesochorus* eclosed from all rearings.

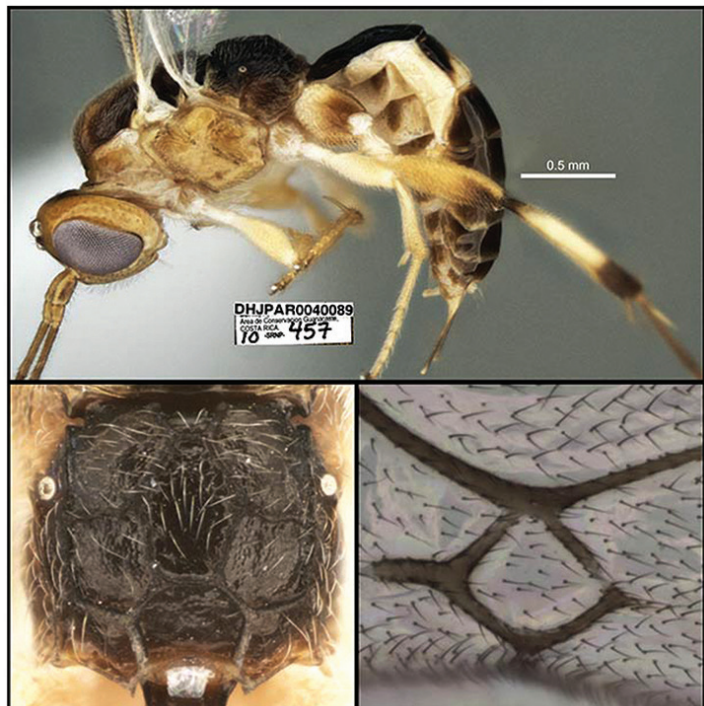


Fig. 63. *M. cincocero*, holotype male.

Mesochorus cincouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:83EA6809-1706-4BCC-B935-CFDDDB36ACC54

Diagnostics: Fig. 64.

Consensus barcode (5 specimens).

```
AATTTTATATTTTATTTTGGGAATATGGGCCGGAATAATTGGCTCATCAATAAGAATAATTATCCGAATAGAATTAG
GAAATCCTAGATTTTTAATTAATAATGATCAAATTTATAATCTTTTTGTAACATCTCATGCTTTTATTATAATCTTTTT
CATAGTTATACCAATTATAATTGGAGGATTTGGAAATGAATAATTCCTTTAATAATTGGAGCACCAGATATA
GCTTTTCTCGAATAAATAATAAGATTTTGATTATTACCACCTTCAATTATATTACTACTAAGTGGAAATTT
GTCAAAAAGGTATAGGAACAGGATGAAGTGTACCCACCATTATCATAAATATTAGACATGAAGGATTAT
CAGTTGATTTTTCAATTTTTTCATTACATTTAGCAGGAATATCCTCAATTATAGGAGCAATTAATTTTATCACAA
CAATTTAAATATACGAATTTAAAAACATCTTTAGATCAGATATCTTTATTCGTTTGATCTATTTTAAATACAACA
ATTTTATTATTATTAGCAGTACCAGTTTTAGCTGGTGCAATTACAATATTATTATCTGATCGAAATTTAAATACTT
CATTTTTGACCCATCAGGAGGAGGGGATCCTATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAM1111.

Nearest neighbor: *M. trestres*,
BOLD:AAF0671, 6.63% (p-dist).

Holotype ♀: DHJPAR0039469, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Mismo, 10.98758, -85.41967, 680 m, eclosion date 04/12/2010, caterpillar collection date 03/10/2010 (CNC). GenBank accession code HQ926200.

Holotype host data: Hyperparasitoid of *Chelonus melaniamunozae* (Braconidae: Cheloninae), which is a primary parasitoid of gelJanzen01 Janzen758 (Gelechiidae) feeding on *Coccoloba porphyrostachys* (Polygonaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Chelonus* (Braconidae: Cheloninae). All rearings produced a single *Mesochorus* specimen.

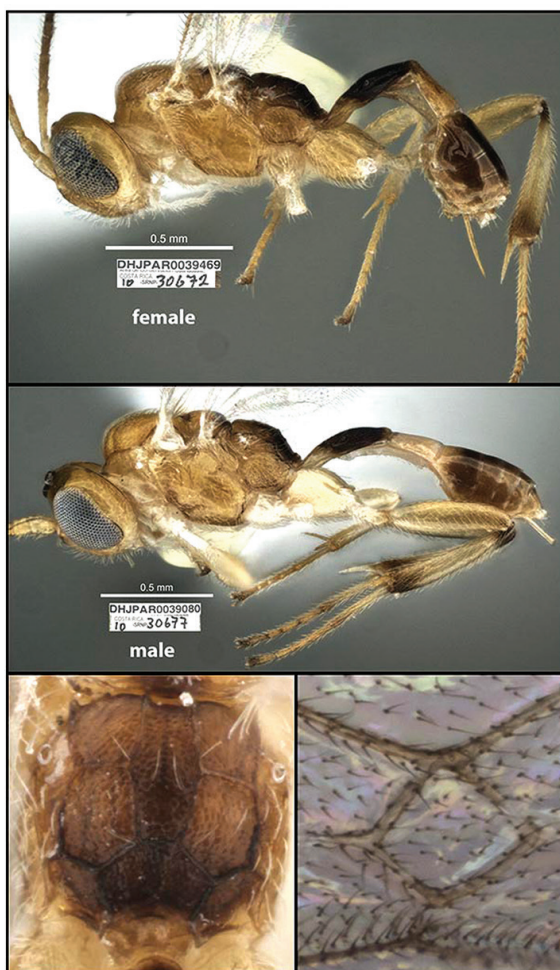


Fig. 64. *M. cincouno* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cincodos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:3C163111-6FEC-41D2-A660-3E0993A2E179

Diagnostics: Fig. 65.

Holotype barcode.

```
TGTATTATATTTTATTTTGGAAATTTGAGCTGGAATAATTGGATCAGCAATAAGATTGATCATTGCAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAACTCATTTGTAACAGCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCTATTATAATTGGAGGATTTGGAAATGATTAGTACCCTTAATAATTGGGGCTCCTGATATAGCATTCC
CACGAATAAATAATATAAGATTCTGATTATTGCCTCCTTCATTAATATATATTATTATAAGAAGAATTATTAATAAA
GGAGTAGGAACAGGCTGAACTGTATACCCCCATTATCATAAATTTAAGACATGAAGGAATATCAGTAGATTT
GTCAATTTTTTCATTACATTTAGCAGGTATATCTTCAATTATAGGAGCAGTAAATTTTATTACTACAATTTTAAATA
TACATTTATTTGGGATATCTTAGATCAATTATCATTTTACATGATCAATTATTGTCACTACAATTTTATTATTATTGG
CAGTTCCAGTTTTAGCAGGAGCAATTACAATATTATTAACTGATCGAAATTTAAATACATCATTTTTTGACCCATCTG
GAGGGGGGATCCTATTCTTTATCAACATTTATT
```

BOLD data: BIN: BOLD:AAM1690.

Holotype ♀: DHJPAR0038387, Área de Conservación Guanacaste, Guanacaste, Sector Mundo Nuevo, Vado Miramonte, 10.77175, -85.43400, 305 m, eclosion date 02/13/2010, caterpillar collection date 01/23/2010 (CNC). GenBank accession code HQ549133.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi57 (Braconidae: Microgastrinae), which is a primary parasitoid of *Agaraea minuta* (Erebidae) feeding on *Costus scaber* (Costaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.



Fig. 65. *M. cincodos*, holotype female.

Mesochorus cincotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:1209C8A0-586C-4D86-BFBD-668529693318

Diagnostics: Fig. 66.

Consensus barcode (3 specimens).

TATTTTATATTTTATTTTGGTATATGATCAGGAATAATTGGATCATCAATAAGATTAATTATTCGAATAGA
ATTAGGGAATCCTGGATTTTAAATTAATAATGAYCAAATTTATAATCTTTTGTACAGCCCATGCTTTTATCA
TAATTTTTTTTATAGTTATACCTATTATAATTGGAGGATTTGGTAATTGAATAGTTCCTTTAATAATTGGAGCACCA
GATATAGCTTTTCTCGAATAAATAATATAAGTTTTGATTATTACCMCTTCAATTATATTATTATTGTTAAGAAGA
ATTTGTCAGAAAGGAGTTGGAAGTGGATGAACTGTTTATCCCCCTTATCATAAATAGAAGYCATGAAGGATT
GGCAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGTATATCTTCTATTATAGGAGCAGTTAATTTATTACAA
CAATTTAAACATACGTRTAGTTGGATCTTCTTTAGATCAAATATCTTTATTTGTTTGATCAATTTAAATTACAACA
ATTTTATTATTATTAGCTGTCCCTGTTTGTAGCAGGAGCAATTACAATATTATTAAGTATGATCGTAATTTAAATACAA
CATTTTTGACCCTTCAGGAGGAGGTGACCAATTTTATACCAACATTTATT

BOLD data: BIN: BOLD:AAM1692.

Nearest neighbor: *M. unotresuno*, BOLD:ADA1951 2.81% (p-dist). Forewing areolet sessile apically in *M. cincotres*, petiolate in *M. unotresuno* (Fig. 67).

Holotype ♀: DHJPAR0040561, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Leonel, 10.99637, -85.40195, 510 m, eclosion date 07/13/2010, caterpillar collection date 06/26/2010 (CNC). GenBank accession code JF863322.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi214 (Braconidae: Microgastrinae), which is a primary parasitoid of *Paectes fovifera* DHJ02 (Euteliidae) feeding on *Protium ravenii* (Burseraceae). A single *Mesochorus* specimen eclosed.

Other host data: *Diolcogaster*, *Glyptapanteles* (Braconidae: Microgastrinae). One rearing produced a sole *Mesochorus* and the other produced multiple *Mesochorus* specimens.

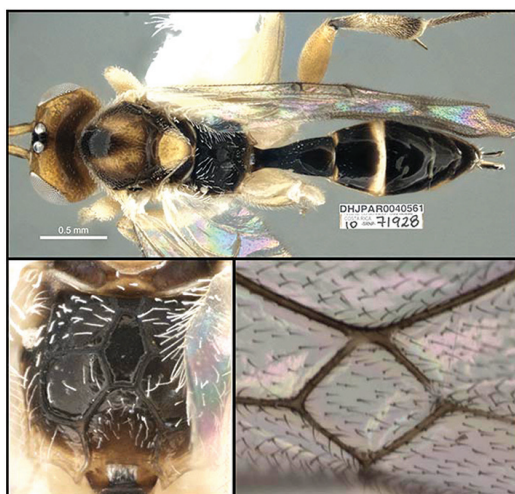


Fig. 66. *M. cincotres*, holotype female.

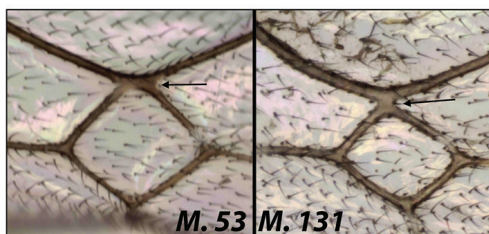


Fig. 67. Comparisons of *M. cincotres* with its nearest neighbor, *M. unotresuno*.

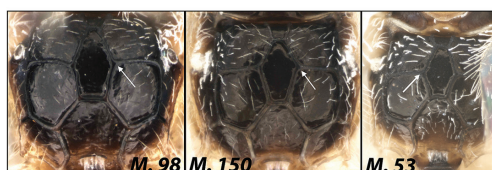


Fig. 68. Comparisons of the propodea of three species of *Mesochorus* (*M. nuevecho*, *M. unocincocero* and *M. cincotres*) whose COI barcodes code for identical amino acids. Note the shapes of the median areolae.

Mesochorus cincocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:72884B3A-1130-42BD-AF23-42E8E126F48F

Diagnostics: Fig. 69.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGGATATGATCAGGAATAATTGGATCTTCAATAAGATTAATTATTTCGAATAGAATTAGGA
AACCCCGGATTTTAAATTAATAATGACCAAATTTATAATCTTTTGTGACAGCTCATGCATTATTATAATTTTTTTTATA
TAGTAATACCAATCATAATTGGTGGATTGGAACTGAATAGTACCCTTAATAATTGGAGCTCCTGATATA
GCTTCCCTCGAATAAAACAATATAAGATTTGGTTATTACCCCATCAATTATATTATTATTATAAGAAGAATTT
GCCAAAAGGTGTAGGGACAGGATGAACAGTTTACCCTCCTTTATCATTAAACAGAAGACATGAAGGATTTT
CAGTAGATTTATCAATTTCTCTACACTTAGCTGGTATATCATCAATTATAGGTGCCGTAATTTATTACAA
CAATTTAAATATACGTATTATTGGATCATCAATTGACCAAATATCTTTATTTGTTGATCAATCAAATTACAACA
ATTTATTATTATTAGCTGTACCAGTTCTTGACAGGAGCAATTAATATATTAACAGATCGAAATTTAAATACAA
CATTTTTGACCCTTCAGGAGGAGGGGACCCAATTTTATACCAACATCTATT
```

BOLD data: BIN: BOLD:AAM1693.

Nearest neighbor: *Mesochorus* sp. undescribed, BOLD:AAX4067, 9.46% (p-dist).

Holotype ♀: DHJPAR0038400, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Manguera, 10.99590, -85.39842, 470 m, eclosion date 11/24/2009, caterpillar collection date 11/08/2009 (CNC). GenBank accession code HQ549144.

Holotype host data: Hyperparasitoid of *Triraphis billmclarneyi* (Braconidae: Rogadinae), which is a primary parasitoid of zygjanzen01 Janzen23 (*Zygaenidae*) feeding on *Doliocarpus multiflorus* (Dilleniaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Triraphis* (Braconidae: Rogadinae). A single *Mesochorus* specimen enclosed.

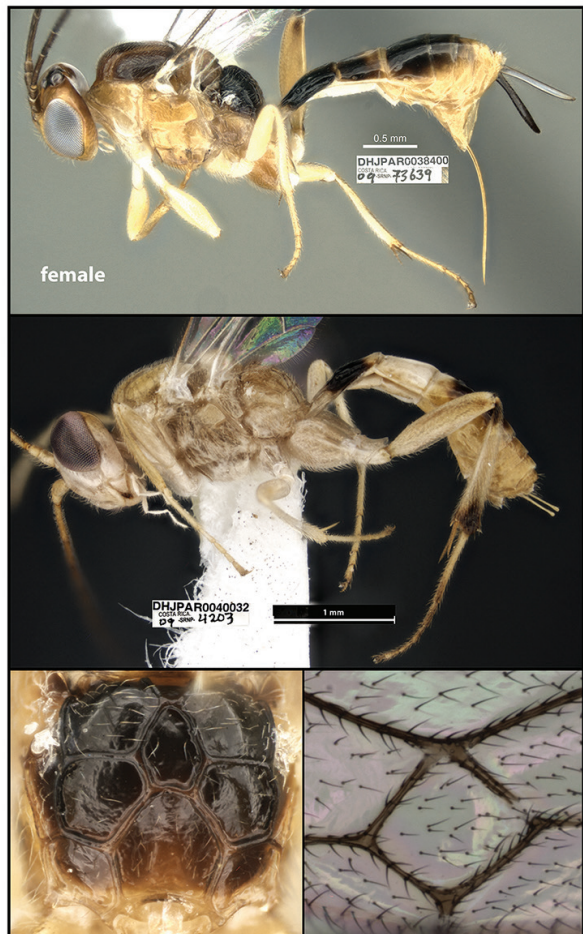


Fig. 69. *M. cincocuatro* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus cincocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:FABF829F-164F-400E-BBBB-1D48F5039494

Diagnostics: Fig. 70.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGAAATGATCAGGAATAATTGGATCATCTTTAAGAATAATTATTCGTATAGAATTAGGA  
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATGCTTTTGTACATCACATGCTTTTATTATAATTTTTTTTA  
TAGTTATACCAATCATAAATTGGAGGTTTGGAAATTGATTAATTCCTTTAATAATTGGTGCACCAGATATA  
GCTTTTCTCGTATAAATAATATAAGATTTGATTATTACCTCCTTCAATTATACTATTATTATTAAGAGGAATTTGT  
CAAAAAGGTGTAGGAACAGGTTGAACTATTTATCCTCCTTTATCATTAAATTTAAGACATGAAGGATTATCTGTT  
GATTATCAATTTTTCTTACATCTTGCTGGCATATCATCAATTATAGGATCAATTAATTTATTACAACAATTTTTAA  
TATACGAATTTAAAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCAATCTTAATTACAACAATTTATTAC  
TATTAGCAGTTCCAGTTTTAGCAGGTGCAATTACTATATATTATCAGATCGAAATTTAAATACTTCTTTTTTTGATC  
CATCAGGTGGAGGAGATCCAATTCTATATCAACATCTATTT
```

BOLD data: BIN: BOLD:AAM1703.

Nearest neighbor: *M. sietenueve* BOLD:AAX4050 4.81% (p-dist).

Holotype ♀: DHJPAR0051899, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Jardín Estrada, 10.86546, -85.39694, 722 m, eclosion date 03/01/2013, caterpillar collection date 02/12/2013 (CNC). GenBank accession code OM237679.

Holotype host data: Hyperparasitoid of *Apanteles christianzunigai* (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenomoma* Janzen11 (Depressariidae) feeding on *Desmopsis schippii* (Annonaceae). One *Mesochorus* specimen enclosed.

Other host data: *Apanteles christianzunigai* (Braconidae: Microgastrinae). One *Mesochorus* specimen enclosed.

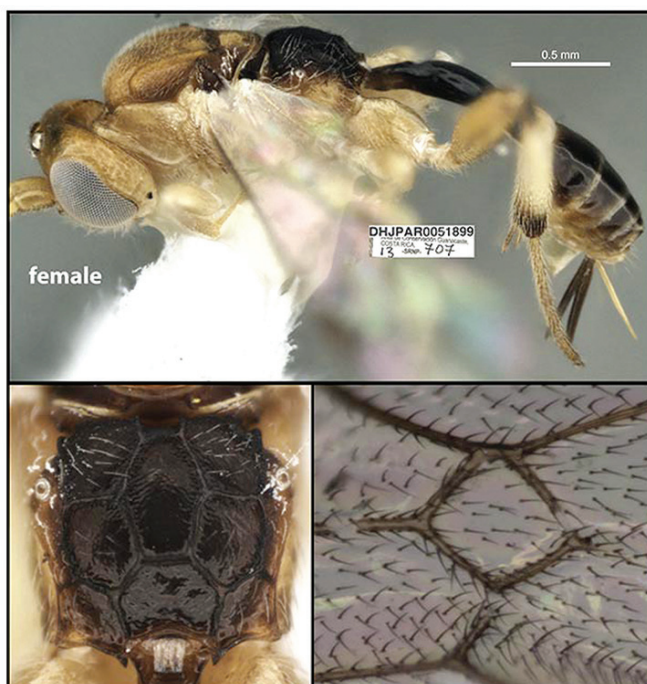


Fig. 70. *M. cincocinco*, holotype female.

Mesochorus cincoseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:5B10BC14-9170-46D7-A811-C6BF3FD24533

Diagnostics: Fig. 71.

Consensus barcode (3 specimens).

```
TATTTTATATTTTATTTTTGGTATATGGGCAGGAATAATTGGTCTTCAATAAGAATGATCATTTCGTATAGAATTAGGA
AATCCTGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTTGTAACATCACATGCTTTTATTATAATTTCTTTA
TAGTTATACCTATTATAATTGGTGGATTGGAAATGAATAATTCCTTTAATAATTGGAGCTCCTGATATAGCTTTCC
CACGAATAAATAATAAGATTTTGATTATTACCACCATCAATTATATTATTATTATTAAGAGGAATTTGTCAAAAA
GGTGTGGTACAGGATGAACAGTTTACCCACCTTTATCATTAAATGTTAGACATGAAGGATTATCARTAGATTTAT
CAATTTTTTCTTTACATTTAGCTGGTATATCTTCAATTATAGGAGCAATTAATTTTATTACAACAATCTTAAATATAC
GAATTTTAAAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCAATTTAATCACAACAATTTTATTACTTTTAG
CAGTCCAGTTTTAGCTGGTGCTATTACAATATTATTATCAGATCGTAACTTAAATACTCTTTTTTTTGACCCTTCA
GGTGGTGGAGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:AAN2491.

Nearest neighbor: *M. unocero Cinco* BOLD:ACC1150, 5.31% (p-dist).

Holotype ♀: DHJPAR0039413, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Sendero Albergue Crater, 10.84886, -85.32810, 980 m, eclosion date 05/20/2010, caterpillar collection date 05/07/2010 (CNC). GenBank accession code HQ926168.

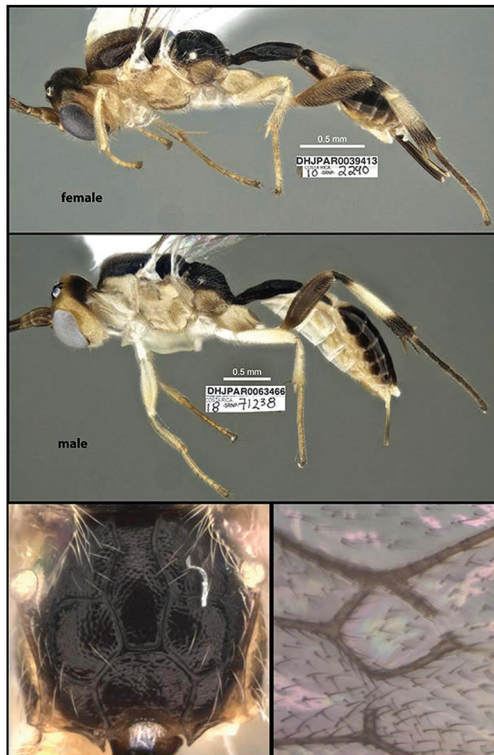


Fig. 71. *M. cincoseis* holotype female and male paratype. Unlabeled images are of the holotype.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield251 (Braconidae: Microgastrinae), which is a primary parasitoid of *Lamprosema* Janzen340 (Crambidae) feeding on *Paullinia capreolata* (Sapindaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Hypomicrogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

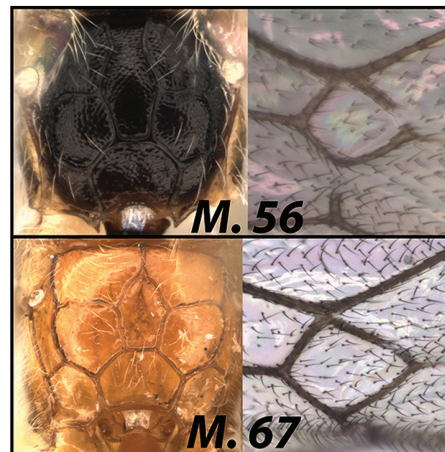


Fig. 72. Comparisons of two species of *Mesochorus* (*M. cincoseis* and *M. seissiete*) whose COI barcodes code for identical amino acids.

Mesochorus cincosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:52F9F324-878C-459C-AD83-152F5BE26A3B

Diagnostics: Fig. 73.

Holotype barcode.

```
AGTATTATACTTCATTTTTGGTATATGAGCTGGAATAATTGGATCATCAATAAGATTAATAATTCGCCTAGA  
ACTTGGAAATCCTGGATTTTTAATTAATAATGATCAAATTTATAATTCATTTGTAACGCACATGCTTTTGTA  
TAATTTTTTTATAGTTATACCAATTATAATTGGAGGATTCGGAAATTGATTAATTCCTCTAATAATTGGAGCTCT  
GATATAGCTTTCCCCGAATAAATAATATAAGATTTGACTATTACCTCCTTCATTAACCTTTATTAATTTAAGAA  
GAGTTACTCACAAGGAGTTGGAACAGGATGAACCGTCTACCCACCTCTATCTTTAAATTCTAGTCATGAAGGA  
ATGCTGTAGATTTATCTATTTTTCTTTACATTTAGCAGGTATATCCTCAATATAGGGGCTATTAATTTTATTAC  
TACTATTTAAATATACGATGCACAGGAACATCTTTAGATCAAATATCATTATTTACTTGATCAATAAAAATTACA  
ACCATTTACTACTATTAGCAGTACCAGTATTAGCAGGAGCAATTACAATATTACTGGCAGACCGAAACTTAAA  
TACTCTTTTTTTGATCCTTCAGGAGGAGGAGACCCAATTTTATATCAACACTTATT
```

BOLD data: BIN: BOLD:AAQ0213.

Holotype ♀: DHJPAR0040562, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Laguna, 10.98880, -85.42336, 680 m, eclosion date 07/08/2010, caterpillar collection date 06/09/2010 (CNC). GenBank accession code JF863323.

Holotype host data: Hyperparasitoid of *Eucelatoria* Janzen09 (Tachinidae: Exoristinae), which is a primary parasitoid of uraJanzen01 Janzen05 (Uraniidae) feeding on *Bertiera bracteosa* (Rubiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

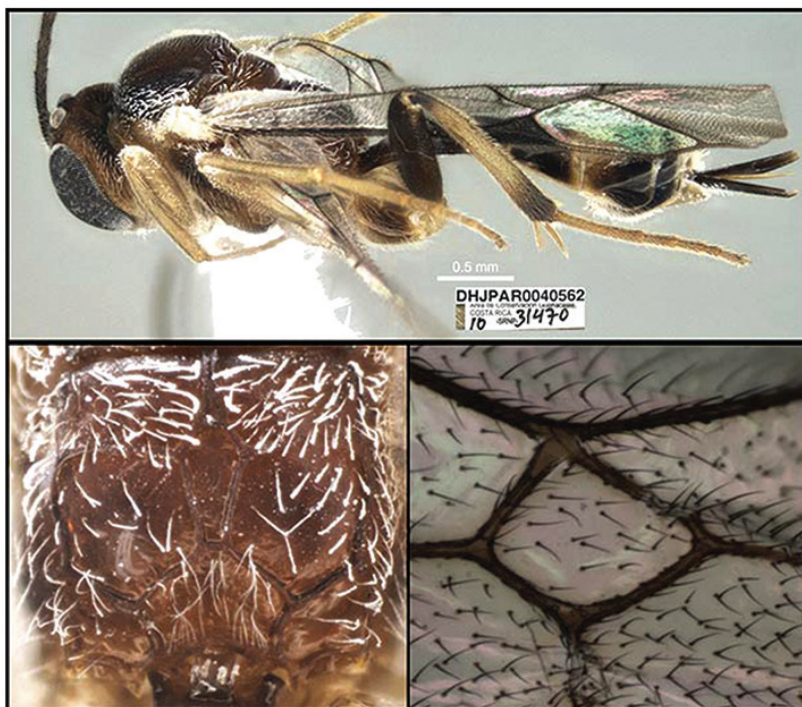


Fig. 73. *M. cincosiete*, holotype female.



Mesochorus cincocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:1F1CF952-8B28-474C-954E-1F61D9D7BED9

Diagnostics: Fig. 74.

Consensus barcode (3 specimens).

TATTTTATATTTTATTTTGGGAATATGRTCCAGGAATAATGGTTCTTCTATAAGATTAATTATTCGAATAGA
ACTTGGTAATCCAGGATTTCTAATTAATAATGATCAAATTTATAATTCATTTGTTACTTCTCATGCATTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATGGAGGATTTGGAAATTGAATAGTTCTTTAATAATTGGTGCACCA
GATATAGCCTTCCCTCGAATAAATAATATAAGGTTTGGATTATGCCCCCATCAATTCATTACTTTTATTAAGAA
GAATTTGTCAAAAAGGTGTAGGAACAGGATGAACAGTTTACCCCCATTATCATAAATAAGACATGAAGGAT
TRCTGTAGACCTTTCAATTTTTCTTTACACCTTGAGGAATATCTTCAATTATAGGAGCAGTTAATTTTATTAC
TACAATTTTAAATATACGAATTATAAAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCAATTTAATTACAA
CAATTTTATTATTAGCCGTTCCAGTATTAGCTGGTGCTATTACAATATTATTAACAGATCGTAACTTAAATACAT
CATTTTTGATCCATCAGGAGGTGGTGATCCTATTTTATATCAACATTTATTTC

BOLD data: BIN: BOLD:AAT8847.

Nearest neighbor: *M. unocero*, BOLD:ABY4235, 2.24% (p-dist). The shapes of the forewing areolets differ (Fig. 75).

Holotype ♀: DHJPAR0039097, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Flecha, 10.94741, -85.31501, 491 m, eclosion date 03/13/2010, 02/03/2010 (CNC). GenBank accession code HQ549550.

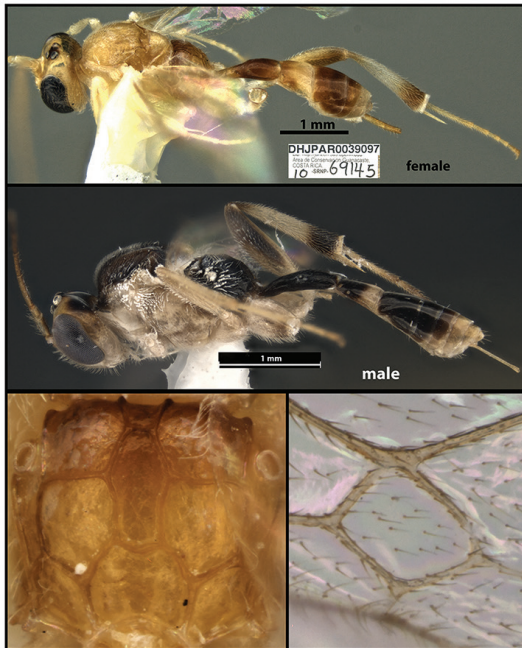


Fig. 74. *M. cincocho* holotype female and male paratype. Unlabeled images are of the holotype.

Holotype host data: Hyperparasitoid of *Apanteles luisgritai* (Braconidae: Microgastrinae), which is a primary parasitoid of *Desmia Solis*19 (Crambidae) feeding on *Psychotria jimenezii* (Rubiaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

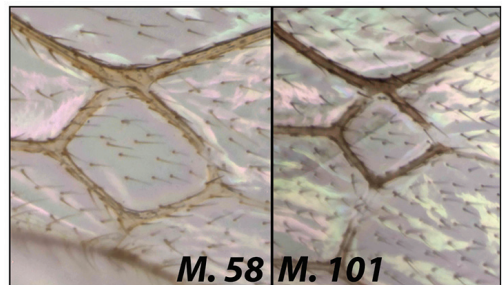


Fig. 75. Comparisons of *M. cincocho* with its nearest neighbor, *M. unocero*.

Mesochorus cinconueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8FA82DC6-8A7B-4795-AC48-43241F39CA4D

Diagnostics: Fig. 76.

Consensus barcode (10 specimens).

```
AATTTTATATTTTATTTTCGGAATTTGAGCTGGAATAATTGGATCTTCTATAAGATTAATTGTTTCGAATAGA
ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTTACAGCTCACGCATTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGRGGATTTGGAAATTGATTAATTCCTTTAATAATTGGAGCCCT
GATATAGCATTTCTCGAATAAATAATATAAGATTTGATTACTACRCCTTCAATTATATATATTATTAAGAA
GAATTATTAATAAAGGAGTAGGAACAGGATGAACAGTTTATCCCCCTTATCTTTAAATATAAGACATGAAGGTA
TATCTGTTGATTTATCAATTTTGTCTTACATTTAGCTGGTATATCCTCAATTATAGGGGCAGTAAATTTATYAC
CACTATTTTAAATATACATTTAATTGGTATAACAATAGATCAATTGTCTTTATTTACTTGATCAATTAAGATTACA
ACAATTTTATTATTATTAGCAGTACCAGTTTTAGCTGGRGCTATTACAATATTATTAAGTACCAGAAATTTAA
TACTTCTTTTTTATGATCCATCAGGAGGRGGAGACCCTATTCTTTATCARCATTATTTT
```

BOLD data: BIN: BOLD:AAT8854.

Nearest neighbor: *M. unodos*,

BOLD:AAC6097, 6.57% (p-dist).

Holotype ♀: DHJPAR0041672,

Área de Conservación Guanacaste,
Guanacaste, Sector Pitilla,

Quebradona, 10.99102, -85.39539,

475 m, eclosion date 01/17/2011,

caterpillar collection date 12/23/2010

(CNC). GenBank accession code

JQ575454.

Holotype host data: Hyperparasitoid

of *Parapanteles* Whitfield213

(Braconidae: Microgastrinae), which

is a primary parasitoid of *Napaea*

beltiana (Riodinidae) feeding on

Orchidaceae 22039 (Orchidaceae).

Multiple *Mesochorus* specimens

eclosed.

Other host data: *Parapanteles*

(Braconidae: Microgastrinae).

Multiple *Mesochorus* specimens

eclosed.

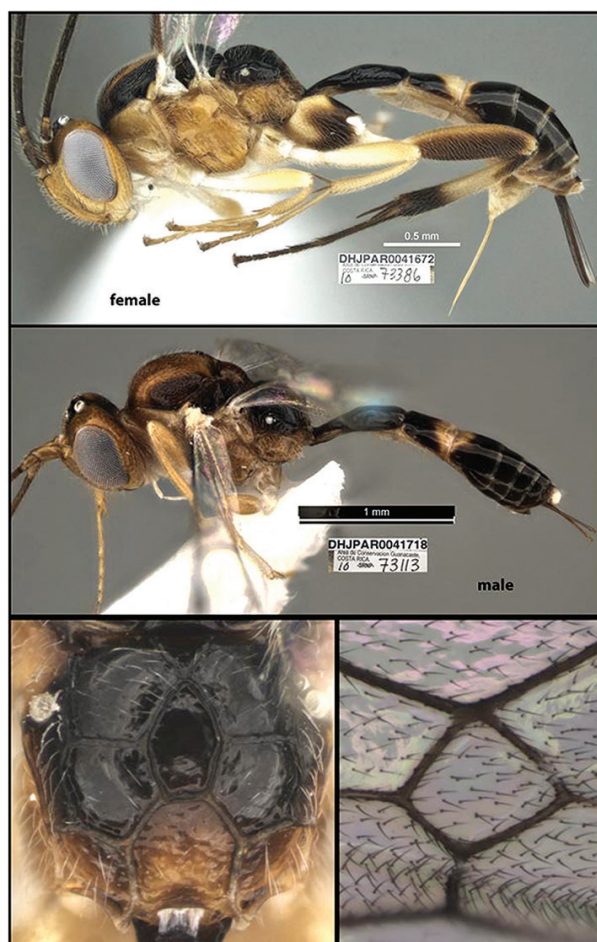


Fig. 76. *M. cinconueve* holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus seiscero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9AC6DF9F-5D15-474F-B0EE-46EDEE09AC26

Diagnostics: Fig. 77.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGTTATGAGCAGGAATAGTAGGAGCTTCAATAAGAATAATTATTCGTATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAACTCTTTTGTACATCACATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGTGGATTGGAAATGAATAATCCATTAATAATTGGAGCACCAGATATAGCTTTCC
CACGAATAAATAATAAGATTTTGATTATTACCTCCTTCAATATATATTATTATTAAGAGGAATTTGTCAAAA
AGGTGTTGGAAGTGGATGAACAGTTTATCCACCACTATCATTAAATATTAGTCATGAAGTTTATCAGTTGATC
TATCAATTTTTTCATTACATTTAGCTGGTATATCATCAATATAGGAGCAATTAATTTTATTACAACAATTTTAAATA
TACGTATTTTAAAATCATCATTAGATCAAATATCTTTATTTGTTTGATCAATTTTAAATTACAACAATTTTATTATTATA
GCAGTTCCAGTTTGTAGCTGGTGCAATTAATCTATATTATCTGATCGAAATTTAAATACTTCATTTTTTGTATCCATCAG
GAGGTGGTGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN:BOLD:AAT9024.

Holotype ♀: DHJPAR0041540, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Amonias, 11.04249, -85.40339, 390 m, eclosion date 02/01/2011, caterpillar collection date 01/12/2011 (CNC). GenBank accession code OM237746.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield09 (Braconidae: Microgastrinae), which is a primary parasitoid of *Desmia benealis* DHJ02 (Crambidae) feeding on *Drymonia serrulata* (Gesneriaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Hypomicrogaster* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

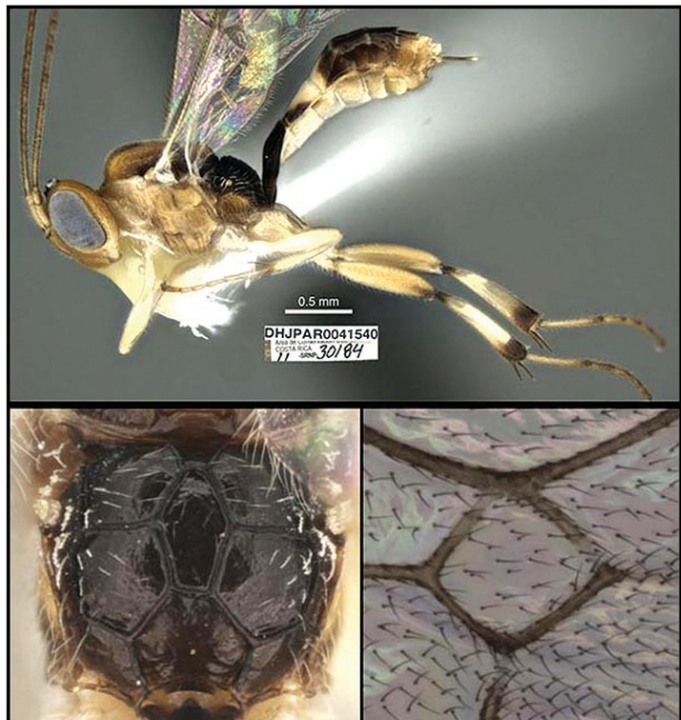


Fig. 77. *M. seiscero*, holotype.

Mesochorus seisuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:7AA9AC3E-F334-4FF8-A0BB-F0C2FC4DB9B2

Diagnostics: Fig. 78.

Holotype barcode.

```
AATTTTATATTTTATTTTTGGTATATGAGCTGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGA
ATTAGGAAATCCAGGATTTTTAATTAATAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTTATTA
TAATTTTTTTTATGGTTATACCAATTATAATTGGTGGATTTGGAAATTGAATAATTCCTTTAATAATTGGAGCACCA
GATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATATTATTATTAAGAAGA
ATTTGTCAAAAAGGTATAGGAAGTGGTTGAACAGTTTATCCTCCATTATCATTAAATATTAGTCATGAAGGGTTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGAATATCTTCAATTATAGGTGCTATTAACTTTATTACAAC
TATTTTAAATATACGAATTTAAAAACATCTTTTGATCAAATATCATTTTGTATGATCAATTTAATTACAAC
TATTTTATATTATTAGCTGTTCCAGTTTTAGCAGGTGCAATTACAATATTACTTTCAGATCGAAATTTAAACACTT
CATTTTTGACCCATCAGGTGGAGGTGATCCAATTTATATCAACATTTATTT
```

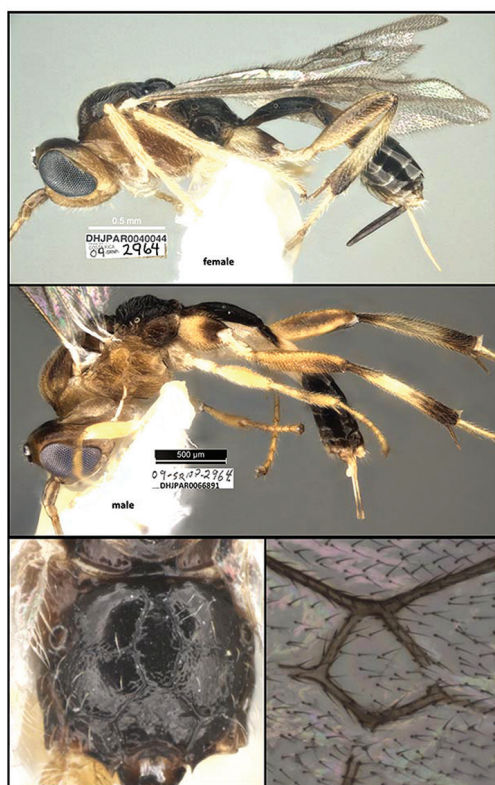


Fig. 78. *M. seisuno*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066891) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 09-SRNP-2964, that can be recovered from the Janzen/Hallwachs website.

BOLD data: BIN: BOLD:AAT9233.

Nearest neighbor: *M. nueveseis*, BOLD:ABX4997, 2.4% (p-dist). The shapes of the forewing areolets are different (Fig. 79).

Holotype ♀: DHJPAR0040044, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Corredor, 10.87868, -85.38963, 620 m, eclosion date 07/05/2009, caterpillar collection date 06/25/2009 (CNC). GenBank accession code OM237731.

Holotype host data: Hyperparasitoid of *Apanteles* Whitfield13 (Braconidae: Microgastrinae), which is a primary parasitoid of *Desmia octomaculalis* (Crambidae) feeding on *Notopleura aggregata* (Rubiaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: None.

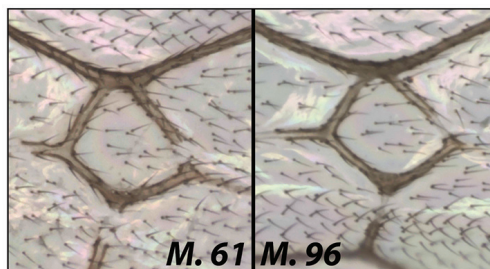


Fig. 79. Comparisons of *M. seisuno* with its nearest neighbor, *M. nueveseis*.

Mesochorus seisdos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:77CF7D8D-B4D0-4AA8-B193-F919617D7F62

Diagnostics: Fig. 80.

Holotype barcode.

```
AGTTTTATATTTTCATTTTTGGGATTTGAGCAGGAATAATTGGATCATCTATAAGATTAATTATTCGAATAGAATTAGGA
AACCCGTGGATATTTAATTAACAATGACCAAATTTATAATTCATTCGTTACAGCTCACGCATTATTATAATTTTTTTTA
TAGTTATACCTATTATAATCGGCGGATTTGGAAATTGATTAGTCCCTTAATAATTGGGGCCCCAGATATAGCATTCC
CACGAATAAACAATATAAGATTTTGATTATTACCACCTTCATTAATATATTATTATTAAGAAGAATTATTAATAAA
GGGGTAGGAACAGGATGAAGTGTACCCCATTCATTAATATTAGCCATGAAGGAATATCAGTTGATTTAT
CAATTTTTCTTTACATTTAGCAGGAATATCTTCAATCATAGGAGCAATTAATTTTATTACTACAATTTAAATA
TACATTTAAATGGAATAACTTTTGATCAATATCATTATTACATGATCAATAAAATTACAATTTCTTTATTATT
GGCAGTTCTGTCTAGCTGGAGCAATTACTATATTATTAACAGACCGAAATTTAAATACCTCATTTTTTGACCCTT
CAGGGGGGGGGGACCCAATTCTTTACCAACATTTATTT
```

BOLD data: BIN: BOLD:AAW4583.

Nearest neighbor: *M. unodosocho*, BOLD:ACZ6907, 9.8% (p-dist).

Holotype ♂: DHJPAR0042078, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Conguera, 10.91589, -85.26631, 420 m, eclosion date 12/22/2010, caterpillar collection date 11/30/2010 (CNC). GenBank accession code JQ575767.

Holotype host data: Hyperparasitoid of *Meteorus* Zitani01DHJ08 (Braconidae: Euphorinae), which is a primary parasitoid of noctJanzen01 Janzen10-44548 (Noctuidae) feeding on *Gleichenia pectinata* (Gleicheniaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

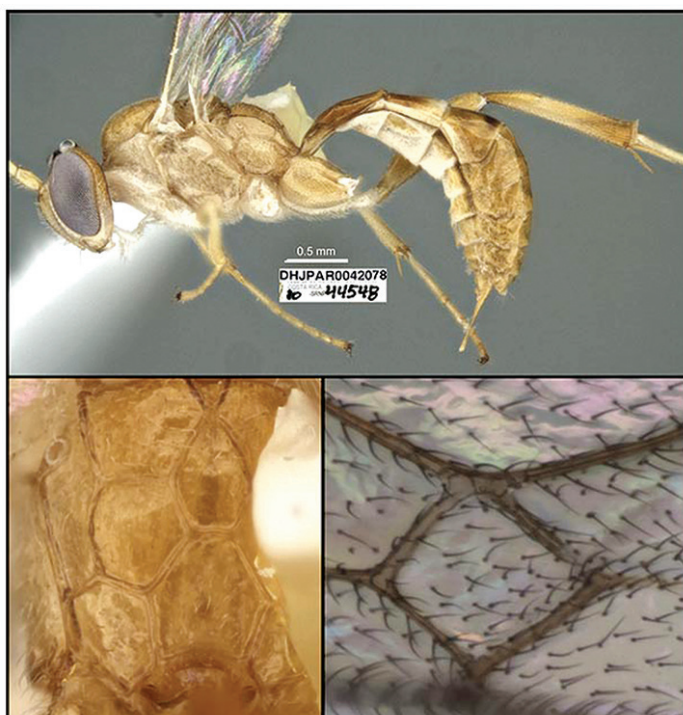


Fig. 80. *M. seisdos*, holotype male.

Mesochorus seistres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:E6B331BB-FC63-4E4A-AD09-97287FCBEEA4

Diagnostics: Fig. 81.

Holotype barcode.

TATTTTATATTTTATTTTGGTATATGATCAGGAATAATTGGATCATCAATAAGATTAATATATCCGAATAGAATTAGGA
 AATCCAGGATTTTGGATTAATAATGACCAAATTTATAATCTTTTGTACAGCCCATGCTTTTATTATAATTTTTTTA
 TAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATAATTGGAGCCCCTGATATAG
 CATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATATATTTTTATTATTAAGAAGAATTA
 GACAAAAGGGGTAGGAAGTGGATGAACAGTTTACCCTCCTTTATCATAAATAGAAGTCATGAAGGATTTG
 CAGTTGATTTATCAATTTCTCTTTGCATTTAGCTGGTATATCATCAATTATAGGTGCAATTAATTTTATTACTAC
 TATTTTAAATATACGTGTTACAGGATCTTCTTAGATCAAATATCTTTATTTGTTTGATCTATTAATAATACAACA
 ATTTTATTATTATTAGCAGTTCCAGTTTGTAGCTGGAGCAATTACAATATTATTAAGTATCGAAATTTAAATACA
 ACTTTTTTTGATCCTTCAGGAGGAGGGGATCCAATTTTATATCAACATTTATT

BOLD data: BIN: BOLD:AAX3997.

Nearest neighbor: *M. unotresuno*, BOLD:ADA1951, 7.19% (p-dist).

Holotype ♂: DHJPAR0040555, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Medrano, 11.01602, -85.38053, 380 m, eclosion date 07/28/2010, caterpillar collection date 07/10/2010 (CNC). GenBank accession code JQ574960.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi68 (Braconidae: Microgastrinae), which is a primary parasitoid of *Scotura leucophleps* DHJ05 (Notodontidae) feeding on *Rinorea deflexiflora* (Violaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Dolichogenidea* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

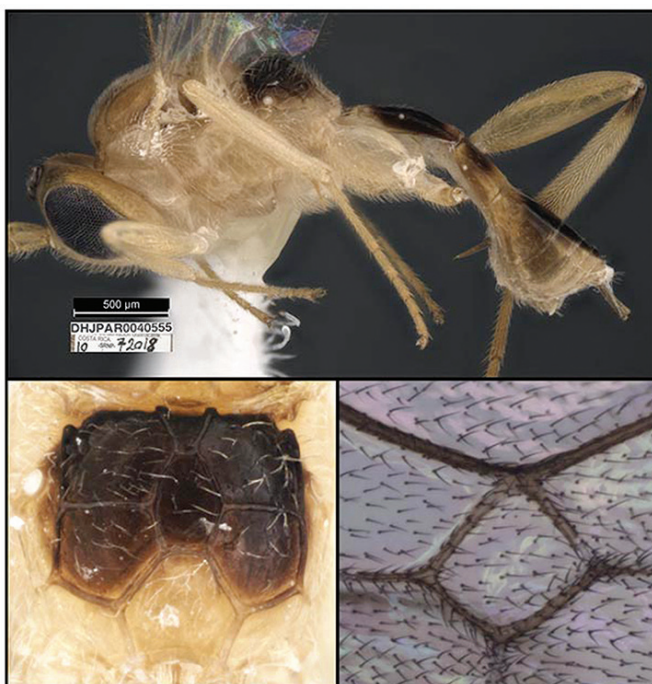


Fig. 81. *M. seistres*, holotype male.

Mesochorus seiscuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:B31521BB-E295-447D-AE16-9417E9532EF7

Diagnostics: Fig. 82.

Holotype barcode.

```
AATTTTATATTTTATTTTTGGTATATGATCTGGAATAATTGGTTCTTCTATAAGAATAATTATTCGAATAGA
ATTAGGTAACCCAGGATTTTTAATTAATAATGATCAAATTTATAAATCTTTTGTACTTCTCATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATAATTGGGGCCC
CAGATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCCCTTCAATTATATTATTATTATAAGAG
GAATTTGTCAAAAAGGTGTAGGTACTGGTTGAACAGTTTATCCACCTTTATCATTAAATATTAGTCATGAAGGA
ATATCAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGTATATCTCAATTATAGGTGCAATTAATTTTACATTA
CAACAATTTTAAATATACGAATTTATAAAACAACCTTTTGATCAAATATCATTATTTGTTTGATCAATTTAATTAC
TACAATTTTATTATTATTAGCAGTTCCAGTTTAGCAGGTGCTATTACTATATTATTATCAGATCGAAATTTAAA
TACTTCTTTTTTGATCCTTCTGGAGGTGGTGATCCAATTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4004.

Holotype ♂: DHJPAR0040552,

Área de Conservación
Guanacaste, Alajuela, Sector
Rincon Rain Forest, Sendero
Parcelas, 10.90777, -85.29137,
375 m, eclosion date 08/08/2010,
caterpillar collection date
05/25/2010 (CNC). GenBank
accession code JQ574958.

Holotype host data:

Hyperparasitoid of *Apanteles raulacevedoi* (Braconidae: Microgastrinae), which is a primary parasitoid of *gellJanzen01 Janzen407* (Gelechiidae) feeding on *Clibadium eggersii* (Asteraceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

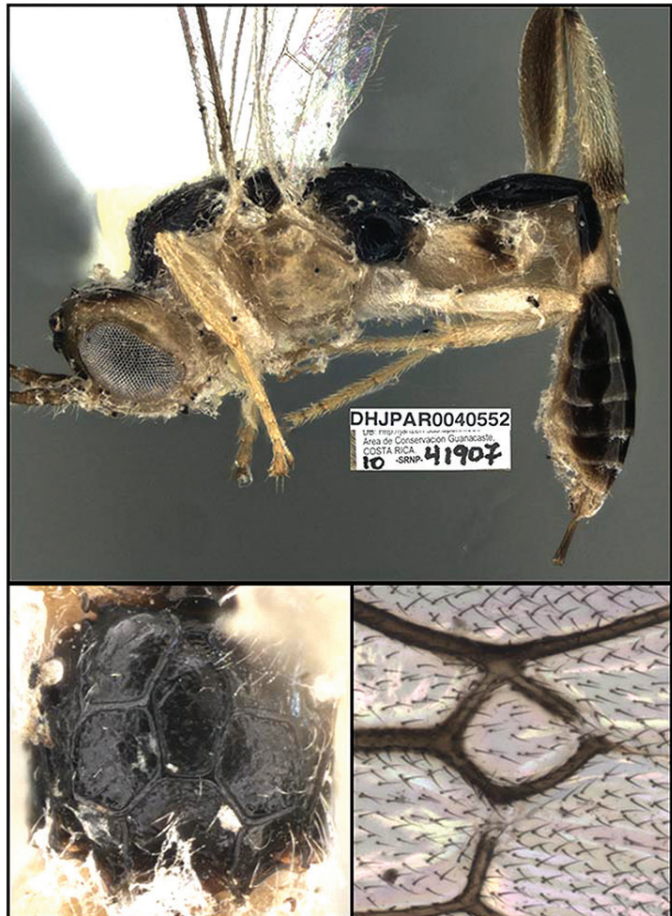


Fig. 82. *M. seiscuatro*, holotype male.

Mesochorus seiscinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:26414353-68FC-49CC-B918-C0D5AD544C55

Diagnostics: Fig. 83.

Holotype barcode.

```
AATTTTATATTTTATTTTTGGCATATGATCTGGAATAATTGGATCTTCAATAAGATTAATTATTCGTATAGAATTA  
GGTACCCCTGGATTTTTAATTAATAATGATCAAATTTATAATCTTTTGTAACCTCTCATGCATTTATTA  
TAATTTTTTTATAGTTATACCTATTATAAATGGCGGATTTGGTAATTGAATAGTTCATTAATAATTGGAGCTCCTGA  
TATAGCATTTCACGTATAAATAATATAAGATTTTGATTACTACCCCTTCAATTATATTTCTTTTATTAAGAGGTATTT  
GTCAAAAAGGCGTTGGCACTGGTTGAACTGTTATCCCCCTTATCATTAATGTTAGTCATGAAGGTTTAT  
CAGTTGATTTATCTATTTTTCTTTACATTTAGCTGGTATATCATCAATTATAGGTGCTGTAAATTTTATTACAAC  
TATTTTAAATATACGAATTTATAAAACATCTTTAGATCAAATATCTTTATTTGTATGATCAATTTAATTACAAC  
TATTTTATTACTTTTAGCTGTTCTGTATTAGCTGGAGCAATTACTATATTATATCAGATCGTAATTTAAATACTT  
CATTTTTGATCCATCAGGGGGTGGTGATCCAATTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4006.

Nearest neighbor: *M. uncerocinco*, BOLD:ACC1150, 9% (p-dist).

Holotype ♂: DHJPAR0040036, Área de Conservación Guanacaste, Guanacaste, Sector Horizontes, Vado Esperanza, 10.78938, -85.55098, 85 m, eclosion date 08/01/2009, caterpillar collection date 06/18/2009 (CNC). GenBank accession code OM237728.

Holotype host data: Hyperparasitoid of *Cardiochiles gerardo-chavesi* (Braconidae: Cardiochilinae), which is a primary parasitoid of epija Janzen01 Janzen15DHJ02 (Pylalidae) feeding on *Coccoloba caracasana* (Polygonaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

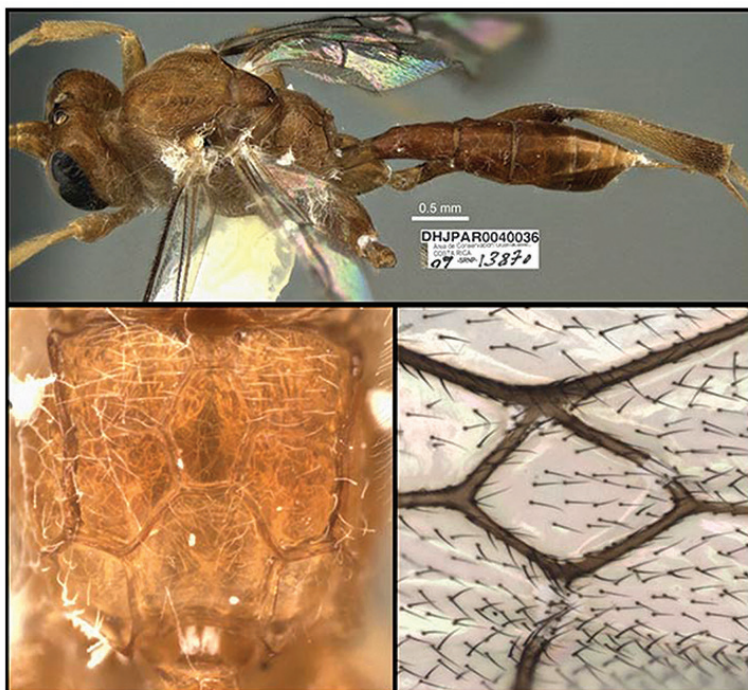


Fig. 83. *M. seiscinco*, holotype male.

Mesochorus seisseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:CE4F65A5-D828-447A-8DB1-63C45EA1D233

Diagnostics: Fig. 84.

Consensus barcode (3 specimens).

TATTTTATATTTTATATTTGGAAATAGAGCTGGAATAATTGGTTTCATCAATAAGAATAATTATTCGTATAGA
ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTGTTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTAATACCTATTATAATTGGTGGTTTTGGAAATTGAATAATCCATTAATAATTGGAGCTCCA
GATATAGCTTTCCCTCGAATAAATAATATAAGATTTTGATTACTACCCCTTCAATCATATTACTTTTATTAAGAGGA
ATTTGTCAAAAAGGTGTTGGTACTGGTTGAACAGTTTATCCTCCTTTATCATTAAATATTAGACATGAAGGTTTAT
CAGTTGATTTATCAATTTTTCTCTACATTAGCTGGAATATCATCAATTATAGGGGCAATTAATTTTATCACAAC
TATTTTAAATATACGAATTTTAAAAACATCTTTAGATCAAATATCTTTATTACTTGATCTATTTAATTACAAC
TATTTTATATTATTAGCAGTTCCAGTACTAGCTGGTGCAATTACTATATTACTTTCTGATCGAAATCTAAATACTT
CATTTTTGACCCGTCAGGAGGTGGTGATCCAATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:AAX4009.

Nearest neighbor: *M. nueveseis*, BOLD:ABX4997, 6.42% (p-dist).

Holotype ♀: DHJPAR0047219,

Área de Conservación
Guanacaste, Alajuela, Sector
Rincon Rain Forest, Finca
Esmeralda, 10.93548, -85.25314,
123 m, eclosion date 01/15/2012,
caterpillar collection date
01/01/2012 (CNC). GenBank
accession code OM237707.

Holotype host data:

Hyperparasitoid of *Apanteles*
Janzen77 (Braconidae:
Microgastrinae), which
is a primary parasitoid
of *Antaeotricha* Janzen66
(Depressariidae) feeding on
Zygia longifolia (Fabaceae). A
single *Mesochorus* specimen
eclosed.

Other host data:

Dolichogenidea, *Apanteles*
(Braconidae: Microgastrinae).
A single *Mesochorus* specimen
eclosed.

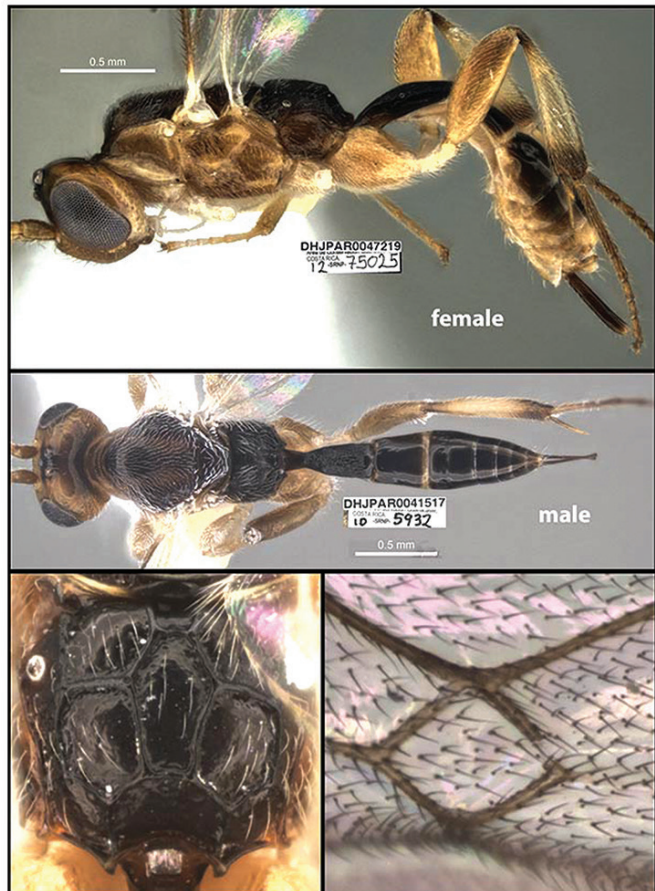


Fig. 84. *M. seisseis*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus seissiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:C4493919-3184-41FC-A41B-7BD8A6F1FFD1

Diagnostics: Fig. 85.

Holotype barcode.

```
AATTTTATATTTTATTTTGGAAATATGAGCTGGTATGATTGGTTCATCAATAAGAATAATTATTCGTATAGAATTAGGA
AACCCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGTGGATTGGTAATTGAATAATTCCTTTAATAATTGGAGCACCAGATATA
GCCTTCTCGTATAAATAATAAGATTTTGATTATTGCCCTTCAATATACTATTATTATTAAGAGGAATTT
GTCAAAAAGGAGTTGGGACTGGTTGAACAGTTTATCCTCTTTATCTTTAAATGTAAGACATGAAGGTTTATCT
GTTGATTTATCAATTTTTCATTACATTTAGCAGGTATATCATCAATTATAGGAGCAATTAATTTTATTACAACA
ATTTTAAATATACGTATTTAAAAACTTCATTAGATCAAATATCTTTGTTTGTTTGATCAATTTTAAATACAACA
ATTTTATTATTATAGCTGTTCCAGTTTTAGCTGGGGCAATTACTATACTTCTTCTGATCGAAATTTAAATACTT
CATTTTTGATCCATCAGGAGGAGGAGACCAATTTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAX4010.

Nearest neighbor: *M. nuevecero*,

BOLD:AAY4749, 4.51% (p-dist).

Holotype ♀: DHJPAR0040558, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Medrano, 11.01602, -85.38053, 380 m, eclosion date 07/22/2010 caterpillar collection date 07/07/2010 (CNC). GenBank accession code JQ574962.

Holotype host data: Hyperparasitoid of *Apanteles raulacevedoi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Phostria cyrsalis* (Crambidae) feeding on *Goethalsia meiantha* (Malvaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

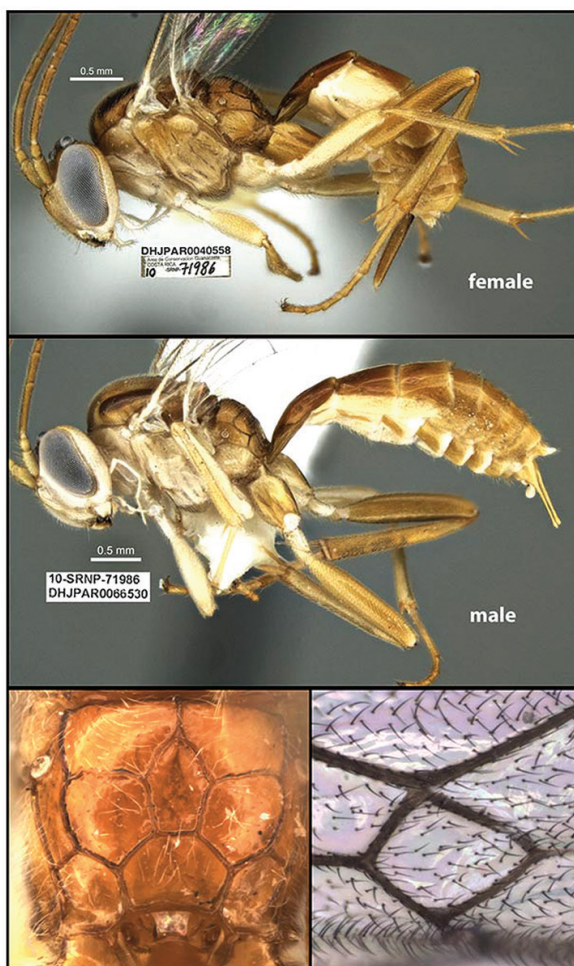


Fig. 85. *M. seissiete*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066530) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 10-SRNP-71986, that can be recovered from the Janzen/Hallwachs website.



Mesochorus seisocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:387C4F0F-83DD-45C7-B39D-E9335BE59DF6

Diagnostics: Fig. 86.

Holotype barcode.

```
TTCTATATTTTATTTTGGGTATATGAGCTGGAATAATTGGTCTTCAATAAGTATAATTATTCGTATAGAATTGGGGA
ATCCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTAAACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGTTTTGGAAATTGAATAATCCATTAATAATTGGTGCCCTGACATA
GCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATAAAGAAGAATTT
GTCAAAAAGGTGTTGGAACAGGATGAACAGTATATCCTCATTATCATTAAATATTAGACATGAAGGTTTATCT
GTTGATTTATCAATTTTTCTTTACATTTAGCTGGAATATCATCAATTATAGGAGCTATTAATTTTATTACAACA
ATTTTAAATATACGAATTTATAAACATCATTAGATCAAATATCTTTATTTGTTTGATCAATTTTAATTACAACA
ATTTTATTATTATTAGCAGTACCAGTTTTAGCAGGTGCAATTACAATATTATTAAGTGATCGAAATTTAAATACAT
CATTTTTGACCCTCTGGTGGTGGTGA
```

BOLD data: BIN: BOLD:AAX4030.

Nearest neighbor: *M. unodossiete*, BOLD:ACW7619, 6.35% (p-dist).

Holotype ♂: DHJPAR0020401, Área de Conservación Guanacaste, Guanacaste, Sector Mundo Nuevo, Porton Rivas, 10.75864, -85.37269, 570 m, eclosion date 11/25/2005, caterpillar collection date, 11/10/2005 (CNC). GenBank accession code JF793184.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield20 (Braconidae: Microgastri-
nae), which is a primary parasitoid of spiloJanzen01 Janzen41 (Crambidae) feeding on *Iresine latifo-
lia* (Amaranthaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: None.

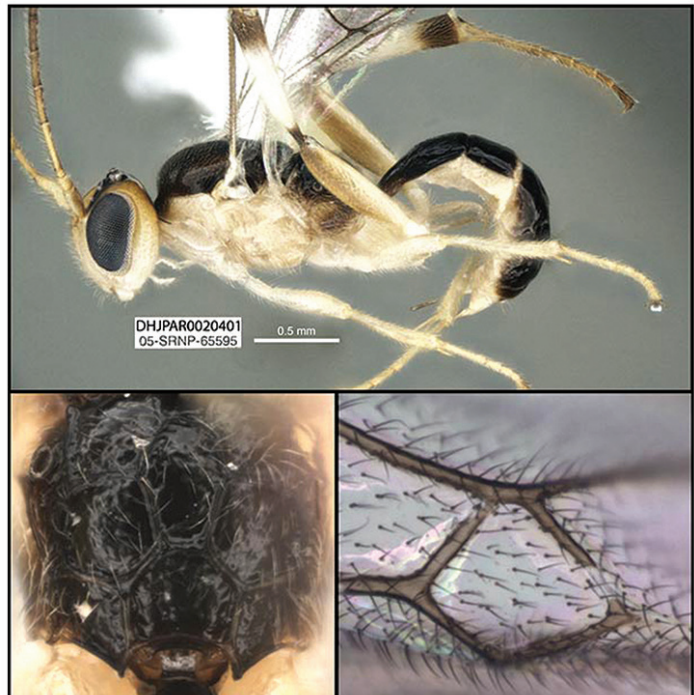


Fig. 86. *M. seisocho*, holotype male.

Mesochorus seisnueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:5EE9302E-8A9A-48E6-ADDD-25392A1CBF7A

Diagnostics: Fig. 87.

Consensus barcode (3 specimens).

```
ATTTTATATTTTATTTTTGGATTATGAGCAGGAATAATTGGAGCTTCAATAAGAATAATTATTCGAATAGA  
ATTAGGRAATCCTGGATTTTTAATTAATAATGATCAAATTTATAACTCTTTTGTACATCCCATGCCTTTATTA  
TAATTTTTTTTATAGTTATACCTATTATAATTGGTGGATTGGAAATGAATAATCCATTAATAATTGGRGCCCA  
GATATAGCCTTCTCGAATAAATAATATAAGATTTGATTATTACCCCATCAATTTATTATTATTAWTAAGAA  
GAATTTGTCAAAAAGGAGTAGGAACAGGTTGAACAGTTTAYCCTCCTTTATCTTTAAATATTAGACATGAAG  
GRTTATCTGTTGATTATCAATTTTTCCCTTCATTTAGCAGGTATATCTTCAATTATAGGAGCAATTAATTTATTA  
CAACAATTATAAATATACGAATTTAAAAACATCYTTAGACCAAATATCATTATTTGTATGATCAATTTWATTACAA  
CAATTTTATTATTATAGCAGTTCCAGTTTAGCTGGTGCAATTACAATATTACTTTCTGATCGAAATTTAAATACTT  
CATTTTTGATCCATCTGGAGGAGGTGATCCAATCTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4031.

Nearest neighbor: *M. dosuno*, BOLD:AAE3978, 7.33% (p-dist).

Holotype ♀: DHJPAR0012207,

Área de Conservación Guanacaste,
Alajuela, Sector Rincon Rain Forest,
Sendero Albergue Crater, 10.84886,
-85.32810, 980 m, eclosion date
7/10/2006, caterpillar collection
date 06/21/2006 (CNC). GenBank
accession code JF793185.

Holotype host data: Hyperparasitoid
of *Glyptapanteles* Janzen5048
(Braconidae: Microgastrinae), which
is a primary parasitoid of *Phastia*
alcimedede ICG02 (Notodontidae)
feeding on *Miconia conomicrantha*
(Melastomataceae). Multiple
Mesochorus specimens eclosed.

Other host data: None.

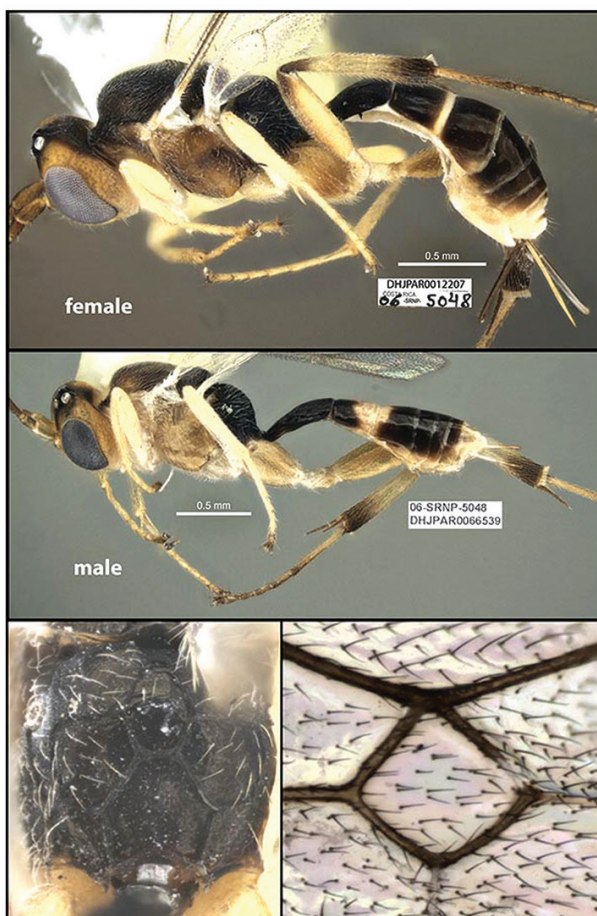


Fig. 87. *M. seisnueve*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066539) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 06-SRNP-5048, that can be recovered from the Janzen/Hallwachs website.



Mesochorus sietecero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:5B993FF8-F1F1-4C71-978F-7193B4CAE94D

Diagnostics: Fig. 88.

Holotype barcode.

```
ATTTTATATTTTATTTTGGGAATATGAGCAGGTATAATTGGATCATCAATAAGAATAATTATTCGTATAGAATTAGGA
AATTCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTAAATCCCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTACCATTAATAATTGGAGACCAGATATAG
CATTTCCTCGAATAAATAATATAAGATTTTGATTACTCCCTCCTTCAATTATATTACTATTAAGAAGAATTTGT
CAAAAAGGTGTGGGAAGTGGTTGAACAGTTTATCCACCATTATCATAAATATTAGTCATGAAGGACTTTTCAGTT
GATTTATCAATTTTTTCTTTACATTTAGCTGGTATATCTTCAATTATAGGAGCAATTAATTTTACTTACA
ATTTTAAATATACGTATTATAAGTACTTCATTAGATCAATAACATTATTTGTATGATCAATTTTAAATCACAACA
ATTTTATTATTATTAGCAGTTCCAGTTTTAGCAGGAGCAATTACTATATTACTTTTCAGATCGAAATTTAAATACTT
CATTTTTGATCCTTCAGNGGNGGAGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4033.

Nearest neighbor: *M. nueve*, BOLD:AAC2766, 5.32% (p-dist).

Holotype ♀: DHJPAR0020367, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Mismo, 10.98758, -85.41967, 680 m, eclosion date 06/28/2006, caterpillar collection date (CNC). GenBank accession code JF793189.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield50 (Braconidae: Microgastrinae), which is a primary parasitoid of *Paragonia cruraria*DHJ02 (Geometridae) feeding on *Hiraea reclinata* (Malpighiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

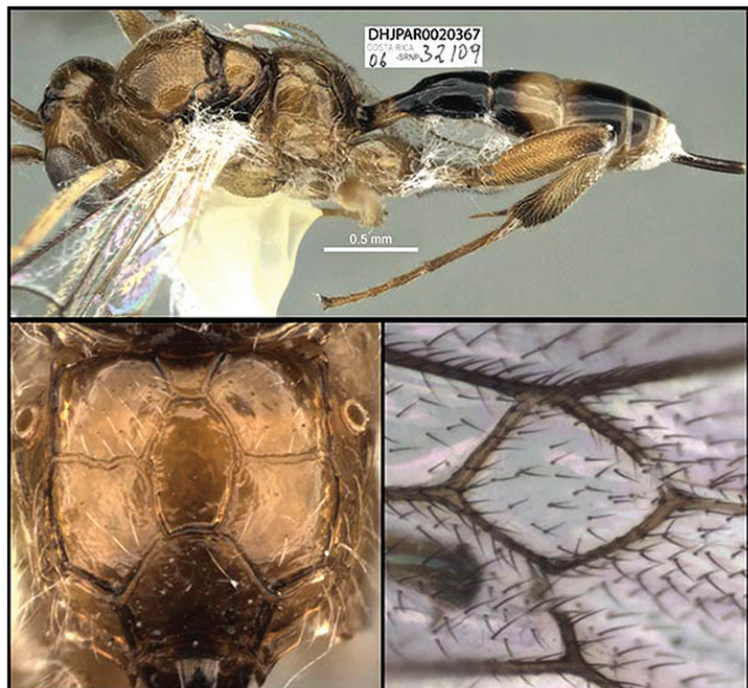


Fig. 88. *M. sietecero*, holotype female.

Mesochorus sieteuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:EA621DF7-4A9C-4FDE-AFE2-F05C199CB3B7

Diagnostics: Fig. 89.

Consensus barcode (4 specimens).

```
AATTTTATATTTATTTTTGGAAATAGAGCAGGAATAATTGGTTCTTCAATAAGAATAATTATTCGATTAGA  
ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTGTAACATCACATGCTTTTATTA  
TAATTTTTTTTATAGTTATACCAATTATAATTGGTGGATTTGGAAATTGAATAATTCCTTTAATAATTGGTGCAC  
CAGATATAGCTTTTCCCGAATAAATAATATAAGATTTTGATTATTACCACCTTCAATTATATTATTATTAAAGT  
GGAATTTGTCAAAAAGGAGTTGGAAGTGGTGAACAGTTATCCTCTTTATCATAAATAAGTCATGAAG  
GATTATCTGTTGATTTATCAATTTTTTCATTACATTTARCTGGAATATCTTCAATTATAGGAGCTATTAATTTATTA  
CAACAATTTTAAATATACGTATTTTAAAACATCATTTGATCAAATATCTTTATTCGTTTGATCAATTTTAAATACAA  
CAATTTTATTATTATTAGCAGTACCCGTTTTAGCTGGTGCAATTACTATATTACTCTCTGATCGAAATTTAAATACTT  
CATTTTTGACCCATCAGGAGGTGGAGATCCTATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4034.

Nearest neighbor: *M. seiscero*, BOLD:AAT9024, 6.25% (p-dist).

Holotype ♀: DHJPAR0021753, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Pasmompa, 11.01926, -85.40997, 440 m, eclosion date 03/04/2005, caterpillar collection date 02/05/2005 (CNC). GenBank accession code JF793192.

Holotype host data: Hyperparasitoid of *Apanteles freddyquesadai* (Braconidae: Microgastrinae), which is a primary parasitoid of *Gorgythion begga pyralina* (Hesperiidae) feeding on *Banisteriopsis muricata* (Malpighiaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.



Fig. 89. *M. sieteuno*, holotype female.



Mesochorus sietedos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9131CD0D-706B-4FD0-8758-E3FF8AC8F78B

Diagnosics: Fig. 90.

Consensus barcode (4 specimens).

AATTTTATATTTTATTTTTGGAAATGAGCAGGAATAATTGGAGCTTCTATAAGTATAATTATTCGAATAGA
ATTAGGAAATCCAGGATTTTAATTAACAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTATTA
TRATTTTTTTTATAGTTATACCTATTATAATTGGAGGATTTGGAAATTGAATAATCCCATTAATAATTGGAGCTC
CAGATATAGCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTTTATTATTATTAAGA
GGTATTTGTCAAAAAGGAGTAGGAACTGGTTGAACAGTCTACCCCCATTATCATAAATAAGTCATGAAG
GATTATCAGTTGATTATCTATTTTTCTTTACACTTAGCAGGAATATCATCAATTATAGGAGCAATTAATTTATTA
CAACAATTTAAATATACGAATTTAAAAACATCTTTAGACCAAATATCTTTATTTGTTTGATCAATTTAATACAA
CAATTTTATTATTATAGCAGTTCCAGTTTGTAGCTGGTGCAATTACAATATTATTATCAGATCGAAATTTAAATACTT
CATTTTTGATCCATCAGGAGGAGTGATCTATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:AAX4035.

Nearest neighbor: *M. ochocinco*,
BOLD:AAX4065, 5.61% (p-dist).

Holotype ♀: DHJPAR0061695,
Área de Conservación Guanacaste,
Guanacaste, Sector Pitilla,
Pasmompa, 11.01926, -85.40997,
440 m, eclosion date 04/14/2017
caterpillar collection date
04/03/2017 (CNC). GenBank
accession code OM237685.

Holotype host data:

Hyperparasitoid of *Glyptapanteles ilarisaaksjarvi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Condica funerea* (Noctuidae) feeding on *Neurolaena lobata* (Asteraceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Glyptapanteles* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

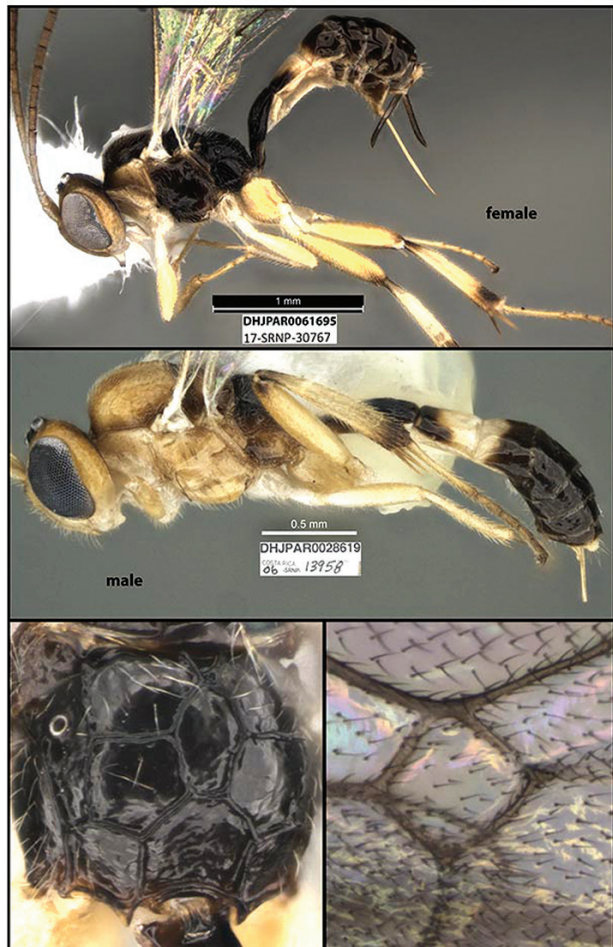


Fig. 90. *M. sietedos*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus sietetres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:07B675B2-E3D1-4AC1-BB55-8709F80A08FA

Diagnostics: Fig. 91.

Holotype barcode.

```
ATTTTATTTTTATTTTTGGTATATGAGCTGGAATAATTGGATCATCAATAAGAATAATTATTCGTATAGAATTAGGA  
AACCCGATTTTTAATAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA  
TAGTTATACCAATTATAATTGGTGGATTGGTAATTGAATAGTACCATTAATAATTGGTGCTCCAGATATAG  
CATTTCCTCGAATAAATAACATAAGATTTTGATTATTACCTCCTTCAATTATATATTATTAATAAGTGAATTTGT  
CAAAAAGGTGTTGGAAGTGGATGAACAGTTTATCCTCATTATCATTAAATATTAGACATGAAGGTTTATCTGTT  
GATTTATCAATTTTTCCCTACATTTAGCAGGTATATCTCAATTATAGGAGCAATTAATTTATTACAATTTTTAA  
ATATACGAATTTAAATCATCACTTGATCAAATATCATTATTTGTTTGATCAATTTAATTACTACTATTTTAC  
TACTATTAGCAGTACCAGTTTAGCTGGTCTATTACTATATTATTATCGGATCGTAATTTAAATACCTCATTTTTT  
GATCCTCAGGCGGAGG
```

BOLD data: BIN: BOLD:AAX4037.

Holotype ♂: DHJPAR0021749, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Rotulo, 11.01355, -85.42406, 510 m, eclosion date 01/05/2017, caterpillar collection date 03/04/2006 (CNC). GenBank accession code JF793193.

Holotype host data: Hyperparasitoid of mgJanzen01 Janzen1194 (Braconidae: Microgastrinae), which is a primary parasitoid of *Idaea* Janzen11 (Geometridae) feeding on *Mimosa watsonii* (Fabaceae). One *Mesochorus* specimen enclosed.

Other host data: None.

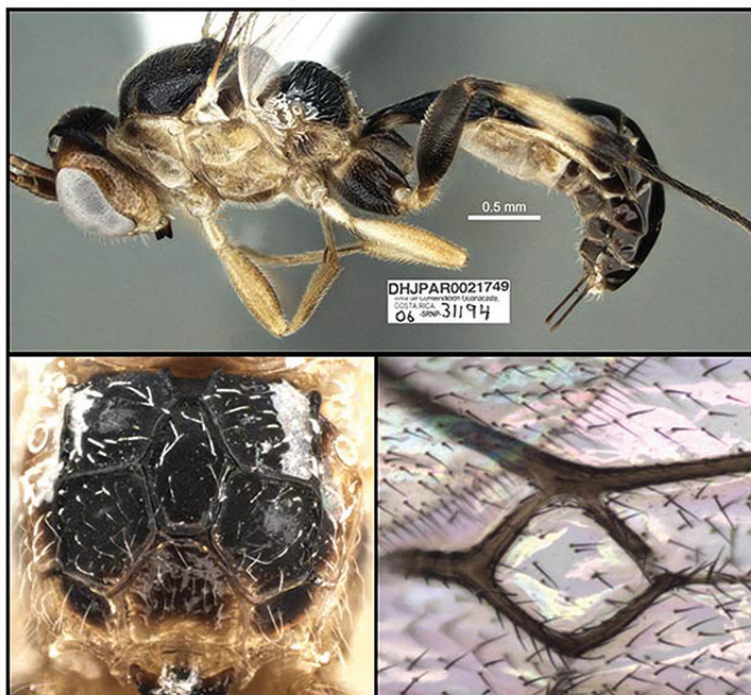


Fig. 91. *M. sietetres*, holotype male.

Mesochorus sietecuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:68B030E7-256B-4245-AB82-72874FB8FA00

Diagnostics: Fig. 92.

Consensus barcode (2 specimens).

AATTTTATATTTTATTTTGGAAATGATCAGGTATAATTGGATCATCAATAAGATTAATTATTCGTATAGAATTAGGA
 AATCCAGGATTTTAAATTAATAATGATCAAAATTTATAATCTTTTGTACAGCTCATGCTTTTGTATAATTTTTTTA
 TAGTAATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTACCATTAATAATTGGAGCCCCAGATATAG
 CATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATTAAAGAAGAATTTGT
 CAAAAAGGTGTTGGAACAGGATGAACGTTTATCCTCTTTATCTTTAAATAGAAGTCATGAAGGATTTG
 CAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGAATATCATCTATTATAGGTGCAGTAAATTTATTACAAC
 TATTTTTAATATACGAGTTATAGGTTCTTCATTAGATCAAATATCTTTATTTGTTTGATCAATAAAATTACAACA
 ATTTTATTATTATTAGCTGTTCTGTATTAGCAGGTGCTATTACTATATTATTAAGTATGATCGAAATTTAAATACA
 ACTTTTTTGTATCCTCAGGAGGTGGTGATCCAATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:AAX4038.

Holotype ♀: DHJPAR0061552, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Manguera, 10.99590, -85.39842, 470 m, eclosion date 07/06/2017, caterpillar collection date 06/17/2017 (CNC). GenBank accession code OM237758.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi08 (Braconidae: Microgastrinae), which is a primary parasitoid of *Antapistis* Poole10 (Erebidae) feeding on *Anthurium ochranthum* (Araceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Diolcogaster* (Braconidae: Microgastrinae).

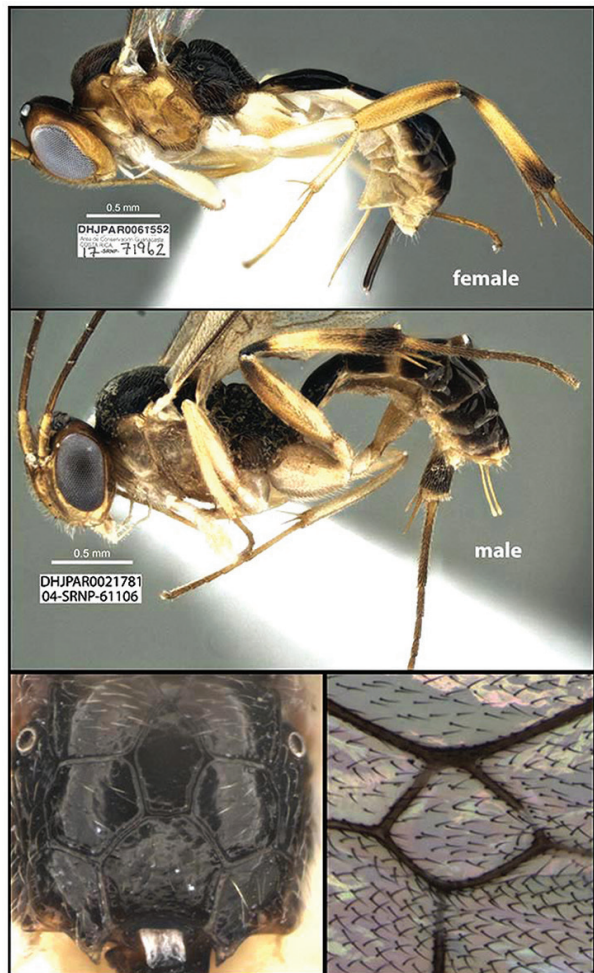


Fig. 92. *M. sietecuatro*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus sietecinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:3BD691D0-6F87-4A82-AE6B-380AEB43E362

Diagnostics: Fig. 93.

Consensus barcode (3 specimens).

AATTTTATACTTTATTTTTGGTATTGAGCAGGAATAATTGGATCAGCAATAAGCTTAGTTATTCGAATAGA
 ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTTACAGCTCATGCATTTGTTA
 TAATTTTTTTATAGTTATACCGGTAATAATTGGAGGATTGGAAATTGATTAATCCACTAATAATTGGGGCCCT
 GATATAGCATTCCCTCGAATAAATAATATAAGATTTGACTATTACCTCCCTCATTATATTATTAATATTAAGAA
 GAATTATAATAAAGGAGTAGGAACAGGATGAACGTGTTATCCCCATTATCATTAAATTCAGGCATGAAGGTA
 TATCTGTAGATTTATCAATTTCTCTTTACATTTAGCTGGAATATCTCAATTATAGGAGCTGAAATTTATTAC
 TACAATTTTTAATATACATTTATATGGAATGTCATTAGATCAATTATCCTTATTTACATGATCAATTATAACTA
 CAATTTTATTATTATTAGCAGTTCCAGTTTTAGCTGGAGCAATTACAATATTATTAAGTATGATCGAAATCTAAA
 TACTTCTTTTTTGGACCATCAGGAGGGGGAGACCCAATCTTTACCAACATTTATT

BOLD data: BIN: BOLD:AAX4039.

Nearest neighbor: *M. unocuatro*,

BOLD:AAC8600, 6.89% (p-dist).

Holotype ♀: DHJPAR0045508.

Área de Conservación Guanacaste,
 Guanacaste, Sector Pitilla, Sendero
 Carica, 10.99284, -85.42936, 660 m,
 eclosion date 06/30/2011, caterpillar
 collection date 06/03/2011 (CNC).

GenBank accession code OM237759.

Holotype host data: Hyperparasitoid

of *Glyptapanteles sydneycameronae*

(Braconidae: Microgastrinae),

which is a primary parasitoid of

Pachygonidia drucei (Sphingidae)

feeding on *Doliocarpus multiflorus*

(Dilleniaceae). Multiple *Mesochorus*

specimens enclosed.

Other host data: *Glyptapanteles*

sydneycameronae (Braconidae:

Microgastrinae). Multiple *Mesochorus*

specimens enclosed.

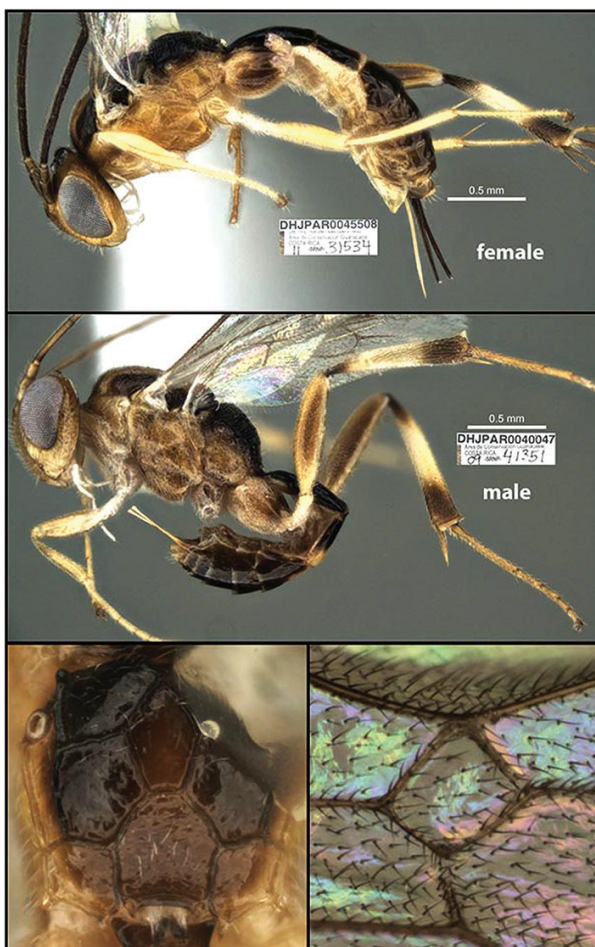


Fig. 93. *M. sietecinco*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus sieteseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8D7C7905-7AE4-417F-B9DD-E8113403A738

Diagnostics: Fig. 94.

Holotype barcode.

```
ATTTTATACTTTATTTTTGGTATGTGAGCAGGAATAATTGGTTCTTCAATAAGAATAATTATTCGTATAGA
ATTAGGTAACCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTGTAACTTCACATGCTTTTATTA
TAATTTTTTTTATAGTTATAACCAATTATAATTGGAGGATTTGGAAATGAATAATTCCTTTAATAATTGGAGCTCCAGA
TATAGCATTTCCTCGAATAAATAACATAAGATTTTGACTATTACCCCTTCAATTATATTACTTTTATTAAGAAGAATTT
GTCAAAGGGAGTAGGAACAGGATGAACTGTTTATCCCTTTATCCCTTAATGTAAGTCATGAAGGATTATCAGTA
GATTTATCAATTTTTTTCATTACATTTAGCAGGGATATCTTCAATTATAGGGGCCGTAATTTTATTACAACATTTATTA
TATACGTATTAATAAACATCATTGATCAAATATCTTTATTTGTTGATCAATTTTAAATACAACAATTTTATTAC
TATTAGCTGTACCTGTACTAGCAGGAGCAATTACTATATTATTATCTGATCGTAATTTAAATACATCATTTTTTGATC
CATCTGGAGGAGGGGACCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4045.

Nearest neighbor: *M. cinco*, BOLD:AAB3993, 2.89% (p-dist). The dimensions of the central propodeal areolae and the medioposterior areolae are different (see Fig. 12, associated with *M. cinco*).

Holotype ♂: DHJPAR0020560, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Cabanya, 10.87703, -85.23077, 340 m, eclosion date 06/17/2007, caterpillar collection date 05/26/2007 (CNC). GenBank accession code JF793174.

Holotype host data:

Hyperparasitoid of *Eiphosoma* Janzen14 (Ichneumonidae), which is a primary parasitoid of *Pilocrocis purpurascens* (Crambidae) feeding on *Pentagonia donnellsmithii* (Rubiaceae). A single *Mesochorus* specimen eclosed.

Other host data:

None.

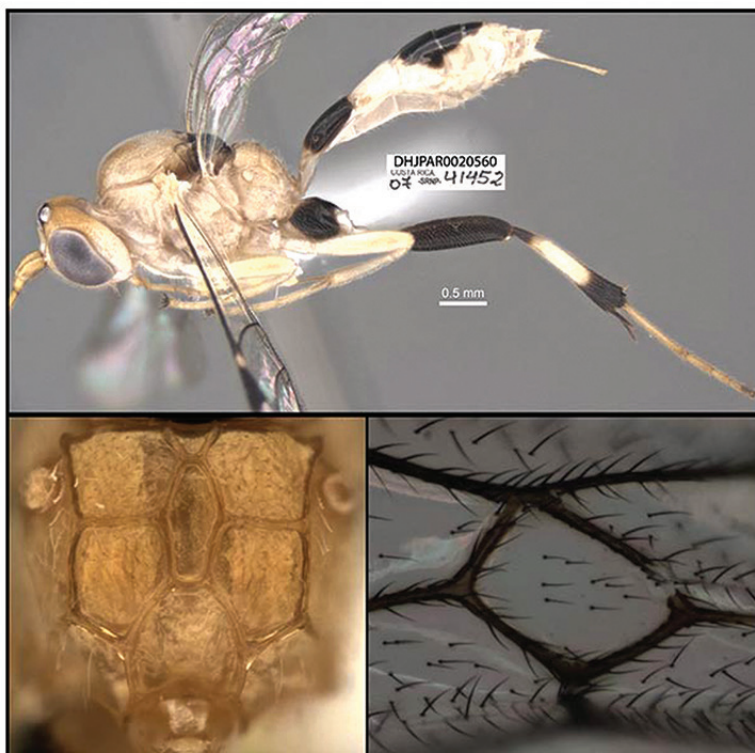


Fig. 94. *M. sieteseis*, holotype male.

Mesochorus sietesiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:6E924A90-33E9-4F2F-B9B9-B2ED158AD93A

Diagnostics: Fig. 95.

Consensus barcode (3 specimens).

```
TATTTATATTTTATTTTGGRATTTGAGCTGGGATAATTGGATCTTCAATAAGATTAATTATCCGAATAGA
ATTAGGGAATCCTGGATTTTAAATTAACAATGACCAAATTTATAATTCAATTGTAAGTACTGCTCATGCTTTTATTA
TAATTTTTTTTATAGTTTACCTATTATAATCGGAGGATTTGGAAATTGATTAATTCCTTTAATAATTGGAGCACCT
GATATAGCATTCCCCGAATAAATAATATAAGATTTTGATTACTACCTCTTCATTATCATTATTATTATTGAGAAGA
ATTATTAATAAAGGAGTAGGAACAGGATGAACAGTATACCCYCCTTTATCCTTAAATGTAAGACATGAAGGGA
TATCTGTAGATTTATCAATTTTTCTACTACATTTAGCAGGAATATCTTCTATTATAGGTGCGGTAATTTTATTAC
TACAATTTTAAATATACATTTATTAGGTATAACAATAGATCAGTTATCATTATTTACTTGATCAATAAAATTACA
ACAATTTTATTATTATTAGCAGTCCCTGTATTAGCAGGAGCAATTACTATATTATTAACGTATCGTAATTTAAA
TACATCTTTTTTGGATCCTTCAGGAGGAGGGGATCCAATTTTATACCAACACTTATTC
```

BOLD data: BIN: BOLD:AAX4046.

Nearest neighbor: *M. dosocho*, BOLD:AAF0566, 9.13% (p-dist).

Holotype ♀: DHJPAR0021742, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Danta, 10.86059, -85.37914, 890 m, eclosion date 0/25/2005, caterpillar collection date 10/08/2005 (CNC). GenBank accession code JF793164.

Holotype host data: Hyperparasitoid of *Glyptapanteles jamesrobertsoni* (Braconidae: Microgastrinae), which is a primary parasitoid of *Antapistis* Poole09 (Erebidae) feeding on *Psychotria graciliflora* (Rubiaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Microcharops* (Ichneumonidae: Campopleginae). A single *Mesochorus* specimen enclosed.

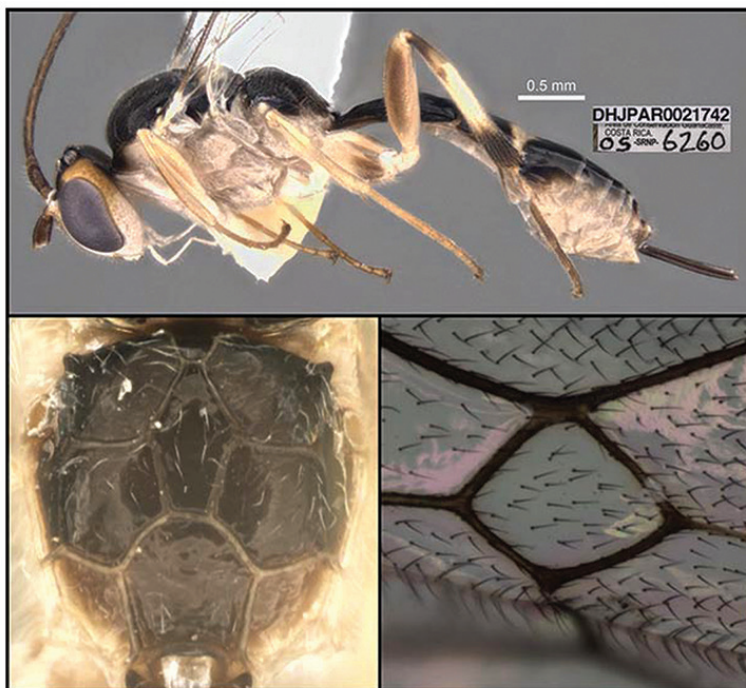


Fig. 95. *M. sietesiete*, holotype female.

Mesochorus sieteocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4AA2EFFA-D8BA-4541-B067-ABB8891BC20E

Diagnostics: Fig. 96.

Holotype barcode.

```
TATTTTATATTTTATTTTGGTATTTGAGCCGGAATAATTGGATCAGCAATAAGATTAATCATTTCGAATAGA
ATTAGGTAATCCGGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTAAGTGCACATGCATTTCATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGAAATTGATTAGTACCATTAATAATTGGTGCCCT
GATATGGCATTTCACGAATAAATAATATAAGATTTGGTTATTACCACCGTCACTTATATTATTATTGAGAAGA
ATTATTAACAAAGGTGTTGGAACAGGATGAAGTGTATATCCACCTTATCATTAAATATAAGTCATGAAGGTATATCT
GTAGATTTATCAATTTTTTTCATTACATTTAGCAGGAATATCTCAATTATAGGAGCAGTTAATTTTATTACCACAATTA
TAAATATACATTTATTAGGAATATCATTAGATCAATTATCATTATTTACTTGATCAATTTTCATTACAACAATTTTAC
TATTACTGGCAGTGCCAGTTTTAGCAGGGGCTATTACAATATTACTAACTGACCGAAATTTAAATACATCATTTTTT
GACCTTCGGGGGGTGGAGATCTATTCTATATCAACATTTATTC
```

BOLD data: BIN: BOLD:AAX4047.

Nearest neighbor: *M. dosnueve*, BOLD:AAF0585, 7.23% (p-dist).

Holotype ♀: DHJPAR0040084, Área de Conservación Guanacaste, Guanacaste, Sector Del Oro, Chon, 11.04788, -85.45266, 280m. eclosion date 01/01/2010, caterpillar collection date 11/17/2009 (CNC). GenBank accession code JQ574585.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield46 (Braconidae: Microgastrinae), which is a primary parasitoid of *Psaliodes* Janzen03 (Geometridae) feeding on *Bolbitis portoricensis* (Dryopteridaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: None.

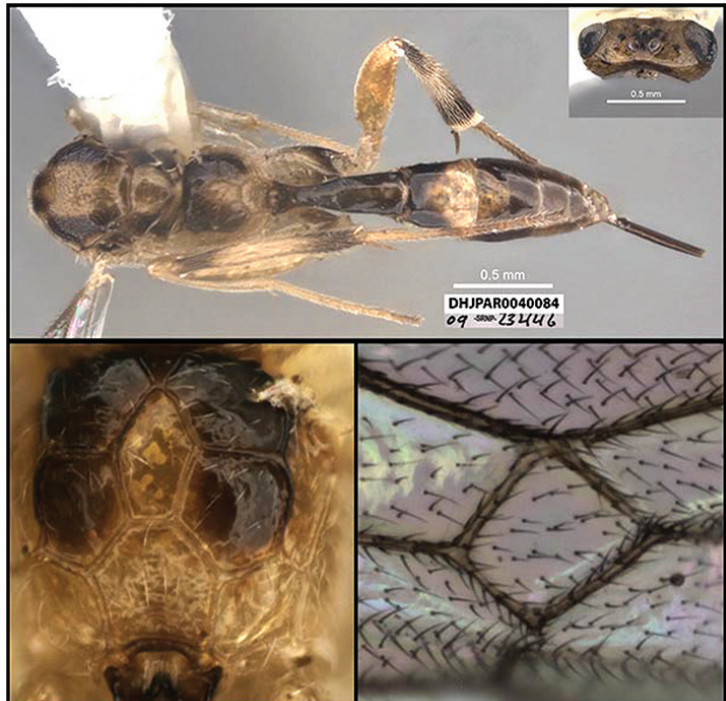


Fig. 96. *M. sieteocho*, holotype female.

Mesochorus sietenueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:763D7405-4561-4833-BF12-4C88BC021A9C

Diagnostics: Fig. 97.

Holotype barcode.

```
AATTTTATATTTTTATTTTTTGGAAATATGATCAGGGATAATTGGATCATCTTTAAGTATAATTATTCGTATAGA
ATTAGGAAATCCAGGATTTTTAATTAATAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGTTTTGGAAATTGATTAATTCCTTTAATAATTGGAGCAC
CAGATATAGCTTCCCTCGTATAAATAATATAAGATTTGACTATTACCCCTTCAATTATACTATTATTATTAAGA
GGAATTTGCCAAAAGGTGTAGGGACAGGTTGAACTGTTTATCCTCCTTTATCATTAAATTTAAGACATGAAG
GATTATCCGTAGATTTATCAATTTTTTCATTACATCTTGCTGGAATATCCTCAATTATAGGATCAATCAATTTATTA
CAACAATTTAAATATACGAATTTAAAAACATCCTTAGATCAAATATCTTTATTTGTTTGATCAATTTAATTA
CAACAATTTTATTATTATTAGCAGTCCAGTTTTAGCTGGTGCAATTACTATATTATTATCAGATCGTAATCTAAA
TACTTCTTTTTTGGATCCTTCAGGGGGAGGAGACCAATTTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:AAX4050.

Nearest neighbor: *M. cincocinco*, BOLD:AAM1703, 4.81% (p-dist).

Holotype ♀: DHJPAR0035272. Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Rio Areno, 10.91407, -85.38174, 460 m, eclosion date 06/22/2009, caterpillar collection date 05/04/2009 (CNC). GenBank accession code OM237699.

Holotype host data: Hyperparasitoid of *Pseudapanteles mariocarvajali* (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenomoma adytodes* (Depressariidae) feeding on *Pouteria reticulata* (Sapotaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

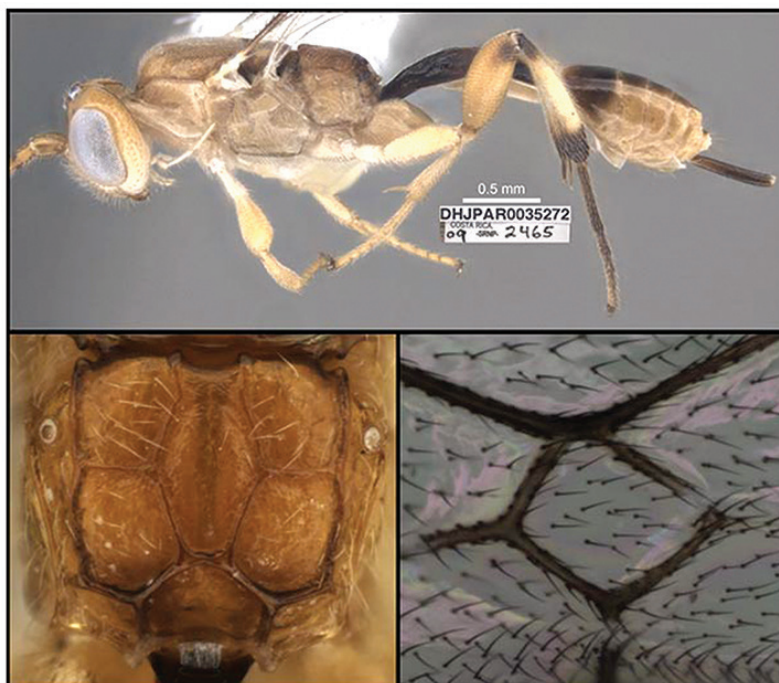


Fig. 97. *M. sietenueve*, holotype female.

Mesochorus ochocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:FAB2EAE3-4A73-44C3-A447-C76C92903FB7

Diagnostics: Fig. 98.

Consensus barcode (11 specimens).

TATTTATATTTATTTTGGGAATGAGCTGGAATAATTGGATCTTCAATAAGAATAATTATTCGAATAGA
ATTAGGAAATTCAGGATTTTAATTAATAATGATCAAATTTATAACTCTTTTGTACATCTCATGCTTTTATTA
TAATTTTTTTATAGTAATACCAATTATAATTGGTGGATTGGAAATTGAATAATACCTTTAATAATTGGAGCAC
CAGATATGGCCTTCTCGAATAAATAATATAAGATTTTGATTACTTCTCTTCAATTATATATTATTATTAAGA
GGAATTTGCCAAAAGGTGTTGGAAGTGGTTGAACAGTTTATCTCCATTATCTTTAAATATAAGACATGAAG
GATTTTCAGTTGATTATCAATTTTTCTTTACATTTAGCTGGTATATCATCAATTATAGGAGCAATTAATTTATTA
CAACTATTTTAAATATACGAATTATAAAAACATCATTAGATCAAATATCATTTTRTTTGATCAATTTAATTACTA
CAATCTTTTATTATTAGCAGTTCCAGTTTGTAGCTGGGGCTATTACTATATTACTCTCTGATCGAAATTTAAATACTT
CATTTTTGATCCATCAGGAGGAGGAGATCCAATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:AAX4054.

Nearest neighbor: *M. nueve*,

BOLD:AAC2766, 5.93% (p-dist).

Holotype ♀: DHJPAR0030574,

Área de Conservación

Guanacaste, Guanacaste, Sector

Cacao, Estación Cacao, 10.92691,

-85.46822, 1 150 m, eclosion

date 04/22/1995, caterpillar

collection date 04/18/1995

(CNC). GenBank accession code

OM237684.

Holotype host data:

Hyperparasitoid of *Microplitis*

marini (Braconidae:

Microgastrinae), which is a

primary parasitoid of *Xylophanes*

tersa (Sphingidae) feeding on

unidentified plant. Multiple

Mesochorus specimens enclosed.

Other host data: *Microplitis*

(Braconidae: Microgastrinae).

Multiple *Mesochorus* specimens

enclosed.

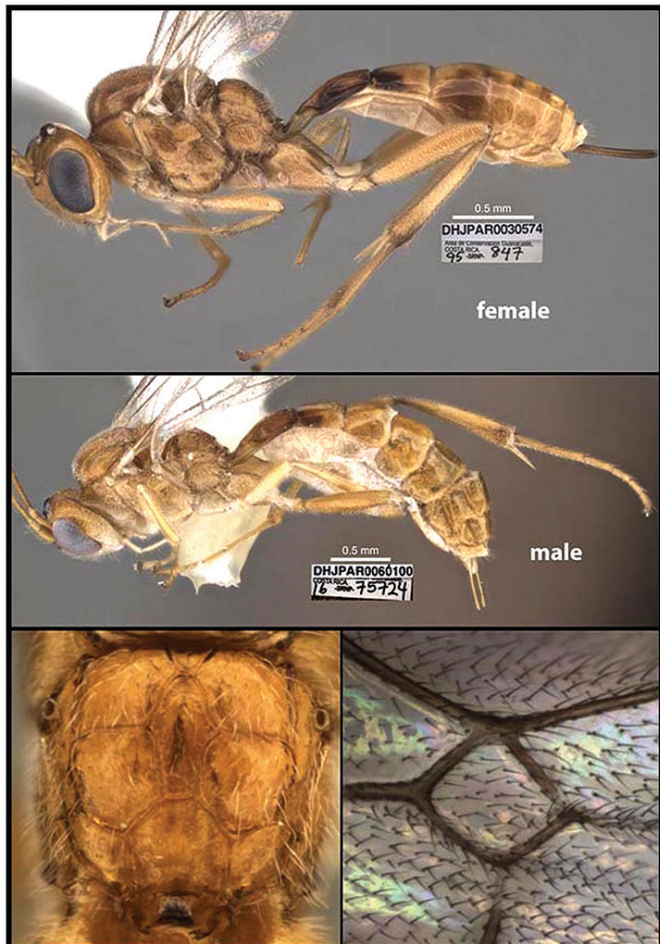


Fig. 98. *M. ochocero*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus ochouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:061BE041-BBBB-4C74-8E83-84893BA25A2C

Diagnostics: Fig. 99.

Consensus barcode (3 specimens).

```
GTTTTATATTTTGTATTTGGTATTTGATCAGGTATAGTAGTTTATCTATAAGATTGATTATTCGGTTGGA
ATTAGTAATCCAGGGTATTTAATTAATAATGATCAGATTTATAATTCATTTGTTACTGCCTATGCTTTTGTTA
TAATTTTTTTTATAGTAATACCAGTTTAAATGGGGGCTTTGGAAATTGACTTGTACCATTAATGATTGGTGACCT
GATATAGCATTCCCTCGAATAAATAATATAAGATTTTGGTTATTACCCCTTCATTAATATTATTAATAAATAAGA
GGTTTAGTKTATAARGGGGTAGGTACGGGTTGAACAGTATATCCCCATTATCACCTAATGTTGGTCATGAAGGTA
TATCAGTAGATTTATCAATTTTTCTTTACATTTGGCAGGTATATCATCTATTATAGGGGCTATTAATTTTATTACA
ACAATTTTAAATATACGATTTAATGGTGTGTCTATAGATCAGGTTTCTTTATTTGTTTGATCKTTATTAATTAAGT
CAGTTTATAGTATTATTAGCAGTACCAGTGTAGCGGGTGAATTACCATATTATTATCAGATCGTAATTTGAATACTT
CATTTTTGATCCTTCAGGGGGTGGTGATCCAGTTTTGTATCAACATTTATT
```

BOLD data: BIN: BOLD:AAX4057.

Nearest neighbor: *M. seiscuatro*, BOLD:AAX4004, 15.55% (p-dist).

Holotype ♀: DHJPAR0012211, Área de Conservación Guanacaste, Guanacaste, Sector Murcielago, Camino Bahía Hachal, 10.93338, -85.72912, 5 m, eclosion date 07/11/2006, caterpillar collection date 06/10/2006 (CNC). GenBank accession code OM237690.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi85 (Braconidae: Microgastrinae), which is a primary parasitoid of *Diastema morata* (Noctuidae) feeding on *Lippia cardiostegia* (Verbenaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Snellenius*, *Diolcogaster* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

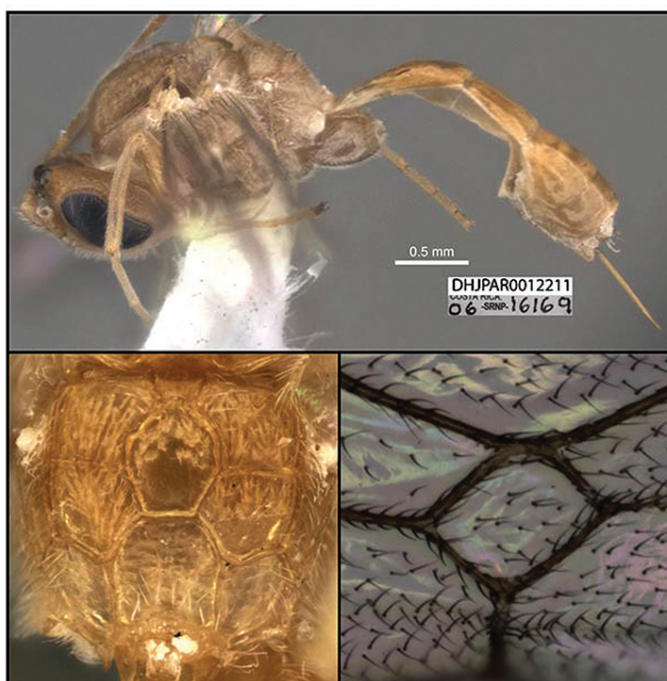


Fig. 99. *M. ochouno*, holotype female.



Mesochorus ochodos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4BADE09E-C7CA-4E98-A01D-8E5E350AA199

Diagnostics: Fig. 100.

Holotype barcode.

```
ATTTTATATTTTATTTTGGGAATATGATCAGGAATAATTGGATCATCTATAAGAATAATCATTGGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCCCATGCTTTTATTATAATTTTTTTTAT
GGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATCCATTAATAATTGGAGCTCCTGACATA
GCTTTTCTCGAATAAATAATATAAGATTTTGATTACTTCTCTCAATTATATTATTATTAAAGTAGAATTT
GTCAAAAAGGAGTTGGAAGCTGGATGAACAATTTACCCTCTTTATCATTAAATATTAGTCATGAAGGACTTT
CAGTAGATTTATCAATTTTTCTTTACATTTAGCTGGAATATCCTCAATCATAGGAGCAATTAACCTTTATTACA
ACAATTTTAAATATACGAATTTTAAAAACATCATTAGACCAAATATCTTTATTGTTTGATCTATTTTAAATTAC
TACAATTTTATTATTATTAGCAGTACCAGTTTAGCTGGGGCTATTACCATATTATTATCAGATCGTAATTTAAA
TACATCTTTTTTGGACCCATCAGGAGGAGGTGATCCAATTTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAX4062.

Nearest neighbor: *M. unoseis*, BOLD:AAD0123, 6.59% (p-dist).

Holotype ♂: DHJPAR0020562, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Casa Roberto, 520 m, 11.01095, -85.42094, eclosion date 08/14/2007, caterpillar collection date 08/03/2007 (CNC). GenBank accession code JQ847910.

Holotype host data: Hyperparasitoid of *Dolichogenidea* Janzen40 (Braconidae: Microgastrinae), which is a primary parasitoid of *Cicinnus camarinus* (Mimallonidae) feeding on *Vochysia ferruginea* (Vochysiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

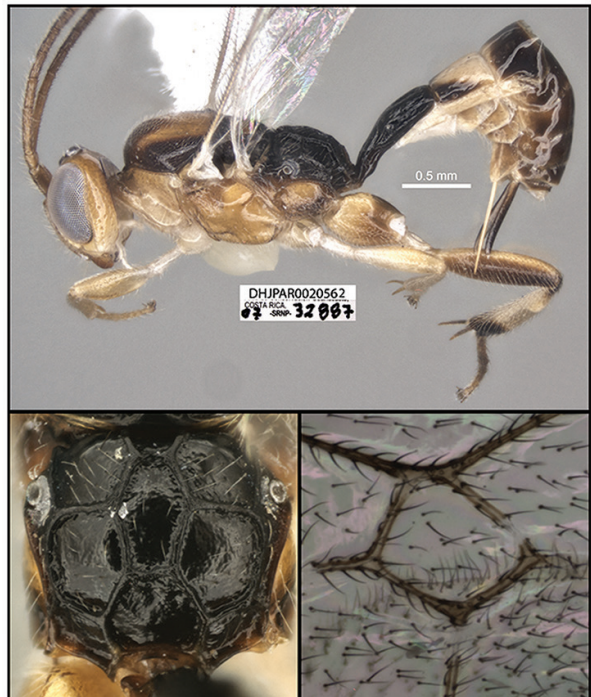


Fig. 100. *M. ochodos*, holotype female.

Mesochorus ochotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:122BE60C-DD2B-43A0-9575-1E6610656FE9

Diagnostics: Fig. 101.

Holotype barcode.

```
GTATTATACCTTTATTTTGGAAATATGAGCAGGAATAATTGGATCTTCTATAAGTATAATTATTCGTATAGAATTA  
GGAAACCCTGGATTTTAAATTAATAATGATCAAATTTATAACTCTTTTGTACATCTCACGCTTTTATTA  
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTCGGAAATTGATTAATCCATTAATAATTGGAGCTCT  
GATATGGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCCCTTCAATTATATATTATTATTAAGAA  
GAATTTGTCAAAAAGGTGTGGGGACAGGTTGAACAGTTTATCCCCCTTATCACTAAATATTAGTCATGAAG  
GATTATCAGTTGATTATCAATTTTTCTTACATTTAGCTGGTATATCATCAATTATAGGAGCTATTAATTTATTA  
CAACAATTTAAATATACGAATTTAAAAACATCTTTAGATCAAATATCTTTATTTGTTTGGTCAATTTAATTA  
CAACAATTTATTATTATTAGCTGTTCCAGTTTGTAGCTGGTGCCATTACAATATTATTATCAGATCGAAATTTAA  
CACTCTTTTTTTGACCCATCAGGAGGAGGAGACCTATTTTATATCAACATTTATTT
```

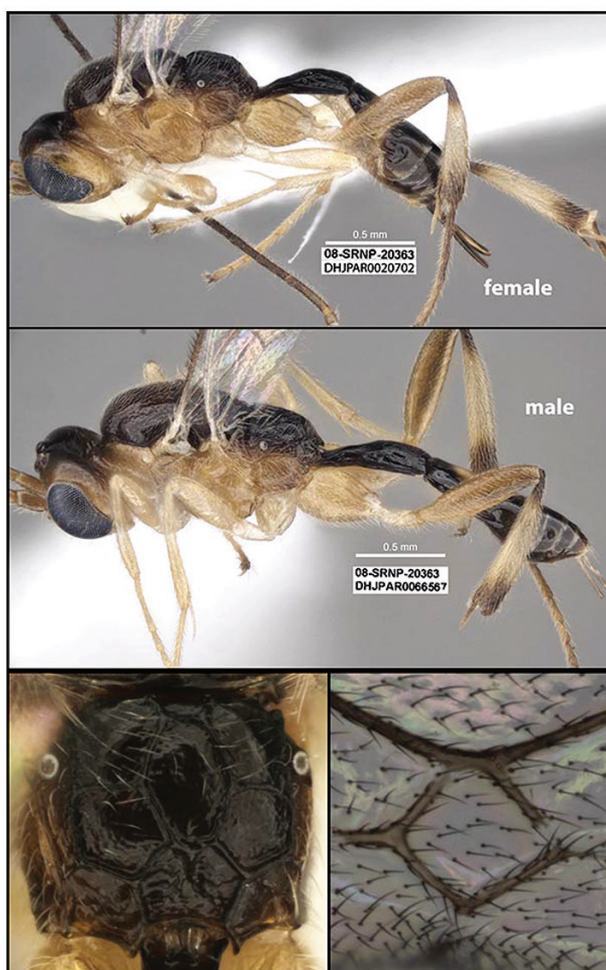
BOLD data: BIN: BOLD:AAX4063.**Nearest neighbor:** *M. unodosiete*,
BOLD:ACW7619, 6.43% (p-dist).**Holotype** ♀: DHJPAR0020702,
Área de Conservación Guanacaste,
Guanacaste, Sector Del Oro,
Quebrada Lajosa, 11.03306,
-85.42876, 400 m, eclosion date
02/09/2008, caterpillar collection
date 01/17/2008 (CNC). GenBank
accession code JF793211.**Holotype host data:** Hyperparasitoid
of *Hypomicrogaster* OVRGDHJ12
(Braconidae: Microgastrinae), which
is a primary parasitoid of *Omiodes*
humeralis (Crambidae) feeding on
Inga oerstediana (Fabaceae). Multiple
Mesochorus specimens eclosed.**Other host data:** None.

Fig. 101. *M. ochotres*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066567) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 08-SRNP-20363, that can be recovered from the Janzen/Hallwachs website.

Mesochorus ochocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8B356692-0088-46C7-B225-C2A247819578

Diagnostics: Fig. 102.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGGAATATGATCAGGAATAATTGGTTTCCTCAATAAGAATAATTATTCGCATAGA
ATTAGGAAATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCTTTTGTAACATCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTGGTAATTGAATAATTCCATTAATAATTGGAGCTC
CAGATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCCCTTCAATTATATTATTATTAAGTA
GAATTTGTCAAAAAGGTATAGGAACTGGATGAACAGTATACCCCCTTTATCCTTAAATATTAGTCATGAAG
GACTTTAGTAGATTTATCAATTTTTTCATTACACTTAGCTGGAATATCATCAATTATAGGGGCAATTAATTCATTA
CAACAATTTTAAATATACGAGTTTTTAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCAATTTAATTA
CAACAATTTTATTATTATTAGCAGTACCAGTTTTAGCTGGTGCTATTACTATATTATTATCTGATCGTAATTTAAA
TACATCTTTTTTTGATCCATCAGGAGGAGGAGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:AAX4064.

Nearest neighbor: *M. unoseis*, 16 BOLD:AAD0123, 4.49% (p-dist).

Holotype ♀: DHJPAR0020416, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Rio Blanco Abajo, 10.90037, -85.37254, 500 m, eclosion date 04/21/2002, caterpillar collection date 04/04/2002 (CNC). GenBank accession code JF793207.

Holotype host data: Hyperparasitoid of *Apanteles carloscastilloi* DHJ01 (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenomoma completella* (Depressariidae) feeding on *Clarisia mexicana* (Moraceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae).
Unknown number of *Mesochorus* specimens enclosed.

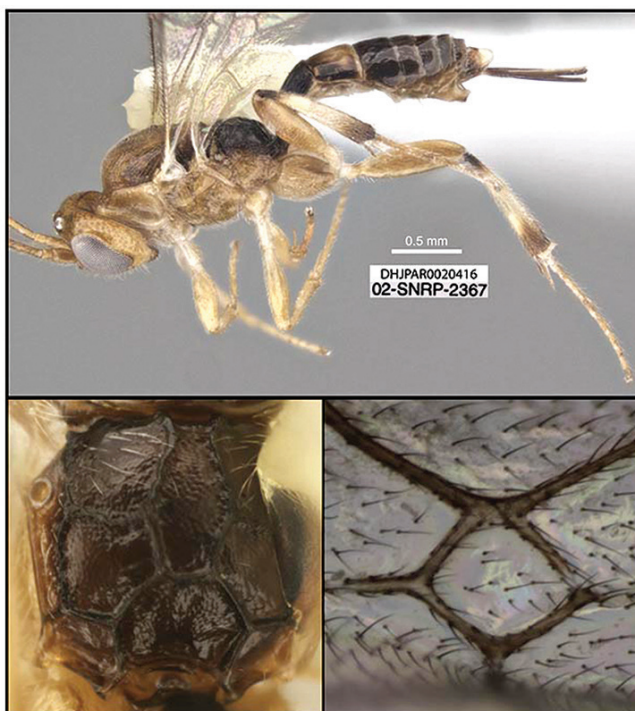


Fig. 102. *M. ochocuatro*, holotype female.

Mesochorus ochocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9DF2DE19-4EEF-41D1-AAFB-7BC52F30342B

Diagnostics: Fig. 103.

Holotype barcode.

```
AATTTTATATTTTATTTTGGTATATGAGCAGGAATAATTGGTGCTTCAATAAGTATAATTATCCGAATAGAATTAGGA
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGTTTTGGAAATGAATAATCCATTAATAATTGGATCACCAGATATAGCTTTTC
CACGAATAAATAATAAGATTTTGATTATTACCACCATCAATTTTATTATTATTATAAGAAATTTTGTCAAAAA
GGTGTAGGTACTGGTTGAACAATTTACCCCTTTATCATTAAATGTTAGTCATGAAGGATTATCAGTTGATTATC
TATTTTTCTTTACATTTAGCTGGAATATCCTCAATTATAGGAGCAATTAATTTATTACAACAATTTAAATATAC
GAATTTCAAAAACATCATTAGATCAAATATCTTTATTTGTTTGATCAATTTAATTACAACAATTTATTATTATTAG
CAGTACCAGTTTTAGCTGGTGCTATTACTATATTATTATCAGATCGAAATTTAAATACTTCATTTTTTGATCCATCAG
GAGGAGGTGATCCAATTTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAX4065.

Nearest neighbor: *M. unodossiete*,
BOLD:ACW7619, 4.97% (p-dist).

Holotype ♀: DHJPAR0051465,
Área de Conservación Guanacaste,
Guanacaste, Sector Pitilla, Bullas,
10.98670, -85.38503, 440 m, eclosion
date 12/23/2012, caterpillar collection
date 12/01/2012 (CNC). GenBank
accession code OM237739.

Holotype host data: Hyperparasitoid
of *Glyptapanteles* Janzen23
(Braconidae: Microgasterinae),
which is a primary parasitoid of
Antiblemma phoenicopyra (Erebidae)
feeding on *Graffenrieda galeottii*
(Melastomataceae). Multiple
Mesochorus specimens eclosed.

Other host data: *Glyptapanteles*
(Braconidae: Microgasterinae).
Multiple *Mesochorus* specimens
eclosed.

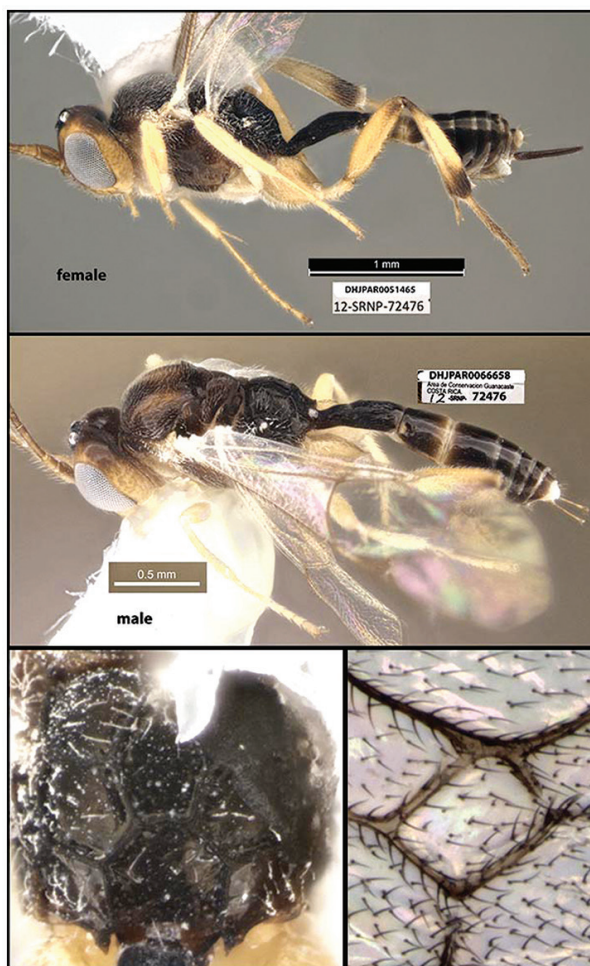


Fig. 103. *M. ochocinco*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066658) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 12-SRNP-72476, that can be recovered from the Janzen/Hallwachs website.

Mesochorus ochoseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:61DE14F7-B37B-473E-9762-9B16AB608DBB

Diagnostics: Fig. 104.

Consensus barcode (2 specimens).

```
AGTTTTATATTTATTTTCGGAATATGATCTGGAATAATTGGAGCATCAATAAGAATTATAATTCGATTAGA
ATTAGGAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAACTCTTTTGTAACAGCTCATGCATTTATTA
TAATTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTCCCTTTAATAATTGGAGCCCT
GATATAGCTTCCCCGTATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATATTATTATTATAAGAGGA
ATCTGTCAAAAAGGTGTTGGAAGTGGATGAACTGTTTATCTCTCTTTCTTTAAATACTAGTCATGAAGGATTA
GCTGTTGATTATCAATTTTTCTTTACACTTAGCTGGTATATCTCAATTATAGGAGCAATTAATTTATTACAA
CAATTATAAATATACGAATTCATAAAACATCTTTAGATCAAATAACTTTATTTGTTTGATCAATTTAATCACAA
ATTTATTATTACTAGCAGTACCTGTTTTAGCTGGTGCTATCACTATATTACTCTCTGATCGAAATTTAAACACTT
CATCTTTGATCCTTCTGGAGGAGGAGATCCAATTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAX4066.

Holotype ♀: DHJPAR0051167, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Puente Palma, 10.91630, -85.37869, 460 m, eclosion date 12/13/2012, caterpillar collection date 11/24/2012 (CNC). GenBank accession code OM237696.

Holotype host data: Hyperparasitoid of mgJanzen01 Janzen915 (genus undetermined) (Braconidae: Microgastrinae), which is a primary parasitoid of gelJanzen01 Janzen19 (Gelechiidae) feeding on *Hiraea reclinata* (Malpighiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

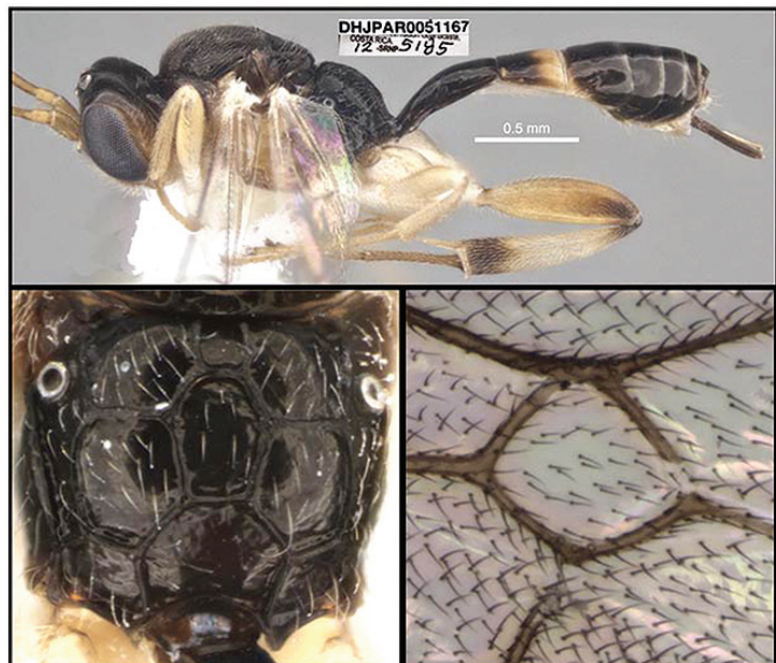


Fig. 104. *M. ochoseis*, holotype female.

Mesochorus ochosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:5D9B7EAB-AF9C-4FFB-AECF-E9E607455E76

Diagnostics: Fig. 105.

Consensus barcode (3 specimens).

```
AATTTTATACTTTATTTTTGGTATATGAGCGGGAATAATTGGATCATCYATAAGAATAATCATTTCGTATAGAATTAG
GAAACCCAGGATTTTAAATTAATAATGATCAAAATTTATAATTCTTTTGTAAACATCACATGCTTTTATTATAATTTTTTT
CATAGTTATGCCAATTATAATTGGTGGATTGGAAATTGGTTAATTCCTTTAATAATTGGAGCCCCCTGATATA
GCTTCCCTCGTATAAATAATAAGATTTTGACTATTACCCCTTCTATTATGTATTATTACTAAGAGGAATTT
GTCAAAAAGGAGTAGGAACAGGATGAACAGTTTATCCACCATTATCATTAAATATTAGTCATGAAGGTTTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCYGGAATATCTTCAATTATGGGAGCTATTAATTTTATTACA
ACAATTTTAAATATACGTATTTTAAAAACATCTTTAGATCAAATATCTTTATTTGTCTGATCAATTTTATTACA
ACAATTTTATTATTATTAGCAGTACCAGTTTTAGCAGGTGCAATCACAATATTATTATCAGATCGAAATTTAAA
TACTTCTTTTTTTGATCCATCAGGAGGAGGGGATCCAATTTTATATCAACACTTATT
```

BOLD data: BIN: BOLD:AA4694.

Nearest neighbor: *M. nuevecinco*, BOLD:ABX0067, 5.64% (p-dist).

Holotype ♂: DHJPAR0041918, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Quebrada Guarumo, 10.90445, -85.28412, 400 m, eclosion date 11/26/2010, caterpillar collection date 11/04/2010 (CNC). GenBank accession code JQ575647.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield40 (Braconidae: Microgastrinae), which is a primary parasitoid of *Undulambia* Solis02 (Crambidae) feeding on *Alsophila firma* (Cyatheaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Hypomicrogaster* Whitfield40 (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

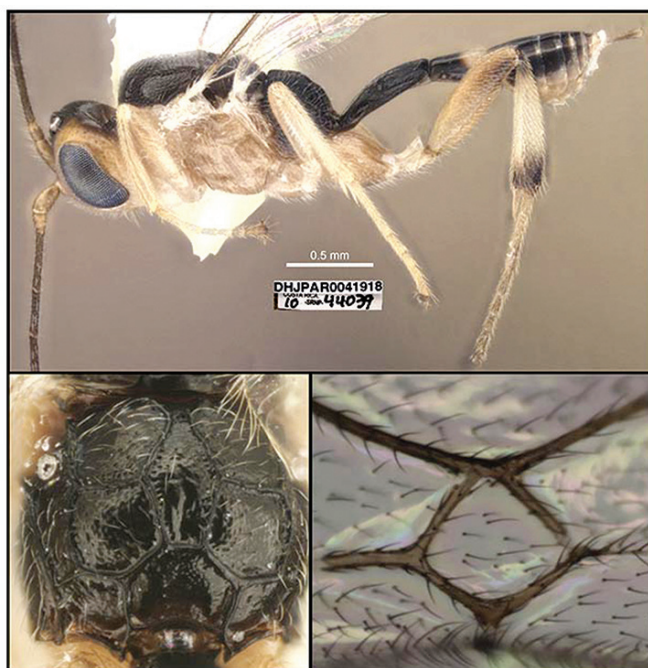


Fig. 105. *M. ochosiete*, holotype male.

Mesochorus ochocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:09062083-FCCA-44DA-9273-DB53DACD350F

Diagnostics: Fig. 106.

Consensus barcode (2 specimens).

```
AATTTTATACTTYMWTGTTGGGATATGGGAGGAATAGTTGGATCCTCAATAAGATTAATATTTCGTATAGA
ACTTGAAACCCCGGATTTCTAATTAATAATGATCAAATTTATAATTCATTTGTAAGTCCCATGCTTTTGTA
TAATTTTTTTTATAGTTATACCTATTATAATCGGAGGATTTGGTAATTGATTAATCCATTAATAATTGGTGCACCA
GATATAGCATTYCCCCGAATAAATAATATAAGATTTTGATTACTACCACCTTCTATTTTTTTATTAATTTAAGAA
GAATAATTCATAAAGGTGTTGGGACAGGRTGAACAGTTTATCCCCCTTATCATTAAATCAAGACATGAAGGTA
TATCRGTTGATTATCAATTTTTCTCTTCATTTAGCGGGTATATCTCAATTATAGGAGCTATTAATTTTATTA
CAACTATCCTAAATATACGATGTTAAGAATCATTAGATCAAATRTCATTATTTACTTGATCAATAAAAATTACA
ACAATTTTATTACTTTTAGCAGTTCCAGTTCTTGCTGGAGCAATTACTATATTATAACAGATCGAAATTTAA
TACTTCCTTTTTGATCCTTCAGGTGGGGGAGATCCTATTTTATCAACATTTATT
```

BOLD data: BIN: BOLD:AA4745.

Holotype ♀: DHJPAR0041379, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Sendero Derrumbe, 10.92918, -85.46426, 1 220 m, eclosion date 09/30/2010, caterpillar collection date 08/31/2010 (CNC). GenBank accession code JQ575220.

Holotype host data: Hyperparasitoid of *Diradops poirena*DHJ01 (Ichneumonidae: Banchinae), which is a primary parasitoid of *Trauaxa lua* (Erebidae) feeding on *Tabernaemontana robinsonii* (Apocynaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

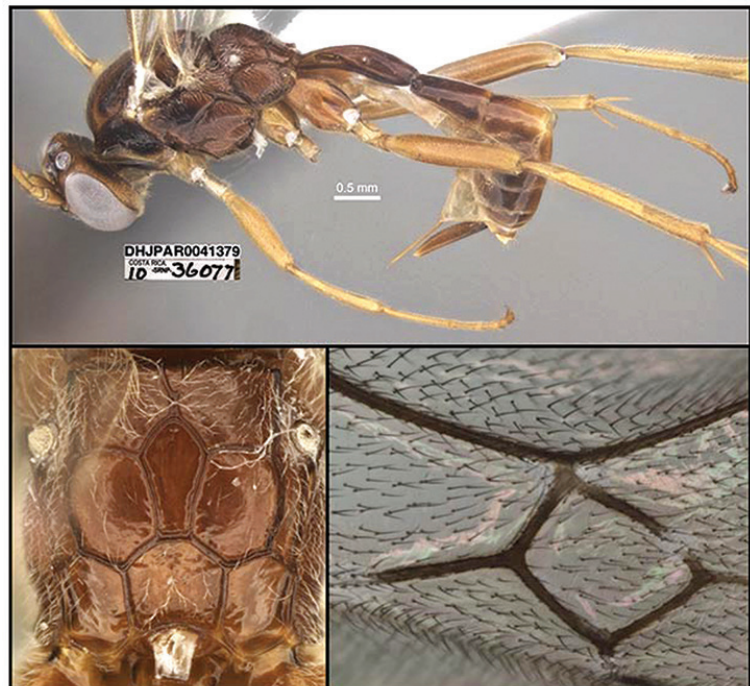


Fig. 106. *M. ochocho*, holotype female.

Mesochorus ochonueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:E170ECED-B86F-47F1-AFB0-5444C64F42AE

Diagnostics: Fig. 107.

Consensus barcode (5 specimens).

```
AATTTTATATTTTATTTTGGTATATGRTCCAGGAATAATTGGATCATCTATAAGAATAATTATTCGAATAGA  
ATTAGGTAATCCTGGATTTCTAATTAATAATGATCAAATTTATAATCTTTTGTTACAGCTCATGCTTTTATTA  
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATCTTTAATAATTGGAGCACCT  
GATATAGCTTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCTTCAATTATATATTATTATTAAGAAGA  
ATTTGTCAAAAAGGTGTAGGAACAGGATGAACAGTTTATCCCTTTATCATTAAATACTAGACATGAAGGATTAT  
CAGTTGATTTGTCAATTTTCTTTTACATTTAGCTGGTATGTCATCAATTATAGGAGCAATTAATTTATTACAAC  
TATTATTAATATACGTATTAATAAATCAACATTAGATCAAATATCATTATTTGTTTGATCAATTTAATCACAACAATC  
TATTATTATTAGCTGTACCAGTTTGTAGCTGGAGCAATTACTATATTATTATCTGATCGAAATTTAAATACTCTTTTTT  
GATCCTTCAGGTGGAGGRGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:AA4746.

Nearest neighbor: *M. unodosiete*, BOLD:ACW7619, 6.89% (p-dist).

Holotype ♀: DHJPAR0042488, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Leonel, 10.99637, -85.40195, 510 m, eclosion date 02/11/2011, caterpillar collection date 01/22/2011 (CNC). GenBank accession code OM237723.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi116 (Braconidae: Microgastrinae), which is a primary parasitoid of *Eois* Janzen04 (Geometridae) feeding on *Piper guanacostense* (Piperaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Diolcogaster* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

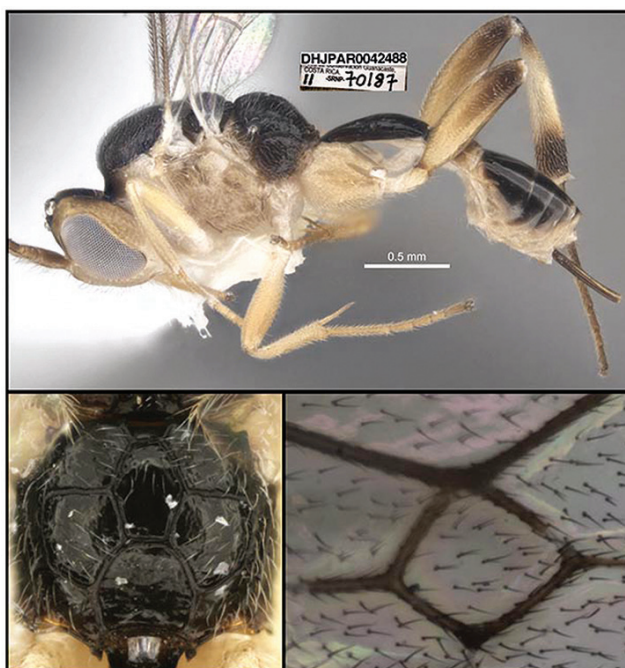


Fig. 107. *M. ochonueve*, holotype female.

Mesochorus nuevecero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9B230178-396B-45CA-98CA-EB28E7DBB7E9

Diagnostics: Fig. 108.

Consensus barcode (2 specimens).

```
RATTTTATATTTTATTTTAGGTATATGAGCTGGTATAATTGGGTCATCAATAAGAATAATTATTCGTATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCCCATGCTTTTATCATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGTAATTGAATAATTCCTTTAATAATTGGGGCACCAGATATA
GCTTTTCTCGAATAAATAATATAAGATTTTGATTACTACCTCCTTCAATTATATTATTATTATTAAGAGGAATTTGT
CAAAAAGGAGTTGGAAGTGGTGAACAGTTTATCCTCCTTTATCATTAAATGTAAGACATGAAGGTTTATCAGTT
GATTTATTAATTTTTCATTACATTTAGCAGGTATATCATCAATTATAGGAGCAATTAATTTTATTACAACAATTTTAA
ATATACGGATTTAAAAACTTCATTAGATCAAATATCTTTATTTGTTTGATCAATTTAATCACAACAATTTTATTGTT
GCTAGCTGTTCCAGTTTTAGCTGGAGCAATCACTATACTTCTTCTGATCGAAATTTAAACACTTCATTTTTTGATC
CATCAGGAGGAGGGGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:AA4749.

Nearest neighbor: *M. seissiete*, BOLD:AA4010, 4.51% (p-dist).

Holotype ♀: DHJPAR0041422, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Bosque Transición, 10.86472, -85.41531, 540 m, eclosion date 08/25/2010, caterpillar collection date 08/19/2010 (CNC). GenBank accession code JQ575251.

Holotype host data: Hyperparasitoid of *Eiphosoma maculicoxa* DHJ04 (Ichneumonidae: Cremastinae), which is a primary parasitoid of *Syllepte* Janzen03 (Crambidae) feeding on *Pavonia peruviana* (Malvaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Eiphosoma* (Ichneumonidae: Cremastinae). A single *Mesochorus* specimen eclosed.

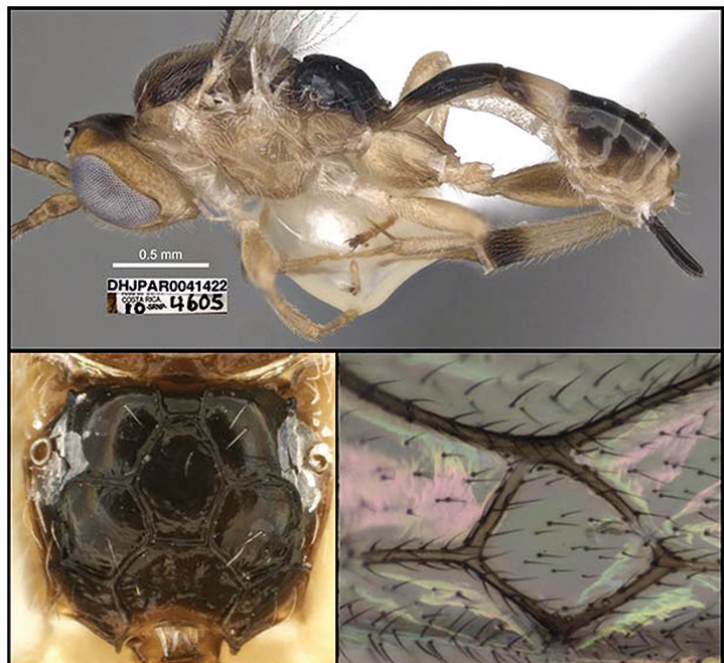


Fig. 108. *M. nuevecero*, holotype female.

Mesochorus nueveuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:DF4546E4-3697-43B8-B467-C557F89C4431

Diagnostics: Fig. 109.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGGAATCGAGCCGGAATAATCGGTTTCATCTATAAGATTAATTATTCGAATAGA
ATTAGGGAATCCCGGATTCTTAATTAATAATGACCAAATTTATAATTCAATTGTAACAGCCACGCATTTATTA
TAATTTTTTTTATAGTTATACCAATCATAATTGGAGGATTTGGAAATTGATTAGTACCATTAATAATTGGA
GCCCCGTATATAGCATTCCCTCGAATAAATAATAAGATTTTGATTATTACCCCCCTCTTTATTATTATTAT
TATTAAGAAGAATTATTAATAAGGGTGTAGGAACGGGATGAACAGTTTACCCCCCTTTATCATTAAACACTA
GGCACGAAGGCATATCAGTAGATTTATCAATTTTTTCTTACATTTAGCGGGAATATCCTCAATTATGGGAGCT
GTAAATTTTATTACAATTTTTAAATATAAAATTAATGGGACATCAATAGATCAAATATCTTTATTACGTGATCA
ATTAATTAACAACAATTTTATTACTTTTAGCAGTACCAGTGTAGCGGGAGCAATTACAATATTATTAACGTATCGA
AATTTAAATACATCTTTTTTCGATCCGTCAGGGGGAGGGGATCCAATCTTTATCAACATTTATTT
```

BOLD data: BIN: BOLD:AA4751.

Nearest neighbor: *M. nuevedos*, BOLD:AA4752, 7.85% (p-dist).

Holotype ♂: DHJPAR0041419, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Quebradona, 10.99102, -85.39539, 475 m, eclosion date 10/03/2010, caterpillar collection date 09/20/2010 (CNC). GenBank accession code JQ575249.

Holotype host data: Hyperparasitoid of *Diolcogaster* Janzen10 (Braconidae: Microgastrinae), which is a primary parasitoid of *Semaepopus* Janzen08 (Geometridae) feeding on *Virola sebifera* (Myristicaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Diolcogaster* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.



Fig. 109. *M. nueveuno*, holotype male.

Mesochorus nuevedo

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:6FE49C2E-70DD-4A84-B7D5-389677E387F0

Diagnosics: Fig. 110.

Consensus barcode (2 specimens).

```
AATTTTATATTTATTTTTGGAAATTTGAGCTGGAATAATTGGATCATCAATAAGATTAATTATTCGAATAGA
ATTAGGAAACCCCGGATTCTTAATTAATAATGATCAAATTTATAATTCAATTGTAACAGCTCATGCATTTATTA
TAATTTTTTTTATGGTTATACCAATCATAATTGGTGGATTTGGAAATTGATTAGTACCATTAATAATCGGRGCCCC
CGACATAGCTTTCCCCGAATAAATAATATAAGATTTTGATTATRCCYCCTTCTTTATTATTATTATAAAGTA
GAATTATAATAAAGGTGTTGGTACAGGATGAACAGTTTACCCTCCTTTATCATAAATACTAGTCATGAAGGA
ATATCAGTAGATTTATCAATTTTTCCTTACATTTAGCAGGAATATCCTCAATTATAGGRGCTGTTAATTTTATTA
CAACATTTTAAATATAAAATTAAYGGATCATCAATAGACCAATTATCTTTATTACATGATCAATAAAATTACA
ACAATTTTATTACTTTTAGCAGTTCCAGTATTGGCGGGGGCAATTACAATATTACTAAGTATCGAAATTTAAA
TACATCTTTTTTGGATCCRTCAGGAGGAGGTGACCCGATTCTTTACCAGCATTATTT
```

BOLD data: BIN: BOLD: AAY4752.

Nearest neighbor: *M.*

nueveuno, BOLD: AAY4751,
7.85% (p-dist).

Holotype ♀: DHJPAR0053149,
Área de Conservación
Guanacaste, Alajuela, Sector
Rincon Rain Forest, Palomo,
10.96187, -85.28045, 96 m,
eclosion date 06/17/2013,
caterpillar collection date
06/02/2013 (CNC). GenBank
accession code OM237740.

Holotype host data:

Hyperparasitoid of *Venanides*
Choi01 (Braconidae:
Microgastrinae), which is a
primary parasitoid of *Euglyphis*
asapha (Lasiocampidae)
feeding on *Virola sebifera*
(Myristicaceae). A single
Mesochorus specimen eclosed.

Other host data: *Venanides*
(Braconidae: Microgastrinae).
A single *Mesochorus* specimen
eclosed.

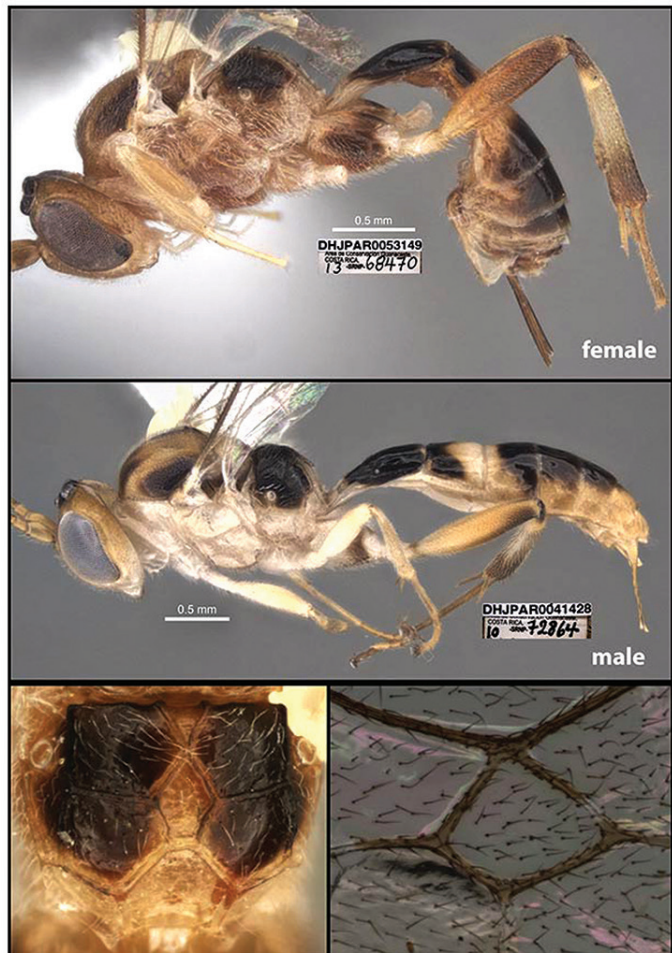


Fig. 110. *M. nuevedo*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus nuevetres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:FABD516D-B1FF-4327-97D7-7F0BFCEDCF37

Diagnostics: Fig. 111.

Holotype barcode.

```
AATTCATATTTTTTATTTTTTGGAAATGAGCAGGAATAATTGGTTCTTCTATAAGTATAATTATTCGAATAGAATTAG
GAAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTGTTACTTCACATGCTTTTATTATAATTTTTTT
CATAGTAATACCAATTATAATTGGTGATTTCGAAATGAATAATTCCATTAATAATTGGAGCTCCTGATATA
GCTTTTCTCGAATAAATAATAAGATTTTGATTATTACCCCATCAATTATATTATTATAAAGTAGAATTTGT
CAAAAAGGAGTAGGAACTGGATGAACAGTATATCCACCATTATCATAAATATTAGACATGAAGTTTATCAGTT
GATTATCAATTTTTTCATTACATTTAGCTGGAATATCTTCAATTATAGGTGCAATTAATTTTATTACAACAATTTAAA
TATACGAATTTTTAAATCATCTTTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACAACATTTTATTATTATA
GCAGTTCAGTATTAGCTGGAGCAATTACTATATTATCTGATCGAAATTTAAATACTTCATTTTTTGATCCATC
CGGTGGAGGTGATCCAATTTTATACCAACACTTATT
```

BOLD data: BIN: BOLD:ABA8538.

Nearest neighbor: *M. unotresnueve*,
BOLD:ADQ8339, 4.97% (p-dist).

Holotype ♀: DHJPAR0043267, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Laguna, 10.98880, -85.42336, 680 m, eclosion date 05/22/2011, caterpillar collection date 05/04/2011 (CNC). GenBank accession code JQ576160.

Holotype host data: Hyperparasitoid of microgastrine sp. (Braconidae), which is a primary parasitoid of *Macaria approximaria* (Geometridae) feeding on *Cojoba valerioi* (Fabaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: None.

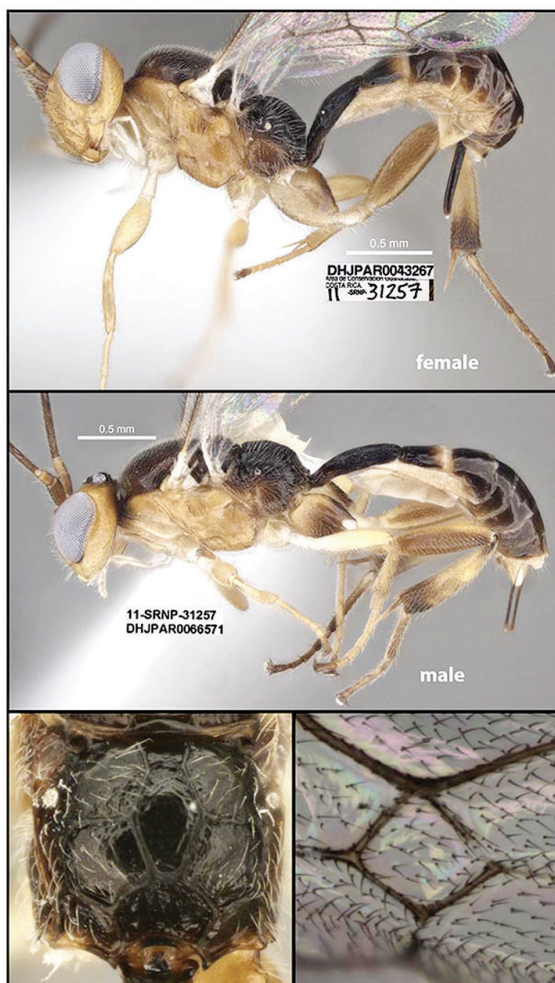


Fig. 111. *M. nuevetres*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066571) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 11-SRNP-31257, that can be recovered from the Janzen/Hallwachs website.

Mesochorus nuevecuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:B30002CE-A03A-4CFF-9CE2-FE864E39F74E

Diagnostics: Fig. 112.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGTATATGATCTGGTATAATTGGATCATCAATAAGAATAATTATTCGAATAGAATTAGGA
AACCCAGGATCATAATTAATAATGACCAAATTTACAATTCATTTGTTACTTCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGTAATTGAATAGTCCATTAATAATCGGAGCCCCAGATATA
GCCTTTCCTCGAATAAATAATATAAGATTTTGATTACTACCCCTTCAATTATATTATTATTATTAAGAGGAATTTGT
CAAAAAGGTGTTGGAACCTGGTTGAACAGTATATCCCCATTATCATAAATATTAGACATGAAGGATTATCTGTT
GATTTAGCAATTTTTTATTACATTTAGCTGGTATATCATCAATTATAGGAGCAATTAATTTTATTACAACATTTTAA
ATATACGAATTTAAATACATCATTAGATCAAATATCTTTATTTGTTTGATCAATTTAATTACAACAATTTTATT
GTTATTAGCAGTCCAGTTTGTAGCTGGTGCAATTACAATATTATATCAGATCGAAATTTAAATACTTCATTTTTT
GATCCATCAGGAGGAGGATCCTATTTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:ABA8539.

Holotype ♀: DHJPAR0043261, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Orosilito, 10.98332, -85.43623, 900 m, eclosion date 05/28/2011, caterpillar collection date 05/18/2011 (CNC). GenBank accession code JQ576153.

Holotype host data: Hyperparasitoid of *Apanteles didiguadamuzi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenomoma Janzen06* (Depressariidae) feeding on *Ocotea leucoxylon* (Lauraceae). Multiple *Mesochorus* specimens eclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

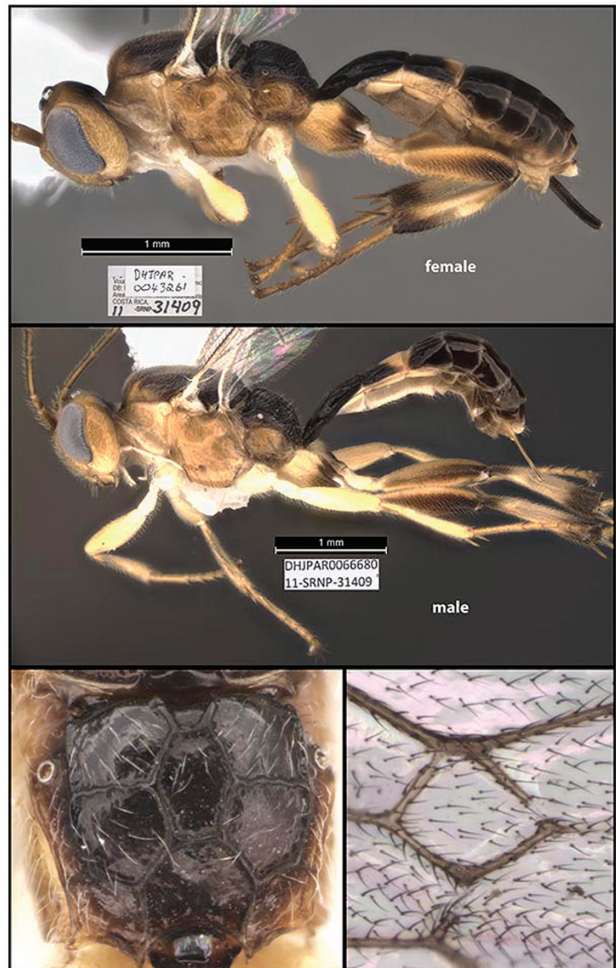


Fig. 112. *M. nuevecuatro*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066680) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 11-SRNP-31409, that can be recovered from the Janzen/Hallwachs website.

Mesochorus nuevencinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:BB56489E-18B9-4946-ABBA-F9DA8D1A583E

Diagnostics: Fig. 113.

Consensus barcode (4 specimens).

```
AATTTTATATTTTCATTTTTGGGAATATGAGCAGGAATAATTGGATCATCTATAAGAATAATTATTCGTATAGA
ATTAGGAAACCCAGGATTTTTAATTAATAATGATCAAATTTATAAATCTTTTTGTAACATCTCATGCTTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGTAATTGAATGTTCTTTAATAATTGGAGCCCT
GATATAGCTTTCCCTCGAATAAATAATATAAGATTTTGATTACTACCACCTTCTATTATATATTATTATTTAA
GAGGAATTTGTCAAAAAGGAGTAGGAACAGGATGAACAGTTTACCCCCCATGTCAATAAATATAGT
CATGAGGGGTTATCTGTAGATTTATCAATTTTTCTCTACATTTAGCTGGAATATCTTCAATATAGGAGC
TATTAATTTTATTACAACAATTATAATATACGAATTTAAAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCA
ATTTAATTACAACAATTTTATTATTATTAGCAGTCCCAGTTTATGACAGGTGCAATTACAATATTATTATCAGATCGAA
ATTTAAACTTCTTTTTTTGATCCATCAGGAGGAGGTGATCCTATTCTATATCAACACTTATT
```

BOLD data: BIN: BOLD:ABX0067.

Nearest neighbor: *M. ochosieta*,

BOLD:AAY4694, 5.64% (p-dist).

Holotype ♀: DHJPAR0063975, Área de Conservación Guanacaste, Guanacaste, Sector Mundo Nuevo, Quebrada Tibio Perla, 10.76261, -85.42979, 330 m, eclosion date 11/21/2018, caterpillar collection date 10/31/2018 (CNC). GenBank accession code OM237774.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield20 (Braconidae: Microgastrinae), which is a primary parasitoid of *Hahncappsia* BioLep471 (Crambidae) feeding on *Iresine latifolia* (Amaranthaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Hypomicrogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

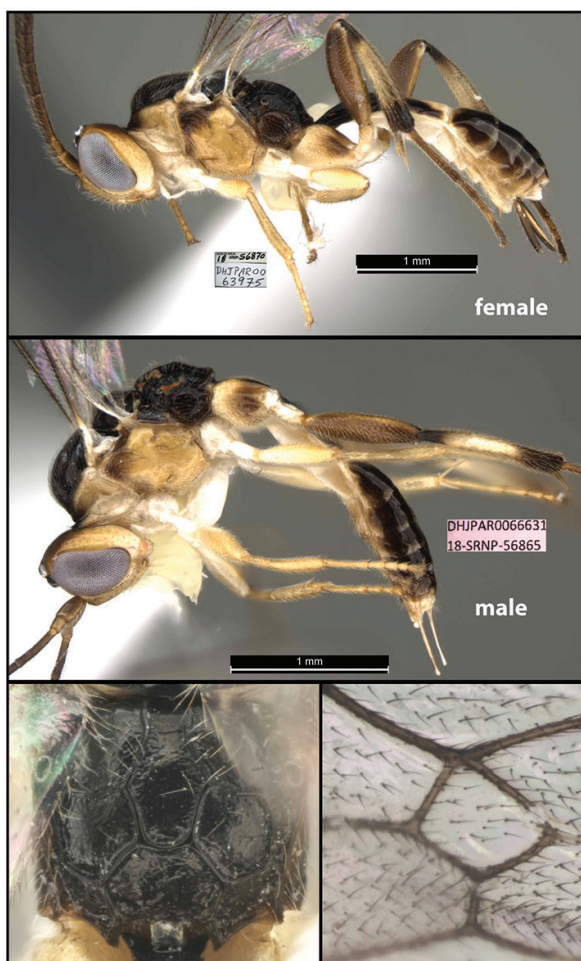


Fig. 113. *M. nuevencinco*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066631) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as paratype, DHJPAR0063977, which was barcoded. They both have the same rearing/caterpillar record, 18-SRNP-56865, that can be recovered from the Janzen/Hallwachs website.

Mesochorus nueveseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:E701D574-14F1-430F-9EAD-4845654E7199

Diagnostics: Fig. 114.

Consensus barcode (10 specimens).

```
AATTTTATATTTTATTTTGGTATATGGGCTGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGA
ATTAGAAATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACATCACATGCTTTTATTA
TAATTTTTTTATAGTTATACCAATTATAATTGGTGGATTGGAAATTGAATAATTCCTTTAATAATTGGAGCACCA
GATATAGCTTTCCTCGAATAAATAATATAAGATTTTGATTACTTCCATCAATTATATTATTTATTAAGARGA
ATTTGTCAAAAAGGTGTTGGAACGTTGAAACAGTTTATCCTCCATTATCATTAAATGTTAGACATGAAGGATTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGAATATCTCAATTATAGGTGCTATTAATTTTATTACAAC
TATTTAAATATACGAATTTAAAAACATCTTTTGATCAAATATCATTATTTACATGATCAATTTTAATTACAACA
ATTTTATTATTATAGCTGTTCCAGTTTTAGCAGGTGCAATTACAATTTACTTTCTGATCGAAATTTAAAYACTT
CATTTTTGATCCATCAGGAGGAGGTGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ABX4997.

Nearest neighbor: *M. unodoscero*, BOLD:ACE9731 1.76% (p-dist). The shape of the propodeal areolae and the propodeal sculpture differ (Fig. 115).

Holotype ♀: DHJPAR0038405, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Leonel, 10.99637, -85.40195, 510 m, eclosion date 12/14/2009, caterpillar collection date 11/07/2009 (CNC). GenBank accession code HQ549149.

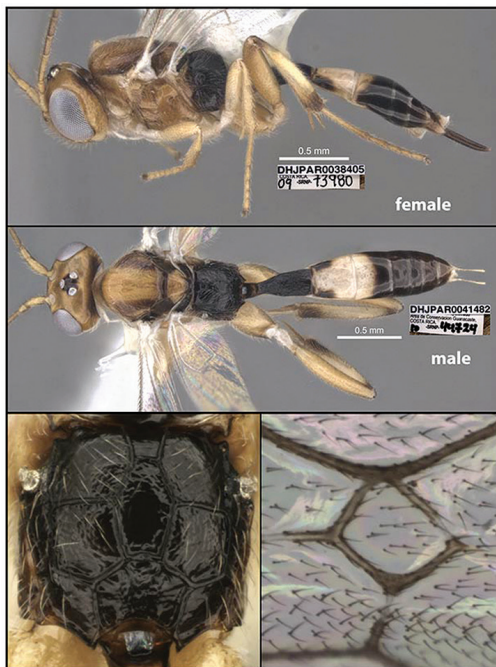


Fig. 114. *M. nueveseis*, holotype female and male paratype. Unlabeled images are of the holotype.

Holotype host data: Hyperparasitoid of *Apanteles luiscantillanoi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Diacme* BioLep02 (Crambidae) feeding on *Cyathea multiflora* (Cyatheaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

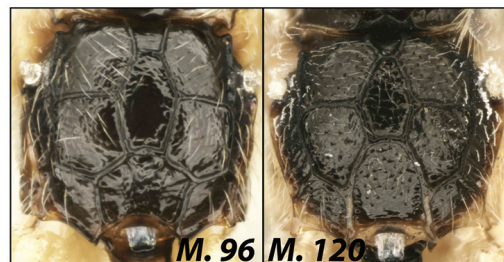


Fig. 115. Comparisons of *M. nueveseis* with its nearest neighbor, *M. unodoscero*.

Mesochorus nuevesiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:EA808C19-44F0-48A7-AAAA-661F31AA40B6

Diagnostics: Fig. 116.

Holotype barcode.

```
TTTATATTTTATTTTGGTATATGATCAGGTATAATTGGAGCATCAATAAGATTAATTATTCGTATAGATTAG
GAAATCCTGGATATTTAATTAATAATGATCAAATTTATAATTCTTTTGTAACAGCACATGCATTTATTA
TAATTTTCTTTATAGTTTATACCTATTATAATTGGAGGATTCGGAAATTGATTAATTCCATTAATAATTGGAGCACCT
GATATAGCTTTCCCTCGAATAAATAATATAAGTTTTTGGATTATTACCTCCTTCATTAATATTATTAATTTTTAGTAGA
ATAATTCATAAAGGTGTAGGAAGTGGATGAACAGTTTTACCCTCCTTTATCTTTAAATATCAGTCATGAAGGAATAT
CAGTAGATTTATCAATTTTCTCTCTTCATCTAGCTGGAATATCATCAATCATAGGGGCTATTAATTTTATTACAACA
ATTTTAAATATACGATTTACAGGATCAACATTAGATCAAATATCTTTATTTTCTCGATCAATTAATCAACAACA
ATTTTATTATTATTAGCAGTTCCAGTTTTAGCCGGAGCTATCACTATACTTTTAGCTGATCGAAATTTAAATACCT
CATTCTTCGACCCTTCAGGTGGAGGAGATCCAATTTTATACCAACATTTATT
```

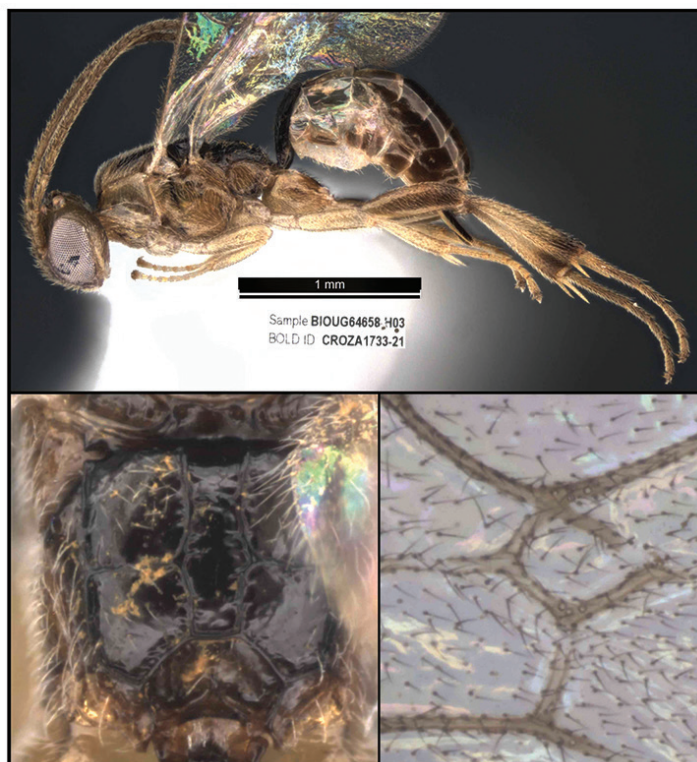
BOLD data: BIN: BOLD:AEJ5580.**Holotype** ♀: BIOUG64658-H03, Área de Conservación Pacífico, Central, Puntarenas, Savegre, Quepos, Baru-1, 9.26200, -83.87400, 15 m, Malaise trap, 04/16/2019 (CNC). GenBank accession code OM237692.**Holotype host data:** None.**Other host data:** None.

Fig. 116. *M. nuevesiete*, holotype female.

Mesochorus neuevocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:CBAF495D-DE96-4285-AA8D-FDF7F7F2CE99

Diagnostics: Fig. 117.

Consensus Barcode (3 specimens).

TATTTTATATTTTATTTTGGTATATGATCAGGAATAATTGGTTCATCAATAAGATTAATTATTTCGAATAGAGTTA
GGAAACCCTGGATTCTTAATTAATAATGATCAAATTTATAATCTTTTGGTTACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCTATTATAATTGGAGGATTTGGTAATTGAATGTTCTTTAATAATTGGAGCTCCA
GATATAGCTTTCCCTCGAATAAATAATATAAGTTTTTGGATTATTACCCCTTCAATTATATATTATTATTAAGAAGA
ATTTGCCAGAAAGGGGTTGGTACTGGATGAACTGTTTACCCTCCTTTATCATTAAATAGAAGACATGAAGGATTA
GCAGTTGATTATCAATTTTTTCATTACATTTAGCAGGAATATCTTCTATTATAGGGGCAGTTAACTTTATTACTACA
ATTTTAAATATACGAGTTGTTGGATCTCTTTAGATCAAATATCTTTATTTGTTTGATCAATAAAATTACAACAATTC
TATTATTATTAGCTGTTCTGTTTAGCAGGGCAATTACAATATTATTAAGTATCGTAATTTAAATACAACATTTTTT
GATCCTTCAGGAGGAGGGGATCCAATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:AEI0702.

Nearest neighbor: *M. unocincocero*, BOLD:AEI3256, 1.28% (p-dist). The transverse propodeal carinae hit the central areola of *M. neuevocho* at midheight and well above midheight in *M. unocincocero* (Fig. 118).

Holotype ♀: DHJPAR0020369, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Mismo, 10.98758, -85.41967, 680 m, eclosion date 06/28/2006, caterpillar collection date 06/18/2006 (CNC). GenBank accession code JF793177.

Holotype host data: Hyperparasitoid of *Glyptapanteles johnnoyesi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Deinopa signiplena* (Erebidae) feeding on *Swartzia costaricensis* (Fabaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Glyptapanteles* and *Diolcogaster* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

Fig. 117. *M. neuevocho*, holotype female and male paratype. Unlabeled images are of the holotype.

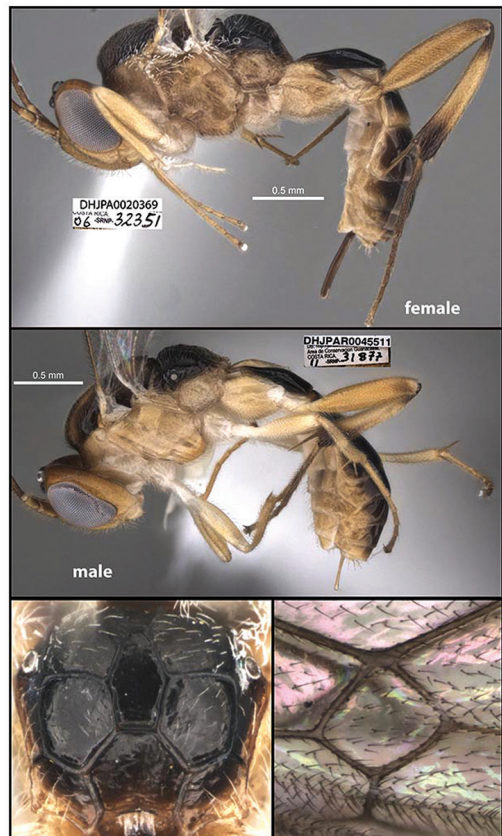
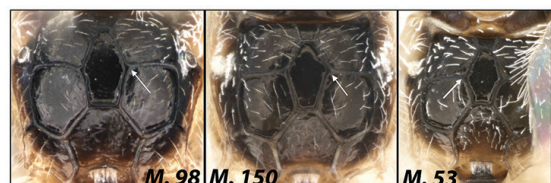


Fig. 118. Comparisons of *M. neuevocho* with its nearest neighbor, *M. unocincocero* and with *M. cincotres*.



Mesochorus nuevenueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:D9501868-1E31-4882-9C7E-949BB9CE2151

Diagnostics: Fig. 119.

Consensus barcode (12 specimens).

TATTTATATTTTATTTTTGGTATATGATCTGGRATAATTGGCTCTTCAATAAGAATAATTATTCGTATAGA
ATTAGGTAATCCAGGATTTTTAATTAATAATGACCAAATTTATAACTCATTTGTTACTTCACATGCTTTTTATTA
TAATCTTTTTTATAGTCATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATGATTGGGGCTC
CAGATATAGCATTCCCTCGAATAAATAATATAAGATTTTGATTACTACCCCTTCAATTATATTACTTTTACTAAGA
AGAATTTGTCAAAAAGGAGTAGGAACAGGATGAAGTGTATATCCCTTTTATCACTTAATATAAGTCATGAAG
GACTATCTGTAGATTTGTCAATTTCTCATTACATTTAGCRGGAATATCATCAATTATAGGAGCAGTAAATTTATTA
CAACTATTATAATATACGTATTTATAAAACATCATTTGATCAAATATCTCTATTTGTTTGATCAATTCTAATTACAA
CAATTTTATTATTATAGCTGTACCTGTATTAGCTGGRGCAATCACTATATTATTATCTGATCGTAATTTAAATACAT
CATTTTTGATCCATCAGGAGGTGGAGACCCAATTTTATACCAACACTTATT

BOLD data: BIN: BOLD:ABX5838.

Nearest neighbor: *M. cuatrocho*, BOLD:AAK7574, 3.53% (p-dist).

Holotype ♀: DHJPAR0053147, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Sendero Rincon, 10.89620, -85.27769, 430 m, eclosion date 08/19/2013, caterpillar collection date 07/29/2013 (CNC). GenBank accession code OM237751.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield49 (Braconidae: Microgastrinae), which is a primary parasitoid of *Phostria* Janzen05 (Crambidae) feeding on *Palicourea cyanococca* (Rubiaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Eiphosoma* (Ichneumonidae: Cremastinae), *Apanteles*, *Prasmodon* (Braconidae: Microgastrinae), *Macrocentrus* (Braconidae: Macrocentrinae). A single *Mesochorus* specimen enclosed.

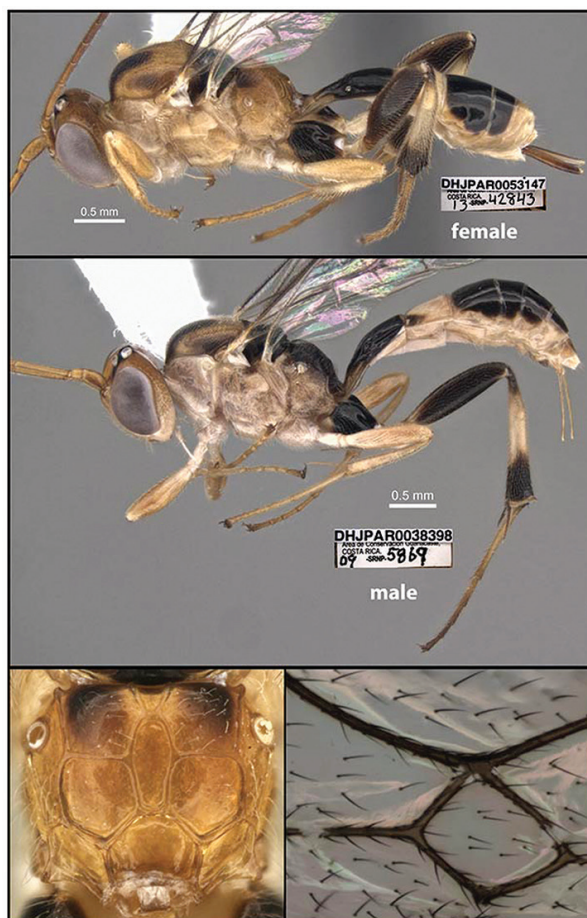


Fig. 119. *M. nuevenueve*, holotype female and male paratype. Unlabeled images are of the holotype.



Mesochorus unocrocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:82CC3DA6-99C3-487F-9B3E-814C3637F065

Diagnostics: Fig. 120.

Consensus barcode (4 specimens).

```
AATTTTATATTTTATTTTGGAAATGAGCAGGTATAATTGGCTCGTCAATAAGAATAATTATTCGATTAGA
ATTAGGAAATCCGGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTTACATCTCATGCGTTTATTA
TAATTTTTTTTATAGTTATGCCAATTATAATTGGTGGTTTTGGAAATTGAATAGTTCATTAAATAATTGGTGCTC
CAGATATAGCATTTCTCGTATAAATAATATAAGATTTTGATTATTACCACCTTCAATTATATTATTATTAAAGA
GGAATTTGTCAAAAAGGTGTTGGTACTGGATGAACAGTGTACCCTCTTTATCATTAAATGTTAGACATGAAG
GATTATCAGTAGATTTATCAATTTTTCTTTACATTTAGCTGGTATATCYTCAATTATAGGAGCAATTAATTTATTA
CAACAATTTAAATATACGTATTTAAAACTTCATTTGATCAAATATCTTTATTTGTTTGATCAATTTAATTAC
TACAATTTTATTATTATTAGCAGTTCCAGTATTAGCTGGTGAATACAATATTACTTTCTGATCGAAATTTAAA
TACTTCTTTTTTTGATCCATCTGGAGGAGGTGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ABX6640.

Nearest neighbor: *M. unocincoquatro*, BOLD:AAG8572, 2.4% (p-dist). The central areola of *M. unocrocero* is narrower basally and apically (Fig. 121).



Fig. 120. *M. unocrocero*, holotype male.

Holotype ♂: DHJPAR0049387, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Sendero Venado, 10.89678, -85.27001, 420 m, eclosion date 04/30/2012, caterpillar collection date 04/10/2012 (CNC). GenBank accession code OM237716.

Holotype host data: Hyperparasitoid of *Apanteles* Janzen78 (Braconidae: Microgastrinae), which is a primary parasitoid of *Antaeotricha* Janzen245 (Depressariidae) feeding on *Coccoloba tuerckheimii* (Polygonaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae) and *Chelonus* (Braconidae: Cheloninae). A single *Mesochorus* specimen enclosed.

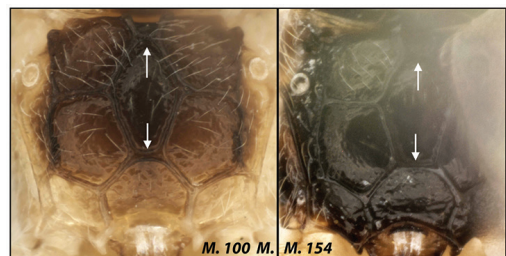


Fig. 121. Comparisons of *M. unocrocero* with its nearest neighbor, *M. unocincoquatro*.

Mesochorus unoceroouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:0D556632-FE72-48A7-8D64-C1950E0C2FAA

Diagnostics: Fig. 122.

Consensus barcode (13 specimens).

TATTTTATATTTTATTTTTGGAATATGATCAGGAATAATGGTTCTTCTATAAGATTAATTATTCGAATAGA
 ACTTGGTAATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACTTCTCATGCATTTATTA
 TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGTAATTGAATAATTCCTTTAATAATTGGAGCCC
 CAGATATAGCCTTTCTCGAATAAATAATATAAGATTTTGATTATTACCCCATCAATTTTATTACTTTTATTAAGA
 AGAATTTGTCAAAAAGGTGTAGGAACAGGATGAACAATTTACCCCATCATTAATGTAAGACATGAAG
 GATTATCTGTAGACCTTCAATTTTTCTTTACAYCTTGCAGGAATATCTCAATTATAGGAGCAGTTAATTTATTAC
 TACAATTTAAATATACGAATTATAAAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCAATTTTAATTACAA
 CAATTTTATTATTATAGCTGTTCCAGTATTAGCTGGTGCTATTACAATATTATTAACAGATCGTAATTTAAATACAT
 CATTTTTGATCCATCAGGAGGTGGTGATCCTATTTTATATCAACATTTATTTC

BOLD data: BIN: BOLD:ABY4235.

Nearest neighbor: *M. cincocho*,
 BOLD:AAT8847, 2.24% (p-dist). The
 shapes of the forewing areolets differ (Fig.
 75, associated with *M. cincocho*).

Holotype ♀: DHJPAR0051419, Área
 de Conservación Guanacaste, Alajuela,
 Sector Rincon Rain Forest, Sendero
 Anonas, 10.90528, -85.27882, 405 m,
 eclosion date 11/21/2012, caterpillar
 collection date 11/03/2012 (CNC).
 GenBank accession code OM237680.

Holotype host data: Hyperparasitoid of
Apanteles rosibelizondoeae (Braconidae:
 Microgastrinae), which is a primary
 parasitoid of *Herpetogramma salbialis*
 (Crambidae) feeding on *Eleutheranthera*
ruderalis (Asteraceae). A single
Mesochorus specimen eclosed.

Other host data: *Alabagrus*, (Braconidae:
 Agathidinae), *Papanteles*,
Hypomicrogaster (Braconidae:
 Microgastrinae). A single *Mesochorus*
 specimen eclosed.

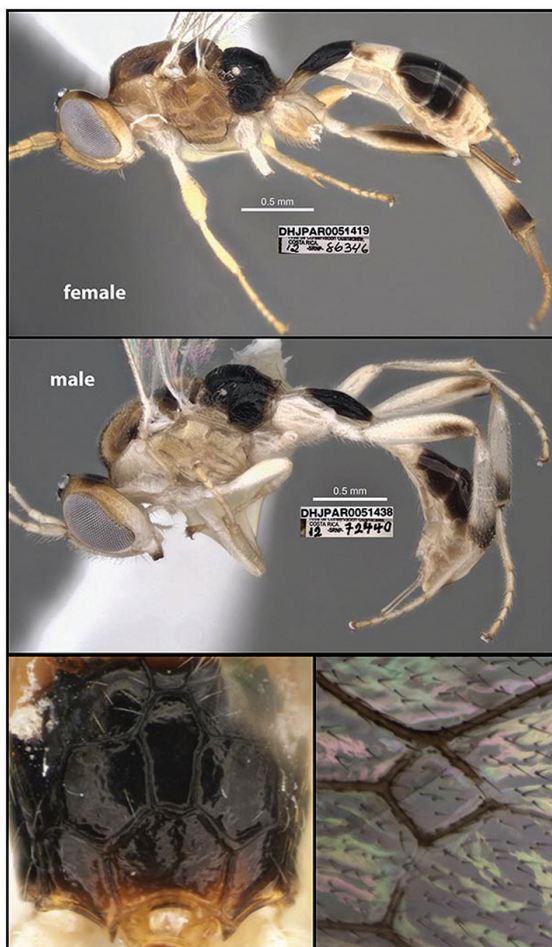


Fig. 122. *M. unoceroouno*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unoceros

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:816B8B94-82FF-4A42-97E7-37B25264624F

Diagnostics: Fig. 123.

Consensus barcode (3 specimens).

```
AATTTTATACTTTATTTTTGGTATATGATCAGGAATAATTGGATCTTCAATAAGAATAATTATTCGTATAGA
ATTAGGAAACCCTGGATTCTTAATTAATAATGATCAAATTTATAAATCTTTTGTACGTCTCATGCTTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATAATTGGTGCAC
CAGATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATTGTTAAGA
GGAATTTGTCAAAAAGGTGTAGGAACTGGATGAACAGTATATCCACCATTATCATAAATATTAGACATGAAG
GATTTTCTGTTGATTTATCAATTTTTTCATTACATTTAGCTGGAATATCATCTATTATGGGTGCAATTAATTTATTA
CAACTATTATAAATATACGAATTTTAAATACATCTCTTGATCAAATATCTTTATTTACTTGATCTATTTTAATTAC
TACAATTTTACTTTTTAGCTGTTCCAGTTTTAGCGGGAGCTATTACTATATTATTATCAGATCGTAATTTAAA
TACTTCTTTTTTTGACCCGTCAGGAGGAGGAGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:ACB1637.

Nearest neighbor: *M. trestres*, BOLD:AAF0671, 7.05% (p-dist).

Holotype ♂: DHJPAR0049440, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Flecha, 10.94741, -85.31501, 491 m, eclosion date 06/10/2012, caterpillar collection date 05/24/2012 (CNC). GenBank accession code OM237717.

Holotype host data: Hyperparasitoid of *Aerophilus jessiehillae* (Braconidae: Agathidinae), which is a primary parasitoid of *Dysodia speculifera* (Thyrididae) feeding on *Margaritaria nobilis* (Phyllanthaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Aerophilus* (Braconidae: Agathidinae). A single *Mesochorus* specimen enclosed.

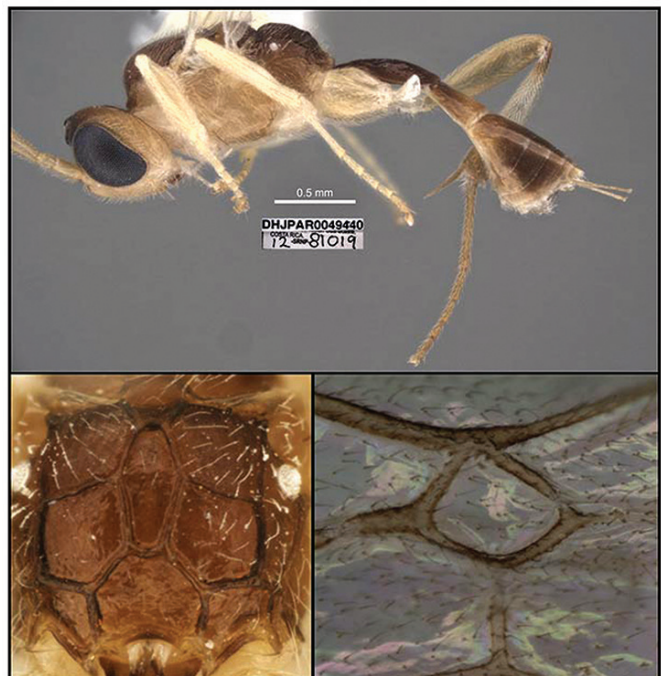


Fig. 123. *M. unoceros*, holotype male.

Mesochorus unocerotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9846349A-4803-4E4E-8946-D59F0E32B27C

Diagnostics: Fig. 124.

Consensus barcode (4 specimens).

```
TATTTTATATTTTATTTTGGGAATATGATCAGGAATAATTGGTTCCTCTATAAGAATAATTATTCGCATAGAATT
GGGTAACCCAGGATTTTTAATTAATAATGACCAAATTTATAATTCATTTGTAACATCTCATGCTTTTATTA
TAATTTTTTTTATAGTCATACCAATCATAATTGGAGGATTTGGAAATGAATAATCCATTAATAATTGGAGCACCAGA
TATAGCATTCCCTCGAATAAATAATATAAGTTTTGATTATTACCCCATCAATATATTACTTTTATTAAGAAGAATTT
GTCATAAAGGTGTAGGAACAGGATGAACAGTTTATCCACCATTATCTTTAAATGTTAGACATGAAGGATTATCAGTA
GATTTATCAATTTTTTTCATTACATTTAGCAGGAATATCATCAATTATAGGAGCTGTAAATTTATTACTACTATTATTA
TATACGTATTTATAAACATCTCTAGATCAAATATCTTTATTTGTTTGATCAATCTTTATTACAACAATTTATTAC
TYTTAGCTGTACCTGTTTTAGCAGGAGCAATTACTATATATTATCTGATCGTAATTTAAATACATCGTTTTTT
GATCCTTCAGGTGGAGGAGATCCAATTTTATAYCAACATTTATTT
```

BOLD data: BIN: BOLD:ACC0953.

Nearest neighbor: *M. cinco*, BOLD:AAB3993 6.89% (p-dist).

Holotype ♀: DHJPAR0050033, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Pasmompa, 11.01926, -85.40997, 440 m, eclosion date 07/30/2012, caterpillar collection date 07/12/2012 (CNC). GenBank accession code OM237762.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield09 (Braconidae: Microgastrinae), which is a primary parasitoid of *Desmia benealis* DHJ02 (Crambidae) feeding on *Drymonia serrulata* (Gesneriaceae). Multiple *Mesochorus* specimen enclosed.

Other host data: *Hypomicrogaster*, *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed from all other rearings.

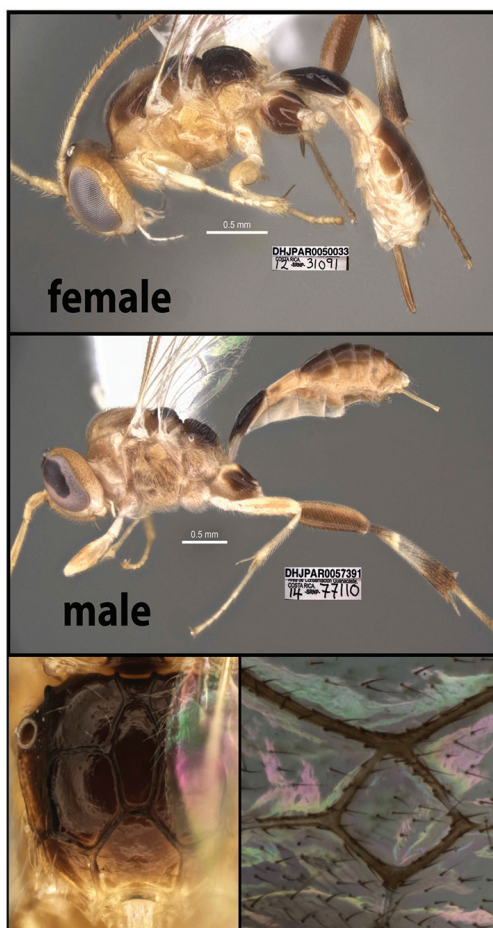


Fig. 124. *M. unocerotres*, holotype female and male paratype. Unlabeled images are of the holotype.



Mesochorus unoceroquatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F218D489-3D96-456E-ABB2-6C102E301C44

Diagnostics: Fig. 125.

Consensus barcode (5 specimens).

```
AGTATTATATTTTATTTTTGGTATATGATCAGGAATAATTGGTTCATCTATAAGAATAATTATTCGAATAGAATTAGG
GAACCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTTACATCACATGCYTTTATTATAATTTTTTTTA
TAGTAATACCAATTATAATTGGAGGATTTGGAAATTGACTAGTTCCATTAATAATTGGAGCTCCAGATATAG
CATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCACCTTCAATATATTATTACTAAGAGGAATTT
GTCAAAAAGGAGTAGGAACAGGTTGAACAGTTTATCCTCCTTTATCTTTAAATGTTAGTCATGAAGGATTAT
CAGTTGATTTATCAATTTTTTCATTACATTTAGCAGGAATATCATCAATTATAGGTGCAATTAATTTTATTACA
ACTATTCTAAATATACGAATTTATAAAACATCATTGTATCAAATATCATTATTTATTGATCAATTTTAATTAATA
CAATTTTATTACTTTTAGCAGTACCAGTTTAGCTGGAGCTATACAATATTACTATCTGATCGAAATTTAAA
TACTTCTTTTTTTGATCCCTCTGGAGGAGGTGATCCAATTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ACC1131.

Holotype ♀: DHJPAR0050019, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Sendero Venado, 10.89678, -85.27001, 420 m, eclosion date 10/20/2012, caterpillar collection date 09/14/2012 (CNC). GenBank accession code OM237729.

Holotype host data:

Hyperparasitoid of *Campoplex* NV-02 (Ichneumonidae:

Campopleginae), which is a primary parasitoid of *Stenomoma* Janzen44 (Depressariidae) feeding on *Tetracera hydrophila* (Dilleniaceae).

A single *Mesochorus* specimen enclosed.

Other host data: *Campoplex*

(Ichneumonidae: Campopleginae).

A single *Mesochorus* specimen enclosed from all rearings.

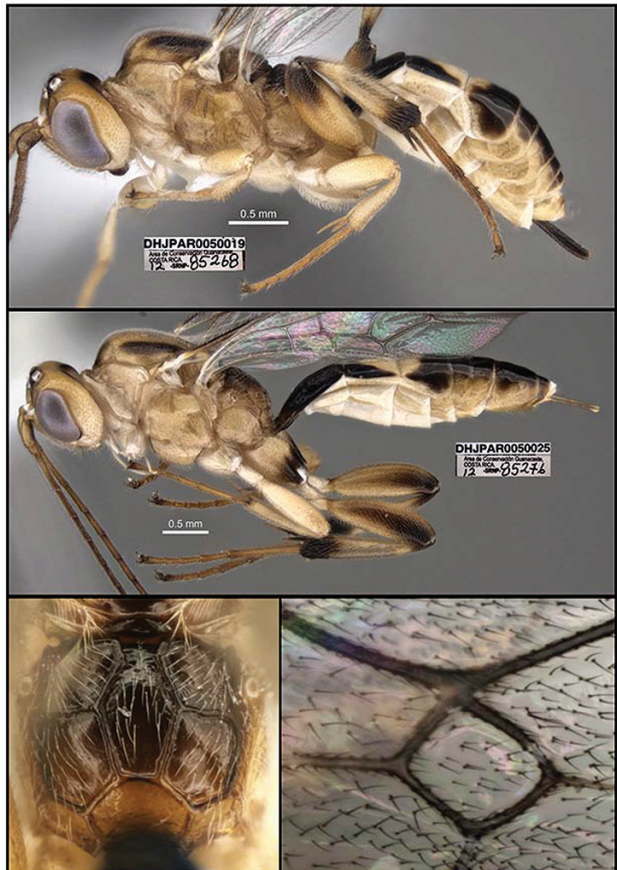


Fig. 125. *M. unoceroquatro*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unoceroцинco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:3C17A664-939F-4C7F-A3F1-FA81A0ADF71C

Diagnostics: Fig. 126.

Consensus barcode (2 specimens).

TATTTTATATTTTATTTTGGTATATGAGCAGGAATAATTGGTTCATCTATAAGAATAATTATTCGTATAGAATTAGGA
 AATCCTGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA
 TAGTTATACCTATTATAATTGGAGGATTGGAAATTGGATTATCCATTAATAATTGGAGCTCCTGATATAGCATTTC
 CACGAATAAATAATATAAGATTTTGATTACTACCACCATCAATTATATTATTATTTAAGAAGAATTTGTCAAAAA
 GGTGTTGGAACAGGATGAACAGTTTACCCCCCTTATCATTAATTTAAGTCATGAAGGATTATCAGTAGATTTAT
 CAATTTTTCTTTACATTTAGCTGGAATATCATCAATTATAGGAGCAATTAATTTTATTACAACAATTTTAAATATAC
 GAATTTAATAACATCTTTTGATCAAATATCTTTATTTGTTTGATCAATTTAATTACAACAATTTTATTACTTTTAG
 CAGTTCCAGTTTTAGCTGGTGCATTACTATATTATTATCAGATCGTAATTTAAATACTTCTTTTTTTGATCCTTCAG
 GAGGTGGAGATCCAATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:ACC1150.

Nearest neighbor: *M. cincoseis*, BOLD:AAN2491, 5.31% (p-dist).

Holotype ♂: DHJPAR0056342, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Quebrada Escondida, 10.89920, -85.27486, 420 m, eclosion date 08/18/2012, caterpillar collection date 08/02/2012 (CNC). GenBank accession code OM237711.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Janzen19 (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenoma* Janzen10 (Depressariidae) feeding on *Desmopsis schippii* (Annonaceae). Multiple *Mesochorus* specimens eclosed.

Other host data: None.

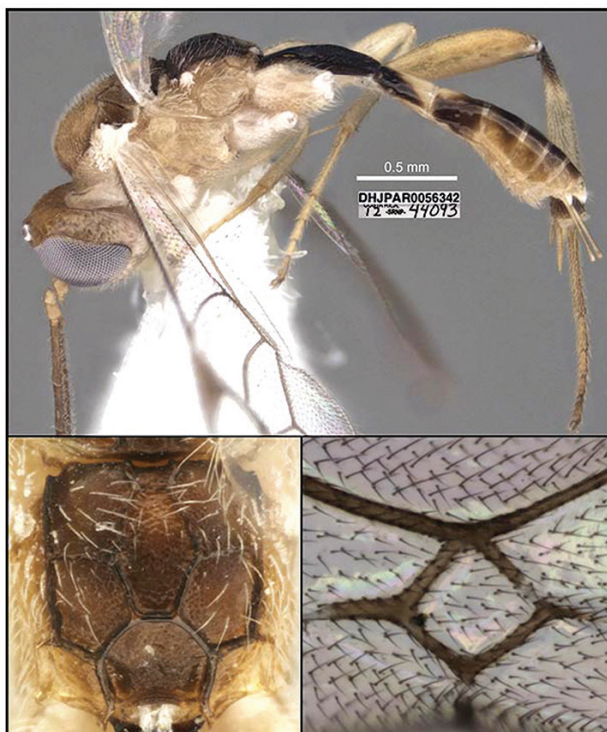


Fig. 126. *M. unoceroцинco*, holotype male.

Mesochorus unoceroiseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:CABF16F8-5665-43DE-9EB3-E7F8EE511781

Diagnostics: Fig. 127.

Consensus barcode (3 specimens).

```
AATTTTATATTTTATTTTTGGTATATGAGCTGGTATAATTGGTTCWTCATAAAGTATAATTATTCGTATAGA
ATTAGGTAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCCTTTGTTACATCTCATGCTTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGTGGATTTGGTAATTGAATAGTTCCTTTAATAATTGGTGCAC
CAGATATAGCTTTCCACGAATAAATAATATAAGATTTTGATTATTACCCCATCAATTATATTATTATTAAAGT
GGAATTTGTCAAAAAGGTGTAGGAAGTGGATGAACTGTGTACCCCTTTATCATTAAATGTTAGTCATGAA
GGTTTATCCGTTGATTATCAATTTTTCTTTACACTTAGCAGGTATATCTTCTATTATAGGTGCTATTAATTTTATTAC
TACTATTTTAAATATACGTATTATAAAAACATCTCTGGATCAAATATCATTATTTGTTTGATCAATCTTAATTACAA
CAATTTTATTATTATTAGCAGTACCAGTATTAGCAGGAGCTATCACAAATATTATTATCTGATCGTAATTTAAATACTT
CATTTTTTGATCCATCAGGAGGAGGGGATCCAATTTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:ACC3709.

Holotype ♂: DHJPAR0043051, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Garzasol, 10.89666, -85.29003, 400 m, eclosion date 02/20/2011, caterpillar collection date 02/01/2011 (CNC). GenBank accession code OM237715.

Holotype host data: Hyperparasitoid of *Apanteles juanlopezi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Paramorbia* Brown001DHJ03 feeding on *Hypolepis repens* (Dennstaedtiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

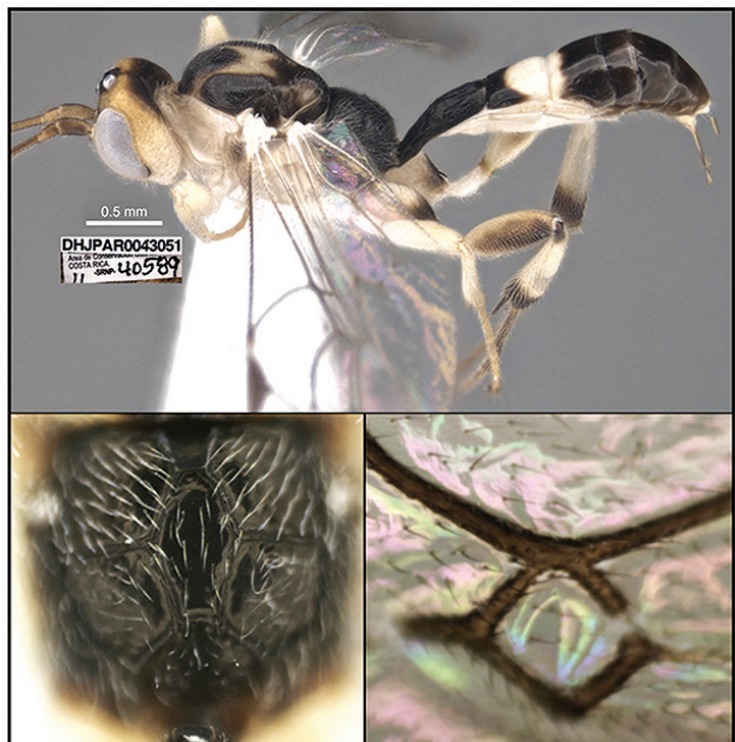


Fig. 127. *M. unoceroiseis*, holotype male.

Mesochorus unocerosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:BDB3762E-AAF2-4F44-BEF9-CA4B1160BC4A

Diagnostics: Fig. 128.

Holotype barcode.

```
TATTTTATATTTTATTTTGGAAATATGAGCAGGAATAATTGGATCATCAATAAGAATAATAATTCGAATAGAATTAGGA
AACCCGGATTCTTAATTAATAATGATCAAATTTATAATCTTTTGTAAACATCACATGCCTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTGGAAATGAATAGTACCTCTAATAATTGGAGACCAGATATAGCTTTTC
CGCGAATAAATAATAAGATTTTGATATTACCACCTTCAATTATATTATTATTATTAAGAGGAATTTGTCAAAAA
GGTGTAGGAACCTGGTTGAACAGTTTATCCACCTTTATCATAAATATCAGACATGAAGGATTATCTGTTGATTATC
TATTTTTTCATTACATTTAGCTGGAATATCTTCAATCATAGGAGCCATTAATTTATTACAACAATTTAAATATAC
GAATTTATAAACATCATTAGATCAAATATCTTTATTTGTTTGATCAATCTTAATTACAACAATTTATTATTATTAG
CAGTCCAGTATTAGCTGGTGCCATCACAAATATTATTATCAGATCGAAATTTAAATACTTCTTTTTTTGACCCATCT
GGTGGAGGAGATCCAATTTTATACCAACACTTATT
```

BOLD data: BIN: BOLD:AAM1691.

Nearest neighbor: *M. sieteuno*,
BOLD:AAX4034, 7.05% (p-dist).

Holotype ♀: DHJPAR0038397, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Puente Palma, 10.91630, -85.37869, 460 m, eclosion date 11/20/2009, caterpillar collection date 11/03/2009 (CNC). GenBank accession code HQ549141.

Holotype host data: Hyperparasitoid of *Apanteles luiscanalesi* (Braconidae: Microgastrinae), which is a primary parasitoid of *Macalla niveorufa* DHJ02 (Pylalidae) feeding on *Hieronyma alchorneoides* (Phyllanthaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

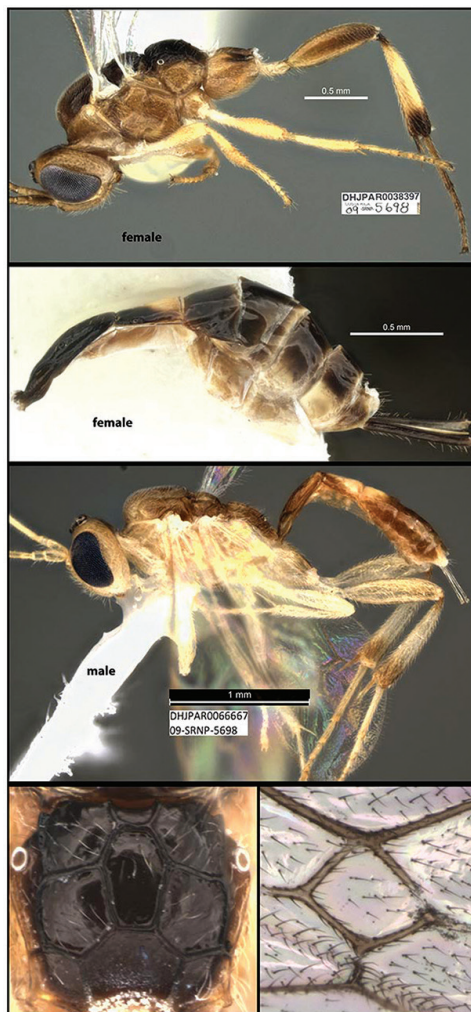


Fig. 128. *M. unocerosiete*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066667) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as the holotype, which was barcoded. They both have the same rearing/caterpillar record, 09-SRNP-5698, that can be recovered from the Janzen/Hallwachs website.

Mesochorus unocerocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:00490EE1-2A3F-4280-AE45-5FE0211419AE

Diagnostics: Fig. 129.

Consensus barcode (5 specimens).

```
AATTTTATATTTTATTTTGGARTTTGGGCTGGAATAAATGGATCATCAATAAGCTTAATTATTCGAATTGA
ACTTGGTAACCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCCCATGCTTTTATTA
TAATTTTTTTATAGTTATACCAATAATAATTGGAGGGTTTGGAAATTGATTAATTCCTTTAATAATTGGAGCTCT
GATATAGCATTCCCTCGAATAAAACAATAAAGATTTTGACTTTTACCTCCTTCATTAATATTACTTCTATTAAGAA
GAATTATTAATAAAGGAGTTGGAACAGGTTGAACCGTTTATCCACCTTTATCATTAAATGTCAGACATGAAGGTA
TATCTGTAGATTTATCAATTTTTTCATTACATTTAGCCGGGATATCTTCAATATAGGAGCAGTTAATTTTATTA
CAACAATTTAAACATACATTTATTTGGYATATCAATAGATCAATATCTTTATTACATGATCAATAAAATTAC
TACAATTTTACTTTTAGCTGTTCCAGTTTGTAGCTGGAGCAATTAATACTATTAACAGATCGAAATTTAAA
TACATCTTTTTTGGACCCATCRGKGGTGGTGACCAATCTTTACCAACATTTATTT
```

BOLD data: BIN: BOLD:ACE7768.

Nearest neighbor: *M. doscinco*, BOLD:AAE9757, 1.4% (p-dist). Central areola of *M. doscinco* petiolate apically, sessile in *M. unocerocho* (Fig. 32, associated with *M. doscinco*).

Holotype ♀: DHJPAR0060102, Area de Conservacion Guanacaste, Guanacaste, Sector Pitilla, Charia, 10.99339, -85.40271, 530 m, Ricardo Calero, eclosion date 04/02/2016, caterpillar collection date 03/09/2016, (CNC). GenBank accession code OM237686.

Holotype host data: Hyperparasitoid of *Alphomelon* Deans29 (Braconidae: Microgastrinae), which is a primary parasitoid of hespJanzen01 Janzen55 (Hesperiidae) feeding on *Cryptochloa concinna* (Poaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae), *Microcharops* (Ichneumonidae: Campopleginae). A single *Mesochorus* specimen eclosed from all rearings.

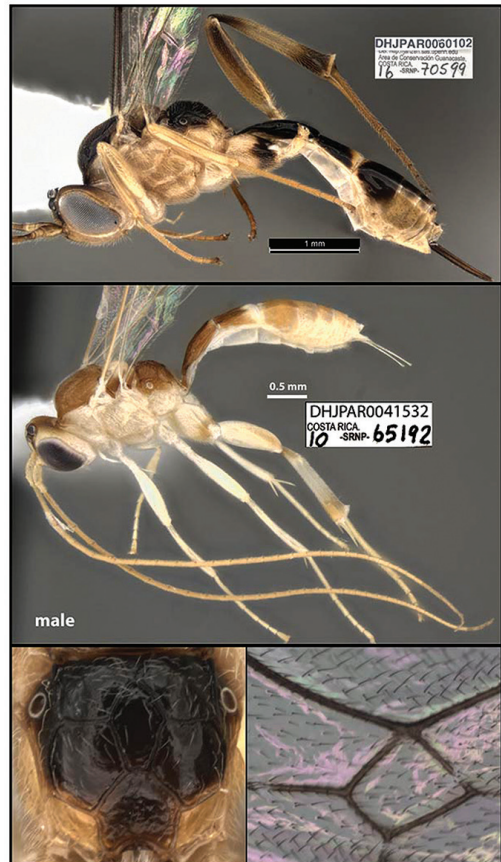


Fig. 129. *M. unocerocho*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unoceronueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:915C70C8-230D-4933-9C2F-CFD66166C937

Diagnostics: Fig. 130.

Consensus barcode (5 specimens).

```
AATTTTATATTTTATTTTCGGAATATGAGCAGGAATAATTGGTTCATCTATAAGAATAATTATTCGATTAGAATTAGGA
AATCCTGGATTTTGGATTAATAATGATCAAATTTATAATTCATTTGTTACATCTCATGCATTTATTATAATTTTTTTTA
TAGTRATACCAATTATAATTGGTGGTTTTGGTAATTGAATAATTCATTAATAATTGGTGCTCCAGATATAG
CATTTCCTCGTATAAATAATATAAGATTTTGATTATTACCACCTTCAATTATATTATTATTAAAGAGGAATTTGT
CAAAAAGGTGTTGGTACTGGATGAACAGTATATCCTCCTTATCATTAATATTAGACATGAAGGACTATCAGTA
GATTTATCAATTTTTCTCTACATTTAGCTGGTATATCTCAATTATAGGRGCAATTAATTTATTACAACAATTTAAA
TATACGTATTTAAAACCTCATTGGATCAAATATCTTTATTTGTTTGATCAATTTAATTACTACAATTTATTATTATT
GGCAGTTCCAGTATTAGCTGGTGCAATTACAATATTACTTTCTGATCGTAATTTAAATACTTCTTTTTTTGATCCATCT
GGAGGAGGTGACCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:ACE9003.

Nearest neighbor: *M. unocincoquatro* BOLD:AAG8572, 1.03% (p-dist). The shape of the forewing areolets and the thickness of the veins are different (Fig. 131).

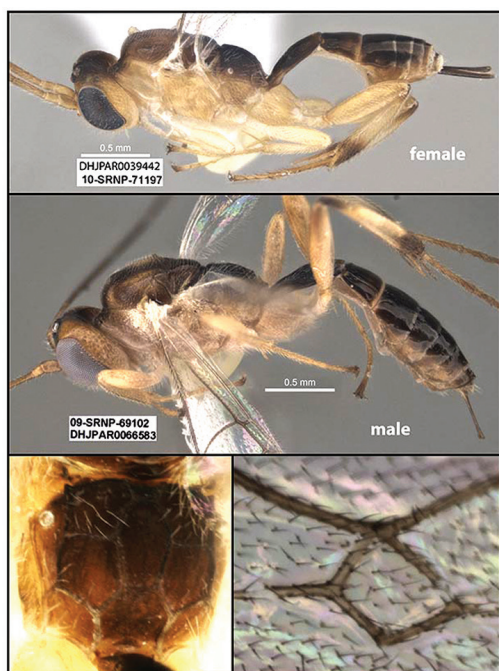


Fig. 130. *M. unoceronueve*, holotype female and male paratype. Unlabeled images are of the holotype. The male (DHJPAR0066583) is not barcoded. It was one of many specimens, presumably siblings, that emerged from the same caterpillar as paratype, DHJPAR0035462, which was barcoded. They both have the same rearing/caterpillar record, 09-SRNP-69102, that can be recovered from the Janzen/Hallwachs website.

Holotype ♀: DHJPAR0039442, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Suspiro, 10.98394, -85.38853, 439 m, eclosion date 04/19/2010, caterpillar collection date 03/16/2010 (CNC). GenBank accession code HQ926183.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield12 (Braconidae: Microgastrinae), which is a primary parasitoid of *Gonioterma anna* (Depressariidae) feeding on *Pourouma bicolor* (Urticaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Hypomicrogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed from one rearing and a single specimen from another.

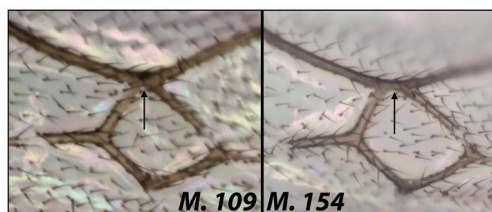


Fig. 131. Comparisons of *M. unoceronueve* with its nearest neighbor, *M. unocincoquatro*.

Mesochorus unouocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:3805F8DB-4240-4C57-9436-9FF50D81A088

Diagnostics: Fig. 132.

Consensus barcode (8 specimens).

```
GATTTTATATTTTATTTTGGTATTTGAGCTGGAATAATTGGATCAGCAATAAGATTAATTATTCGTATAGAATTAGGA
AATCCGGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTAAGTGCACATGCCTTTATTATAATTTTTTTA
TAGTTATACCAATTATAATTGGGGGATTTGGAAATGATTAGTACCTTTAATAATTGGTGCCCCAGATATAGCATTCC
CACGAATAAATAATAAGATTTTGATTATTACCCCATCATTATATTATTTAAGAAGAATTATTAATAAAG
GAGTAGGAACAGGATGRACGTTTACCCACCTTTATCATTAAATGTAAGTCATGAAGGTATGCTGTTGATTAT
CAATTTTTTCATTACATTAGCAGGAATATCYTCAATTATAGGTGCAGTAAATTTATTACCACAATTATAAATA
TACATTTATTTGGAATATCATTAGATCAGTTATCATTATTTACTTGATCAATTTAATACTACAATTTATTATTATTAG
CAGTCCAGTTTTAGCAGGAGCAATTACAATATTATAACTGACCGRAATTTAAATACATCATTTTTTGATCCTTCA
GGGGYGGAGAYCCWATTCTTTATCAACATTTATTT
```

BOLD data: BIN: BOLD:ACE9622.

Nearest neighbor: *M. tres*, BOLD:AAA8075, 1.6% (p-dist). The dimensions of the central propodeal areolae are different as are the dimensions of the areolets of the forewing (Fig. 8, associated with *M. tres*).

Holotype ♀: DHJPAR0020543, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Sendero Guayabal, 10.88571, -85.48184, 500 m, eclosion date 12/23/2007, caterpillar collection date 12/19/2007 (CNC). GenBank accession code OM237702.

Holotype host data: Hyperparasitoid of *Microcharops tibialis* DHJ14 (Ichneumonidae: Campopleginae), which is a primary parasitoid of *Hemiceras nigrescens* (Notodontidae) feeding on *Inga punctata* (Fabaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Hyposoter* (Ichneumonidae: Campopleginae), *Hypomicrogaster*, *Apanteles* (Braconidae: Microgastrinae), *Lytopylus* (Braconidae: Agathidinae). A single *Mesochorus* specimen enclosed from solitary primary parasitoids and multiple *Mesochorus* specimens enclosed from the caterpillars hosting the gregarious primaries.

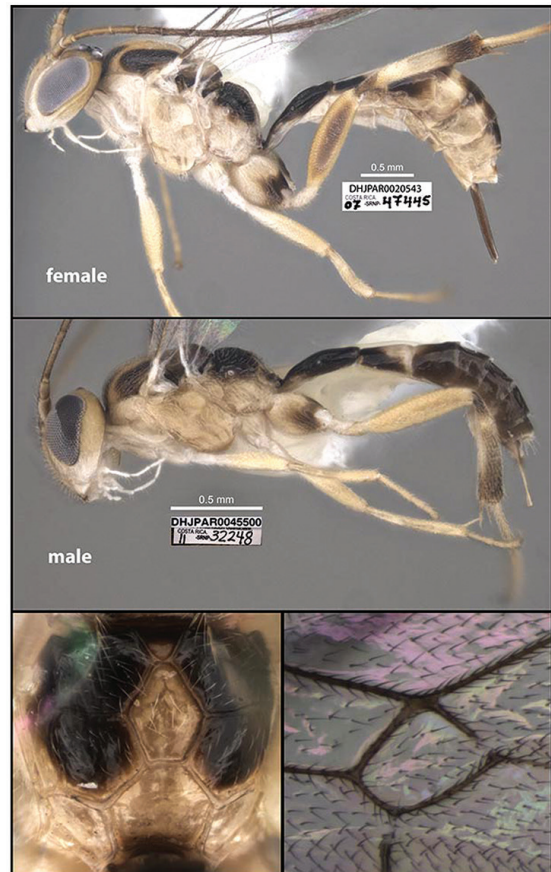


Fig. 132. *M. unouocero*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unounouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:525C1A5A-7881-41B1-96C1-83A3BF0FFECE

Diagnostics: Fig. 133.

Consensus barcode (3 specimens).

```
AATCTTATATTTTATTTTGGTATTTGAGCTGGAATAATTGGATCTTCAATAAGATTAATTATTCGTATAGA
ATTAGGTAATCCAGGTTATTTAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTAATACCTATTATGATTGGAGGATTTGGAAATTGATTAATTCCTTTAATAATTGGAGCTCT
GATATAGCATTCCCTCGAATAAATAATATAAGATTTGATTATTACCTCCTTCATTGATATATTATTATTAAGAA
GATTAATTAATAAAGGAGTTGGAACAGGATGAACAGTTTATCCTCCATTATCTTTAAATATTAGACATGAAGGA
ATATCAGTTGATTATCTATTTTTTCATTACATTAGCAGGAATATCTCAATTATAGGTGCAGTAAATTTTATTAC
TACAATTTTAAATATACACTTACAAGGAATAAGTTAGATCAATTATCATTATTACATGATCAATTAATAATTAC
TACAATTTTATTATTATTAGCAGTACCAGTATTAGCAGGAGCAATTACTATATTATTAACAGATCGAAATTTAA
TACATCTTTTTTTGATCCATCAGGAGGAGGAGATCCTATTCTTTTCAACATTTATTT
```

BOLD data: BIN: BOLD:ACF3106.

Nearest neighbor: *M. unosiete*, BOLD:AAD1724, 1.28% (p-dist). The dimensions of the three median areolae are different (Fig. 23, associated with *M. unosiete*).

Holotype ♀: DHJPAR0040085, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Huerta, 10.93050, -85.37223, 527 m, eclosion date 01/30/2009, caterpillar collection date 01/14/2009 (CNC). GenBank accession code OM237705.

Holotype host data:

Hyperparasitoid of *Cotesia* Whitfield265 (Braconidae: Microgastrinae), which is a primary parasitoid of *Isostyla zetila* (Notodontidae) feeding on *Asterogyne martiana* (Arecaceae). Multiple *Mesochorus* specimens eclosed.

Other host data:

Cotesia (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens eclosed.

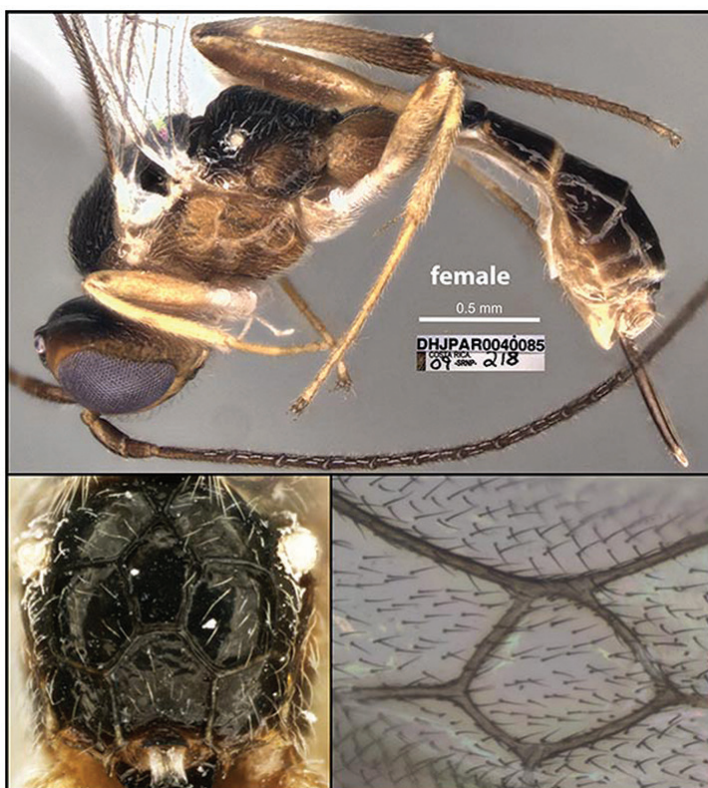


Fig. 133. *M. unounouno*, holotype female.

Mesochorus unounodos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:74C72A46-07A9-4891-9E76-0A7D3C6570D1

Diagnostics: Fig. 134.

Consensus barcode (4 specimens).

```
AATTTTATATTTTATTTTGGTATGTGAGCTGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGA
ATTAGGAAATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGTGGATTTGGAAATTGAATAATTCCTTTAATAATTGGAGCACCA
GATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCCCATCAATTATATTATTATTAAGAGGA
ATTTGTCAAAAAGGTGTTGGAAGTGGTGAACAGTTTACCCCATCATTAATGTTAGACATGAAGGATTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGAATATCTCAATTATAGGTGCTATTAATTTTATTACAAC
TATTTTAAATATACGAATTTAAAAACATCTTTTGAYCAAATATCATTATTTGTATGATCAATTTAATTACAACA
ATTTTATTATTATTAGCTGTTCCAGTTTTAGCAGGTGCAATTACAATATTACTTTCTGATCGAAATTTAAATACTT
CATTTTTGATCCATCAGGGGGAGGTGATCCAATTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ACE9731.

Nearest neighbor: *M. nueveseis*, BOLD:ABX4997, 1.76% (p-dist). The coloration of the two species is very different (Fig. 135).

Holotype ♂: DHJPAR0040389, Área de Conservación Guanacaste, Guanacaste, Sector Mundo Nuevo, Punta Plancha, 10.74160, -85.42734, 420 m, eclosion date 6/27/2010, caterpillar collection date 06/16/2010 (CNC). GenBank accession code JQ574841.

Holotype host data: Hyperparasitoid of *Apanteles* sp. (Braconidae: Microgastrinae), which is a primary parasitoid of *Phaedropsis Solis02* (Crambidae) feeding on *Helicteres guazumifolia* (Malvaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

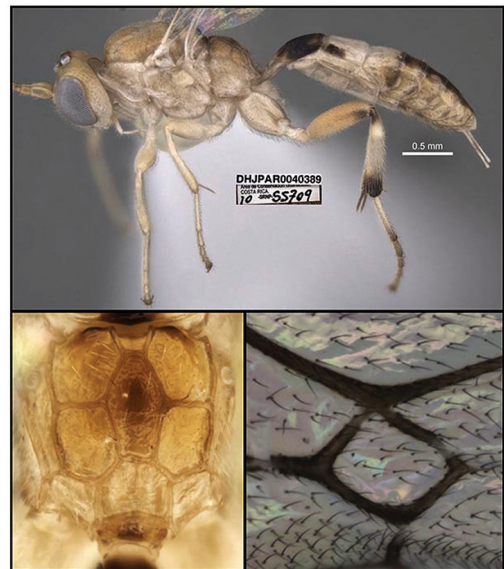


Fig. 134. *M. unounodos*, holotype male.

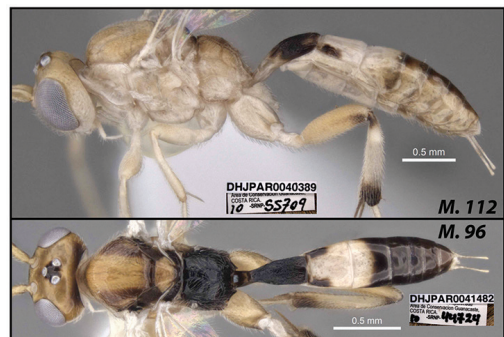


Fig. 135. Comparisons of *M. unounodos* with its nearest neighbor, *M. nueveseis*.

Mesochorus unounotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F87100A6-B7C5-4CFC-A069-0315F1674165

Diagnostics: Fig. 136.

Consensus barcode (2 specimens).

```
AATTTTATATTTTATTTTGGTATATGAGCAGGAATAATCGGATCATCAATAAGAATAATTATTCGAATAGA
ATTAGGTAATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTACATCACATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGTGGATTTGGTAATTGAATAATCCACTAATAATTGGAGCACCA
GATATAGCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCATCTATTATACTATTACTATTTCAGAGGA
ATTATACAAAAAGGAGTTGGAAGTGGACTGGATGAACAGTTTATCCACCATTATCTTAAATATTAGTCATGAAGTTTAT
CAGTTGATTTATCAATTTTTTCATTACATTTAGCTGGAATATCATCAATTATAGGAGCTATTAATTTTATTACAA
CAATTTTAAATATACGAATTTTTAAACTTCATTTGATCAAATATCATTATTTGTTTGATCAATTTTAAATTACAACA
ATTTTATTATTATTAGCAGTTCCAGTTTTAGCTGGAGCTATTACAATACTCTTTCAGATCGTAATTTAAATACTT
CATTTTTGATCCATCAGGAGGAGGTGACCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ACJ3584.

Nearest neighbor: *M. tresdos*, BOLD:AAF0643, 6.41% (p-dist).

Holotype ♀: DHJPAR0051874, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Potrero Argentina, 10.89021, -85.38803, 520 m, eclosion date 02/25/2013, caterpillar collection date 02/10/2013 (CNC). GenBank accession code OM237719.

Holotype host data: Hyperparasitoid of *Apanteles laurenmoralesae* (Braconidae: Microgastrinae), which is a primary parasitoid of elachBioLep01 BioLep754 (Depressariidae) feeding on *Tapirira mexicana* (Anacardiaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Apanteles* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

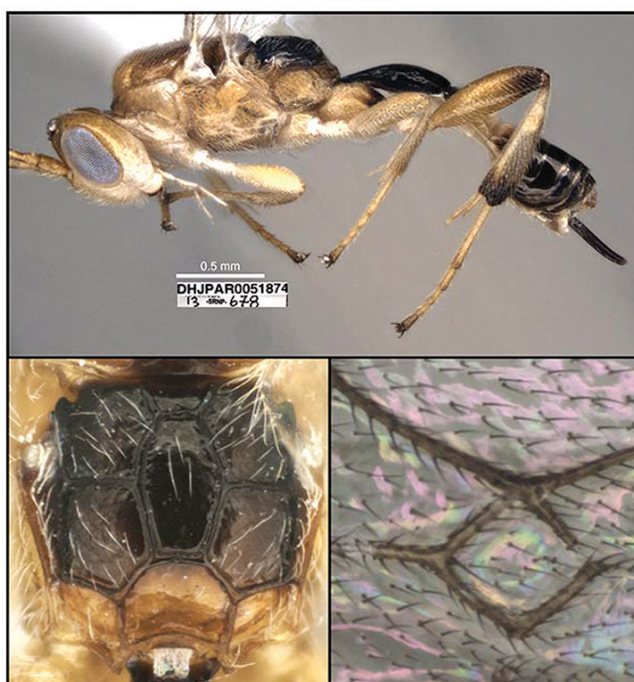


Fig. 136. *M. unounotres*, holotype female.

Mesochorus unounocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:6E188CD1-BC0D-4F5B-AA7E-4A9948E6B039

Diagnostics: Fig. 137.

Consensus barcode (7 specimens).

```
TATTTTATATTTTATTTTTGGTATATGAGCGGGAATAATTGGCTCTTCAATAAGTATAATTATTCGTATAGA
ATTAGGTAATCCAGGATTTTAAATTAATAATGACCAAATTTATAATTCATTTGTAACCTTCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATGATTGGAGGATTTGGAAATTGAATAATTCATTAATAATTGGAGCCC
CAGATATAGCATTTCCTCGAATAAATAATATGAGATTTTGATTATTACCTCCTTCAATTATATTACTTTTATTAAGA
AGAATTTGCCAAAAGGAGTGGGAACAGGATGAACTGTTTACCCCTTTATCACTTAATGTAAGTCATGAAG
GATTATCAGTAGATTTATCAATTTTTCACTACATTTAGCAGGTACATCTTCAATTATAGGAGCAGTAAATTTATTA
CAACCATTATCAATATACGTATTAATAAAAACATTCATTCGATCAAATATCTTTATTTGTTTGATCAATCTTAATACAA
CAATTTTATTATTATGGCTGTACTGTACTAGCAGGTGCAATTACCATATTATTATCTGATCGTAATTTAAATACAT
CATTTTTGATCCATCTGGTGGAGGAGATCCAATTTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:ACJ4159.

Nearest neighbor: *M. sieteseis*, BOLD:AAX4045, 5.47% (p-dist).

Holotype ♀: DHJPAR0051413,

Área de Conservación, Guanacaste, Alajuela, Sector Rincon Rain Forest, Palomo, 10.96187, -85.28045, 96 m, eclosion date 11/08/2012, caterpillar collection date 10/16/2012 (CNC). GenBank accession code OM237687.

Holotype host data:

Hyperparasitoid of *Apanteles* Janzen50 (Braconidae: Microgastrinae), which is a primary parasitoid of *Neoleucinodes* Janzen02 (Crambidae) feeding on *Heliconia irrasa* (Heliconiaceae). A single *Mesochorus* specimen eclosed. GenBank accession code OM237687.

Other host data: *Apanteles*

(Braconidae: Microgastrinae).

A single *Mesochorus* specimen eclosed.

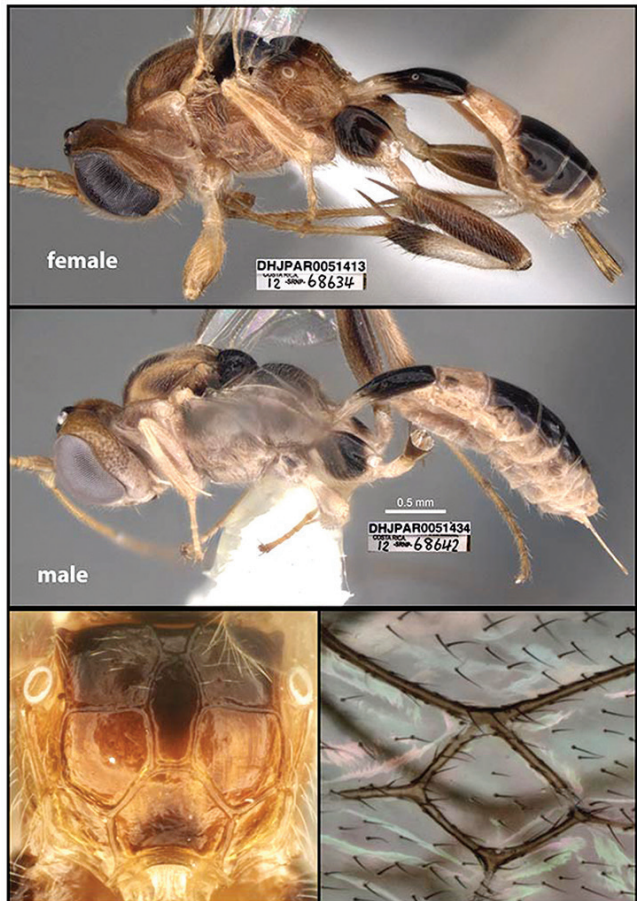


Fig. 137. *M. unounocuatro*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unounocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:D917D933-A0E0-4D89-9982-2BC0F0E442D6

Diagnostics: Fig. 138.

Consensus barcode (3 specimens).

```
AATTTTATATTTTATTTTTGGTATATGAGCAGGAATAATTGGTTCTTCAATAAGAATAATTATCCGAATAGA
ATTAGGAAACCCAGGATTTTTAATTAATAATGATCAAATTTATAATTCATTTGTAACCTCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGCGGATTTGGAAATTGAATAATTCCATTAATAATTGGAGCCC
CAGATATAGCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATATTACTATTATTAAGA
AGAATTTGCCAAAAGGAGTTGGTACTGGATGAAGTGTATCCACCATTATCATAAATATTAGACATGAAG
GATTATCTGTTGATTTATCAATTTTTTCATTACATTTAGCCGGTATATCATCAATTATAGGTGCAATTAATTTATTA
CAACTATTATAATATACGAATTTAAAAACATCATTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACAAC
TATTTTATTATTATTAGCAGTCCAGTTTTAGCCGGTGCAATTACTATATTATTATCAGATCGAAATTTAAATACTT
CATTTTTGATCCATCCGGTGGTGGTGACCAATTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:ACJ4853.

Nearest neighbor: *M. unotresnueve*,

BOLD:ADQ8339, 4.65% (p-dist).

Holotype ♀: DHJPAR0053000, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Perdido, 10.87940, -85.38607, 620 m, eclosion date 07/05/2013, caterpillar collection date 06/20/2013 (CNC). GenBank accession code OM237744.

Holotype host data: Hyperparasitoid of *Dolichogenidea* Janzen19 (Braconidae: Microgastrinae), which is a primary parasitoid of *Brenthia* Janzen05 (Choreutidae) feeding on *Pterocarpus officinalis* (Fabaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Dolichogenidea* (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

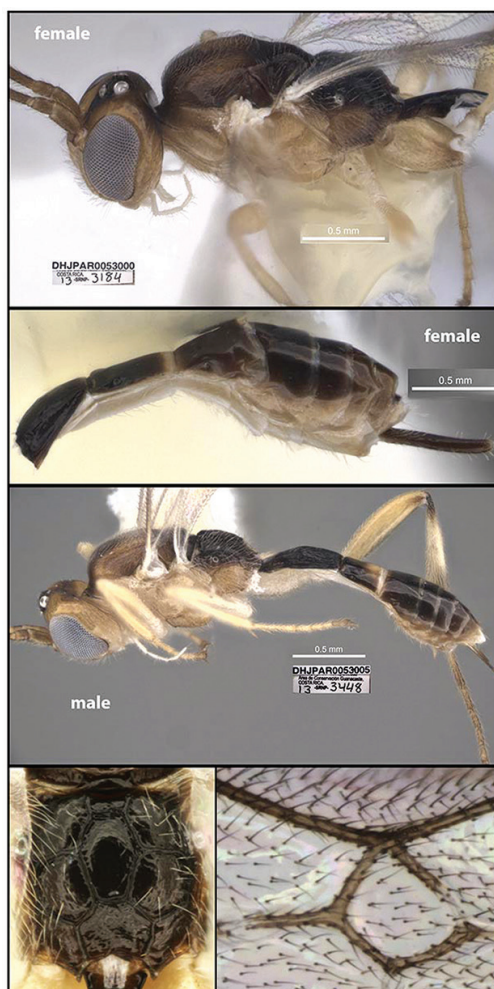


Fig. 138. *M. unounocinco*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unounoseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:469CB060-8D38-492D-B9B1-D26C2DCF33D6

Diagnostics: Fig. 139.

Consensus barcode (5 specimens).

TATTTTATACTTTATTTTTGGAAATGATCAGGAATAATTGGTTTCCTCAATAAGATTAATTATTCGAATAGA
 ATTAAGTACCCCTGGTTATTTAATTAATAATGATCAAATTTATAATTCAATTGTTACTGCCCATGCATTTATTA
 TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGCTTTGGAAATTGAATAATTCCTTTAATAATTGGTGCTCCA
 GATATAGCTTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCTCAATTACATTCTTATTATTAAGAAGA
 ATTTGTCATAAAGGTGTTGGTACTGGATGAACGTGTACCACCTTTATCATTAAATACTAGTCATGAAGGATTA
 GCTGTTGATTTATCTATTTTTCTTACACTTAGCTGGAATATCATCAATTATAGGAGCTATTAATTTTATCACAA
 CAATTTTAAATATACGAATTATAAATACTTCTTTAGATCAAATATCATTATTTGTATGATCAATTCTAATTACAACA
 ATTTTATTACTTTTAGCAGTACCAGTTTTAGCAGGAGCAATTACTATATTATTATCTGATCGAAACTTAAATACAT
 CATTTTTGACCCTTCAGGGGGAGGAGACCCCATTTTATATCAACATTTATTT

BOLD data: BIN: BOLD:ACK4344.

Nearest neighbor: *M. unodosiete*, BOLD:ACW7619, 9.46% (p-dist).

Holotype ♂: DHJPAR0053159, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Cementerio Viejo, 10.88111, -85.38889, 570 m, eclosion date 07/14/2013, caterpillar collection date 06/23/2013 (CNC). GenBank accession code OM237753.

Holotype host data: Hyperparasitoid of *Alabagrus jeanmariecadoui* (Braconidae: Agathidinae), which is a primary parasitoid of *Desmia ploralis*DHJ03 (Crambidae) feeding on *Psychotria graciliflora* (Rubiaceae). A single *Mesochorus* specimen eclosed.

Other host data: *Alabagrus* (Braconidae: Agathidinae). A single *Mesochorus* specimen eclosed.

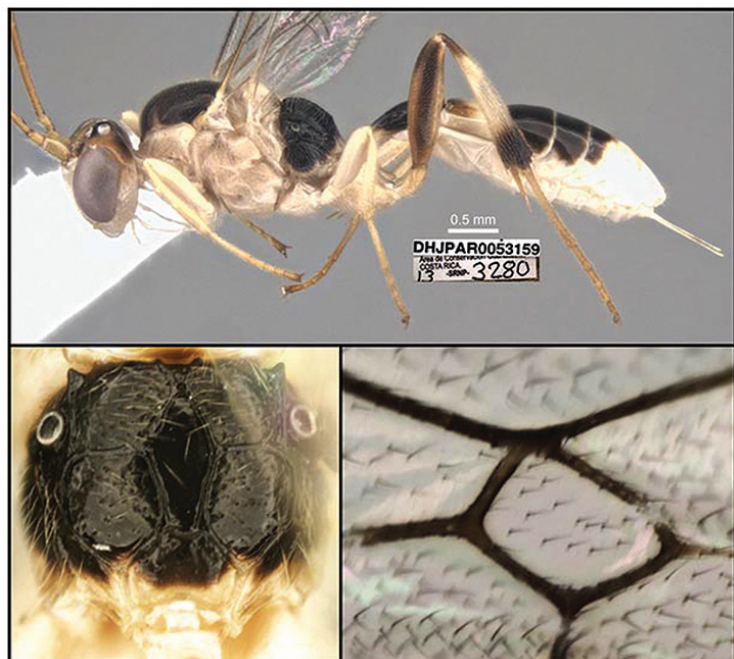


Fig. 139. *M. unounoseis*, holotype male.

Mesochorus ununosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F63A2181-B95B-4495-A45F-5323ED26BDF7

Diagnostics: Fig. 140.

Consensus barcode (2 specimens).

```
AGTTTTATATTTTTTTTTGGTATATGATCAGGAATAATTGGTTCATCTATAAGAATAATTATTCGTATAGAACTAGGA  
AATCCAGGATTTTTAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCCCTCATTATAATTTTTTTTA  
TAGTAATACCTATTATAATTGGAGGTTTTGGAAATTGAATAGTACCATTAATAATTGGAGCACCAGATATAG  
CATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATATTTTTATTATTAAGAAGAATTTGT  
CAAAAAGGTGTTGGAACGGATGAACAGTTTACCCACCTCTTTCATTAATGTTAGTCATGAAGGATTAGCTGTT  
GACTTATCTATTTTTCTTTACATTTAGCTGGTATATCCTCAATTATAGGAGCAATTAATTTTATTACAACAATTTTAA  
ATATACGAATTTTAAATACATCATTAGACCAATAACATTTTGTGTTGATCAATTTTAATTACAACAATTTTAC  
TACTTTTAGCTGTACCAGTTTTAGCAGGTGCAATTACTATATTATTAAGTATCGAAATCTAAATACCTCATTTTTT  
GATCCATCAGGAGGAGGAGATCCAATTTTATACCAACATTTATTT
```

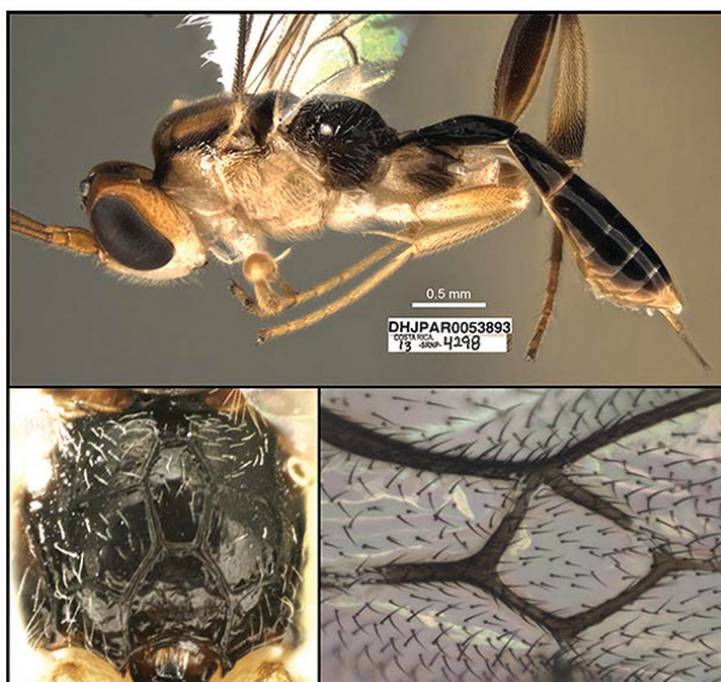
BOLD data: BIN: BOLD:ACL9187.**Nearest neighbor:** *M. unodosiete*, BOLD:ACW7619, 6.89% (p-dist).**Holotype** ♂: DHJPAR0053893, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Sendero Perdido, 10.87940, -85.38607, 620 m, eclosion date 09/02/2013, caterpillar collection date 08/16/2013 (CNC). GenBank accession code OM237718.**Holotype host data:** Hyperparasitoid of *Prasmodon bobpoolei* (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenomoma* Janzen58 (Depressariidae) feeding on *Serjania valerioi* (Sapindaceae). A single *Mesochorus* specimen eclosed.**Other host data:** *Prasmodon* (Braconidae: Microgastrinae). A single *Mesochorus* specimen eclosed.

Fig. 140. *M. ununosiete*, holotype male.

Mesochorus unounoocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:771F6B65-0122-4461-A000-8FE89F78F699

Diagnostics: Fig. 141.

Holotype barcode.

```

TTTATTTTTGGAATATGAGCAGGAATAATTGGTTTCATCAATAAGATTATTAATTCGATTAGAACTTGAAATCCT
GGATTTTTAATTAATAATGACCAAATTTATAATTCATTTGTAAGTCTCATGCCTTTGTAATAATTTTTTTTA
TAGTAATGCCAATTATAATTGGAGGATTTGGGAATTGATTAATTCCATTAATAATTGGAGCTCCTGATA
TAGCATTCCCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCTCTTTTTTTATTAATTTTTAAGAA
GAATTATTCATAAAGGAGTAGGAACAGGATGAAGTGTACCCACCTTTATCTTTAAATTCTAGTCATGAAGGA
ATATCTGTAGATTTAAGAATTTTTCTCTTCATTTAGCAGGTATATCTTCAATTATAGGATCAATTAATTTTTATTA
CAACTATTTAAATATACGATGTTTAGGGACTTCTAGATCAAATATCTTTATTTACTTGATCAATAAAAATTACAAC
TATTTTATTACTTTTAGCCGTCAGTTCTGCAGGTGCAATCACAAATATTATTGACAGAT
  
```

BOLD data: BIN: BOLD:ACS0642.

Holotype ♂: BIOUG18700-H10, Área de Conservación Guanacaste, Guanacaste, Sector Santa Rosa, Bosque San Emilio, 10.84380, -85.61380, 300 m, Malaise trap, 05/28/2012 (CNC). GenBank accession code OM237737.

Holotype host data: None.

Other host data: None.

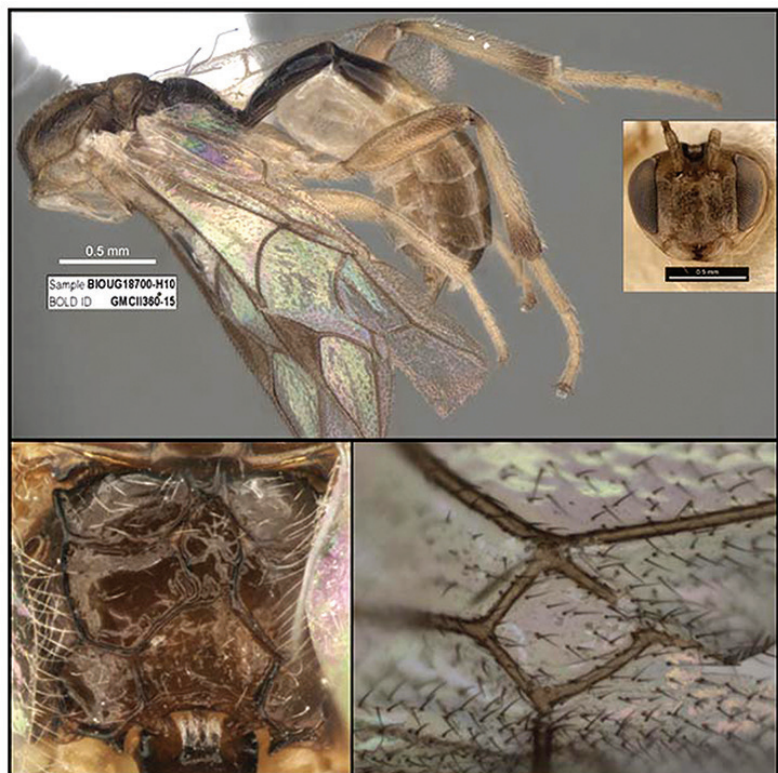


Fig. 141. *M. unounoocho*, holotype male.

Mesochorus unounonueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9BA97D2A-C390-4122-A246-D9B81B3206AE

Diagnostics: Fig. 142.

Holotype barcode.

```
TATTTTATATTTTATTTTGGGAATATGAGCAGGAATAATTGGGTCATCAATAAGAATAATTATTCGGATAGA  
ATTAGGTAATCCTAGATATTTAATAATAATGATCAAATTTATAATTCTTTTGTTACATCTCATGCTTTTATTA  
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGTTTTGGTAATTGAATAATACCATTATGATTGGAGCACCA  
GATATAGCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCACCTTCAATTATATATTATTATTAAGAAA  
TATTATTCAAAAAGGTGTAGGGACAGGATGAACAGTTTATCTCCATTATCATTAAATATAAGACATGAAGGGATAT  
CAGTTGATATATCAATTTTTTCATTACATTTAGCTGGTATGTCATCAATTATAGGGGGGATTAATTTTATTACAAC  
TATTATAAATATACGAATTAAGGGAATATATTAGATCAAATATCTTTATTTGTTTGATCAATCTTAATTACTACAATTT  
GTTATTATTAGCAGTTCCGGTGTAGCAGGTGCAATTACTATATATTATCTGATCGTAATTTAAATACTTCATTTTTT  
GATCCATCAGGTGGAGGTGACCAATTTTATATCAGCATTATTT
```

BOLD data: BIN: BOLD:ACT0355.

Nearest neighbor: *M. unodoscero*, BOLD:ACU6992, 9.82% (p-dist).

Holotype ♀: DHJPAR0056338, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Medrano, 11.01602, -85.38053, 380 m, eclosion date 07/27/2014, caterpillar collection date 07/08/2014 (CNC). GenBank accession code OM237683.

Holotype host data: Hyperparasitoid of *Diolcogaster* Choi100 (Braconidae: Microgastrinae), which is a primary parasitoid of *Semaepopus* Janzen05 (Geometridae) feeding on *Lacistema aggregatum* (Lacistemataceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

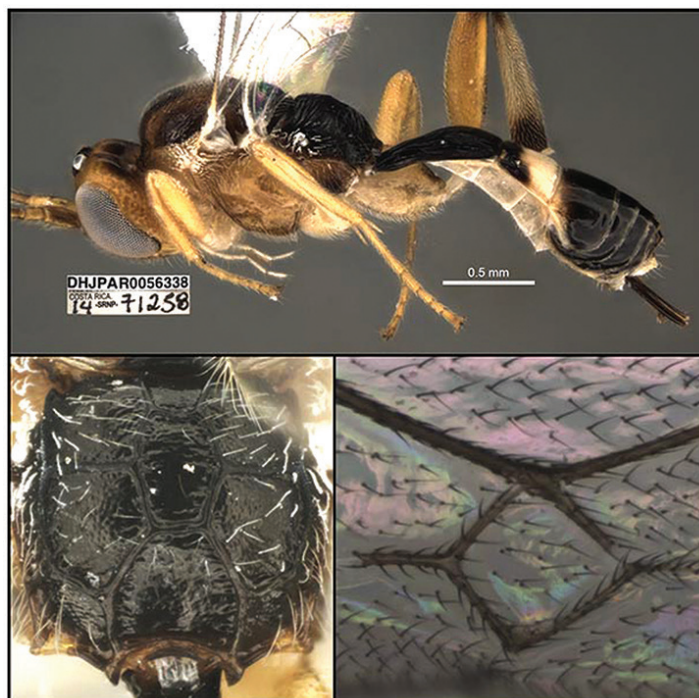


Fig. 142. *M. unounonueve*, holotype female.

Mesochorus unodoscero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:0EE5E775-B265-46DE-9941-56926982DEBB

Diagnostics: Fig. 143.

Holotype barcode.

```
TATTTATATTTTATTTTGGTATATGATCAGGTATAATTGGATCATCAATAAGAATGATTATTCGAATAGA
ATTAGGTAATCCAAGTTATTTAATTAATAATGATCAAATTTATAATTCCTTTGTTACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTAATACCAATTATAATTGGTGGATTGGAAATTGAATAATCCATTAATAATTGGAGCACCA
GATATAGCTTTCCACGAATAAATAATATAAGATTTGATTATTACCTCCTTCAATTATATTATTACTAAGTAA
TATTATCAAAAAGGTACAGGTACAGGTTGAACAATTTATCCACCATTATCATTAAATATAAGACATGAAGGTA
TATCTGTTGATATATCAATTTTTCTTTACATTTAGCAGGAATATCATCAATATAGGAGGAATTAACCTTTATTA
CAACTATTTAAATATACGAATTAATAAGTCTTCATTAGATCAAATATCTTTATTTGTTTGATCAATTTAATTACAAC
TATTTTATTATTATTAGCAGTTCCAGTATTAGCAGGTGCAATTACTATATTATTATCTGATCGAAATTTAAATACAT
CATTTTTGATCCATCAGGAGGAGGAGATCCTATTTATTTCACATTTATTT
```

BOLD data: BIN: BOLD:ACU6992.

Nearest neighbor: *M. unodostres*, BOLD:AAD2703, 2.24% (p-dist). The sculpture of the propodeum and the configuration of the propodeal areolae, especially the posteromedial areola, are different (Fig. 144).

Holotype ♂: DHJPAR0056944, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Medrano, 11.01602, -85.38053, 380 m, eclosion date 10/24/2014, caterpillar collection date 10/04/2014 (CNC). GenBank accession code OM237738.

Holotype host data: Hyperparasitoid of an unidentified microgastrine (Braconidae: Microgastrinae), which is a primary parasitoid of *Euclystis sublignaris* (Erebidae) feeding on *Apeiba membranacea* (Malvaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

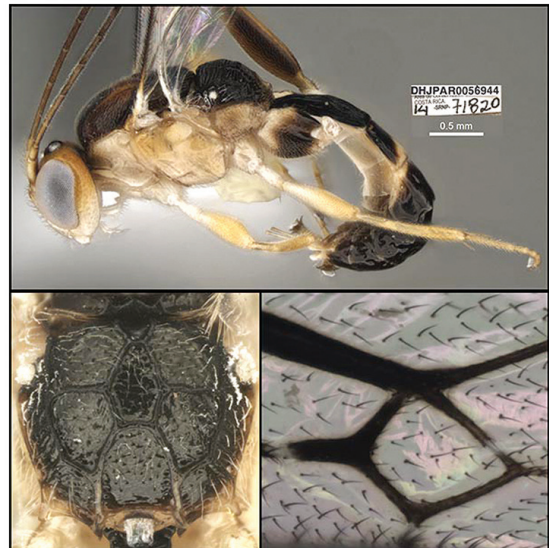


Fig. 143. *M. unodoscero*, holotype male.

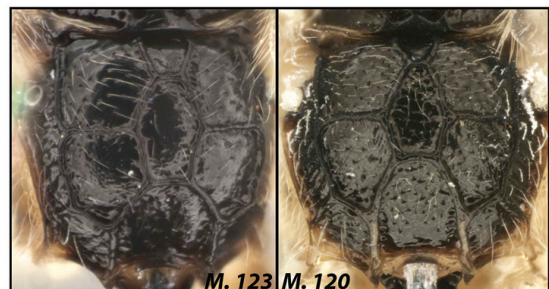


Fig. 144. Comparisons of *M. unodostres* with its nearest neighbor, *M. unodoscero*.

Mesochorus unodosuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:D9854E63-0CA8-4750-A20C-8B9BC53C92F2

Diagnostics: Fig. 145.

Holotype barcode.

```
TATTTTATATTTTATTTTGGTATATGAGCTGGAATAATTGGTTCATCTATAAGATTAATTGTCCGTATAGAACTTGGAAATCCAGGATTCTTAATTAATAATGATCAAATTTATAATTCATTTGTAACATCCCACGCATTATTATAATCTTTTTTATAGTAATACCTATTATAATTGGAGGATTTGGAAATTGAATAGTTCCATTAATAATTGGAGCTCCTGATATAGCATTTCCTCGTATAAATAATATAAGATTTTGATTATTACCACCCTCAATTTTCATTACTTTTATTAAGAGGAATTTGTCAAAAAGGTGTAGGAACAGGTTGAACTGTTTACCCACCATTATCATTAAATATTAGTCATGAAGGCTTATCAGTAGATTTATCAATCTTTTCATTACATCTTGCAGGTATATCATCAATTATAGGTGCAATTAACCTTTATTACAAC TATTATAAATATACGTATTAATAAATCTCTTTTGATCAAATATCTTTATTTGTATGATCAATTTTAATTACAAC CATCCTTTTATTATTAGCAGTACCAGTTTTAGCAGGAGCAATTACAATATTATTATCTGATCGAAATTTAAATACAT CATTTTTGTATCCGTCAGGAGGAGGGGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ACU7076.

Nearest neighbor: *M. unocuatronueve*, BOLD:AEF1753, 10.26% (p-dist).

Holotype ♀: DHJPAR0056926, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Jacobo, 10.94076, -85.31770, 461 m, eclosion date 02/01/2015, caterpillar collection date 01/16/2015 (CNC). GenBank accession code OM237695.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* OVRGDHJ10 (Braconidae: Microgastrinae), which is a primary parasitoid of *Herpetogramma* Solis10 (Crambidae) feeding on *Justicia macrantha* (Acanthaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

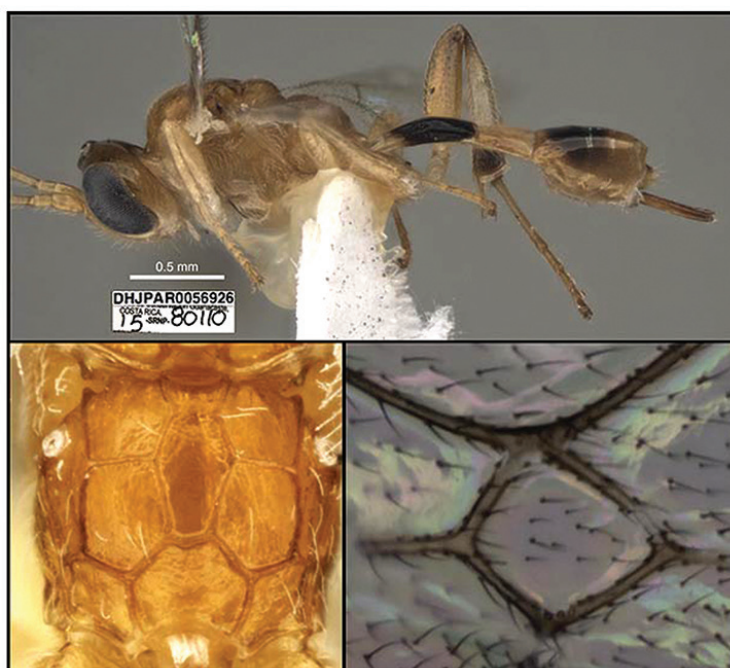


Fig. 145. *M. unodosuno*, holotype female.

Mesochorus unodosdos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:159AD3BB-9301-4388-87A7-AB224F8B558E

Diagnostics: Fig. 146.

Holotype barcode.

```
GATTTTATATTTTATTTTGGAAATGAGCTGGAATAATTGGTTCATCAATAAGAATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTTACATCTCATGCATTTATTATAATTTTTTTTA
TAGTTATACCTATTATAATTGGTGGATTTCGGAAATTGAATAGTCCATTAATAATTGGTGCTCCAGATATA
GCCTTTCCTCGTATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATTATAAGTGGAAATTTGTCAA
AAAGGTGTAGGAACAGGGTGAACAGTATACCCACCTTTATCATTAAATATTAGACATGAAGGATTATCAGTTGATTT
GTCAATTTTTTCTTTACATTTAGCTGGTATATCATCAATATAGGTGCAATTAATTTTATTACTACAATTTTAAATA
TACGTGTTTTAAAACTCCCTTGATCAAATATCTTTATTTGATGATCAATTTAATTACCACAATTTTATTATTATA
GCAGTTCAGTATTAGCTGGAGCAATTACTATATTACTTTCTGATCGTAATTTAAACTTTCATTTTTTGACCCATCAG
GAGGAGGGGACCCTATTTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:ACU7077.

Nearest neighbor: *M. unoceronueve*, BOLD:ACE9003, 6.01% (p-dist).

Holotype ♀: DHJPAR0056937, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Palomo, 10.96187, -85.28045, 96 m, eclosion date 01/09/2015, caterpillar collection date 12/28/2014 (CNC). GenBank accession code OM237754.

Holotype host data: Hyperparasitoid of an unidentified microgastrine (Braconidae), which is a primary parasitoid of *Antaeotricha radicalis* (Depressariidae) feeding on *Vochysia guatemalensis* (Vochysiaceae). A single *Mesochorus* specimen eclosed.

Other host data: None.

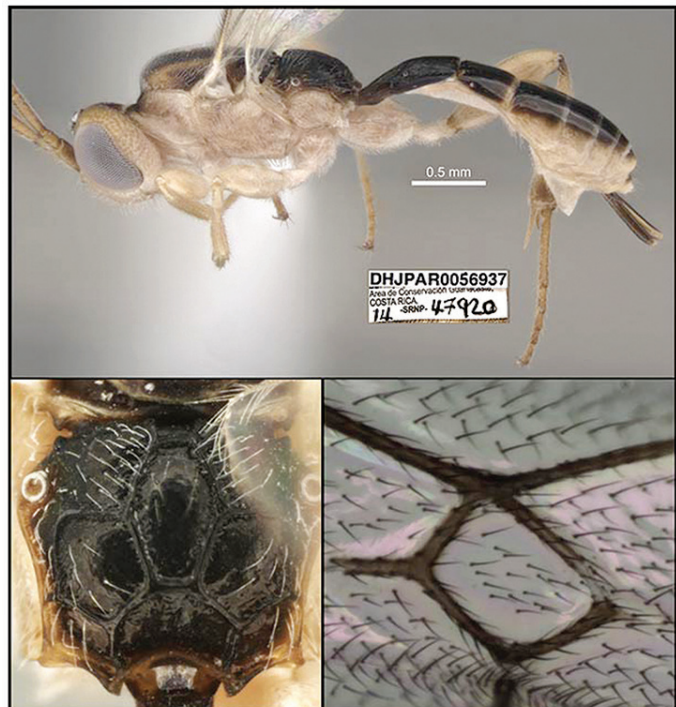


Fig. 146. *M. unodosdos*, holotype female.

Mesochorus unodostres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:1B63F5CA-8AA9-40FC-B7AE-2708BBA5B5C7

Diagnostics: Fig. 147.

Consensus barcode (7 specimens).

ATTTTATATTTTATTTTGGGAATATGATCAGGTATAATTGGATCATCAATAAGAATAATTATTCGAATGGA
 ATTAGGTAATCCAAGTTATTTAATTAATAATGATCAAATTTATAATTCCTTTGTTACAGCTCATGCCTTTATTA
 TAATTTTTTTTATAGTAATACCAATTATAATTGGTGGATTTGGAAATTGAATAATTCCTTAATAATTGGAGCACCAGA
 TATAGCTTTCCACGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATTAAGTAATATTATT
 CAAAAGGTACAGGTACAGGTTGAACAATTTATCCACCATTATCATTAAATATAAGACATGAAGGTATATCTGTTGA
 TATATCAATTTTTCTTTACATTTAGCAGGAATATCTCAATTATAGGTGGAATTAATTTTATTACTACTATTTAAATA
 TACGAATTAATAAGACTTCACTAGATCAAATATCTTTATTGTTTGATCAATTTAATTACAACATTTTATTATTATTA
 GCAGTCCCAGTATTAGCAGGTGCAATTACTATATTATTATCTGATCGGAATTTAAATACATCATTTTTTGATCCATCAG
 GAGGAGGAGATCCTATTTTATTTCAACATTTATTT

BOLD data: BIN: BOLD:AAD2703.

Nearest neighbor: *M. unodoscero*,
 BOLD:ACU6992, 2.24% (p-dist). The
 sculpture of the propodeum and the
 configuration of the propodeal areolae,
 especially the posteromedial areola, are
 different (Fig. 144, associated with the
 treatment of *M. unodoscero*).

Holotype ♀: DHJPAR0023515, Área de
 Conservación Guanacaste, Guanacaste,
 Sector Pitilla, Amonias, 11.04249,
 -85.40339, 390 m, eclosion date
 12/07/2007, caterpillar collection date
 11/15/2007 (CNC). GenBank accession
 code JF793182.

Holotype host data: Hyperparasitoid
 of *Snellenius sandyknappae*
 (Braconidae: Microgastrinae), which is
 a primary parasitoid of *Helia argentipes*
 (Erebidae) feeding on *Inga oerstediana*
 (Fabaceae). A single *Mesochorus*
 specimen eclosed.

Other host data: *Snellenius*
 (Braconidae: Microgastrinae). A single
Mesochorus specimen eclosed.



Fig. 147. *M. unodostres*, holotype female.



Mesochorus unodoscuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:85F7A8B1-B41A-40A1-9A97-FAE128A19010

Diagnostics: Fig. 148.

Consensus barcode (3 specimens).

```
ATTTTATATTTTATTTTGGGAATATGAGCAGGAATAATTGGTTCATCTATAAGAATAATTATTCGAATAGAATTAGGA
AATCCTGGATTTTAATTAATAATGACCAAATTTATAATCTTTTGTAAACATCCCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCTTTAATAATTGGAGCCCCAGATATA
GCCTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCCCATCAATTATATTATTAATATTAAGTAGAATTT
GCCAAAAGGAGTAGGAAGTGGTTGAACAATTTACCCCATATATCATTAATATAAGACATGAAGGAATATCT
GTAGATTTATCAATTTTTTTCATTACATTTAGCTGGTATATCTCAATTATAGGAGCAATTAATTTTATTACAACA
ATTTTAAATATACGTATTTTAAAACATCTTTAGATCAAATATCTTTATTTGTTTGATCAATTTTAATTACAACA
ATTTTATATTATTAGCAGTCCAGTTTTAGCCGGTGAATTACTATATTATTATCTGAT
```

BOLD data: BIN: BOLD:ACW5260.

Nearest neighbor: *M. cuatronueve*, BOLD:AAM1067, 4.87% (p-dist).

Holotype ♀: BIOUG24853-B04, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88000, -85.38900, 575 m, Malaise trap, 03/24/2014 (CNC).

GenBank accession code OM237763.

Holotype host data: None.

Other host data: None.

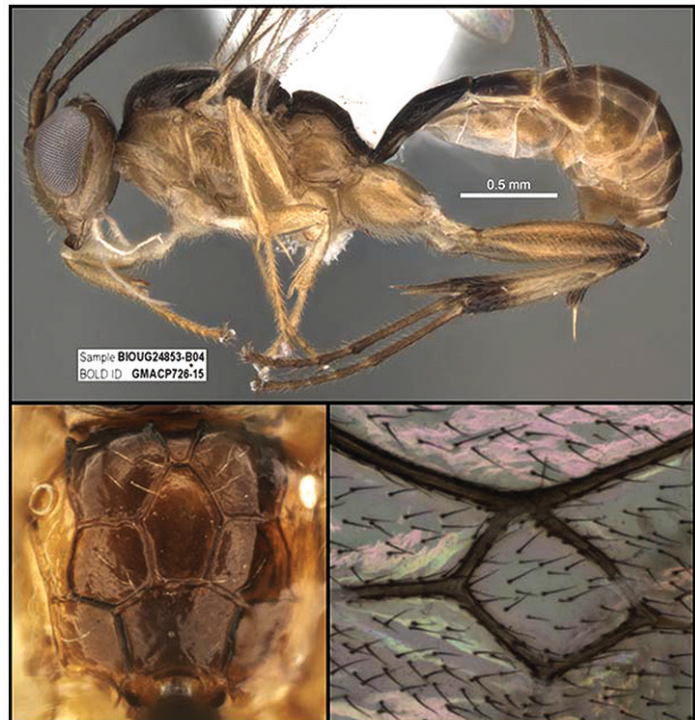


Fig. 148. *M. unodoscuatro*, holotype female.

Mesochorus unodoscinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8BAF841E-4F22-4CF8-85AD-DEF082FA2684

Diagnostics: Fig. 149.

Consensus barcode (2 specimens).

```
GTTTTATATTTTATTTTGGGAATATGAGCAGGTACTAGGGGCATCAATAAGAATAGTTATTCGAATAGAATTAGGA
AATTCAGGATTTTAATTAATAATGATCAAATTTATAATCTTTTGTAACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGGGGATTTGGAAATTGAATAGTACCATTAATGATCGGAGCTCCTGATATA
GCTTCCCTCGTATAAATAATATAAGATTTTGATTATTACCCCCTTCAATTATAATATTAATTAAGTAATATTTGT
CAAAAAGGTGTAGGAACCTGGTTGGACCATTATCCACCTTTATCATTAAATATAGGACATGAAGGATTTTCGGTT
GATTTATCAATTTTTCTTTACATTTAGCTGGAATATCCTCAATTATAGGTGCAATTAATTTTATTACAACA
ATCTAAATATACGAATTATAAAAATATCATTAGATCAAATATCATTATTTGTTTGATCAATTTTAATTACAACA
ATTTTATTATTATTAGCAGTTCAGTTTTAGCTGGAGCAATCACAAATATTACTTTCTGAC
```

BOLD data: BIN: BOLD:ACW5717.

Nearest neighbor: *M. trescuatro*, BOLD:AAF0739, 8.24% (p-dist).

Holotype ♀: BIOUG22620-A03, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88000, -85.38900, 575 m, Malaise trap, 11/18/2013 (CNC).

GenBank accession code OM237722.

Holotype host data: None.

Other host data: None.



Fig. 149. *M. unodoscinco*, holotype female.

Mesochorus unodosseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9054C3D0-32E9-44A3-A03E-A999AEC62CCA

Diagnostics: Fig. 150.

Consensus barcode (8 specimens).

```
GATGATTTTTGGTCACCCTGAAGTTTATCGATATACGACGTGCCTACCATCTCTCTCAACAACAACAACGGAGGA
GGAGGAAAAGAGAGAGATGGTAGGCACGTCGTATATCATAAAGATATTGGAATTTATATTTATTTTTGGTATAT
GAGCTGGAATAATTGGTTCATCTATAAGATTAATTATTTCGATTAGAATTAGGAAATCCTGGTTATTTAATTAATAAT
GATCAAATTTATAATTCATTTGTAACGCTCATGCTTTTGAATGATTTTTTTTATAGTTTATACCAATTATAATTGGAG
GATTTGGAAATTGATTAATTCATTGATAATTGGAGCTCCAGATATAGCTTTCCCTCGAATAAATAATATAAGATTTT
GATTATTACCACCTTCATTAATTTTATTAATTTAGGTAGTATTACTCATAAAGGTGTTGGAACAGGTTGAACT
GTTTATCCACCATTATCTTTAAATACCAGTCATGAAGGTATATCAGTTGATTTATCCATTTTTCATTACATTAGCA
GGTATATCATCAATTATAGGAGCAATTAATTTATTACAACATTTTAAATATACGATGTATAGGAACATCCTTAGATCA
AATATCATTATTTACTTGATCTATAAAAATTACAACAATTTTATTATTATTAGCAGTTCAGTCCCTTGCAGGAGCTATTA
CAATATTATTAGCAGATCGTAATTTAAATACTTCTTTTTTGGATCCTTCAGGAGGGGGGAGATCCTATTTTATATCAA
CACTTATTTT
```

BOLD data: BIN: BOLD:ACW6579.

Holotype ♀: BIOUG60354-A02, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-3, 10.76300, -85.33400, 820 m, Malaise trap, 08/22/2019 (CNC). GenBank accession code OM237681.

Holotype host data: None.

Other host data: None.

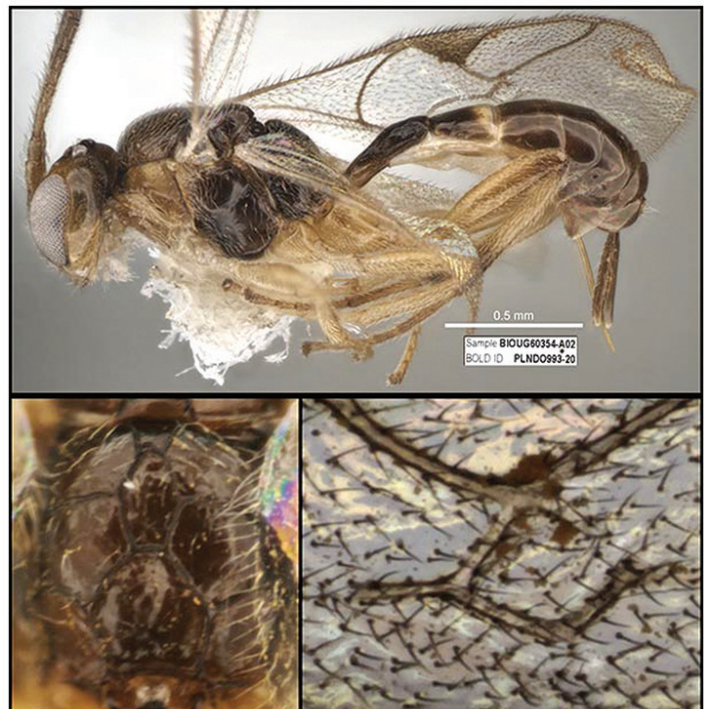


Fig. 150. *M. unodosseis*, holotype female.

Mesochorus unodossiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:A775A712-5DD9-4930-B14A-76072B31F4FB

Diagnostics: Fig. 151.

Holotype barcode.

```
AATTTTATATTTTATTTTGGTATATGAGCAGGAATAATTGGTCTTCAATAAGAATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGTTTGGAAATTGAATAATCCATTAATAATTGGAGCTCCAGATATA
GCTTTTCTCGAATAAATAATATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATTATAAGAAGAATCTGT
CAAAAAGGTGTAGGAACAGGATGAACAGTTTATCCCCCTTATCATTAAATATTAGTCATGAAGGATTATCAGTT
GATTTATCTATTTTCTTTACATTTAGCTGGAATATCATCAATTATAGGAGCAATTAATTTATTACAACAATTTTAA
ATATACGAATTTAAAAACATCATTAGATCAAATATCATTATTTGTTTGATCAATTTTAATTACAACATTTTAC
TATTATTAGCAGTACCAGTATTAGCCGGAGCAATTAACAATATTATTATCTGATCGAAATTTAAATACTTCATTTTTT
GATCCATCAGGAGGAGGAGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ACW7619.

Nearest neighbor: *M. unocinctes*,

BOLD:ADQ7300, 4.49% (p-dist).

Holotype ♀: DHJPAR0057729,

Área de Conservación Guanacaste,

Alajuela, Sector San Cristobal, Rio

Blanco Abajo, 10.90037, -85.37254,

500 m, eclosion date 08/07/2014,

caterpillar collection date 07/17/2014

(CNC). GenBank accession code

OM237710.

Holotype host data: Hyperparasitoid

of an unidentified braconid

(Braconidae), which is a

primary parasitoid of *Charistica*

*walkeri*DHJ03 (Gelechiidae) feeding

on *Ardisia auriculata* (Primulaceae).

A single *Mesochorus* specimen

eclosed.

Other host data: None.

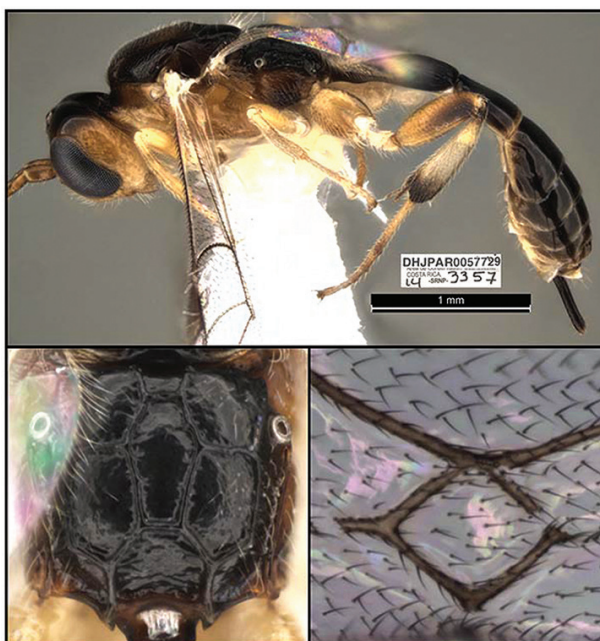


Fig. 151. *M. unodossiete*, holotype female.

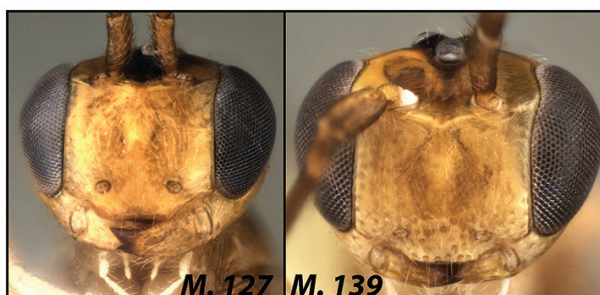


Fig. 152. Comparisons of the heads of two species of *Mesochorus* (*M. unodossiete* and *M. unotresnueve*) whose COI barcodes code for identical amino acids. Note the size of the mandibles and the sculpture of the clypei.

Mesochorus unodosocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:535A614B-0EEE-490B-81FD-742F421B0F6A

Diagnostics: Fig. 153.

Holotype barcode.

ATTTTATATTTTATTTTGGGAATTTGAGCAGGAATAATTGGGCTTCAATAAGATTAATTATTCGAATAGA
ATTAGGAAATCCTGGATTTTAAATCAATAATGATCAAATTTATAATTCATTTGTAACAGCTCACGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGTGGATTTGGGAATTGATTAGTACCATTAATAATTGGGGCTCT
GATATAGCATTTCTCGAATAAATAATATAAGATTTTGATTATTACCTCCATCATAATATTATTATTATTAAGAAGA
ATTATTAATAAAGGGGTAGGAACAGGTTGAACAGTTTATCCTCCTTTATCATTAAATGTTAGTCATGAAGGTA
TATCTGTAGATTTATCAATTTTTCTTTACATTTAGCAGGTATATCATCAATCATAGGAGCTGTAAATTTTACTA
CAATTTTAAATATACATTTATATGGAATAACAATAGATCAACTATCATTATTTACATGATCAATTAATAACTACA
ATTTTATTATTATTAGCCGTTCCAGTTTTAGCTGGTGCAATTAATTAATTAAGTATCA

BOLD data: BIN: BOLD:ACZ6907.

Holotype ♀: BIOUG28149-F09, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88010, -85.38900, 575 m, Malaise trap 07/06/2015 (CNC).
GenBank accession code OM237756.

Holotype host data: None.

Other host data: None.

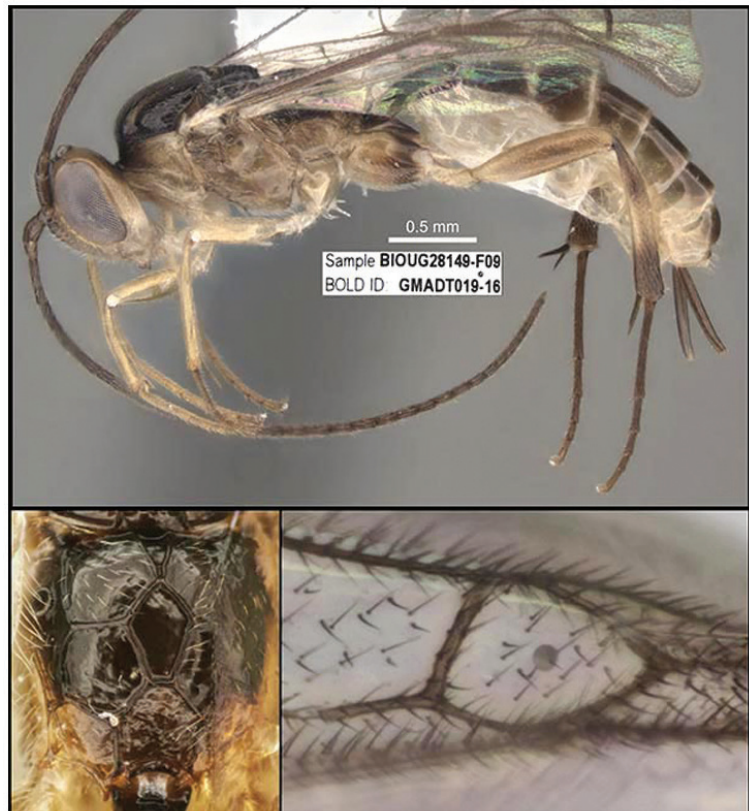


Fig. 153. *M. unodosocho*, holotype female.

Mesochorus unodosnueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:0DA68316-7EC1-4705-AD42-D7837AA773BB

Diagnostics: Fig. 154.

Holotype barcode.

```
ATTTTATATTTTATTTTGGTATATGAGCAGGTATAATTGGTTCATCTATAAGTATAATTATTCGAATAGAATTAGGA  
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTCGTAACATCACATGCCTTTATTATAATTTTTTTTA  
TAGTTATAACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCATTAATAATTGGAGCACCAGATATA  
GCCTTTCCTCGAATAAATAATATAAGATTTTGATTATTACCACCTTCAATTATATTATTAATAAAGTGGTATTT  
GCCAAAAGGAGTTGGTACTGGTTGAACAGTTTATCCACCTTATCTTTAAATATTAGTCATGAAGGATTAT  
CAGTTGATTTATCAATTTTTTCTTACATTTAGCAGGTATATCATCAATTATAGGAGCAATTAATTTTATTACAAC  
TATTATAAATATACGAATTTTAAAAACATCATTTGATCAAATATCATTATTTGTTTGATCAATTTTAATTACAACA  
ATTTTATTATTATTAGCAGTTCCAATTTAGCTGGAGCAATTACAATATTATTATCTGAT
```

BOLD data: BIN: BOLD:ACZ7580.**Holotype** ♂: BIOUG28020-F11, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88000, -85.38900, 575 m, Malaise trap, 12/15/2014 (CNC).

GenBank accession code OM237734.

Holotype host data: None.**Other host data:** None.

Fig. 154. *M. unodosnueve*, holotype male.

Mesochorus unotrescero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:A34ACC6D-5B87-451E-B793-3042B03D27CD

Diagnostics: Fig. 155.

Holotype barcode.

```
ATTTTATATTTTATTTTGGTATATGATCAGGAATAATTGGGTCATCAATAAGATTAATTATTTCGAATAGAATTAGGA
AATCCTGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACAGCCCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCTATTATAATTGGGGGATTTGGTAATTGAATAGTTCCTTTAATAATTGGAGCTCCAGATATA
GCTTCCCTCGAATAAATAATATAAGTTTTGATTATTACCTCCTTCAATTATATTATTATTATAAGAAGAATTT
GTCAAAAAGGAGTTGGAAGTGGATGAAGTGTTCCTCCTTTATCATTAAATAGAAGTCATGAAGGATTAG
CAGTTGATTTATCAATTTTTCTTTACATTTAGCAGGTATATCTTCTATTATAGGAGCAGTTAATTTTATTACAACA
ATTTTAAATATACGTGTAGTTGGATCTTCTTTAGATCAAATATCTTTATTTGTTTGATCAATTAATTAACAACA
ATTTTATTATTATTAGCTGTTCTGTTTAGCAGGAGCAATTACAATATTATTAAGTATCGTAATTTAAAT
```

BOLD data: BIN: BOLD:ADA1951.

Nearest neighbor: *M. cincotres*, BOLD:AAM1692, 2.81% (p-dist). The colors of the hind femora and the apical metasomal terga differ (Fig. 156).

Holotype ♂: BIOUG28085-C08, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88000, -85.38900, 575 m, Malaise trap, 11/25/2013 (CNC). GenBank accession code OM237706.

Holotype host data: None.

Other host data: None.



Fig. 155. *M. unotrescero*, holotype male.

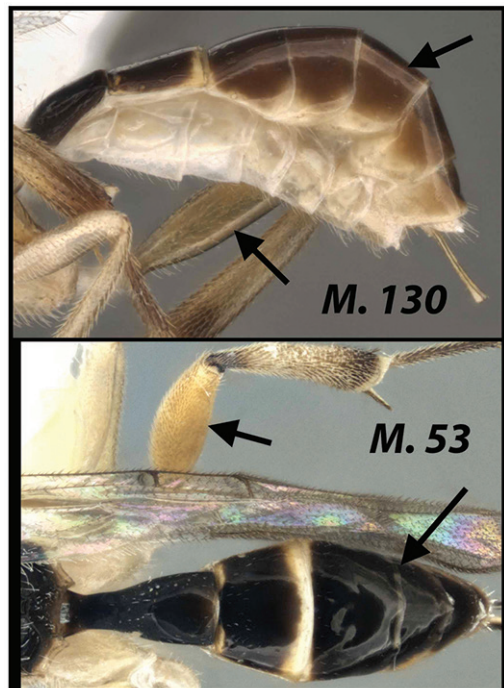


Fig. 156. Comparisons of *M. unotrescero* with its nearest neighbor, *M. cincotres*.

Mesochorus unotresuno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:CAB297C2-5674-4E3E-87C6-68964F2CE1F0

Diagnostics: Fig. 157.

Holotype barcode.

```
ATTTTATATTTTATTTTGGTATATGAGCTGGAATAGTAGGGTCGTCTATAAGATTAATTATTCGATTAGA
ATTAGGAAATCCTGGATTTTAATCAATAATGATCAAATTTATAATTCATTTGTTACTGCTCATGCTTTTGTA
TAATTTTTTTATGGTTATACCAATTATAATTGGTGGATTTGGTAATTGATTAATCCATTAATAATTGGAGCCCC
GATATAGCTTCCCTCGAATAAATAACATAAGATTTGATTACTTCTCCTTCTCTTTTTTATTAATCTTAGAA
GAATTATTCATAAAGGAGTGGGGACCGGATGAAGTGTATATCCCCATTATCTCTTAATACTAGCCATGAAGGTA
TATCAGTTGATTTATCAATTTTTCTCTTCATTTAGCTGGAATATCTTCAATTATAGGAGCTATTAATTTTATTACA
ACCATTTTAAATATACGATGTTTAGGAACATCCTTAGATCAATAAGTCTATTTACCTGATCTATAAAAATTACAAC
TATTTTATTATTATTAGCAGTCCCAGTCTTGCAGGAGCTATTACTATATTACTAGCAGATCGTAATTTAAAT
```

BOLD data: BIN: BOLD:ADA3956.**Holotype** ♂: BIOUG28068-G02, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88010, -85.38900, 575 m, Malaise trap, 12/23/2013 (CNC).

GenBank accession code OM237771.

Holotype host data: None.**Other host data:** None.

Fig. 157. *M. unotresuno*, holotype male.



Mesochorus unotresdos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:26CD0599-FC96-4938-8BBD-E6175BFE32E8

Diagnostics: Fig. 158.

Holotype barcode.

```
ATTTTATATTTTATTTTGGTATATGAGCCGGTATGATTGGATCTTCAATAAGAATTATTATTCGTATAGAATTAGGA
AATCCAGGATTTTAATTAATAATGATCAAATTTATAATACATTTGTAACATCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCGATTATAATTGGAGGATTTGGTAATTGATTAATTCCTTAAATAATTGGAGCTCCAGACATAG
CATTTCTCGAATAAATAATATAAGATTTGGCTACTTCCACCTTCAATTATATATTATTATTAAGAAGAATTTGT
CAAAAAGGAGTTGGAACCTGGTTGAACAATTTATCCACCATTATCATTAAATGTTAGCCATGAAGGTTTATCTGTT
GATTTATCAATTTTTCTCTTCATTTAGCTGGTATATCATCAATTATAGGAGCAATTAATTTTATTACAACATTTTAA
ATATACGAATTATAAATACCTCATATGATCAAATATCATTATTTGTTTGATCAATTTAATTACCACAATTTTATTATTAC
TAGCAGTTCCAGTTTTAGCAGGT
```

BOLD data: BIN: BOLD:ADB4943.

Nearest neighbor: *M. unotrescuatro*, BOLD:ADF5414, 8.24% (p-dist).

Holotype ♀: BIOUG29530-G12, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-3, 10.76300, -85.33400, 820 m, Malaise trap, 01/09/2014 (CNC). GenBank accession code OM237689.

Holotype host data: None.

Other host data: None.

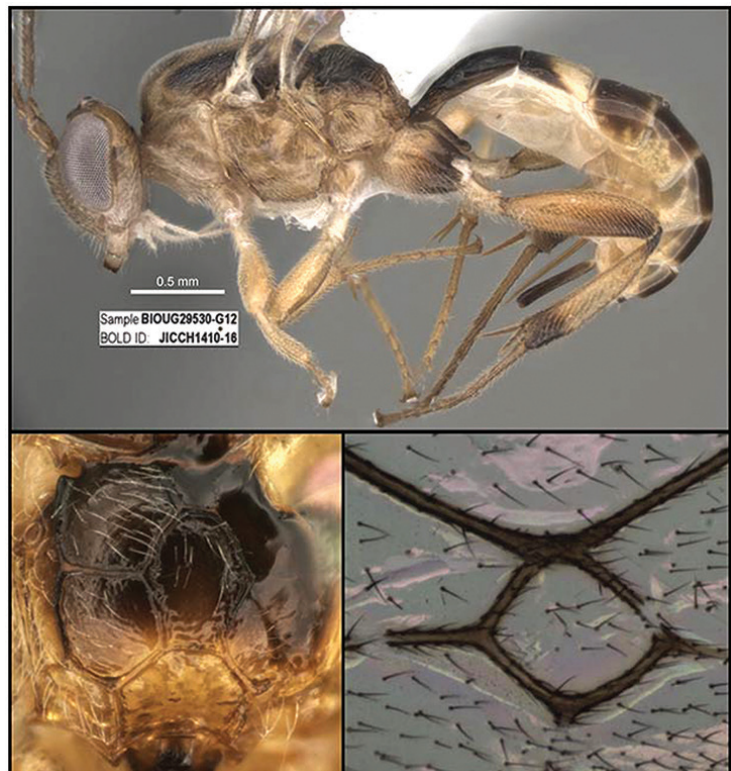


Fig. 158. *M. unotresdos*, holotype female.

Mesochorus unotrestres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4DE55128-0BDC-4ADC-B0DD-E55247459B00

Diagnostics: Fig. 159.

Holotype barcode.

```
ATCTTATATTTTATTTTGGTATATGGTCTGGAATAATTGGATCTTCTATAAGAATAATTATTCGAATAGAATTAGG
GAATCCAGGATATTTAATTAATAATGATCAAATTTATAATTCCTTTGTTACATCCCATGCTTTTATTATAATTTTTTTA
TAGTTATACCAATTATAATTGGTGGATTGGTAATTGAATAGTTCCTTTAATAATTGGAGCCCCAGATATAGCTTTCC
CACGAATAAATAATAAGATTTTGATATTACCCCATCAATTATATTATTATTTAAGAAGAATTTGTCAAAAA
GGAACAGGAACAGGATGAACAGTTTATCCTCCTTTATCATTAAATACTAGTCATGAAGGTTTATCAGTAGATTAT
CAATTTTTTTCATTACATATAGCAGGAATATCTTCAATTATAGGTGCAATTAATTTTATTACAACCATTATAAATATAC
GAATTTATAAACATCATTAGACCAGATATCATTATTTGTTTGATCAATTTAATTACAACAATTTTATTATTATTAG
CAGTCCAGTTTTAGCGGGGCAATTACAATACTTCTTCTGATCGGAAT
```

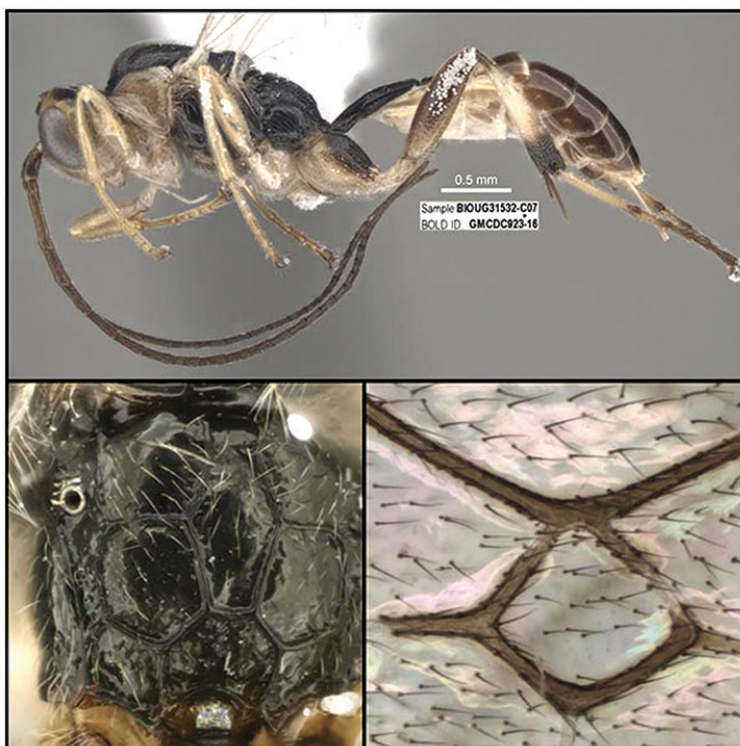
BOLD data: BIN: BOLD:ADF3229.**Nearest neighbor:** *M. tresseis*, BOLD:AAG9050, 7.12% (p-dist)**Holotype** ♂: BIOUG31532-C07, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Derrumbe, 10.92920, -85.46430, 1 220 m, Malaise trap, 11/13/2014 (CNC). GenBank accession code OM237755.**Holotype host data:** None.**Other host data:** None.

Fig. 159. *M. unotrestres*, holotype male.

Mesochorus unotrescuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:824642BB-A0E8-4690-8EB8-6DA8DC68534F

Diagnostics: Fig. 160.

Consensus barcode (3 specimens).

```

ATTTTATATTTTATTTTGGTATATGAGCAGGAATAATTGGTTCTTCAATAAGTATAATTATTTCGAATAGA
ATTAGGTAATCCTGGATTTTAAATTAATAATGATCAAATTTATAATTCTTTTGTGACATCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGTGGATTTGGAAATTGATTAATTCCATTAATAATTGGAGCTCCA
GATATAGCATTTCCTCGAATAAATAATATAAGATTTTGATTATTACCACCATCAATTATATTATTATTAAAGAAGA
ATTTGTCAAAAAGGAACTGGTACTGGTTGAACAGTTTATCCCCCTTTATCATTAAATGTTAGACATGAAGGATTAT
CAGTTGATTTATCAATTTTTCTTTACATTTAGCTGGTATATCTCAATTATAGGTGCAATTAATTTTATTACAACA
ATTTTAAATATACGAATTTAAAAACATCCTTGATCAAATATCTTTATTTGTTTGATCTATTTTAATTACAACA
ATTTTATTATTATTAGCAGTTCAGTTTTAGCAGGTGCAATTACTATATTATTATCTGAT
  
```

BOLD data: BIN: BOLD:ADF5414.

Nearest neighbor: *M. unotresnueve*, BOLD:ADQ8339, 5.2% (p-dist).

Holotype ♀: BIOUG36548-D06, Área de Conservación Guanacaste, Guanacaste, Sector Cacao, Derrumbe, 10.92920, -85.46430, 1220, Malaise trap, 05/07/2015 (CNC). GenBank accession code OM237709.

Holotype host data: None.

Other host data: None.

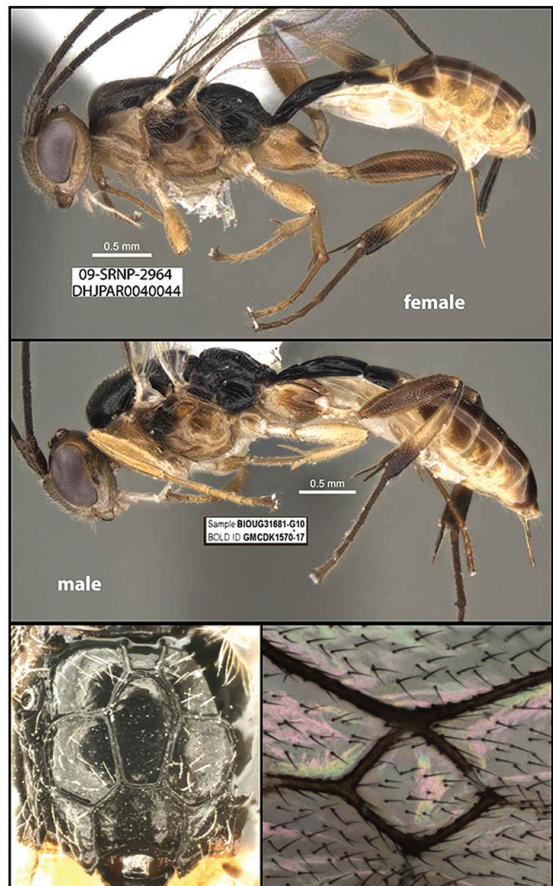


Fig. 160. *M. unotrescuatro*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unotrescinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:C0C05179-9F01-4644-8DB7-5B690C818451

Diagnostics: Fig. 161.

Holotype barcode.

```
ATTTTGGTATATGAGCTGGTATAGTTGGTTCATCAATAAGATTAATTATTTCGACTAGAACTTGAAATCCT
GGTTTTTAATTAATAATGACCAAATTTATAATTCATTTGTGACTGCTCACGCTTTTGTAAATAATTTTTTATAGTAA
TACCAATTATAATTGGAGGATTGGAAATTGATTAATTCCTTTAATAATTGGAGCCCTGATATAGCATTTCCTC
GAATAAATAATATAAGATTTTGATTATTACCTCCTTCTCTTTTTTTGTTGATTTAAGAAGAATTACTCATAAAGGT
GTAGGAACCGCTGAACCGTTTATCCTCCTTTATCATTAAATACTAGTCATGAAGGTATATCAGTTGATTATCA
ATTTTTCTTACATTTAGCAGGGATATCATCAATTATAGGAGCAATTAATTTTATTACTACTATTCTAAATATAC
GATGTTTAGGATCATCATTAGACCAAATATCTTTATTACTTGATCAATAAAAATTACAACAATTTATTATTATTAG
CAGTCCAGTCTTGCAGGAGCTATTACAATATTATTAGCTGATCGTAATTTAAAT
```

BOLD data: BIN: BOLD:ADG1602.**Holotype** ♀: BIOUG31681-G03,
Área de Conservación Guanacaste,
Guanacaste, Sector Cacao,
Derrumbe, 10.92920, -85.46430,
1220, Malaise trap, 01/01/2016
(CNC). GenBank accession code
OM237772.**Holotype host data:** None.**Other host data:** None.**Fig. 161.** *M. unotrescinco*, holotype female.

Mesochorus unotresseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4F1B7163-3F9F-4432-BDCE-8898C855AE2D

Diagnostics: Fig. 162.

Holotype barcode.

```
AATTTTATATTTTATTTTCGGTATTTGATCAGGAATAATTGGATCATCAATAAGATTAATTATTCGAATAGAATTGGGA
AACCAGGATTTTAAATTAATAATGATCAAATTTATAACTCATTTGTAACAGCTCATGCAATTTATTATAATTTTTTTTAT
GGTTATGCCTATTATAAATGGAGGATTTGGAAATGATTAGTCCCCTAATAAATGGTGCTCCTGACATGGCATTCC
CGCGAATAAATAATAAGATTTTGATTATTGCCTCCTTCATTAATATTATTATTATTAAGAAGAATTATTAATAAA
GGGGTAGGAACAGGATGAACAGTATATCCTCCTCTATCTTTAAATATTAGTCATGAAGGTATATCAGTTGATTAT
CAATTTTTTCTTACATTTAGCCGGAATATCTTCAATTATAGGAGCAATTAATTTTATTACAACAATTTTAAATA
TACATTTATTTGGAATATCCTTAGATCAACTATCTTTATTACTTGATCAATTAATTAATTAATTAATTAATTAATTA
GCCGTCCCAGTATAGCGGGAGCCAT TACTATGTTATTAACAGACCGGAATTTAAATACATCTTTTTTT
GATCCTTCGGGGGAGGAGACCAATTCTTTATCAACATCTATTT
```

BOLD data: BIN: BOLD:ADI7361.

Nearest neighbor: *M. dosocho*, BOLD:AAF0566, 9.13% (p-dist).

Holotype ♀: DHJPAR0061554, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Casa Keyner, 10.95644, -85.26611, 121 m, eclosion date 07/19/2017, caterpillar collection date 07/09/2017 (CNC). GenBank accession code OM237720.

Holotype host data: Hyperparasitoid of an unidentified braconid (Braconidae), which is a primary parasitoid of arcJanzen01 Janzen3618 (Erebidae) feeding on *Chimarrhis parviflora* (Rubiaceae). A single *Mesochorus* specimen enclosed.

Other host data: None.

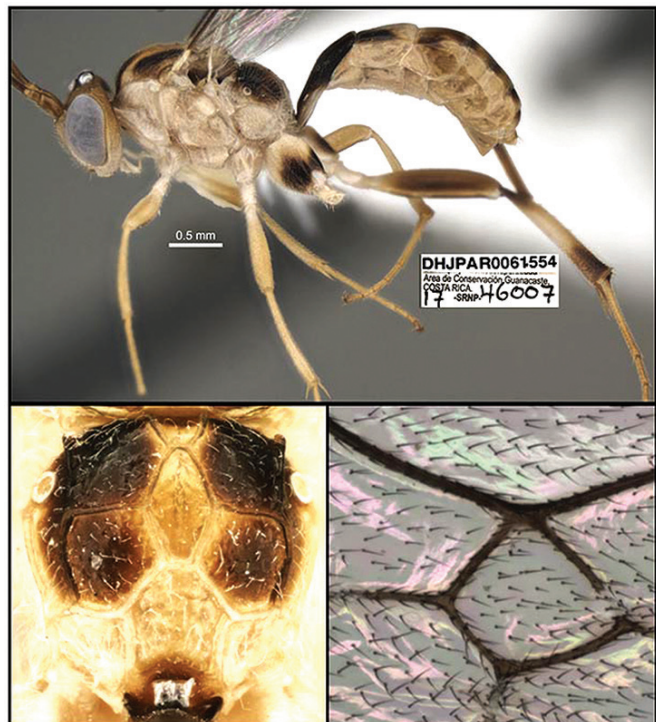


Fig. 162. *M. unotresseis*, holotype female.

Mesochorus unotressiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:63F14FBB-CD3B-41E0-A1F4-245EF69FF933

Diagnostics: Fig. 163.

Consensus barcode (4 specimens).

```
AATTTTATATTTTATTTTGGTATATGAGCTGGAATAGTTGGATCATCAATAAGACTAATTATTCGACTAGAACTTGGAA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTAAGTCTCATGCTTTTGTAAATAATTTTTTTTAA
TAGTAATACCAATTATAAATGGAGGATTTGGAAATTGATTAATTCCTTTAATAAATTGGAGCCCCGTGATATGG
CATTCCCCGAATAAATAATATAAGATTTTGATTATTACCCCTTCTCTTTTTTTATTGATTTAAGAAGAATTACT
CATAAAGGTGTAGGAACCGTTGAACTGTTTATCCTCCTTTATCACTAAATCTAGTCATGAAGGTATATCAGTT
GATTTATCAATTTTTCTTTACATTTAGCAGGAATATCATCAATTATAGGAGCAATTAATTTTACTACTATTATAA
ATATACGATGTTTAGGATCATCATTAGATCAAATATCTTTATTACCTGATCAATAAAAATTACAACAATCTTATTAC
TATTAGCAGTTCCAGTCTTGCAGGTGCTATTACAATATTATAGCTGATCGTAATTTAAATACTTCATTTTTT
GATCCTTCAGGAGGAGGAGACCCTATTTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:ADJ5719.

Nearest neighbor: *M. unotrescinco*,

BOLD:ADG1602, 4.56% (p-dist).

Holotype ♀: BIOUG56783-D04,
Área de Conservación Guanacaste,
Guanacaste, Sector Pailas, Pailas Dos,
PL12-5, 10.76300, -85.33400, 831
m, Malaise trap, 12/01/2016 (CNC).
GenBank accession code OM237749.

Holotype host data: None.

Other host data: None.

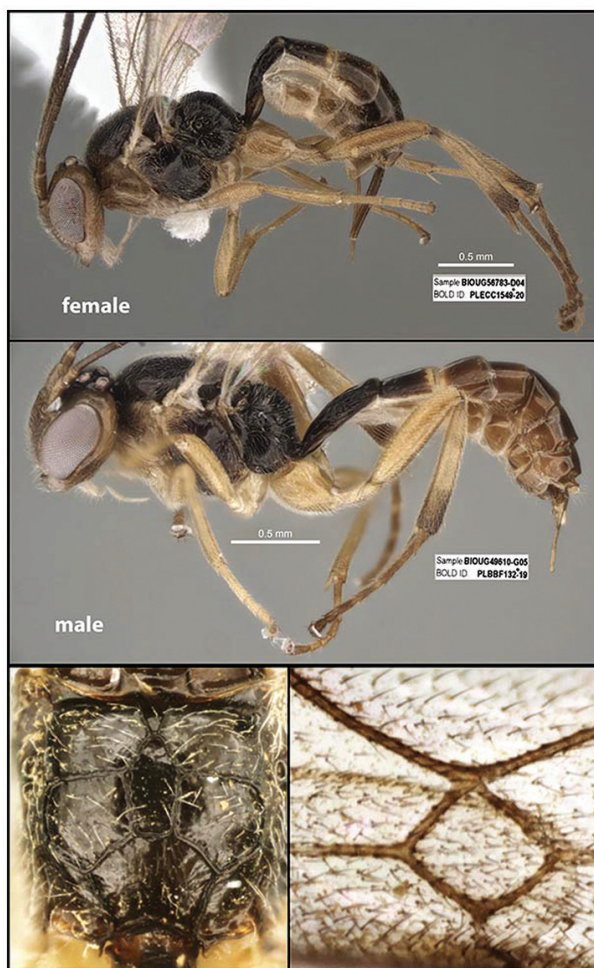


Fig. 163. *M. unotressiete*, holotype female and male paratype. Unlabeled images are of the holotype.

Mesochorus unotresocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:9D1198F1-B7F0-4E3F-AE7B-532F671A3EE2

Diagnostics: Fig. 164.

Holotype barcode.

```
TTTATTTTTGGAATATGAGCAGGAATAATTGGTTCTTCAATAAGTATAATCATTCCGAATAGAAATTAGGAAATCCAG
GATTTTAAATTAATAATGACCAAATTTATAATTCATTTGTTACTTCCCATGCTTTTATATAATTTTTTTATAGTTA
TACCAATTATAATTGGTGGATTGGAAATGAATAATCCATTAATAATTGGAGACCAGATATAGCTTTCCAC
GAATAAATAATATAAGATTTTGATTATTACCTCCATCAATTATATATTACTATTAAGAAGTATTTGTCAAAAAG
GAGTTGGTACTGGATGAACGGTTTATCCTCCATTATCATTAAATATTAGTCATGAAGGATTATCAGTTGATTTTT
CAATTTTTCTTTACATTTAGCTGGAATATCATCAATTATAGGTGCAATTAATTTTATTACAACATTTTAAATATAC
GAATTTAAAAACATCATTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACAACATTTTATTATTATTAG
CAGTACCAGTTTTAGCTGGAGCAATTAATATATTATTCTGATCGAAAT
```

BOLD data: BIN: BOLD:ADQ7301.

Nearest neighbor: *M. unotresnueve*, BOLD:ADQ8339, 1.42% (p-dist). The midtibiae of the two species have different colors (Fig. 165). This may be a trivial character and otherwise the two species are very similar morphologically. More data are needed to make a conclusive decision.

Holotype ♂: BIOUG28068-D04, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Estación San Gerardo, 10.88010, -85.38900, 575 m, Malaise trap 12/23/2013 (CNC). GenBank accession code OM237701.

Holotype host data: None.

Other host data: None.

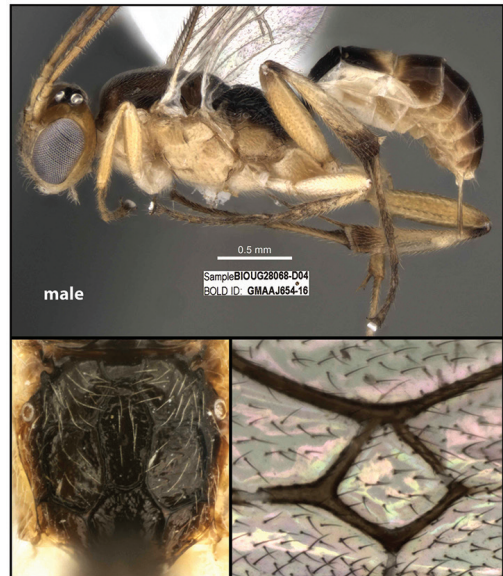


Fig. 164. *M. unotresocho*, holotype male.



Fig. 165. Comparisons of *M. unotresocho* with its nearest neighbor, *M. unotresnueve*.

Mesochorus unostresnueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:53D1578F-1F27-4284-BA75-B12F1CC74F11

Diagnostics: Fig. 166.

Consensus barcode (4 specimens).

```
AATTTTATACTTTATTTTTGGAATATGAGCAGGAATAATTGGTTCCTCAATAAGTATAATTATTTCGAATAGAATTAGGA
AATCCAGGATTTTAATTAATAATGACCAAATTTATAATTCATTTGTTACTTCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGTGGATTGGAAATGAATAATTCCATTAATAATTGGAGCACCAGATATAGCTTTTC
CACGAATAAATAATAAGATTTTGATTATTACCTCCATCAATTATATTATATTATTAAGAAGTATTTGTCAAAAA
GGAGTTGGTACTGGATGAACAGTTTATCCACCATTATCATTAATATTAGTCATGAAGGATTATCAGTTGATTTAT
CAATTTTTCTTTACATTTAGCTGGAATATCATCAATTATAGGTGCAATTAATTTTATTACAATTTTTAAATATAC
GAATTTAAAAACATCATTAGATCAAATATCTTTATTTGTTTGATCTATTTAATTACAATTTTTATTATTATTAG
CAGTACCAGTTTTAGCTGGAGCAATCACTATATTATCTGATCGAAATTTAAATACTTCATTTTTTGATCCATCT
GGTGGAGGAGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ADQ8339.

Nearest neighbor: *M. unotresocho*, BOLD:ADQ7301, 1.42% (p-dist). The midtibiae of the two species are different colors (Fig. 165, associated with *M. unotresocho*). This may be a

trivial character and otherwise the two species are very similar morphologically. More data are needed to make a conclusive decision.

Holotype ♀: DHJPAR0039412, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Sendero Albergue Crater, 10.84886, -85.32810980, eclosion date 04/15/2010, caterpillar collection date 03/29/2010 (CNC). GenBank accession code HQ926167.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Whitfield28 (Braconidae: Microgastrinae), which is a primary parasitoid of *Dichocrocis tlapalis* (Crambidae) feeding on *Randia grandifolia* (Rubiaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: *Hypomicrogaster* (Braconidae: Microgastrinae). Multiple *Mesochorus* specimens enclosed.

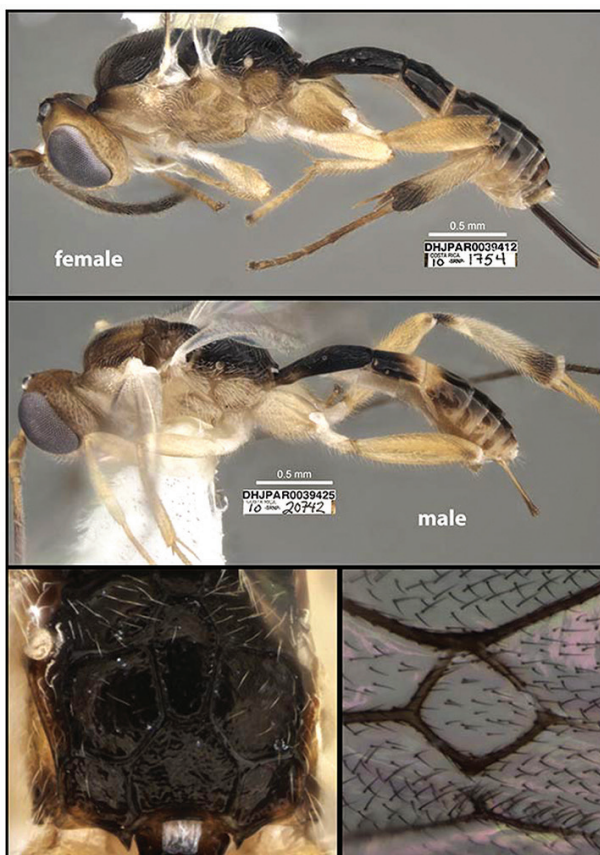


Fig. 166. *M. unostresnueve*, holotype female and male paratype. Unlabeled images are of the holotype.



Mesochorus unocuatrocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:44D2B14C-2724-4E71-B16C-9E92D231D268

Diagnostics: Fig. 167.

Holotype barcode.

TATTTTATATTTTATTTTGGAAATATGATCAGGAATAATTGGATCCTCAATAAGTATAATTATTCGTATAGA
ATTAGGTAATCCAGGATTTTAATTAATAATGATCAAATTTATAATTCATTGTACCTCCCATGCTTTCATTA
TAATTTTTTTATAGTTATACCAATTATAATTGGCGGATTTGGAAATTGAATAATTCCTTTAATAATTGGAGCTCT
GATATAGCTTTCCACGAATAAATAATATAAGATTTGACTCCTTCCTCCTCAATTATATTACTATTAAGAG
GAATTTGTCAAAAAGGAGTTGGGACAGGATGAACTGTTTACCCTCCTTTATCACTTAACGTTAGACATGAAG
GATTATCAGTAGATTATCAATTTTTCTTTACATTAGCTGGAATATCCTCAATCATAGGAGCAGTAAATTTATTAC
TACTATTATAATATACGAATTTATAAACATCTTTTGATCAAATATCTTTATTTGTCTGATCAATTTAATTACA
ACAATTTATTATTATTAGCTGTCCCAGTACTAGCTGGAGCAATTACAATATTACTATCAGATCGCAATCTAAA
TACATCTTTTTTTGATCCTTCAGGAGGAGGAGATCCAATCCTATACCAACATTTATT

BOLD data: BIN: BOLD:ADY0027.

Nearest neighbor: *M. unouno*, BOLD:AAC6096, 8.65% (p-dist).

Holotype ♀: DHJPAR0063450, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Loaiciga, 11.01983, -85.41342, 445 m, eclosion date 09/29/2018, caterpillar collection date 08/22/2018 (CNC). Genbank accession code OM312053.

Holotype host data: Hyperparasitoid of *Cardiochiles gerardo-chavesi* (Braconidae: Cardiochilinae), which is a primary parasitoid of epibaBioLep01 BioLep840 (Pylalidae) feeding on *Combretum* 16766 (Combretaceae). A single *Mesochorus* specimen enclosed.

Other host data: *Eiphosoma* (Ichneumonidae: Cremastinae). A single *Mesochorus* specimen enclosed.

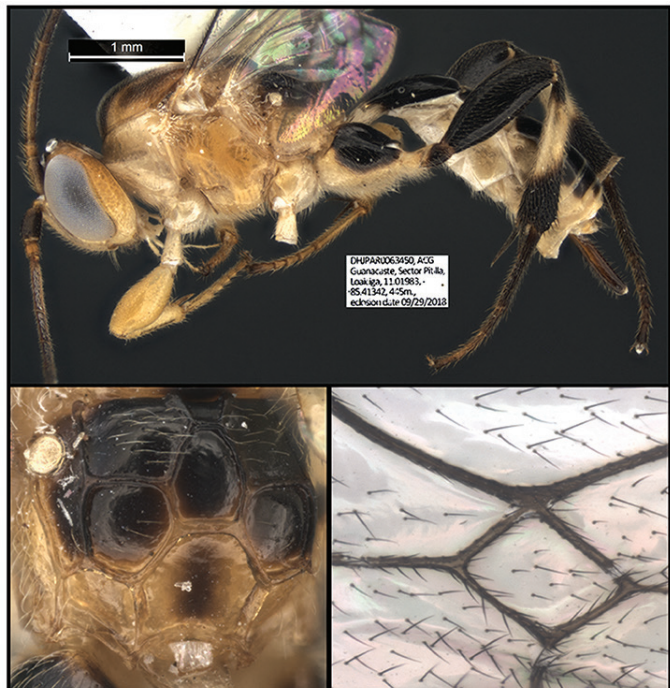


Fig. 167. *M. unocuatrocero*, holotype female.

Mesochorus unocuatrouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:6B439141-AA46-4E9F-830D-111C1FB2C7B6

Diagnostics: Fig. 168.

Holotype barcode.

```
TTGGTTCATCAATAAGAATAATTATTTCGGATAGAATTAGGAAATTCAGGATTTTAATTAATAATGATCAAATTTA  
TAATTCTTTTGTAACATCACATGCTTTTATTATAATTTTTTTTATAGTTATACCAATTATAAATGGAGGATTGGAA  
ATTGAATAGTACCATTAATAATTGGTGCTCCAGATATAGCTTTTCTCGAATGAATAATAAGATTTTGATTATTAC  
CACCTTCTATTATATTATAATAAAGAAGAATTTGTCAAAAAGGTGTAGGAACTGGTTGAACAGTTTATCCAC  
CATTATCATTAAATATTAGTCATGAAGGATTATCAGTAGATTATCAATTTTTCTTTACATTTAGCTGGTATATCTT  
CAATTATAGGTGCAATTAATTTTATTACAACATTTTAAATATACGAATTATAAAAATTCATTTGATCAAATGA  
CATTATTTGTTTGATCTATTTTAATTACAACAATTTTATTATTATTAGCAGTTCAGTTTGTAGCTGGTGAATTAC  
TATATTATATCTGATCGAAATTTAAATACTTCATTTTTTGATCCTTCTGGTGGAGGGGATCCAATTTTATATCAA  
CATTATTT
```

BOLD data: BIN: BOLD:ADZ6939.

Nearest neighbor: *M. nueve*, BOLD:AAC2766, 5.69% (p-dist).

Holotype ♂: DHJPAR0063966, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Casa Roberto, 11.01095, -85.42094, 520 m, eclosion date 02/08/2019, caterpillar collection date 01/15/2019 (CNC). GenBank accession code OM237726.

Holotype host data: Hyperparasitoid of *Eiphosoma* Janzen7832 (Ichneumonidae: Cremastinae) which is a primary parasitoid of *Chloropaschia* Janzen02 (Pyrilidae) feeding on *Heisteria concinna* (Olacaceae). A single specimen eclosed.

Other host data: None.

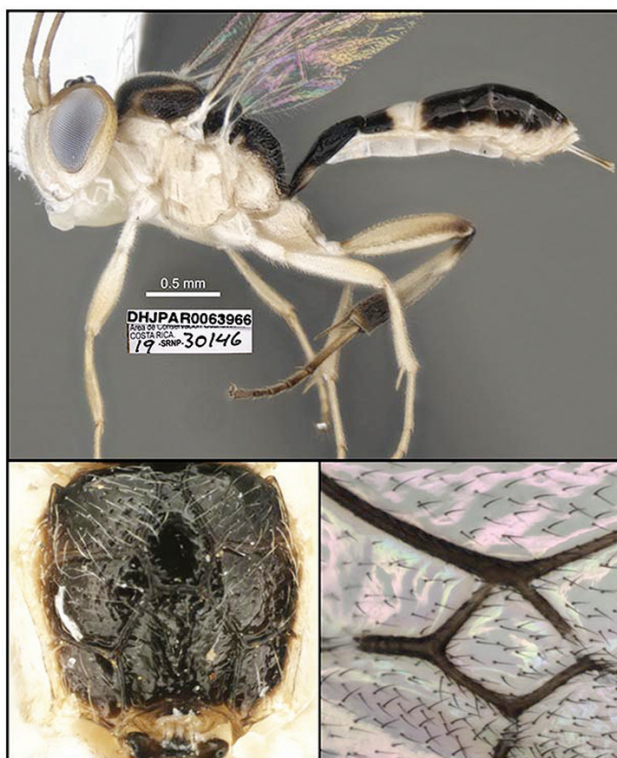


Fig. 168. *M. unocuatrouno*, holotype male.

Mesochorus unocuatrodos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:D0857293-F13B-4C48-8803-B8678EE25524

Diagnostics: Fig. 169.

Consensus barcode (2 specimens).

```
AATTCTATATTTTATTTTGGGAATTTGAGCAGGAATAATCGGCTCATCAATAAGTTTAAATTATTTCGAATAGAATTAGGA
AACCCCGGATATTTAATTAATAATGATCAAATTTATAATTCAATTGTAACAGCGCATGCATTATTATAATTTTTTTTATA
TAGTAATGCCAATTATAATTGGAGGATTTGGAAACTGATTAGTACCGTTAATAATCGGRGCCCCAGATATAGCCTTTC
CGCGAATAAATAATAAGATTTTGATTGCTACCCCTTCTTTAATATATTATTATTAAGAAGAATTATTAATAAAA
GGTGTGGAACAGGGTGAACAGTCTACCCTCCTCTATCGTTAAATATTAGTCACGAAGGTATATCAGTAGATTTAT
CAATTTTTCCCTACATTTAGCAGGAATATCTTCAATTATAGGGCAGTCAATTTTATTACTACCATTTTAAATATAA
AATTAATGGGACATCAATAGACCAACTATCTTTATTACATGATCAATAAAATCACAACAATTTTACTACTYTTAG
CAGTCCAGTATTAGCAGGTGCAATTAATTAATAACTGACCGAAATTTAAACACATCTTTTTTTGACCCATCCG
GAGGAGGGGACCAATCTTTATCAACATTTATTT
```

BOLD data: BIN: BOLD:ADZ6940.

Nearest neighbor: *M. nuevedos*, BOLD:AAY4752, 8.97% (p-dist).

Holotype ♀: DHJPAR0063971, Área de Conservación Guanacaste, Guanacaste, Sector Del Oro, Tangelo, 11.01823, -85.45024, 410 m, eclosion date 09/13/2018, caterpillar collection date 08/31/ (CNC). GenBank accession code OM237765.

Holotype host data: Hyperparasitoid of an unidentified ichneumonid, which is a primary parasitoid of *Dynamine sosthenes* (Nymphalidae) feeding on an unidentified plant. A single specimen eclosed.

Other host data: None.

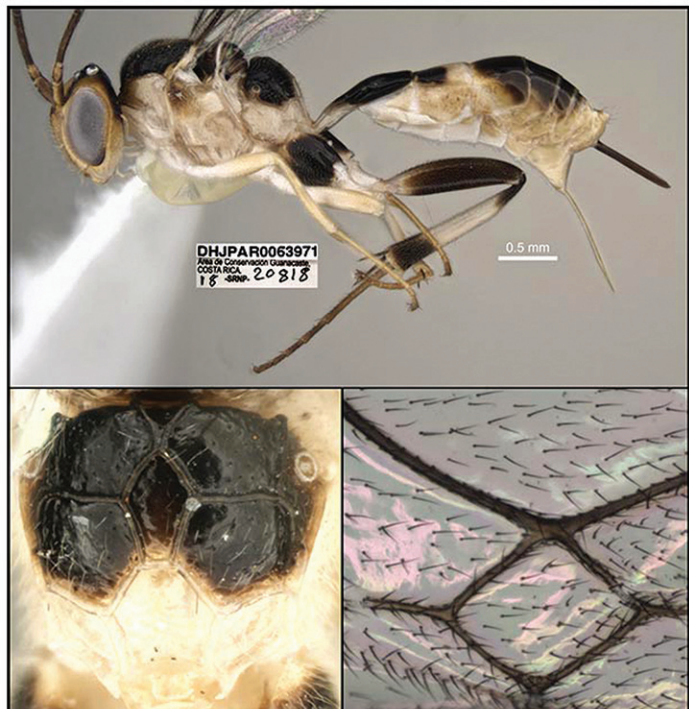


Fig. 169. *M. unocuatrodos*, holotype female.

Mesochorus unocuatrotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:045F71A2-8D06-409E-88C1-17B38DB10BE6

Diagnostics: Fig. 170.

Holotype barcode.

AATTTTATACTTTATTTTTGGTATATGAGCAGGTATAGTTGGTTCATCTATAAGATTAATTATCCGGTTAGA
 ATTAGGAAATCCTGGATATTTAATTAATAATGACCAAATTTATAACTCTTTTGTGACAGCACATGCTTTCATTA
 TAATTTTTTTTATAGTTATACCTATTATAATTGGAGGATTTGGAAATTGATTAATTCCTTTAATAATTGGTGCTCCT
 GATATAGCATTTCCTCGAATAAATAATATAAGATTTTGATTATTGCCACCTTCATTAATATTATTATTATTAAGAACA
 ATTATTAATAAAGGTGTAGGAACAGGGTGAAGTGTACCTCCATTATCTTTAAATGTAAGACATGAAGGAA
 TATCAGTTGATTAAGAATTTTTTCATTACATTTAGCCGGAATATCTCAATTATAGGAGCAATTAATTTTATTAC
 TACAATTTTAAATATACATCTTCATGGAATAACAATAGATCAATTATCTTTATTTACTTGATCAATTAATTAACA
 ACAATTTTACTTTTATTAGCTGTACCTGTATTAGCGGGAGCAATTACTATATTATTAAGTATCGTAATTTAA
 TACATCTTTCTTCGATCCATCAGGGGGTGGAGACCAATTTTATATCAACATCTTTTT

BOLD data: BIN: BOLD:AED9169.

Nearest neighbor: *M. cuatrouno*, BOLD:AAH3285, 9.13% (p-dist).

Holotype ♂: DHJPAR0065348, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Medrano, 11.01602, -85.38053, 380 m, eclosion date 08/07/2019, caterpillar collection date 07/24/2019 (CNC). GenBank accession code OM237698.

Holotype host data: Hyperparasitoid of *Glyptapanteles* Janzen8449 (Braconidae: Microgastrinae), which is a primary parasitoid of *Nepheloleuca politia* (Geometridae) feeding on *Cestrum microcalyx* (Solanaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: None.

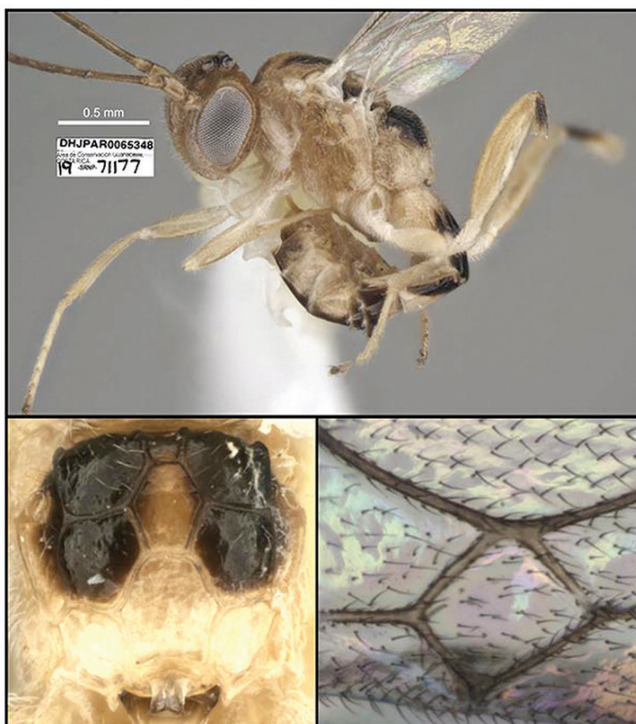


Fig. 170. *M. unocuatrotres*, holotype male.

Mesochorus unocuatrocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:CF8F656A-DAF1-4D46-969B-753EDD4A2D2A

Diagnostics: Fig. 171.

Holotype barcode.

```
TTATACTTTATTTTTGGAATATGAGCAGGAATAATTGGATCATCAATAAGATTAATTATTTCGAATAGAATTAGGA
AATCCTGGATTTTAATTAATAATGATCAAATTTACAATTCCTTTGTTACTGCCCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCTACTATAATTGGTGGATTTGGAAATGATTAATCCCTTTAATAATTGGAGCCCCCTGATATA
GCCTTTCCTCGAATAAACAATATAAGATTTGACTTTTACCACCTTCATTAATATTACTTTTATTAAGAAGAA
TAATTAATAAAGGAGTAGGAACAGGTTGAACTGTGTATCCTCCTTTATCTTTAAATGTAAGTCATGAAGGAATAT
CAGTAGATTTATCAATTTTTCTCTTCATTTAGCAGGAATATCTTCAATTATAGGCGCTATTAATTTTACTACTA
CAATTCTAAATATACACTTATTTGGAATATCAATAGATCAACTATCTTTATTACATGATCAATTAATAATTACTACA
ATTTTATTATTATTAGCTGTACCAGTACTTGACAGGAGCAATTACCATATTATTAAGTATCGAAATTTAAATACAT
CATTTTTTGACCCATCAGGAGGAGGAGATCCAATTTTATATCAACATTTATT
```

BOLD data: BIN: BOLD:AEE4453.

Nearest neighbor: *M. unocuatrocho*, BOLD:AEF1590, 2.4% (p-dist). The medioposterior propodeal areola of *M. unocuatrocho* is larger than that of *M. unocuatrocuatro* (Fig. 172). Otherwise, the species are very similar morphologically and may represent the same species. More sampling should resolve this question.

Holotype ♀: BIOUG54702-B11, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-3, 10.76300, -85.33400, 820 m, Malaise trap, 11/24/2016 (CNC). GenBank accession code OM237682.

Holotype host data: None.

Other host data: None.

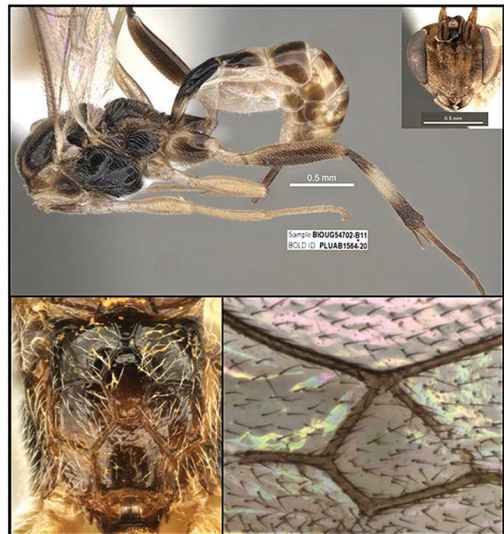


Fig. 171. *M. unocuatrocuatro*, holotype female.

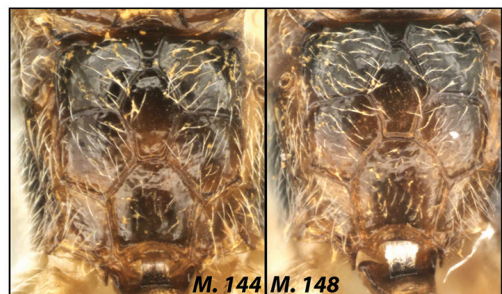


Fig. 172. Comparisons of *M. unocuatrocuatro* with its nearest neighbor, *M. unocuatrocho*.

Mesochorus unocuatrocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:CE8FB5E5-63D6-466D-8C36-8D472CD60973

Diagnostics: Fig. 173.

Holotype barcode.

```
TTTTATATTTTATTTTTGGTTTATGGGCAGGAATAGTAGGTGCTTCAATAAGAATAATTATCCGAATAGAATTAGGA  
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA  
TAGTTATAACCAATTATAATTGGAGGATTTGGAAATTGAATAATTCCATTGATAATTGGTGCACCAGATATA  
GCTTTTCCTCGTATAAATAATATAAGATTTTGATTATTACCCCATCAATTATATTACTATTGAGAGGAATTTGTCA  
AAAAGGTGTTGGAACGGTTGAACAGTATATCCTCCTTTATCATTAAATATTAGTCATGAAGGATTATCAGTTGATC  
TATCAATTTTTTCTTTACACTTAGCTGGTATATCATCAATTATAGGAGCAATTAATTTTATTACAACAATTTAAATA  
TACGTATTTTAAAATCATCTCTAGATCAAATATCATTATTTGTTTGATCAATTTAATTACTACTATTTTATTACTA  
GCAGTTCCAGTTT TAGCAGGTGCAATTACTATATTTATCTGATCGAAATTTAAATACTTCATTTTTTGATCCATCA  
GGTGGTGGAGATCCAATTTTATACCAGCATTTATT
```

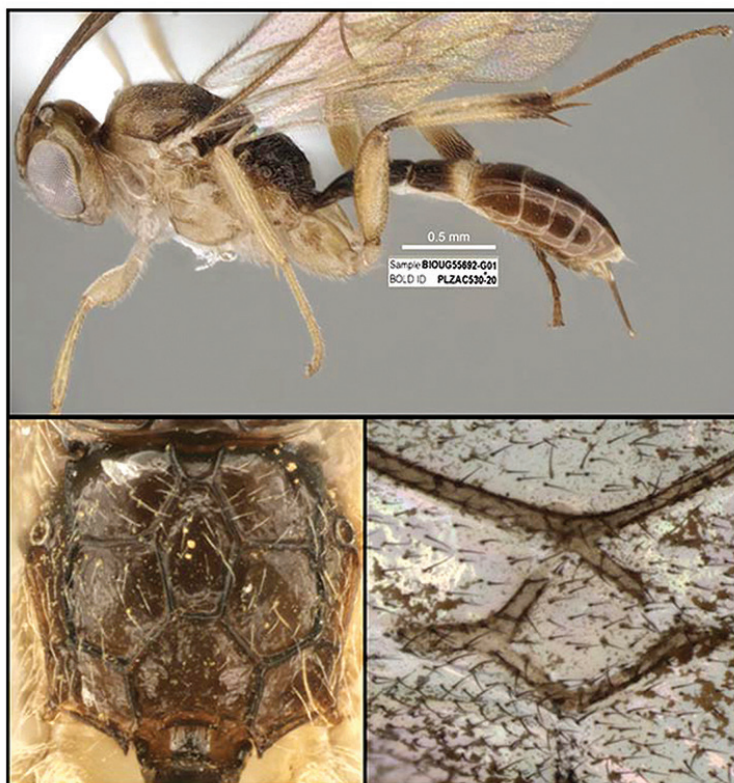
BOLD data: BIN: BOLD:AEE4774.**Nearest neighbor:** *M. tresnueve*, BOLD:AAG9894, 3.7% (p-dist).**Holotype** ♂: BIOUG55692-G01, Área de Conservación Guanacaste, Guanacaste, Pailas Dos, PL12-9, 10.76000, -85.33400809, Malaise trap, 12/01/2016 (CNC). GenBank accession code OM237677.**Holotype host data:** None.**Other host data:** None.

Fig. 173. *M. unocuatrocinco*, holotype male.

Mesochorus unocuatroseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:A22C7C30-1E37-47CF-A3E8-A3437AB6915C

Diagnostics: Fig. 174.

Consensus barcode (2 specimens).

```
TTATATTTTATTTTGGTATATGAGCTGGTATAGTWGGATCATCTATAAGATTAATTATTCGATTAGAAGCTGGAA
ATCCAGGATTTTAAATTAATAATGACCAAATTTATAATTCATTTGTAAGCTGCTCACGCTTTTGTAAATAATTTTTTTA
TAGTAATACCAATTATAATTGGTGGATTGGAAATTGATTAATYCCACTAATAATTGGAGCCCCTGATATAG
CATTCCCCGAATAAATAATATAAGATTTGACTATTACCCCCTCTCTTTTATATTAATTTAAGAAGAATCACT
CATAAAGGAGTGGGAACCGGATGAAGCTGTTACCTCCATTATCATTAAATACTAGACATGAAGGAATATCTGTT
GATTTATCAATTTTTCTTTACATTTAGCGGGAATATCATCAATTATAGGAGCTATTAATTTTATTACCACTATTTAAA
TATACGATGTATAGGRTCATCATTAGATCAAATATCATTATTTACTTGATCAATAAAAATTACAACATTTTATTATTATT
GGCAGTACCAGTTCTTGAGGGGCAATTACTATATTATTAGCAGATCGAAATTTAAATACTTCATTCCTTTGACCCCT
CAGGTGGGGGAGACCCTATTTGTACCAACATTTATT
```

BOLD data: BIN: BOLD:AEE9455.

Holotype ♀: BIOUG54897-F07, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-5, 10.76300, -85.33400, 831 m, Malaise trap, 07/14/2016 (CNC). GenBank accession code OM237750.

Holotype host data: None.

Other host data: None.

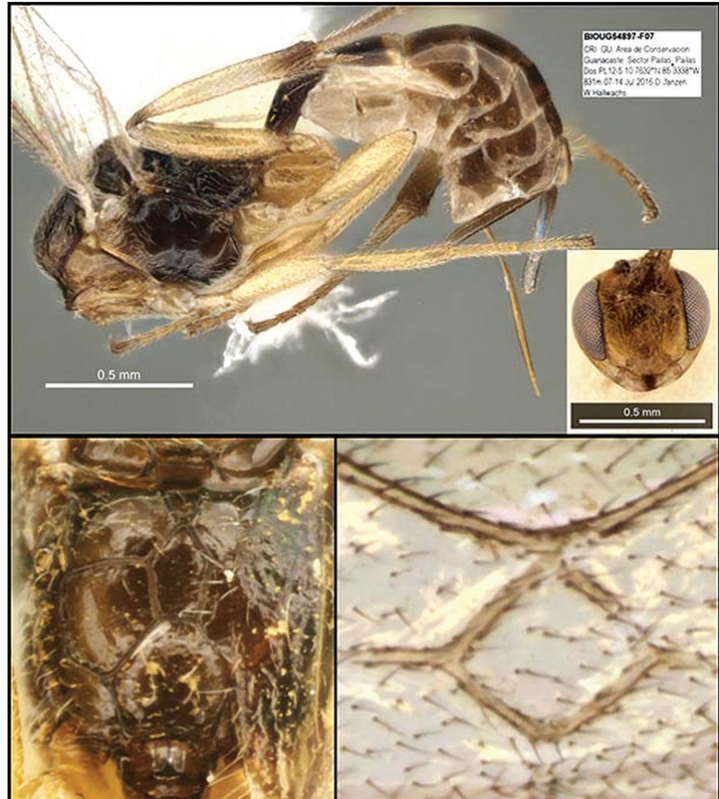


Fig. 174. *M. unocuatroseis*, holotype female.

Mesochorus unocuatrosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:DEE6F703-E8B1-4C46-80A0-08CDF3E557B5

Diagnostics: Fig. 175.

Consensus barcode (2 specimens).

```
CTTATATTTTATTTTTGGAATATGAGCTGGAATAATTGGATCATCTATAAGATTAATTATTCGATTAGAATTA  
GGTAACCCCGGTTATTTAATTAATAATGATCAAATTTATAATTCATTTGTTACTGCTCATGCTTTTATTA  
TAATTTTTTTTATAGTTATACCTATTATAATTGGCGGATTTGGAATTTGATTAATCCATTAATAATTGGAGCCCT  
GATATAGCATTTCCTCGAATAAATAATATAAGATTTTGATTACTACCCCATCTATTTTTTTATTAATTTAAGAAGA  
ATTACACATAAAGGTGTTGGAAGTGGATGAACAGTATACCCCTTTATCTTTAAATTCAGACATGAGGGAATAT  
CAGTAGATTTATCAATTTTTCTTTACATTTAGCAGGTATATCTTCTATTATAGGAGCGATTAATTTTATTACAAC  
TATTTTAAATATACGATGTTTAGGTTTCATCATTAGATCAAATATCTTTATTTACTTGATCAATAAAAATTACAACA  
ATTTTATTATTATTAGCAGTTCCAGTTCTTGCTGGAGCAATTACAATATTATTAGCAGATCGAAATTTAAATACTT  
CATTTTTTGACCCTTCAGGAGGTGGAGATCCTATTTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AEF0106.

Holotype ♀: BIOUG56764-C07, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-5, 10.76300, -85.33400, 831 m, Malaise trap, 11/24/2016 (CNC). GenBank accession code OM237727.

Holotype host data: None.

Other host data: None.



Fig. 175. *M. unocuatrosiete*, holotype female and male paratype. Unlabeled images are of the holotype.



Mesochorus unocuatrocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:8F0ADF29-732E-42E3-933A-67949C6BC1B4

Diagnostics: Fig. 176.

Consensus barcode (12 specimens).

```
TTTTATATTTATTTTTGGAATATGAGCAGGAATAATGGATCATCAATAAGATTAATATTTCGAATAGAATTAGGA
AATCCTGGATTTTAAATTAATAATGATCAAATTTACAATTCCTTTGTACTGCCATGCTYTTATTATAATTTTTTTTA
TAGTTATACCTACTATAATTGGTGGGTTTGAAATGATTAATTCCTTAATAATTGGAGCCCTGATATAGCCTTTC
CACGAATAACAATAAGATTTTGACTTTTACCACCTTCATTAATATTACTCTTTATAAGAAGAATAATTAATAAA
GGAGTAGGRACAGGTTGAAGTGTATATCCCCCTTTATCTTTAAATGTAAGTCATGAAGGAATATCAGTAGATTTAT
CAATTTTTCTCTTCACTTAGCAGGAATATCTTCAATTATAGGTGCTATTAATTTATTACTACAATCTTAAATATA
CACTTATTTGGAATATCAATAGATCAGCTATCTTTATTTACATGATCAATTAATAATACAACAATTTATTATTATA
GCTGTACCAGTACTTGCAGGGCAATTACCATATTATTAAGTATCGAAATTTAAATACATCATTTTTTGACCCATCA
GGAGGAGGAGACCAATCTTATACCAACATTTATTTT
```

BOLD data: BIN: BOLD:AEF1590.

Nearest neighbor: *M. unocuatrocuatro*, BOLD:AEE4453, 2.4% (p-dist). The medioposterior propodeal areola of *M. unocuatrocho* is larger than that of *M. unocuatrocuatro* (Fig. 172, associated with the treatment of *M. unocuatrocuatro*). Otherwise, the species are very similar morphologically and may represent the same species. More sampling should resolve this question.

Holotype ♀: BIOUG58265-E01, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-5, 10.76300, -85.33400, 831 m, Malaise trap, 12/08/2016 (CNC). GenBank accession code OM237704.

Holotype host data: None.

Other host data: None.

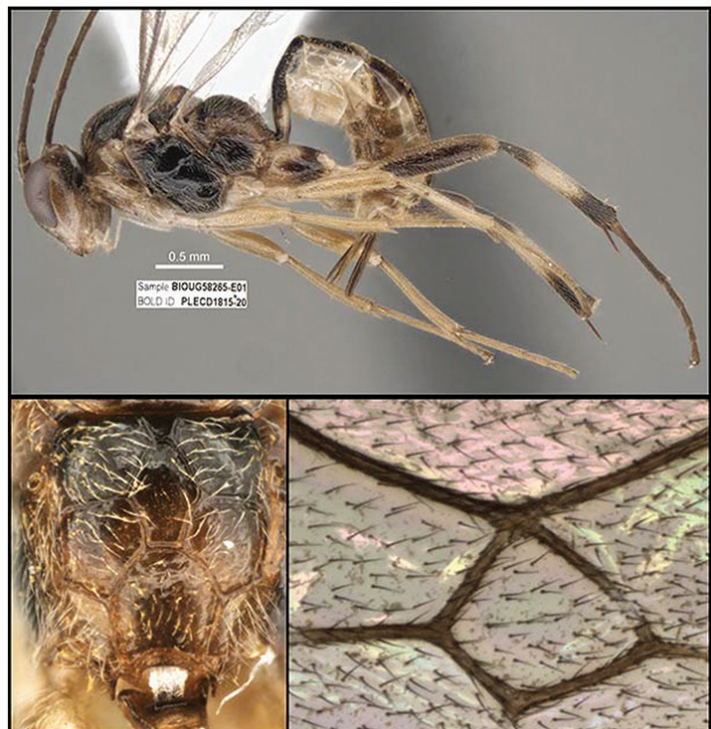


Fig. 176. *M. unocuatrocho*, holotype female.

Mesochorus unocuatronueve

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:BA647E9D-98A8-4788-B54B-CA393F20DFE3

Diagnostics: Fig. 177.

Holotype barcode.

```
CTTATATTTTATTTTGGAAATATGAGCAGGAATAATTGGATCATCAATAAGAATAATTATTCGAATAGAATTAGGA  
AATTCAGGATTTTAAATTAATAATGATCAAATTTATAATCTTTTGTACATCTCATGCTTTTATTATAATTTTTTTTA  
TAGTAATACCAATTATAATTGGAGGATTTGGAAATTGAATAGTACCATTAATAATTGGAGCACCAGATATA  
GCTTTTCCTCGTATAAATAATAAGATTTTGATTATTACCTCCTTCAATTATATTATTATTATAAGAAGAATTT  
GTCAAAAAGGTATAGGAACAGGATGAACAGTTTATCCACCTTTATCATTAATATTAGACATGAAGGATTAT  
CAGTAGATTTATCAATTTTTTCATTACATTTAGCTGGAATATCATCAATTATAGGAGCTATTAATTTTATTACAA  
CAATTTTAAATATACGAATTATAAAAAACATCTTTTGATCAAATAACATTATTTGTTTGATCAATTTTAAATTACAAC  
TATTTTATTATTATTAGCAGTTCCAGTTTTAGCAGGAGCAATTACTATATTACTTTCTGATCGAAATTTAAATACTT  
CATTTTTGATCCATCAGGAGGAGGTGATCCAATTTTATACCAACATTTATTT
```

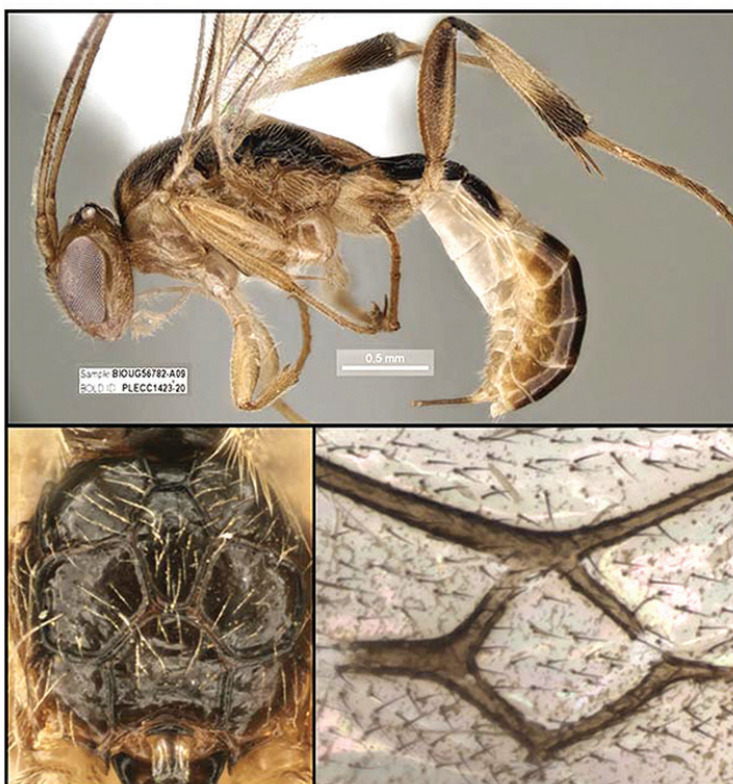
BOLD data: BIN: BOLD:AEF1753.**Nearest neighbor:** *M. tresuno*, BOLD:AAF0637, 4.81% (p-dist).**Holotype** ♂: BIOUG56782-A09, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-5, 10.76300, -85.33400, 831 m, Malaise trap, 12/01/2016 (CNC). GenBank accession code OM237767.**Holotype host data:** None.**Other host data:** None.

Fig. 177. *M. unocuatronueve*, holotype male.

Mesochorus unocincocero

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:BC01C1A4-05FC-4CCE-B9E8-1056ED265FBC

Diagnostics: Fig. 178.

Consensus barcode (2 specimens).

```
TATTTTATATTTTATTTTGGTATATGATCAGGAATAATTGGTTCATCAATAAGATTAATTATTCGAATAGAGTTA
GGAAACCCTGGATTCTTAATTAATAATGATCAAATTTATAATTCTTTTGTTACAGCTCATGCTTTTATTA
TAATTTTTTTTATAGTTATRCCTATTATAATTGGAGGGTTTGGTAATTGAATAGTCCCTTTAATAATTGGAGCTCCA
GATATAGCTTTCCCTCGAATAAATAATATAAGTTTTTGATTATTACCTCCTTCAATTATATATTATTATTAAGAAGA
ATTTGCCAGAAAGGAGTTGGTACTGGATGAAGTGTACCCTCCTTTATCATTAAATAGAAGACATGAAGGATTA
GCAGTTGATTATCAATTTTTTTCATTACATTTAGCAGGAATATCTTCTATTATAGGAGCAGTTAACTTTATTACTA
CAATTTAAATATACGAGTTGTTGGATCTTCTTTAGATCAAATATCTTTATTTGTTTGGTCAATTTAAATTACAACA
ATTTTATTATTATTAGCTGTTCTGTTTTAGCAGGGGCAATTACAATATTATTAAGTATGATCGTAATTTAAATACAA
CATTTTTGATCCTTCAGGAGGAGGGGATCCAATTTTATAYCAACATTTATTT
```

BOLD data: BIN: BOLD:AEI3256.

Nearest neighbor: *M. nuevecho*, BOLD:AEI0702, 1.28% (p-dist). The transverse propodeal carinae join the central areola of *M. nuevecho* at midheight and well above midheight in *M. unocincocero* (Fig. 118, associated with the treatment of *M. nuevecho*).

Holotype ♀: DHJPAR0045510, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Pilon, 10.99087, -85.40540, 561 m, eclosion date 08/03/2011, caterpillar collection date 07/19/2011 (CNC). GenBank accession code OM237700.

Holotype host data:

Hyperparasitoid

of *Diolcogaster*

Choi81 (Braconidae:

Microgastrinae), which is a

primary parasitoid of *Trauaxa*

lua (Erebidae) feeding on

Tabernaemontana robinsonii

(Apocynaceae). A single

Mesochorus specimen eclosed.

Other host data: Unidentified

Microgastrinae (Braconidae).

A single *Mesochorus* specimen

eclosed.

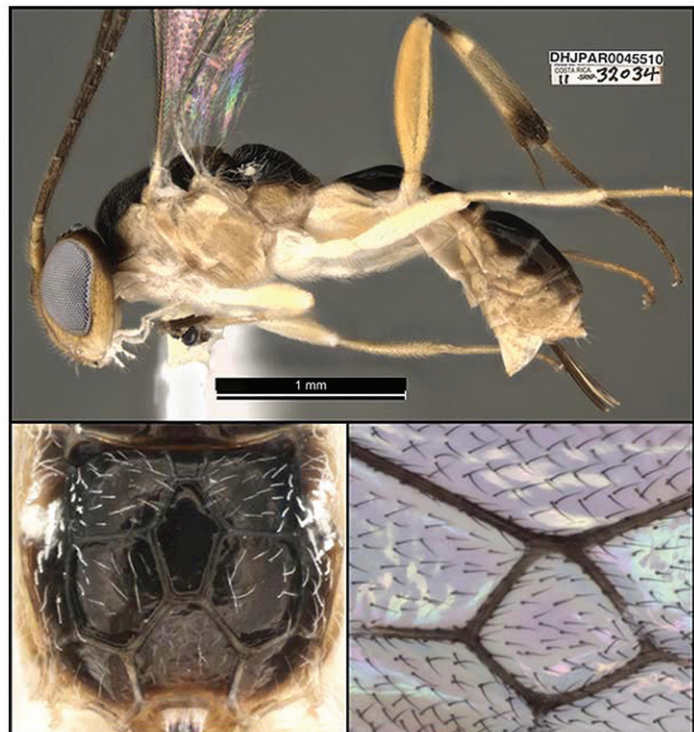


Fig. 178. *M. unocincocero*, holotype female.

Mesochorus unocincouno

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:C8C6F6E7-9FC8-4541-98F4-E6AE19DED24B

Diagnostics: Fig. 179.

Consensus barcode (3 specimens).

```
AGTTTTATATTTTATTTTGGTATATGATCTGGAATAATTGGATCATCAATAAGAATAATTATTCGTATAGA
ATTAGTAATCCTGGGTTTTTAATTAATAACGATCAAATTTATAATTCTTTTGTACATCTCATGCTTTTGTA
TAATTTTTTTTATAGTTATACCAATTATAATTGGAGGGTTGGAAATTGAATAGTACCATTAATAATTGGAGCCC
CAGACATAGCTTTCCCTCGAATAAATAATATAAGATTTTGATTATTACCACCATCAATTATATTTTTACTATTAAGA
AGTATTTGTCAAAAAGGAGTTGGAACAGGATGAACTGTCTATCCCCACTTTCTTTAAATGTAAGACATGAAG
GATTAGCAGTTGATTTATCAATTTTTCTTACATTTAGCTGGAATATCATCAATTATAGGAGCAATCAATTTTATCA
CAACAATTTAAATATACGAATTTTTAAAACATCATTAGATCAAATAACTTTATTTGTTTGATCAATTTAATCAC
TACAATTTTATTACTTTTAGCAGTACCAGTTTAGCAGGAGCAATTAATCTATGCTACTATCAGATCGAAACTTAA
TACTTCTTTTTTGACCCATCAGGAGGAGGAGACCCAATCTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAX3937.

Nearest neighbor: *M. cuatronueve*, BOLD:AAM1067, 8.81% (p-dist).

Holotype ♂: DHJPAR0041526, Área de Conservación Guanacaste, Guanacaste, Sector San Cristobal, Bosque Transición, 10.86472, -85.41531, 540 m, eclosion date 12/05/2010, caterpillar date 11/03/2010 (CNC). GenBank accession code JQ575342.

Holotype host data: Hyperparasitoid of *Hypomicrogaster Janzen04* (Braconidae: Microgastrinae), which is a primary parasitoid of *Stenoma adytodes* (Depressariidae) feeding on *Pouteria reticulata* (Sapotaceae). A single *Mesochorus* specimen enclosed.

Other host data:

Dolichogenidea

Janzen68 (Braconidae: Microgastrinae). A single *Mesochorus* specimen enclosed.

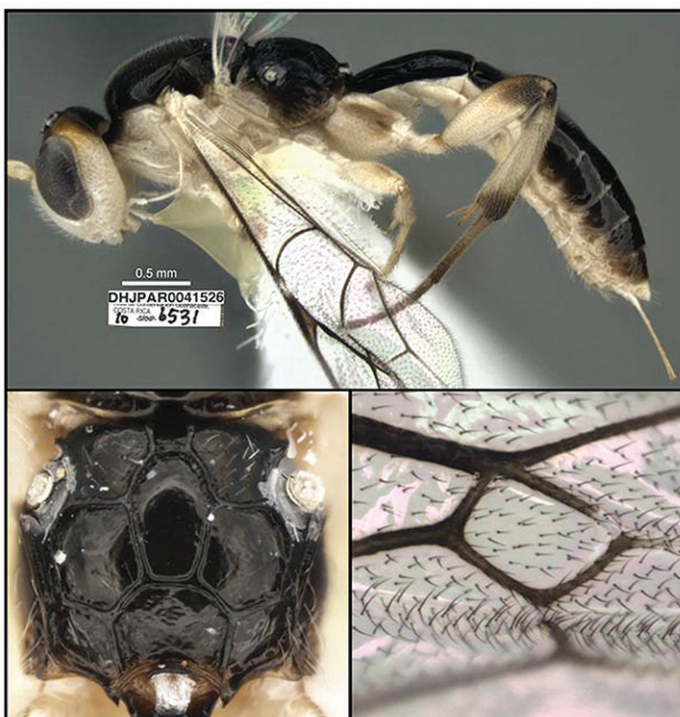


Fig. 179. *M. unocincouno*, holotype male.

Mesochorus unocincodos

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:A37F894C-9A66-4FBC-A3B0-A870C4E843A8

Diagnostics: Fig. 180.

Holotype barcode.

```
TATTTTATATTTTATTTTTGGTATCTGAGCAGGAATAATTGGATCATCAATAAGATTAATTATTCGGTTAGAATTAGGA
AATCCCGGATATTTAATTAATAATGATCAAATTTATAACTCTTTTGTAAACAGCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGAGGTTTTGGAAATGGTTAATTCCTTTAATAATTGGAGCCCTGATATAGCATTCC
CACGAATAAATAATAAGATTTTGACTGTTACCTCCTTCACTATTAATATTATTATTAAGAAGAATTATTAGTAAA
GGTGTGGAAACAGGATGAACAGTTTACCCTCCTTTATCTTTAAATTTAAGCCATGAAGGAATATCTGTAGATTTAT
CAATTTTTCCCTTCATCTAGCTGGAATATCATCTATTATAGGAGCTGTAAATTTTATTACCCTATTTTAAATATAA
AATTAATGGTATATCTATAGACCAACTATCTTTATTTACTTGGTCAATTATAATTACAACAATTTTATTACTAGC
CGTTCCAGTTTGTAGCTGGAGCAATTACAATATTATTAAGTATCGAAATTTAAATACTTCTTTTTTGTATCCATCAG
GAGGAGGAGATCCTATCTTATACCAACATTTATTT
```

BOLD data: BIN: BOLD:ADY3079.

Holotype ♀: DHJPAR0063472, Área de Conservación Guanacaste, Alajuela, Sector Rincon Rain Forest, Quebrada Bambu, 10.93010, -85.25205, 109 m, eclosion date 09/01/2018, caterpillar collection date 08/21/2018 (CNC). GenBank accession code OM237678.

Holotype host data: Hyperparasitoid of an unidentified host, which is a primary parasitoid of *Xylophanes chiron* (Sphingidae) feeding on *Palicourea racemosa* (Rubiaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: None.

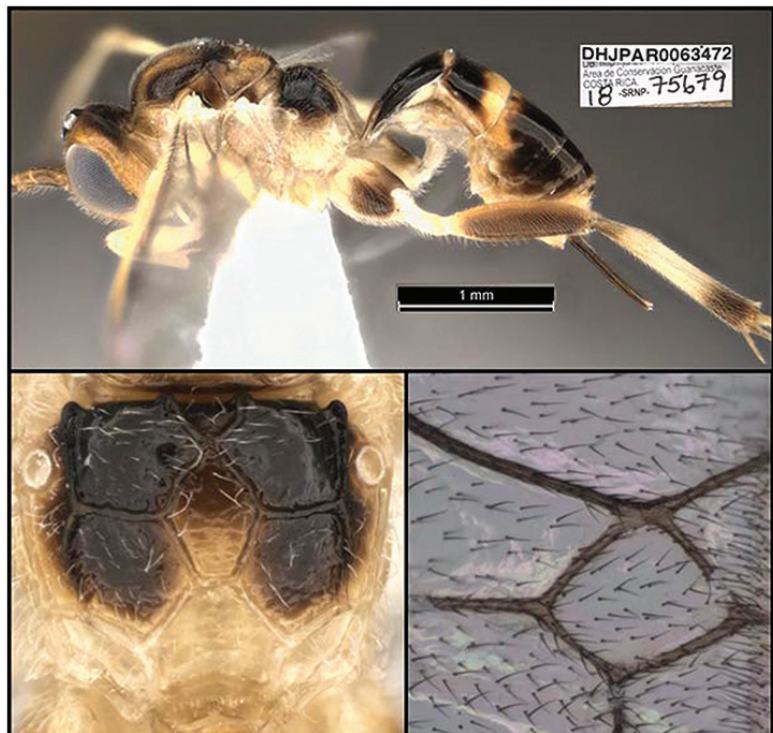


Fig. 180. *M. unocincodos*, holotype female.

Mesochorus unocincotres

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:026528C0-B4B2-4062-A3DD-9559284686CD

Diagnostics: Fig. 181.

Holotype barcode.

```
AATTTTATATTTTATTTTGGTATATGAGCAGGAATAATTGGTTCTCCATAAGTATAATTATTCGAATAGAATTAGGA
AATCCAGGATTTTAAATTAATAATGATCAAATTTATAATTCATTTGTTACTTCTCATGCTTTTATTATAATTTTTTTTA
TAGTTATACCAATTATAATTGGTGGATTTGGAAATTGAATAATCCATTAATAATTGGAGCACCAGATATA
GCTTTTCTCGAATAAATAATATAAGATTTTGATTACTACCTCCATCAATTATATTATTATTAAAGAAGAATTTGT
CAAAAAGGAGTTGGTACTGGATGAACAGTTTATCCTCCATTATCATTAAATATTAGTCATGAAGGATTATCAGTT
GATTTATCAATTTTTCTTTACATTTAGCTGGAATATCATCTATTATAGGTGCAATTAATTTTATTACAACATTTTAAA
TATACGAATTATAAAACATCATTAGATCAAATATCATTATTTGTTTGATCTATTTAATTACAACATTTTATTATTATA
GCAGTACCAGTTTGTAGCTGGAGCAATTAATCTATATTATCTGATCGAAATTTAAATACATTCATTTTTGATCCATCTG
GAGGAGGAGATCCAATTTTATATCAACATTTATTT
```

BOLD data: BIN: BOLD:ADQ7300.

Nearest neighbor: *M. unotresnueve*, BOLD:ADQ8339, 1.92% (p-dist). The dimensions of the propodeal areolae differ (Fig. 182).

Holotype ♀: DHJPAR0062679, Área de Conservación Guanacaste, Guanacaste, Sector Pitilla, Sendero Manguera, 10.99590, -85.39842, 470 m, eclosion date 06/13/2018, caterpillar collection date 05/23/2018 (CNC). GenBank accession code OM237760.

Holotype host data: Hyperparasitoid of *Hypomicrogaster* Janzen29 (Braconidae: Microgastrinae), which is a primary parasitoid of spiloBioLep01 BioLep705 (Crambidae) feeding on *Aegiphila laevis* (Lamiaceae). Multiple *Mesochorus* specimens enclosed.

Other host data: None.



Fig. 181. *M. unocincotres*, holotype female.

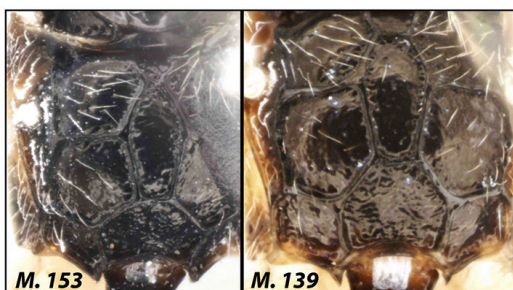


Fig. 182. Comparisons of *M. unocincotres* with its nearest neighbor, *M. unotresnueve*.

Mesochorus unocincocuatro

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:F1F76AB3-567C-4023-AC2D-DB683F1BD514

Diagnostics: Fig. 183.

Holotype barcode.

```
ATTTTATATTTTATTTTCGGAATATGAGCAGGAATAATTGGTTCATCAATAAGAATAATTATTCGATTAGA
ATTAGGAAATCCTGGGTTTTTAATTAATAATGATCAAATTTATAATTCATTTGTTACATCTCATGCATTTATTA
TAATTTTTTTTATAGTTATACCAATATAATTGGTGGTTTTGGTAATTGAATAATCCATTAATAATTGGTGCTCCA
GATATAGCATTTCCTCGTATAAATAATATAAGATTTTGATTATTACCACCTTCAATTATATTATTATTAAGAGGA
ATTTGTCAAAAAGGTGTTGGTACTGGATGAACAGTATATCCTCCTTTATCATTAAATGTTAGACATGAAGGAC
TATCAGTAGATTATCAATTTTTCTCTACATTTAGCTGGTATATCTTCAATTATAGGAGCAATTAATTTTATTA
CAACAATTTTAAATATACGTATTTAAAACTTCATTTGATCAAATATCTTTATTTGTTTGATCAATTTAATTAC
TACAATTTTATTATTATAGCAGTTCAGTATTAGCTGGTGAATTACAATATTACTTTCTGATCGTAATTTAAA
TACTTCTTTTTTGATCCATCTGGAGGAGGTGATCCAATTTATACCAACATTTATT
```

BOLD data: BIN: BOLD:AAG8572.

Nearest neighbor: *M. unoceronueve*, BOLD:ACE9003, 1.03% (p-dist). The shape of the forewing areolets and the thickness of the veins are different (Fig. 124, associated with the treatment of *M. unoceronueve*).

Holotype ♀: DHJPAR0012208, Área de Conservación Guanacaste, Alajuela, Sector San Cristobal, Rio Blanco Abajo, 10.90037, -85.37254, 500 m, eclosion date 07/13/2006, caterpillar collection date 06/22/2006 (CNC). GenBank accession code JF793194.

Holotype host data:

Hyperparasitoid of *Hypomicrogaster largus* (Braconidae: Microgastrinae), which is a primary parasitoid of *Anadasmus* Janzen11 (Depressariidae) feeding on *Ocotea puberula* (Lauraceae). Multiple *Mesochorus* specimens enclosed.

Other host data:

Hypomicrogaster largus (Braconidae: Microgastrinae).



Fig. 183. *M. unocincocuatro*, holotype female.

Mesochorus unocincocinco

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:C50F0437-1048-4EA2-B3DC-26743732FE32

Diagnostics: Fig. 184.

Holotype barcode.

```
TTATATTTTTTTTTGGCATATGAGCTGGTATAATTGGTTTCATCAATAAGAATAATTATTCGTATAGAATTAGGTAATC  
CAGGATTTTTAATAATAATGATCAAATTTATAATCTTTTGTAAACATCTCATGCTTTTATTATAATTTTTTTTATAGTTA  
TACCTATTATAATTGGTGGTTTTGGTAATTGAATAATTCCTCTAATAATTGGTGCACCAGATATAGCTTTCCCTCGA  
ATAAATAATATAAGATTTTGATTACTTCCTCCTCAATTATATTATTATTAAAGTAATTTGTCAAAAAGGTGTTG  
GAACTGGATGAACTGTATACCCTCCATTATCTTTAAATGTTAGTCATGAAGGATTATCAGTTGATTTATCAATTTTTT  
CACTTCATTTAGCAGGAATATCTTCAATTATAGGTGCTATTAACCTTTATTACAACATTTTTAAATATACGAATTTAA  
AAACTTCTTTAGATCAAATATCATTATTTGTTTGATCAATTTAATTACAACAATTTATTATTATTAGCAGTTC  
CAGTATTAGCAGGAGCTATTACAATATTATCTGATCGTAATTTAAATACTTCATTTTTTGATCCTTCTGGAGGAG  
GAGATCCAATTTTATATCAACATTTAT
```

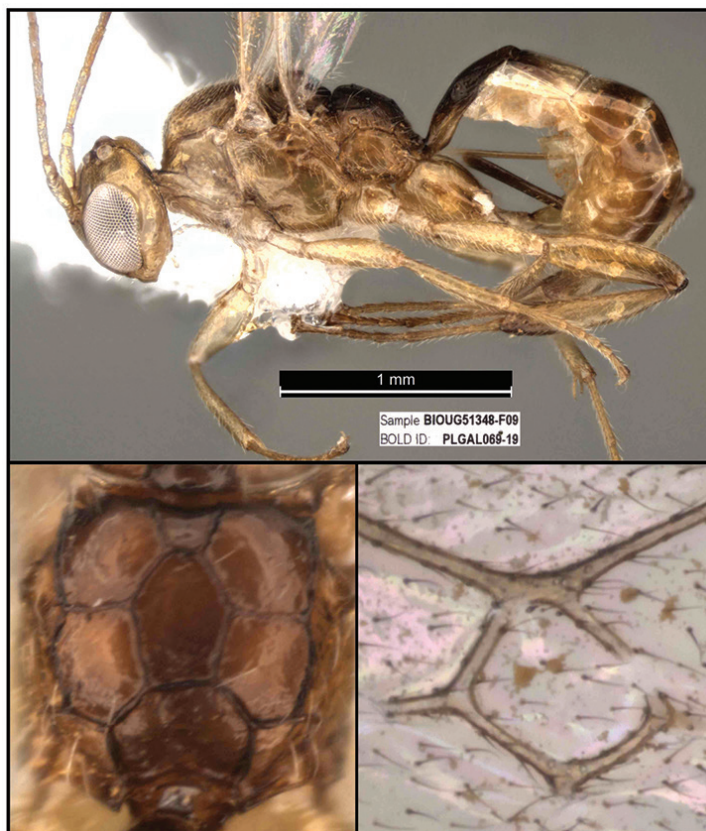
BOLD data: BIN: BOLD:AEB8319.**Nearest neighbor:** *M. unoceroiseis*, BOLD:ACC3709, 6.57% (p-dist).**Holotype** ♀: BIOUG51348-F09, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-8, 10.76100, -85.33500, 811 m, Malaise trap, 02/06/2014 (CNC). GenBank accession code OM237761.**Holotype host data:** None.**Other host data:** None.

Fig. 184. *M. unocincocinco*, holotype female.

Mesochorus unocincoseis

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:4CAD78A8-7BA1-46B0-A98E-047A29454549

Diagnostics: Fig. 185.

Holotype barcode.

```
TTATATTTTTTTTTGGGCATATGAGCAGGAATAGTGGGCTCATCAATAAGATTAATTATTCGACTAGAATTAGGAA
ATCCAGGTTATTAATTAATAATGATCAAATTTATAATTCATTTGTAACAGCCCATGCTTTTTGTAATAATTTTTTTTA
TAGTTATGCCTACTATAATTGGTGGATTCGGAACACTGACTAGTCCCTTAATAATTGGAGCCCTGACATAG
CATTCCCTCGAATAAATAATATAAGATTTTGATTGCTACCTCCTTCTTTATTCTTATTAATCTTAAGAAGAATTATT
CATAAAGGTGTTGGTACAGGATGAACAGTATACCCACCATTATCTTTAAATACCAGTCATGAAGGAATATCTGTT
GATTTATCAATTTTTCTTACATTTAGCAGGAATATCATCTATTATAGGAGCTATTAATTTTATTACAACAATCTTAAA
CATACGATGCTTAGGCTCATCTAGATCAAATATCATTATTTACATGATCAATAAAAAATACAACAATCTTATTATTAC
TAGCAGTTCAGTACTTGCAGGAGCCATTACTATATTATTAGCAGACCGCAACTTAAATACTTCTTTTTTGATCCTA
GAGGAGGTGGAGACCCTATTTATATCAACACTTATT
```

BOLD data: BIN: BOLD:AEF0738.

Holotype ♀: BIOUG58295-C04, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-5, 10.76300, -85.33400, 831 m, Malaise trap, 12/15/2016 (CNC). GenBank accession code OM237768.

Holotype host data: None.

Other host data: None.

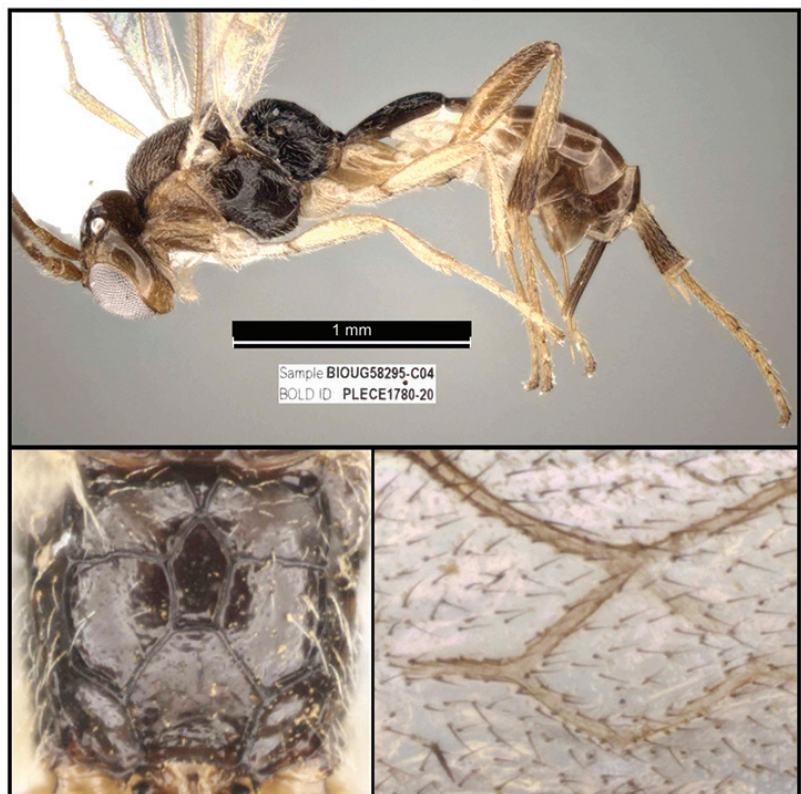


Fig. 185. *M. unocincoseis*, holotype female.

Mesochorus unocincosiete

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:55636CF6-EBA6-48DF-90A3-1EE83582A48D

Diagnostics: Fig. 186.

Holotype barcode.

```
TTTATATTTTATTTTTGGCATCTGAGCTGGAATAATCGGATCATCAATAAGATTAATTATTCGTATAGAATTA  
GGAAATCCTGGATACTTAATTAATAATGATCAAATTTATAACTCATTTGTGACTGCACATGCTTTTATTA  
TAATTTTTTTTATAGTTATACCTATTATAATTGGAGGATTTGGAAATTGATTAGTTCCTTTAATAATTGGTGCTCT  
GATATAGCCTCCCTCGAATAAATAATATAAGATTTGATTGTTACCCCTCTTTATTATTATTATTAAAGAA  
GAATCGTAAATAAAGGTGTTGGGACTGGGTGAACAGTCTATCCTCCTTTATCTTTAAATATTAGTCATGAAGGAA  
TATCGGTAGATTTATCAATTTTTCTTTACATTTAGCCGGTATATCGTCAATTATAGGGGCTGTAAATTTTACTA  
CAATTTTAAATATAAAATTAAGTGGTATATCAATAGATCAATTATCATTATTTACTTGATCTATTAATAACAACA  
ATTTTACTATTAGCAGTGCCTGTTTTAGCAGGAGCAATTACTATATTAACTGATCGAAATTTAAATACAT  
CATTTTTGATCCATCCGGAGGAGGAGATCCAATTTATCAACATTTA
```

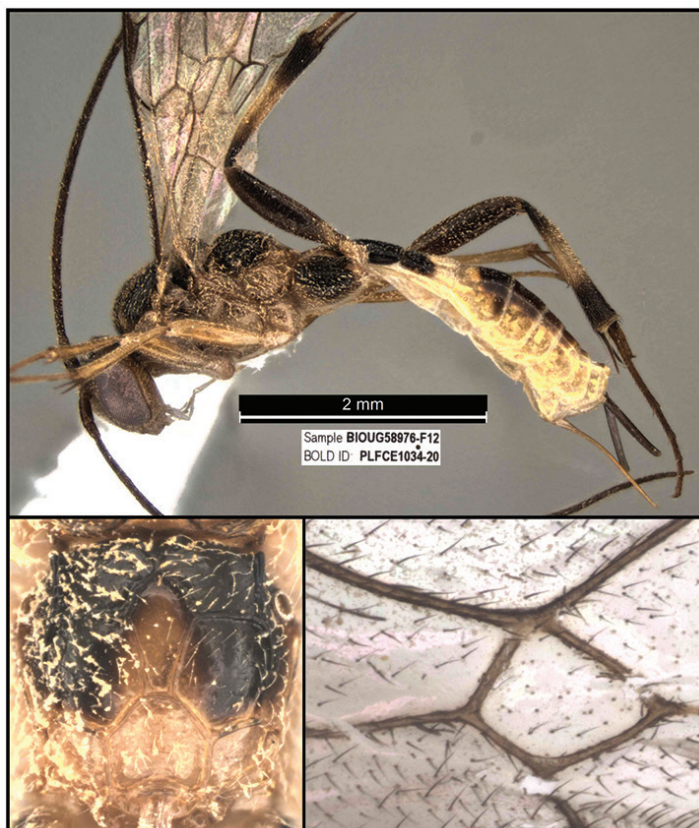
BOLD data: BIN: BOLD:AEF9497.**Holotype** ♀: BIOUG58976-F12, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-5E, 10.76300, -85.33400, 831 m, Malaise trap, 12/14/2017 (CNC). GenBank accession code OM237708.**Holotype host data:** None.**Other host data:** None.

Fig. 186. *M. unocincosiete*, holotype female.



Mesochorus unocincocho

Sharkey, sp. nov.

urn:lsid:zoobank.org:act:368E3662-B144-4FC8-8458-A9F80960BB55

Diagnostics: Fig. 187.

Holotype barcode.

TTTTATATTTTATTTTTGGCTTATGAGCAGGAATAATTGGGTCTTCAATAAGATTAATTATTCGCCTAGA
ATTAGGAAACCCAGGCTATTTAATCAATAATGATCAAATTTATAATTCATTTGTGACTGCTCATGCTTTTTATTA
TAATTTTTTTTATAGTTATACCTATCATAATTGGTGGATTTGGAAATTGACTAATTCCTTTAATAATTGGAGCTCT
GATATAGCATTCCACGAATAAATAATATAAGATTTTGATTATTACCTCCCTCTCTTTTTTTTATTAATTTTAGGA
AGTATTATTCATAAAGGTGTTGGAACCTGGTTGAACTGTTTACCCTCCTTTATCTTTAAATTCTAGTCATGAA
GGTATATCTGTAGATTATCAATCTTTCTTTACATCTAGCAGGAATATCCTCAATTATAGGAGCAATTAATTTTAT
CACAACATCTTAAATATGCGATGTTTAGGCACATCTTTAGATCAAATATCATTATTTACTTGATCAATAAAAATTAC
TACAATTTTATTATTATTAGCAGTTCTGTACTTGACAGGTGCCATCACAATATTATTAGCAGATCGTAATTTAAATACTT
CATTTTTGATCCTGCAGGAGGGGGAGACCCTATTTTATATCAACATTTA

BOLD data: BIN: BOLD:AEJ1909.

Holotype ♀: BIOUG64937-G06, Área de Conservación Guanacaste, Guanacaste, Sector Pailas, Pailas Dos, PL12-9, 10.76000, -85.33400, 809 m, Malaise trap, 10/01/2020 (CNC). GenBank accession code OM237697.

Holotype host data: None.

Other host data: None.

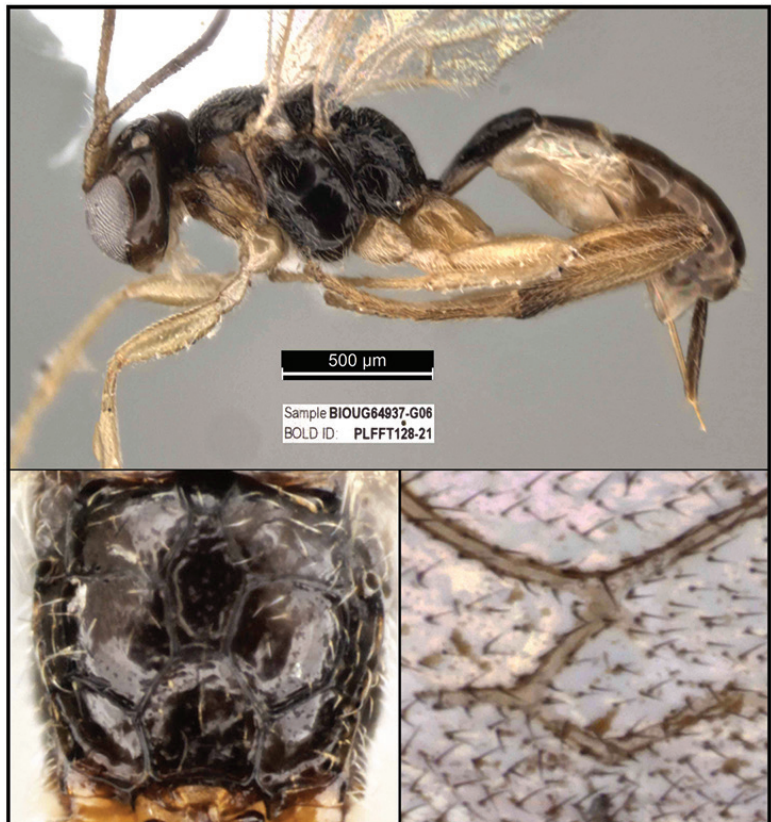


Fig. 187. *M. unocincocho*, holotype female.

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See Supplementary material - v71s1-SM1 • v71s1-SM2 • v71s1-SM3

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